



2015

CATALOGUE

OF SEEDS AND CROP
PROTECTION PRODUCTS

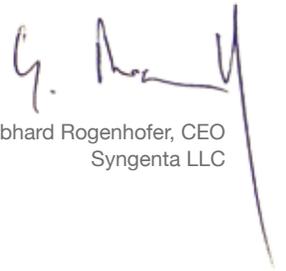
syngenta®

DEAR AGRARIANS, PARTNERS, AND FRIENDS,

For many years, Syngenta is a world leader in its industry, and I am very glad and proud that for more than 25 years I have been working in this well-known company. I want to sincerely thank you for choosing Syngenta and for staying loyal, for your contribution into the company's activities. Partners of Syngenta are our principal value.

We will keep our hard work and create unique solutions satisfying your needs. We always meet the highest requirements as to fairness, honesty, integrity, as each of us is responsible for implementation of values and principles of our company. I look forward to further cooperating with you. Bringing plant potential to life, together we discover our potential in agrarian sphere of Ukraine!

Best regards,



Gebhard Rogenhofer, CEO
Syngenta LLC



Bringing plant potential to life

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History of the Company

Syngenta of today is a young company based on a long-term manufacturing tradition accounting for more than 250 years. We are proud of the history of our company, which helped us occupy world leading position.



1884

Establishment
of Ciba



1876

Establishment of
Sandoz

1926

Establishment
of ICI due to
amalgamation of
Brunner Mond
Limited, Noble
Industries, British
Dyestuffs Coronation
Limited and United
Alkelly Company
Limited

1953

PPL (Plant Production Limited)
becomes fully owned by ICI

1974

Ciba-Geigy
expands its
business to the
sector of seeds
due to purchase
of Funk Seeds
International

1758

1876

1884

1926

1937

1953

1970

1974

1758

Establishment
of Geigy



1937

Establishment of PPL Joint
Venture as a joint enterprise of
ICI and Cooper McDougal &
Robertson Limited

1970

Establishment of
Ciba-Geigy due to
amalgamation of Ciba
and Geigy

1980

Sandoz purchases a Dutch Zaaduni

1994

Establishment of Zeneca due to separation of business between ICI (Imperial Chemical Industries) into different areas

1999

Establishment of AstraZeneca due to amalgamation of Astra AB (Sweden) and Zeneca Group (Great Britain)

01.01.2001

Registration of Syngenta (Ukraine) LLC

1975

1980

1987

1994

1996

1999

2000

2001

1975

Sandoz emerges into seeds market through purchase of Rogers

 **SANDOZ**

1987

ICI purchases chemical company Schtauffer

1996

Establishment of Novartis due to the world's largest amalgamation of Ciba and Sandoz

 **NOVARTIS**

13.11.2000

Establishment of Syngenta due to amalgamation of agricultural divisions of Novartis and AstraZeneca

 **syngenta**

Key areas

Crop protection products (CPPs)

Syngenta aims to ensure stability in agricultural manufacture through up-to-date innovation research and technologies, manufactures wide range of various plant-protecting agents and is currently a leader in a world agrochemical market.



Seeds

Syngenta is also a world leader in seeds business, offering a wide range of seeds of field and vegetable crops to manufacturers of agricultural products in all countries of the world. Syngenta creates hybrids of vegetable and field crops, which yield high-quality and stable harvest.



Lawns and garden

Syngenta plays an important role in world flower business back from XIX century. Our company combines power and experience of such trademarks as Sluis&Groot (Holland), Fischer (Germany), Goldsmith and Yoder (USA). For more than 140 years, we apply innovation technologies and leading selection methods to help professional florists achieve highest results in growing flowers.



Science and development

Syngenta is a world leader in manufacture of CPPs and seeds; however, this is far from all that the company may offer to an agrarian.

Together with manufacture of seeds, the company integrates the whole cycle of its treatment: selection, manufacture, preparation and sale. Syngenta offers complete protection systems and anti-resistance programs for various crops, develops and implements into manufacture basically new agricultural equipment.

Implementation of many successful projects of the Company would be impossible without preliminary field research.

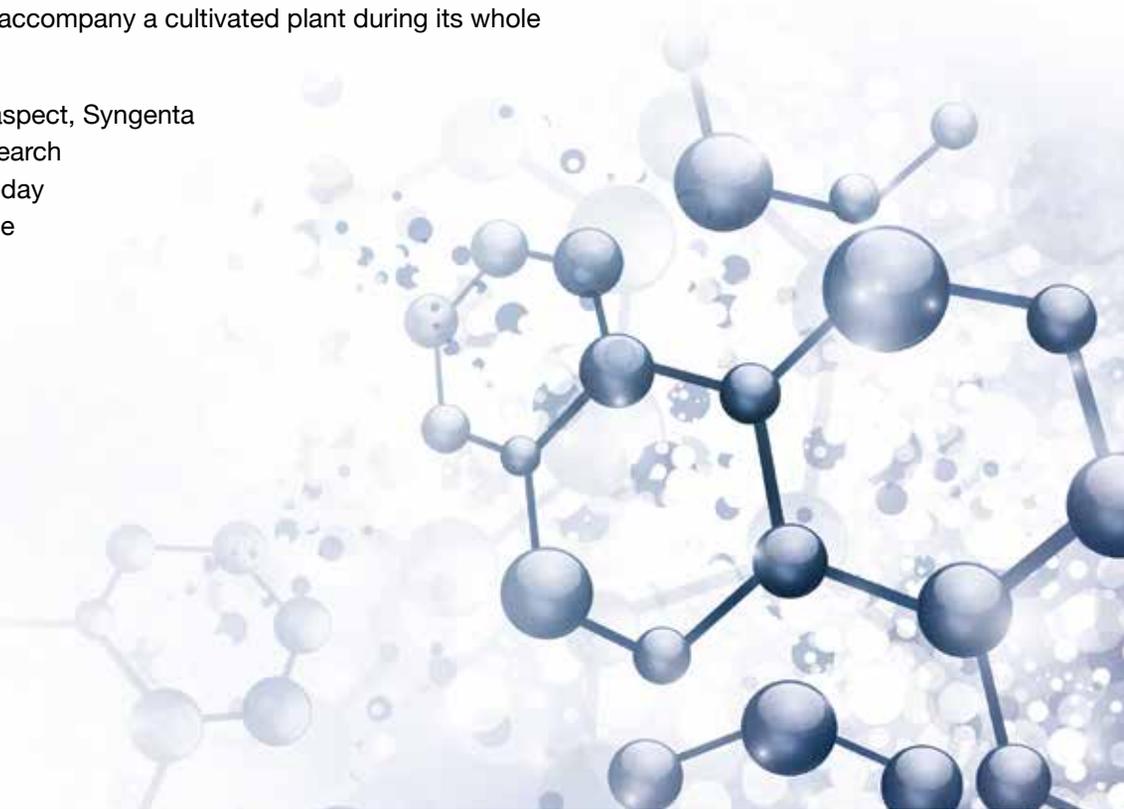
You may think that such research is unnecessary, since scientists established everything long time ago, and numbers obtained in a laboratory indicate of success.

However, the reply is simple: unfortunately, neither modern laboratory is able to represent processes in biosphere that accompany a cultivated plant during its whole lifecycle.

Having understood the gravity of this aspect, Syngenta has created a division of biological research (Research and Development), which today is one of the main operation tools of the company.

Research and development of R&D division are carried out exceptionally in the field environment, creating a powerful foundation and basis for the company's authority.

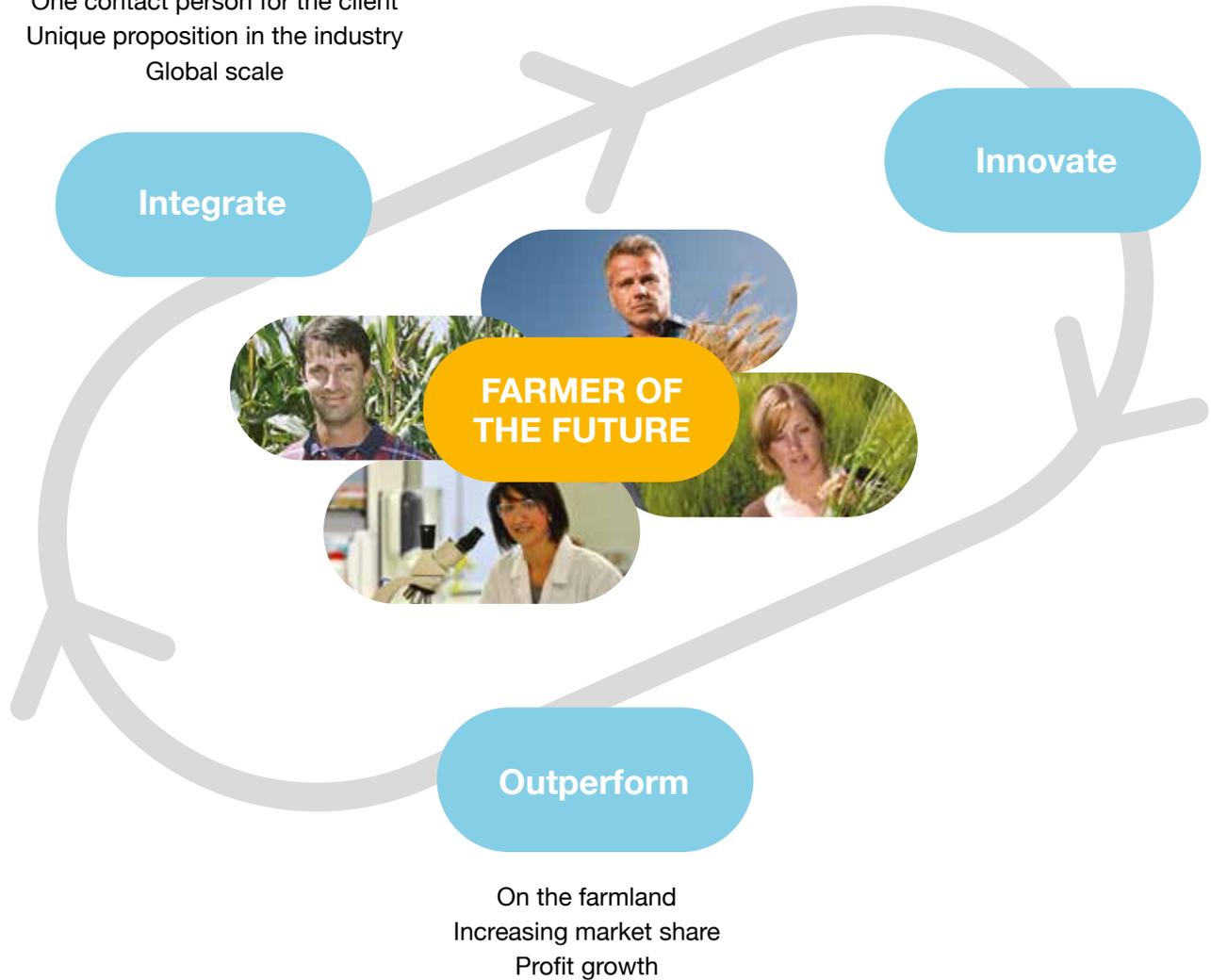
This is the reliability of data obtained due to field research that helps the company better understand and fully assess prospects and the potential of our projects.



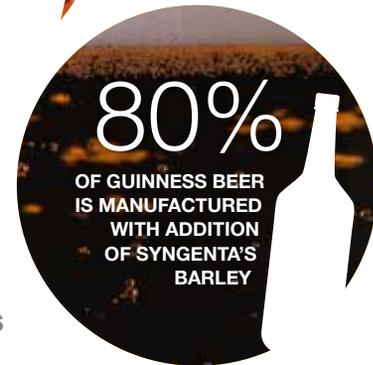
Our strategy

One contact person for the client
Unique proposition in the industry
Global scale

Go beyond the brink of one product
Orientation on crop's features
Partnership and cooperation



Statistics of our success



EVERY DAY WE SPEND MORE THAN

\$2 000 000

FOR DEVELOPMENT OF NEW PRODUCTS AND NEW TECHNOLOGIES



4 400 000 tons

OF COTTON ARE GROWN USING OUR CPPs
AND THIS IS 20 BILLION OF T-SHIRTS AND 3.6 BILLION OF JEANS



16 000 000 tons

EACH SEVENTH TOMATO IN THE WORLD IS GROWN FROM OUR SEEDS





SEEDS

Corn.....	12-21
Sunflower.....	22-37
Winter oil seed rape	38-39
Wheat and barley	40-41
Silage sorghum	42
Sugar beet	43-47

Corn hybrids

Syngenta specializes in corn hybrids of grain and silage areas.

Special attention in selection of hybrids is paid to stability and resistance to basic diseases and adverse factors, particularly, drought. We pay attention not only to theoretical maximal yield of a hybrid, but also to actual figures obtained in adverse, dry years.

Nerissa FAO 200



MATURITY GROUP	Mid-early
USE	Grain, silage
GRAIN TYPE	Flinty dent

Good-looking smooth cobs. Due to its low FAO, has a high cold-resistance and possibility to obtain early grain and silage harvest for cattle. It is characterized by high content of starch (about 70 % in a dry substance). Highly tolerant to boil and averagely resistant to volatile smut. Responds very well to high agricultural background. Hybrid discovers its maximal potential in loyal weather conditions.

RECOMMENDATIONS ON GROWING

It is not recommended to use high norms of herbicides of sulphonylurea group. Hybrid is recommended for growth in Forest areas and Forest Steppe. Recommended density during harvesting is 60-65 thousand plants/ha in Forest Steppe and up to 90 thousand of plants/ha in Forest area.

NK Gitago FAO 210



MATURITY GROUP	Mid-early
USE	Grain, silage
GRAIN TYPE	Flinty dent

Long flattened cob. Grain yield is high, at the average 85 %. Hybrid is characterized by quick initial growth. Leader in drought-resistance in its maturity group. Adapted to growing by extensive technologies. Has high resistance to lateral pathogens. Tolerant to basic leaf diseases and boil smut, averagely resistant to overmaturing in field environment. Appropriate for growth in different soils, adapted to growing by extensive technologies in all corn growing areas of Ukraine.

RECOMMENDATIONS ON GROWING

Recommended density in the period of harvesting in Forest area is up to 90 thousand of plants/ha, in the zone of Forest Steppe is 55-65 thousand of plants/ha, in the zone of Steppe is 45-55 thousand of plants/ha.

SY Tiptop FAO 210



NEW

MATURITY GROUP	Mid-early
USE	Grain
GRAIN TYPE	Flinty dent

Hybrid of intense type in its maturity group. It is characterized by later blooming period. Has a high harvest potential. Plants are well-levelled, of Stay Green type. Highly tolerant to stem rot, cob fusariosis and lodging. Is highly cold resistant. According to laboratory data, starch content in absolutely dry crops is 73-75%.

RECOMMENDATIONS ON GROWING

Recommended for growing in the zones of woodlands and Forest Steppe of Ukraine. Recommended density for harvesting period: woodlands - 70-90 thousand of plants/ha; Forest Steppe – 65-70 thousand of plants/ha.

Delitop FAO 220



MATURITY GROUP	Mid-early
USE	Grain, silage
GRAIN TYPE	Flinty dent

Highly tolerant to root and stem rot, boil smut, helminthosporiosis, rust. Has high resistance to lodging. Cold-resistant hybrid which has an adequate level of drought resistance. Alcohol yield (100 %) per 100 kg of dry grain is up to 45 %. Starch content in dry substance is about 75.1 %.

RECOMMENDATIONS ON GROWING

Recommended optimally early terms of sowing. Recommended for growing in Forest areas and northern Forest Steppe. Recommended density for harvesting: woodlands - up to 90 thousand of plants/ha; Forest Steppe – 60 thousand of plants/ha.

NK Falkone FAO 220



MATURITY GROUP	Mid-early
USE	Grain, silage
GRAIN TYPE	Flinty dent

Greatly grained cob of average size. High resistance to lodging and basic diseases. High flow of moisture release in maturing. Has higher harvest potential than Delitop hybrid, and full maturity occurs 1-2 days earlier. Contains up to 74.3 % starch in dry substance. In fertile soils, highly tolerant to stem diseases. Has high grain and silage quality for treatment into grits and cattle feeding.

RECOMMENDATIONS ON GROWING

Recommended for growing in the zone of Forest area and forest Steppe with the density during harvesting: woodlands - up to 90 thousand of plants/ha; forest Steppe – 60 thousand of plants/ha.

Corn hybrids

NK Cooler FAO 230



MATURITY GROUP	Mid-early
USE	Grain, silage
GRAIN TYPE	Flinty dent

Hybrid forms a cob of average size disposed to elongation under favourable conditions. Boot length is smaller than the cob. Average ability to form second cob. Characterized by average drought resistance and high cold resistance, well tolerant to temperature reductions at initial vegetation. Highly tolerant to boil smut. Hybrid is characterized by quick growth in the beginning of vegetation. Erectoid leaf arrangement.

RECOMMENDATIONS ON GROWING

Recommended for growing in forest area and forest Steppe zones of Ukraine with the density for harvesting period in the Forest zones of 75-90 thousand of plants/ha, and in Forest Steppe 60-70 thousand of plants/ha.

SY Enigma FAO 230



MATURITY GROUP	Mid-early
USE	Grain, silage
GRAIN TYPE	Flinty dent

A hybrid of intermediate type with high yielding potential and excellent water yielding capacity during maturation. Highly tolerant to stem rots, root zone lodging and boil smut. Starch content in absolutely dry crop is 73-75%. Combines high resistance to drought in vegetation period (within its maturity group) and high tolerance to temperature reduction at initial development stages.

RECOMMENDATIONS ON GROWING

Recommended for growing in Forest area and Forest Steppe zones of Ukraine with the density for harvesting period in the Forest zones of 75-85 thousand of plants/ha, and in Forest Steppe 60-70 thousand of plants/ha.

SY Novatop FAO 240



MATURITY GROUP	Mid-early
USE	Grain, silage
GRAIN TYPE	Flinty dent

High harvest potential. Highly tolerant to stem and root rots, boil smut, helminthosporiosis. Hybrid of intensive type. Adequately discovers its potential in fertile soils and high agricultural background. Plants of Stay Green type.

RECOMMENDATIONS ON GROWING

Optimal sowing terms are recommended. Recommended for growing in Forest area and Forest Steppe zones of Ukraine with the density for harvesting period in Forest area of 75-85 thousand of plants/ha, and in Forest Steppe of 60-70 thousand of plants/ha.

SY Respect FAO 240



MATURITY GROUP	Mid-early
USE	Grain
GRAIN TYPE	Flinty dent

Leader in drought resistance in its maturity group. Arrangement of cobs on a stem is mainly vertical, a cob is well-grained, short. Length of boot is the same as the length of cob. Greatly combines early maturity with high efficiency, especially in dry conditions. Highly tolerant to boil smut. Medium tolerant to formation of lateral shoots. Hybrid is characterized by accelerated growth rate in the beginning of vegetation.

RECOMMENDATIONS ON GROWING

Adapted to growing in all regions of corn growing in Ukraine. Recommended density for harvesting period in Forest area zone is 75-90 thousand of plants/ha, in Forest Steppe area is 60-70 thousand of plants/ha, and in Steppe area is 45-55 thousand of plants/ha.

SY Unitop FAO 240



MATURITY GROUP	Mid-early
USE	Grain, silage
GRAIN TYPE	Flinty dent

Hybrid is adapted for growing by extensive technology. Highly tolerant to basic diseases. High amounts of sulphonylurea group herbicides are not recommended. Starch content is up to 73.8 %. Alcohol yield (100 %) per 100 kg of dry grain is up to 41 %. Characterized by high grain yield. Belongs to Stay Green type plants.

RECOMMENDATIONS ON GROWING

Optimal sowing terms are recommended. Recommended for growing in the Forest and Forest Steppe areas with the density while harvesting in the Forest area of 75-85 thousand of plants/ha, in Forest Steppe area of 60-70 thousand of plants/ha.

Arobase FAO 250



MATURITY GROUP	Mid-early
USE	Grain
GRAIN TYPE	Flinty dent

Characterized by increased cold resistance and high resistance to lodging. Tolerant to root and stem rots, boil smut, helminthosporiosis, rust. Flexible hybrid which extensively uses nutritional substances from the soil and fertilizers. It has increased growth rates during the first stages of organogenesis. Drought resistance level is above average. Starch content in a dry grain is up to 73.5%. Alcohol yield (100 %) per 100 kg of dry grain is up to 40 %.

RECOMMENDATIONS ON GROWING

Optimal sowing terms are recommended. Recommended for growing in Forest area and Forest Steppe area with the density for harvesting period in Forest area of 75-90 thousand of plants/ha, and in Forest Steppe, of 60-70 thousand of plants/ha.

Corn hybrids

SY Topman FAO 250



MATURITY GROUP	Mid-early
USE	Grain, silage
GRAIN TYPE	Flinty dent

Cob of average size, boot is longer than the cob. Average ability to form second cob. Characterized by great drought tolerance and cold resistance. Realizes its potential well in fertile soils. Hybrid is characterized by rapid growth in the beginning of vegetation. Highly tolerant to boil smut. Leaf arrangement is of erectoid type. Grain yield is 82.5% at the average.

RECOMMENDATIONS ON GROWING

Hybrid is recommended for growing in Forest area and Forest Steppe areas with the density for harvesting period in Forest area of 75-90 thousand of plants/ha, and in Forest Steppe of 60-70 thousand of plants/ha.

SY Amplitude FAO 250



MATURITY GROUP	Mid-early
USE	Grain
GRAIN TYPE	Flinty dent

The hybrid belongs to intermediate type by the intensity of growing. It is characterized by high tolerance to helminthosporiosis and high resistance to lodging. As indicated by the laboratory data, starch content in absolutely dry crop is 72-74%.

RECOMMENDATIONS ON GROWING

Hybrid is adapted to growing in the zones of Forest, Forest-Steppe and Steppe of Ukraine. Recommended density for harvesting period in Forest area is 75-85 thousand of plants/ha, in Forest Steppe, 60-70 thousand of plants/ha, and in Steppe are, 50-60 thousand of plants/ha.

SY Veralia FAO 260



MATURITY GROUP	Mid-early
USE	Grain
GRAIN TYPE	Flinty dent

Cob of average size, prone to elongation under favourable conditions. Length of boot is the same that the length of cob. Hybrid has an average ability to form second cob. Drought resistance is more than average. Gives off moisture well during harvesting period. Highly tolerant to boil smut, lodging and lateral shoot formation. Hybrid is characterized by average growth rate in the beginning of vegetation.

RECOMMENDATIONS ON GROWING

Hybrid is adapted to growing in all regions of corn growing of Ukraine. Recommended density for harvesting period in Forest area is 75-90 thousand of plants/ha, in Forest Steppe, 60-70 thousand of plants/ha, and in Steppe are, 45-55 thousand of plants/ha.

 **SY Ondina FAO 260**



MATURITY GROUP	Mid-early
USE	Grain, silage
GRAIN TYPE	Flinty dent

High harvesting potential. Highly tolerant to rust and helminthosporiosis. Characterized by rapid moisture give-off during maturing. Hybrid is stable, adapted to for growing in various climatic zones of Ukraine. Discovers its potential well in fertile soils and in high agricultural background.

RECOMMENDATIONS ON GROWING

Optimal early sowing terms are recommended. Recommended density during harvesting in Forest area is 75-85 thousand of plants/ha, in Forest Steppe area, 60-70 thousand of plants/ha.

 **SY Arioso FAO 270**



MATURITY GROUP	Mid-early
USE	Grain, silage
GRAIN TYPE	Flinty dent

Hybrid of intense type. One of the earliest hybrids in its maturity group. It is characterized by high yielding level and excellent moisture-yielding capacity in maturation period. Highly tolerant to boil smut and highly resistant to lodging. As indicated by the laboratory data, starch content in absolutely dry grain is 72-73%.

RECOMMENDATIONS ON GROWING

Hybrid is recommended for growing in Forest area, Forest Steppe and Steppe of Ukraine. Recommended density during harvesting in Forest area is 75-85 thousand of plants/ha, in Forest Steppe area, 60-70 thousand of plants/ha and Steppe 50-60 thousand of plants/ha.

 **NK Symba FAO 270**



MATURITY GROUP	Mid-early
USE	Grain
GRAIN TYPE	Flinty dent

Hybrid combines high level of yield with low level of grain moisture content. One of the best hybrids in terms of resistance to cob fusarium disease, stem and root rot. Highly resistant to lodging. Characterized by high harvest stability. Not recommended for growing as monoculture.

RECOMMENDATIONS ON GROWING

Hybrid is adapted to growing in Forest area, Forest Steppe and northern Steppe of Ukraine with the recommended density for harvesting period in Forest area of 75-85 thousand plants/ha, in Forest Steppe, 60-70 thousand of plants/ha, and in Steppe, 45-55 thousand of plants/ha.

Corn hybrids

SY Aladium FAO 280



MATURITY GROUP	Mid-early
USE	Grain
GRAIN TYPE	Flinty dent

Intermediate type by the intensity of growing. Highly resistant to cob fusarium disease, stem and root rot, helminthosporiosis and lodging.

RECOMMENDATIONS ON GROWING

Recommended for growing in Forest Steppe area of Ukraine with the recommended density during harvesting of 60-70 thousand of plants/ha.

NK Kansas FAO 290



MATURITY GROUP	Mid-early
USE	Grain
GRAIN TYPE	Flinty dent

Length of boot is equal to the length of cob. Ability of hybrid to form second cob is average. Drought resistance is medium. Highly tolerant to boil smut, lodging and lateral shoot formation. Hybrid is characterized by medium growth rate in the beginning of vegetation and high remount capacity. Has a high yield potential, one of the leaders in its maturity group.

RECOMMENDATIONS ON GROWING

Hybrid is adapted to growing in Forest Steppe area of Ukraine with the recommended density for harvesting period of 55-70 thousand of plants/ha.

NK Lemoro FAO 310



MATURITY GROUP	Medium mature
USE	Grain, silage
GRAIN TYPE	Flinty dent

Has a well-grained cob. Is characterized by high and stable yield. Great choice for highly productive soils and high agricultural background. Hybrid is adequately cold-resistant, suitable for sowing in optimally early terms. Has high stability with sowing density variation. Is characterized by quick moisture give-off during maturing.

RECOMMENDATIONS ON GROWING

Recommended for growing in Forest Steppe and Steppe areas of Ukraine with the recommended density for harvesting period in Forest Steppe area of 60-70 thousand of plants/ha, and in Steppe area, of 45-55 thousand of plants/ha.

NK Cobalt FAO 320



MATURITY GROUP	Medium mature
USE	Grain
GRAIN TYPE	Flinty dent

Cob is short, of fixed type. Length of boot is equal to the length of cob. Recommended for growing for grain purposes. Characterized by very high drought resistance, the best in its maturity group. Tolerant to boil smut, helminthosporiosis, rust, cob fusarium disease, lodging. Characterized by average growth rate in the beginning of vegetation. Leaf type is erectoid. Grain yield in the average is 83 %.

RECOMMENDATIONS ON GROWING

Recommended for growing in Forest Steppe and Steppe areas of Ukraine with the recommended density during harvesting in Forest Steppe of 60-75 thousand of plants/ha, in Steppe area, 45-55 thousand of plants/ha.

NK Thermo FAO 330



MATURITY GROUP	Medium mature
USE	Grain
GRAIN TYPE	Flinty dent

Hybrid is characterized by high and stable yield level and quick moisture give-off during maturing. Almost perfectly smooth plant. Suitable for growing in high agricultural background, has an increased nutritional substance use ratio. Averagely and highly tolerant to stress environmental conditions, root and stem rots, boil smut, rust, helminthosporiosis.

RECOMMENDATIONS ON GROWING

Optimal sowing terms are recommended. Hybrid is adapted to growing in Forest Steppe and northern Steppe areas of Ukraine with the recommended density during harvesting in Forest Steppe area of 60-75 thousand of plants/ha, and in northern Steppe area, 45-55 thousand of plants/ha.

SY Batanga FAO 340



MATURITY GROUP	Medium mature
USE	Grain
GRAIN TYPE	Flinty dent

Has a full-blown, well-grained cob of average size. Ability to form second cob is average. Has increased level of growth on the stage of organogenesis. High resistance to helminthosporiosis and lodging. Gives moisture off well during harvesting period. Average grain yield is 84 %. Average protein content in grain is 8.9%, starch content is 74.2%, and oil content is 3.8%.

RECOMMENDATIONS ON GROWING

Recommended for growing in Steppe and Forest Steppe of Ukraine with the recommended density during harvesting in Forest Steppe area of 55-70 thousand of plants/ha, and Steppe area, 45-55 thousand of plants/ha.

Corn hybrids

NK Lucius FAO 340



MATURITY GROUP	Medium mature
USE	Grain, silage
GRAIN TYPE	Flinty dent

Cob is short; boot is longer than cob. Ability of hybrid to form second cob is average. Has an average level of drought resistance. Tolerant to boil smut and lodging. Low resistance to lateral shoot formation. Hybrid is characterized by average growth rate at the beginning of vegetation. Quickly gives moisture off when maturing. Fulfills its potential best of all when grown by intensive technology.

RECOMMENDATIONS ON GROWING

Hybrid is adapted to growing in Forest Steppe and northern Steppe areas of Ukraine with the recommended density for harvesting period in Forest Steppe area of 60-75 thousand of plants/ha, and in Steppe area, 45-55 thousand of plants/ha.

Furio FAO 350



MATURITY GROUP	Medium mature
USE	Grain, silage
GRAIN TYPE	Flinty dent

Stable corn hybrid with powerful root system which uses natural soil fertility very well. Efficiently utilizes increased fertilizer amount. Tolerant to root and stem rots, boil smut, helminthosporiosis, rust, lodging. Suitable for growing by minimal and zero soil treatment technology. Stay Green type plant. Flexible, rapidly gives moisture off during maturing.

RECOMMENDATIONS ON GROWING

Recommended for growing in Steppe and Forest Steppe area of Ukraine with the recommended density during harvesting in Forest Steppe, 60-70 thousand of plants/ha, Steppe area of 40-50 thousand of plants/ha.

Celest FAO 390



MATURITY GROUP	Medium mature
USE	Grain
GRAIN TYPE	Flinty dent

Has high ability to form second cob (provided the sufficient moisture amount in the soils). Characterized by high resistance to drought, utilizes nutritional substances from the soil well. Demonstrates high yield when being grown in various soil types. Quickly gives moisture off during maturing. Tolerant to root and stem rots, boil smut, helminthosporiosis, rust, lodging.

RECOMMENDATIONS ON GROWING

Hybrid is adapted to growing in Steppe and Forest Steppe area of Ukraine with the recommended density during harvesting in Forest Steppe, 60-70 thousand of plants/ha, in Steppe area of 45-55 thousand of plants/ha.

Cisco **FAO 400**



MATURITY GROUP	Mid-late
USE	Grain
GRAIN TYPE	Flinty dent

Highly yielding hybrid with increased resistance to drought. Gives moisture off well during maturing. Is resistant to lodging, tolerant to root and stem rots, boil smut, helminthosporiosis, rust.

RECOMMENDATIONS ON GROWING

Recommended for growing in Steppe and Forest Steppe areas of Ukraine with the recommended density for harvesting period in Forest Steppe, of 60-70 thousand of plants/ha, Steppe of 45-55 thousand of plants/ha.

NK Pako **FAO 440**



MATURITY GROUP	Mid-late
USE	Grain
GRAIN TYPE	Flinty dent

Hybrid is highly tolerant to stress environmental conditions. Characterized by resistance to lodging and stable and high yield. Cob is placed at height of 150 cm. Blooming stage is early in its maturity group. One of the best hybrids for growing under irrigation in southern regions.

RECOMMENDATIONS ON GROWING

Optimal sowing terms are recommended, and under irrigation, optimal early terms. Recommended for growing in Steppe area of Ukraine with the density for harvesting period in bogara of 40-50 thousand of plants/ha, under irrigation, of 70-80 thousand of plants/ha.



Sunflower Hybrids. Classic

Each sunflower hybrid prior to its commercial use is subject to all-round years-long testing by specialists of Syngenta in those soil and climatic conditions, where it is to be subsequently grown.

Classic sunflower hybrid segment from Syngenta company is characterized by high yield potential and oiliness, perfect resistance to diseases and drought.

Hybrids of Syngenta are characterized by high flexibility and maximally realize their potential provided all technological requirements are complied with, e.g., deep tillage, crop rotation, protection from weed plants, fertilizer treatment etc.



Sanbro MR



Drought resistance standard

MATURITY GROUP Early maturing hybrid
USE Classic

World standard of drought resistance. High growth rates at the first stages of organogenesis. Belongs to extensive type.

RESISTANCE

Hybrid with high heat and drought resistance. Resistant to 5 races of broomrape (A-E). Non-resistant to stem blight, therefore, hybrid is not recommended to be grown in farming units, where these diseases are observed. Has increased resistance to peronosporosis.

RECOMMENDATIONS ON GROWING

Suitable for growing by zero and minimal soil treatment technology. Nitrogen fertilizers should not be abused. Optimal density for harvesting period is 40-45 thousand of plants/ha. Adapted to growing in the zone of the Southern Steppe of Ukraine.



NK Rocky



Leader among early

MATURITY GROUP Early maturing hybrid
USE Classic

Oil content is 48-53 %. The best yield potential in early segment. Belongs to moderately intensive type. High growth power on initial stages. In case of frequent precipitation and cool weather after blooming, vegetation may be prolonged. Flexible to sowing terms (possibility of sowing under optimally late conditions).

RESISTANCE

High tolerance to black stem and stem blight, average tolerance to white and grey rot of the head. Resistant to broomrape of A-E races.

RECOMMENDATIONS ON GROWING

Hybrid is adapted to growing in all zones of Ukraine. Recommended density during harvesting: in droughtful conditions of Southern Steppe and Pryazovia: 35-40 thousand of plants/ha; in normal Steppe, Forest Steppe and Forest conditions: 45-05 thousand of plants/ha. It is not recommended to increase the density of crops and abuse nitrogen fertilizers.

Sanluca RM



Early maturity is above all!

MATURITY GROUP Early maturing hybrid
USE Classic

Oil content is 48-50 %. Combines early maturity and high yield. Highly flexible hybrid with good resistance to stress environmental conditions thanks to early blooming terms. Flexible to sowing terms (possibility of sowing at optimally late terms).

RESISTANCE

Stable to broomrape of A-E races. High tolerance to phomosis, false mildew, medium tolerance to stem blight and white rot. Has great drought and heat resistance.

RECOMMENDATIONS ON GROWING

It is recommended to maintain crop rotation. Suitable for growing by minimal soil treatment technology. Hybrid is adapted to growing in all zones of Ukraine. Recommended density during harvesting: in droughty conditions of Southern Steppe and Pryazovia: 40-45 thousand of plants/ha, under normal steppe, forest steppe and forest conditions: 50-55 thousand of plants/ha.

Arena PR



Year-to-year stability

MATURITY GROUP Mid-early hybrid
USE Classic

Oil content is 48-50 %. Belongs to moderately intensive type, greatly reacts to fertile soils. High growth energy on initial stages. Sunflower hybrid, which successfully combines high yielding potential and high oil content with good resistance to stem and head diseases.

RESISTANCE

Resistant to false mildew, perfect tolerance to white and grey rot, stem blight. Resistant to broomrape of A-E races.

RECOMMENDATIONS ON GROWING

It is not recommended to abuse nitrogen fertilizers and sowing density due to the risk of lodging. Optimal sowing terms and classic soil treatment technology are recommended. Adapted to growing in all zones of Ukraine. Recommended density during harvesting: in droughty conditions of Southern Steppe and Pryazovia: 35-40 thousand of plants/ha, under normal Steppe, Forest Steppe and Forest conditions: 45-50 thousand of plants/ha.

Bosfora



Perfect resistance to drought and broomrape

MATURITY GROUP Mid-early hybrid
USE Classic

Hybrid with high growth rates at initial stages of development. High yielding potential (in its maturity group). Oil content is 48-49 %. Belongs to extensive type. Genetically similar to **Sanbro MR** hybrid.

RESISTANCE

Perfect drought resistance. Resistant to broomrape of A-G races.

RECOMMENDATIONS ON GROWING

Crop rotation and classic soil treatment technology are recommended. It is not recommended to be grown on the fields with high infections background of stem blight. Recommended for growing in the area of Southern Steppe of Ukraine. Recommended density during harvesting is 40-45 thousand of plants/ha.

Sunflower Hybrids. Classic

NK Delfi



Stability in everything

MATURITY GROUP Mid-early hybrid
USE Classic

Oil content is 50-52 %. Moderately intensive type. High yielding potential and increased resistance to lodging. One of the most stable hybrids in terms of yielding level. Great growth energy. Characteristic signs of hybrid are its tallness (170-190 cm) and lemony stem and head colouring during maturing.

RESISTANCE

High tolerance to phomosis and stem blight, good resistance to white rot. Stable to broomrape of A-E races.

RECOMMENDATIONS ON GROWING

Recommended for growing in all zones of Ukraine. Optimal density during harvesting: in droughty conditions of Southern Steppe and Pryazovia: 35-40 thousand of plants/ha, under normal Steppe, Forest Steppe and Forest conditions: 45-50 thousand of plants/ha. It is recommended to maintain classic technology of soil treatment.

NK Dolbi



The most intensive hybrid

MATURITY GROUP Mid-early hybrid
USE Classic

Oil content is 50-52 %. Very high yielding potential. Hybrid belongs to highly intensive growing type, readily reacts to fertile soils and fertilizers. Genetically similar to NK Brio hybrid. Flexible in terms of sowing. High initial growth energy.

RESISTANCE

High tolerance to phomosis and stem blight, average tolerance to white rot. Resistant to broomrape of A-E races.

RECOMMENDATIONS ON GROWING

It is recommended to maintain crop rotation and classic soil treatment technology. Recommended for growing in Forest Steppe and Northern Steppe zones of Ukraine. Optimal density during harvesting is 45-50 thousand of plants/ha.

SY Cadix



Universal solution

MATURITY GROUP Mid-early hybrid
USE Classic

Oil content is 47-49%. Hybrid of moderate-intense type with high yielding potential. Has high initial growth energy.

RESISTANCE

Resistant to A-G* races of broomrape. Resistant to diseases (stem blight, verticillium, white rot). Resistant to drought.

RECOMMENDATIONS ON GROWING

It is recommended for growing in all regions. Optimal density in the harvesting period: Southern Steppe and Pryazovia: 35-40 thousand of plants/ha, in the conditions of sufficient moisturizing: 45-50 thousand of plants/ha.

 **Transol**



Resistance to drought and broomrape

MATURITY GROUP Mid-early hybrid
USE Classic

Hybrid belongs to moderately intensive type. It is characterized by high growth rates at initial development stages. Oil content is up to 48 %. Non-resistant to stem blight, therefore, this hybrid is not recommended to be grown in the fields, where such diseases are observed.

RESISTANCE

Perfect drought resistance. Resistant to broomrape of A-G* races. Average resistance to lodging.

RECOMMENDATIONS ON GROWING

It is recommended to maintain crop rotation and classic soil treatment technology. Large amounts of fertilizers are not recommended. Recommended for growing in Southern Steppe of Ukraine. It is not recommended to increase the density of crops, optimal density during harvesting is 35-45 thousand of plants/ha.

 **NK Brio**



One of the most popular hybrids in the world

MATURITY GROUP Medium mature hybrid
USE Classic

Oil content is 48-52 %. The earliest in its maturity group. Highly yielding sunflower hybrid of intensive growing type. It has reduced growth rates on the first stages of development. Hybrid is adapted to growing by classic technology.

RESISTANCE

Resistant to broomrape of A-E races. Highly resistant to phomosis and stem blight, medium resistant to white rot. Highly resistant to lodging, has average resistance to drought.

RECOMMENDATIONS ON GROWING

It is recommended to maintain crop rotation and optimal sowing terms. Recommended for growing in Central, Northern Steppe and Forest Steppe zones of Ukraine. Optimal density during harvesting is 45-55 thousand of plants/ha.

 **NK Kondi**



Record in oil yield

MATURITY GROUP Medium mature hybrid
USE Classic

Recommended for oil-treatment enterprises as one of the most highly yielding hybrids with high oil content, up to 54 %. High yielding potential. Hybrid of intensive type, gives the best yield in fertile soils. At the end of vegetation plant stem looks healthy, undamaged by diseases.

RESISTANCE

More than average resistance to drought. Good growth energy. Resistant to broomrape of A-E races. Very good tolerance to stem blight and phomosis, average resistance to white rot.

RECOMMENDATIONS ON GROWING

It is recommended to maintain crop rotation and classic soil treatment technology. Recommended for growing on the whole territory of Ukraine. Recommended density during harvesting: under drought conditions of Southern Steppe and Pryazovia – 35-40 thousand of plants/ha, under normal Steppe, Forest Steppe and Forest area conditions: 45-55 thousand of plants/ha.

* New races after F race – tolerance.

Sunflower Hybrids. Classic

Opera PR



Years-long established flexibility

MATURITY GROUP Medium mature hybrid
USE Classic

Oil content is 48-52 %. Hybrid of extensive type. Suitable for growing on any types of soil. Flexible as for sowing terms. Has average growth energy at initial stages of development. Highly technological for harvesting.

RESISTANCE

Resistant to broomrape of A-E races. High tolerance to white and grey rot, average resistance to phomosis and stem blight. Good drought resistance.

RECOMMENDATIONS ON GROWING

Suitable for growing by minimal soil treatment technology and on soils with low fertility level. In case of low density (<40 thousand of plants/ha), large seeds are formed. Recommended for growing in Steppe and Forest Steppe areas of Ukraine. Recommended density during harvesting: under drought conditions of Southern Steppe and Pryazovia – 35-40 thousand of plants/ha, under normal steppe, forest steppe and forest area conditions: 45-50 thousand of plants/ha.

SY Kupava



Double beat on common diseases

MATURITY GROUP Medium mature hybrid
USE Classic

Oil content is 49-53%. Highly yielding hybrid of intensive type-growing sunflower. Has a high initial growth energy. Genetically similar to NK Condi hybrid. A unique combination of tolerance to diseases and drought. A hybrid is adapted to growing under the classic technology.

RESISTANCE

Resistant to broomrape of A-G* races. High tolerance to phomosis, stem blight and white rot. Medium resistance to lodging and good drought resistance.

RECOMMENDATIONS ON GROWING

Recommended for growing using intensive technology in the zones of Central and Northern Steppe, Forest Steppe and Forest area. Optimal density in harvesting: under droughty conditions – 35-40 thousand of plants/ha, in sufficient moisturizing – 45-50 thousand of plants/ha.

SY Lascala



Recognition of a talent

MATURITY GROUP Medium mature hybrid
USE Classic

Oil content is 48-52%. Highly yielding hybrid of moderate-intensive type. Has high initial growth energy. Genetically similar to NK Condi hybrid. Flexible to various methods of soil treatment.

RESISTANCE

Resistant to broomrape of A-G* races. Tolerant to diseases (phomosis and light stem). Good drought resistance.

RECOMMENDATIONS ON GROWING

Recommended for growing in the zones of Central and Northern Steppe, Forest Steppe and Forest area. Optimal density in harvesting: in droughty conditions – 35-40 thousand of plants/ha, in sufficient moisturizing – 45-50 thousand of plants/ha.

 **Estrada**



A choice of the experienced

MATURITY GROUP Mid-late hybrid
USE Classic

Hybrid of moderately intensive type. Combines high yielding potential with high tolerance to new races of broomrape and basic sunflower diseases. Oil content is up to 50 %. Genetically similar to NK Armoni hybrid.

RESISTANCE

Good drought resistance and high tolerance to stem blight and white rot. Perfect tolerance to broomrape of A-G** races.

RECOMMENDATIONS ON GROWING

Recommended for growing in all zones, except for extremely dry regions. Recommended density during harvesting: under drought conditions of Southern Steppe and Pryazovia – 35-40 thousand of plants/ha, under normal Steppe and Forest Steppe conditions: 45-50 thousand of plants/ha.

 **NK Armoni**



Stability and productivity

MATURITY GROUP Mid-late hybrid
USE Classic

One of the top performers in terms of yielding level among sunflower hybrids. Recommended for oil treatment enterprises as one of the most highly-yielding hybrids with high oil content (up to 55 % with relevant technology and in case of favourable weather conditions). Moderately intensive type. The highest yield is observed in powerful fertile soils.

RESISTANCE.

High tolerance to stem blight, phomosis, white rot. Good drought resistance. Resistant to broomrape of A-E races.

RECOMMENDATIONS ON GROWING

It is recommended to maintain crop rotation and classic soil treatment technology. For growing in all areas with exception of extremely droughtly. Optimal density during harvesting: under drought conditions of Southern Steppe and Pryazovia: 35-40 thousand of plants/ha, under normal Steppe and Forest Steppe conditions: 45-50 thousand of plants/ha.

 **SY Edenis**



Perfect yield in the environment of diseases

MATURITY GROUP Mid-late hybrid
USE Classic

Very high yielding potential (at the level of NK Armoni). Oil content is up to 50-52 %. Perfect head pollination.

RESISTANCE

High tolerance to stem blight, phomosis, white rot, verticillium. Resistant to broomrape of A-E races.

RECOMMENDATIONS ON GROWING

Recommended for growing in all zones, except for extremely dry regions. Optimal density during harvesting: under drought conditions of Southern Steppe and Pryazovia: 35-40 thousand of plants/ha, under normal Steppe and Forest Steppe conditions: 45-50 thousand of plants/ha.

* New races following race F – tolerance.

Sunflower hybrids.

High-oleic hybrids

NK Ferti



Perfect harvest of valuable oil

MATURITY GROUP	Medium mature hybrid
USE	High-oleic

Oil content is 50-52 %. High-oleic hybrid with oleic oil content up to 92 % (provided maintenance of spatial isolation from 300 m and under favourable weather conditions). Hybrid of intensive type. Genetically similar to NK Brio hybrid. Average growth power at initial stages.

RESISTANCE

Highly tolerant to phomosis and stem blight, medium tolerant to grey and white rot. Resistant to broomrape of A-E races. Has high resistance to lodging and average resistance to drought.

RECOMMENDATIONS ON GROWING

It is recommended to maintain crop rotation and classic soil treatment technology. Recommended for growing in all zones with exception of extremely droughtly. Optimal density during harvesting: under drought conditions of southern steppe and Pryazovia 40-45 thousand of plants/ha, under normal Steppe and Forest Steppe conditions: 50-55 thousand of plants/ha.

Tutti



Champion among high-oleic types

MATURITY GROUP	Medium mature hybrid
USE	High-oleic

Oil content is up to 52 %, oleic acid in oil is up to 93 %. Leader in terms of yielding level among high-oleic hybrids. The most popular high-oleic hybrid in Central and Western Europe. Hybrid of intensive type, genetically similar to NK Kondi hybrid.

RESISTANCE

Resistance to drought is good. Resistant to boomrape of A-E races. Very good tolerance to stem blight and phomosis, resistance to white rot is above average.

RECOMMENDATIONS ON GROWING

It is recommended to maintain crop rotation and classic soil treatment technology. Recommended for growing in all zones with exception of extremely drought regions. Optimal density during harvesting: under drought conditions of Southern Steppe and Pryazovia 35-45 thousand of plants/ha, under normal Steppe and Forest Steppe conditions: 50-55 thousand of plants/ha.

High-oleic sunflower hybrids have ever-growing popularity among manufacturers, traders, and processors of agricultural products. This is due to a set of significant benefits of this sunflower type, including the following:

- high-oleic oil has the highest content of vitamin E, 45 mg/100 g

- in thermal treatment and hydrolysing of high-oleic oils, cicisomers are mostly formed that reduce the content of cholesterol and carcinogens during cooking

- shelf-life of high-oleic oil is four times as long as that of the standard oil.

NK Camen



Oleic source

MATURITY GROUP Mid-late hybrid
USE High-oleic

One of the leaders in terms of oleic acid content (up to 94 % with the total oil content in grain up to 54 %). Hybrid of extensive type. Characterized by high stability. Genetically similar to Opera PR hybrid. Height of plants at the average is 160-180 cm. With the density up to 35 thousand of plants/ha, it may form large seeds.

RESISTANCE

Characterized by high drought resistance. Resistant to broomrape of 5 races (A-E). Highly resistant to false mildew. Average resistance to stem blight, good resistance to grey and white rots of head and stem.

RECOMMENDATIONS ON GROWING

Suitable for growing using null and minimal soil treatment technologies. Suitable for growing on any types of soils. Recommended for growing in all zones with exception of extremely droughtly. Optimal density for harvesting period: under drought conditions of southern steppe and Pryazovia 35-40 thousand of plants/ha, under normal steppe and forest steppe conditions: 45-50 thousand of plants/ha.

NK Colombi



High-oleic standard in terms of drought resistance for Clearfield system

MATURITY GROUP Mid-early hybrid
USE High-oleic, Clearfield

Oil content – 47-48%. Highly-oleic hybrid with the content of oleic acid in the oil up to 92% (in spacious isolation from 300 m and under favourable weather conditions). Hybrid of extensive type. Genetically close to Sanay hybrid. Has a high yealding potential and good growth power at initial stages. Suitable for minimal and null technology.

RESISTANCE

Perfect drought resistance. Resistant to broomrape of A-E races. Resistant to imidazolines enabling the manufacturers to grow highly oleic sunflower in Clearfield system. Non-resistant to stem blight.

RECOMMENDATIONS ON GROWING

Not recommended to grow in households with blight stem areas. Crop rotation in recommended. Adapted to growing in the zone of southern steppe and Pryazovia. Recommended density for harvesting period: 35-45 thousand of plants/ha.

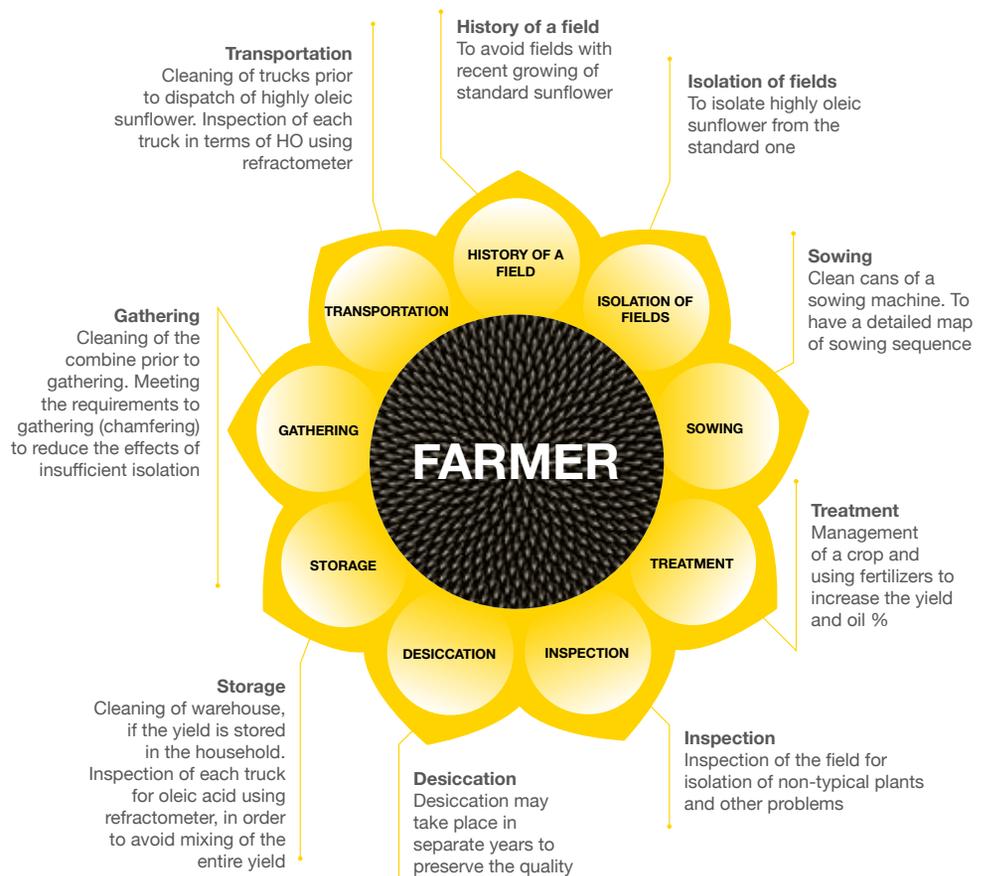
Highly oleic sunflower

Facts and prospects

What is a highly oleic sunflower? This is a flower with oleic oil Omega 9 (mono-saturated oily acid) content above 82% and low content of poly-saturated oily acids Omega 6.

This sunflower has been developed by traditional selection methods, and its genetic potential of oleic acid content is the highest among oily crop, i.e., up to 92-94%! Currently, oil of highly oleic sunflower is exported to European Union countries and used in food industry in Ukraine. By far, the share of highly oleic sunflower in manufacturing structure is low and us about 1-2%. However, global trends of sunflower industry indicate of great prospects of this area in Ukraine. Within the last years, the share of highly oleic sunflower in the world has grown and is about 10% of the entire production. In the US market, the share of oleic sunflower is above 95%, and in France, more than half of it. Development of highly oleic segment is a very perspective area, all the more so the yield of the best modern highly oleic hybrids are no worse than traditional ones. Furthermore, a profit may be obtained that fully covers the cost of seeds per hectare.

Requirements to production of highly oleic sunflower. Description of the process in household



What are the benefits of highly oleic oil?

- High content of vitamin E, a natural antioxidant (tocopherol).
- In frying and hydrogenization (converting into margarine), a small amount of trans fats is created that are harmful for health, and which may cause cardiovascular and cancer diseases (the so-called “bad cholesterol”).
- Long shelf-life, which is 4-fold as long as that of standard sunflower oil.
- Among the reasons of price reduction for olive oil in the world market, a high competence of a highly oleic sunflower oil of which is better than olive oil in terms of qualitative parameters.

Which restricted the growth of areas for highly oleic sunflower?

- Low material interest.
- First sorts/hybrids were unstable and low-yielding, with low tolerance to diseases and weed plants (broomrape) and by these parameters, it was considerably worse than that of linoleic sunflower.
- Low level of awareness on benefits of highly oleic oil.

What changed?

- Today, hybrids exist that are no worse than classic hybrids by the level of yielding, tolerance to diseases and weed plants.
- High interest to large manufacturers (Cargill, Bunge, ADM etc.).
- High interest in the countries of Western Europe.
- Popularization of healthy lifestyle and nutrition.



Peculiarities of growing technology

Growing technology is traditional for sunflowers. It is recommended to comply with spatial isolation from standard linoleic sowing of sunflower within 200-400 m, which makes it possible to obtain the required percent of oleic acid in the oil. If there is no opportunity to keep up with spatial isolation, a hybrid composition should be selected by maturation groups.

It is not recommended to grow in the zones with sharp continental climate, since sharp fluctuations of night and day temperatures during blooming may considerably reduce the level of oleic acid in the oil. An important

factor is the selection of hybrids with genetically high content of oleic acid and high genetic purity, which is guaranteed by manufacturers of Syngenta. Finally, mixing of sunflower should be avoided during sowing, gathering, transportation, drying and storage of production.

Syngenta has a great number of highly oleic sunflower hybrids adapted in most manufacturing countries of industrial sunflower. More than half of the registered hybrids of these segments in Europe are the hybrids of Syngenta. For the environment of Ukraine, Syngenta has registered the

most suitable highly yielding hybrids NK Camen, NK Ferty and Tutty. These are the most successful conversions of traditional (linoleic) hybrids Opera PR, NK Brio and NK Kondi, obtained by the methods of traditional selection.

Hybrids combine a stably high level of yield, high tolerance to diseases, flexibility and high content of oil and oleic acid in it. In the proximate years, it planned to launch new hybrids in the market that would be adapted to regions with insufficient moisturizing, resistant to herbicides etc.

Sunflower hybrids. IMI-hybrids

Infestation of sunflower crops by monocotyledons and dicotyledonous types of weed plants causes significant losses of harvest and, hence, expenses. This problem is specifically critical for such types of weed plants as ambrosia, burdock, amaranth, and boom rape, flower parasite. This problem is solved by Clearfield manufacturing system, which utilizes sunflower hybrids resistant to imidazolinones (Captora herbicide).

IMI-resistant hybrids are obtained by traditional selection method without genetic engineering. Syngenta was the first in the world to create commercial hybrid adapted to this system — Sanay, which was launched into production in 2003 in Turkey.

NK Fortimi



Early Clearfield-hybrid

MATURITY GROUP Early maturing hybrid
USE Clearfield

Genetically similar to NK Rocky hybrid. Resistant to herbicides using Clearfield technology. High growth power at initial stages of development. Stably high harvest in dry conditions. Moderately intensive type. Flexible to sowing terms. The highest oiliness among IMI-resistant hybrids – up to 51 %.

RESISTANCE

Resistant to boom rape of A-E races. High complex resistance to diseases.

RECOMMENDATIONS ON GROWING

Hybrid is adapted to growing in all zones of Ukraine, with exception of extremely droughtly ones. Recommended density during harvesting: under droughtly conditions of Southern Steppe and Pryazovia – 35-40 thousand of plants/ha, under normal Steppe, Forest Steppe and forest area conditions: 45-50 thousand of plants/ha.

Tristan



Passion to high yield

MATURITY GROUP Early maturing hybrid
USE Clearfield

Oil content is up to 50 %. High yielding potential. Hybrid of extensive type. Flexible as to various types of soil sowing terms. Crop rotation maintenance is recommended.

RESISTANCE

Resistant to boom rape of A-E races. Good tolerance of blight, white and grey rots. Tolerance to herbicides of acetochlor group. Good drought resistance.

RECOMMENDATIONS ON GROWING

Suitable for growing by zero and minimal soil processing technology. Adapted to all zones of growing with exception of extremely droughtly. Recommended density during harvesting: under droughtly conditions of Southern Steppe and Pryazovia – 35-40 thousand of plants/ha, under normal steppe, Forest Steppe and Forest area conditions: 45-50 thousand of plants/ha.

 **NK Alego**



Reliable partner

MATURITY GROUP Mid-early hybrid
USE Clearfield

High yielding potential, oil content is up to 50 %. Moderately intensive type, with high flexibility and good growth rates at initial stages of organogenesis. Genetically similar to Arena PR hybrid.

RESISTANCE

Resistant to broomrape of A-E races. Very good tolerance to stem blight and white rot. Resistant to herbicides using Clearfield technology, which gives manufacturers a benefit in their struggle against weed plants and broomrape. Drought resistance is above average.

RECOMMENDATIONS ON GROWING

It is not recommended to use large amounts of nitrogen fertilizers and increase the density of crops. Adapted to for growing in all zones of Ukraine with optimal sowing terms and classical soil processing technology. Recommended density during harvesting is 40-47 thousand of plants/ha.

 **Sanay**



Passion to high yield

MATURITY GROUP Mid-early hybrid
USE Clearfield

Average oil content is 46-48 %. Genetically similar to Sanbro MR hybrid, however, it has higher yielding potential (3-5 Cwt/ha) and longer vegetation period. Flexible as to sowing terms. Extensive type.

RESISTANCE

Resistant to broomrape of A-E races. It is not recommended to be grown in the field with stem blight loci. Resistant to herbicides by Clearfield technology, which gives manufacturers a benefit in their struggle against weed plants and boom rape. Leader in drought resistance, high resistance to shedding, has high resistance to false mildew.

RECOMMENDATIONS ON GROWING

Suitable for growing by null and minimal soil processing technology. It is recommended to maintain crop rotation. Adapted to growing in southern steppe zone of Ukraine. Recommended density for harvesting period — 35-45 thousand of plants/ha. thousand of plants/ha.

 **NK Neoma**



Intensive hybrid for Clearfield

MATURITY GROUP Medium mature hybrid
USE Clearfield

One of the best and most popular hybrids for Clearfield technology. High yielding potential, oil content is up to 50 %. Hybrid of intensive type, the best yield is observed in fertile soils. Genetically similar to NK Brio hybrid. It has medium initial growth power.

RESISTANCE

Resistant to boom rape of A-E races. Good tolerance to stem blight and phomosis, medium to white rot. Medium resistance to drought and perfect resistance to lodging.

RECOMMENDATIONS ON GROWING

It is recommended to maintain crop rotation. Adapted for growing in Forest Steppe, Forest, Northern and Central Steppe zones of Ukraine. Optimal density for harvesting period is 45-55 thousand of plants/ha.

Sunflower hybrids. IMI-hybrids

NK Adagio



Weighty argument

MATURITY GROUP Mid-late hybrid

USE Clearfield

The highest yielding potential in IMI-resistant hybrid segment. Oil content is up to 49 %. Hybrid of moderately intensive type, adapted to various soil processing methods. Genetically similar to NK Armoni hybrid. It has a good growth power at initial stages of growth.

RESISTANCE

Good tolerance to stem blight and drought. Perfect resistance to lodging.

RECOMMENDATIONS ON GROWING

Adapted to growing in Forest Steppe, Northern and Central Steppe of Ukraine. Optimal density for harvesting period: in droughty conditions – 35-40 thousand of plants/ha, in normal conditions - 45-50 thousand of plants/ha.



Manufacturing system Clearfield

Manufacturing system Clearfield is an opportunity to efficiently control broomrape and monocotyledonous and dicotyledonous in sunflower sowing.



A specific issue includes such weed plants as ambrosia (*Ambrosia* spp.), burdock (*Xanthium* spp.), amaranth (*Amaranthus* spp.), abutilon (*Abutilon* spp.), pigweed (*Chenopodium* spp.), and broomrape weed plant (*Orobanche* spp.), which considerably reduce the yield, up to impossibility to treat sunflowers. Manufacturing system Clearfield makes it possible to solve the problems of weeds and broomrape in sunflower sowing following crop emergence. Syngenta was the first in the world to create a commercial hybrid Sanai adapted to IMI herbicide launched into production in 2003 in Turkey. Today, this production system is successfully applied in the world in all sunflower growing areas on the area of 2.5 million hectares and is expected to grow further.

History

In the Kansas state (USA) in 1996, Kassim Al-Khattib, a physiologist and employee of the Kansas University, has identified intact

plants of wild sunflower in soy sowing treated by the herbicide based on imazetapir. A plant has developed resistance to this group of herbicides due to mutagenesis, a natural process occurring in nature with a certain frequency. Gerry Miller, an American geneticist, took seed of this plant and started to study it and experiment. Plants of wild sunflower in the phase of eight leaves were treated by various doses of imidazolinone group herbicides. Studies were conducted for the purpose to identify the most viable plant, a future donor of resistance of this sign. To transfer resistance genes of a wild sunflower to initial lines of cultivated sunflower, the method of back cross was used, a classic selection (reverse crossing). This process is rather slow, usually taking 5-7 years. Resistant inbred lines were given to Syngenta, which by 2003 created Sinai hybrid.

What is Clearfield?

Manufacturing system Clearfield is a unique combination of Captora herbicide (15 g/l

imazapir + 33 g/l imazamox) and highly yielding hybrids of sunflower resistant to this herbicide. Captora has systemic effect on Annual and perennial dicotyledonous and gramineous weed plants, particularly, on ambrosia, sow thistle, abutilon and broomrape.

Specific features of sunflower hybrids for manufacturing system Clearfield

Hybrids are non-transgenic

Sunflower hybrids used in manufacturing system Clearfield have resistance to Captora herbicide. Resistance to herbicides of manufacturing system Clearfield was obtained through traditional methods of plant selection. Thus, these hybrids are non-transgenic. This enables the producers of agricultural products to have an efficient agronomic instrument without any limitations in terms of sale of the obtained products in the world market.

Resistance of hybrids

Sunflower hybrid resistance level depends on the following parameters:

- Stage of growth and condition of plants in treatment,
- Genetics of plants (all recommended hybrids are resistant to double maximal norm 2,4 L/ha of herbicide),
- Environmental conditions during treatment (temperature, moisture supply),
- Components of tank mixture (tank mixtures are not recommended).

Cross tolerance to aftereffects of sulphonylurea with long half-life

Tolerance of IMI hybrids to aftereffects of sulphonylurea with long half-life in the soil was observed (chlorosulphurone, methsulphurone etc.), which were used on previous crops and which are the inhibitors of acetolactate synthase (ALS) or acetoxyhydroxyacetate synthase (AHAS).

Hybrid resistance peculiarities

Resistance to Captora herbicide is ensured by a unique half-dominant gene. To ensure resistance to herbicides in production of industrial sunflower, a gene should be homozygous. For this reason, on the process of production of hybrid sunflower F1 for production system Clearfield, the areas of hybridization require conversion of male and female parent lines. Additional genes may increase resistance of hybrids. Leave discoloration and growth discontinuation are possible. Usually, this is observed more frequently in stress conditions (high temperatures, moisture deficiency in the soil) and discontinues within 14 days.

Recommendations on use

1.0 L/ha in optimal conditions (weed plants at early development stages and during active growth) and in light soils.

1.2 L/ha is the basic recommended norm acting perfectly even in slightly worse conditions (weed plants in later development stages, challenging weed plants, broomrape).

It should be kept in mind that regular sorts and hybrids of sunflower are highly susceptible to the effects of Captora. Herbicide application in these crops may cause their significant inhibition and even full death. It is unacceptable to use generic (analogue) herbicides containing similar active substances, as the resistance of hybrids to these pesticides has not been studied. Following the use of Captora, it is not recommended to perform mechanic processing of row spacing, as it may affect herbicide screen. When using herbicides in crops with minimal (Mini-Till) or null (No-Till) soil tillage in case of a large amount of plant residues on the surface of soil, soil effect of Captora may be reduced.

Warning! In order to avoid damage of crops due to active ingredient residues in the sprayer, immediately following processing a tank and all units should be rinsed according to the instructions laid down in a canister.

Captora application conditions

By weed plant stages

Captora should be used in the period of active growth of weed plants. Dicotyledonous weed plants should not overgrow into the phase 6 leaves (wild spin - 4 leaves), cereals - 4 leaves. In case of high contamination with

ambrosia strains, the recommended phase is up to 4 true weed plant leaves. Except for weed plants emerging as of processing, a herbicide enters the soil and inhibits also emerging weed plants. The above-mentioned development phases of weed plant, a sunflower is usually at the stage of 2-6 true leaves. It is not recommended to use the drug product prior to the phase of 2 leaves in a crop, particularly, in case of drought, when root system is yet poorly developed.

Problems with broomrape

If problems with broomrape arise, one of the methods to control broomrape is the use of manufacturing system Clearfield (clear field). For efficient control of broomrape, considering its biological peculiarities, Captora herbicide is recommended to be used on phases from 4 to 6 leaves of sunflower. Captora is efficient against absolutely all broomrape strains. The recommended dose of herbicide is 1.2 L/ha.

Captora herbicide is recommended to be used only on sunflower hybrids of Clearfield.

Method of application

Only for land application. Aerial application is not registered and not recommended. During processing, overlapping of application strips should be avoided.

Working liquid consumption

200-400 liters per ha. Spraying should be regulated for even application. When using the drug product on crops by the technology with minimal or null soil treatment, water consumption should be not less than 250 liters per ha. Working liquid consumption should be increased in increased density of

crops and/or in large amount of plant residues on the soil. Ca⁺⁺ ions have buffer abilities, therefore, water hardness in this case will not be a problem, while soft water should be used with minimal agent consumption – 1 L/ha.

Tank mixtures

Tank mixtures with other herbicides are not recommended due to their inappropriateness (highly efficient agent). Tank mixtures with pyrethroids may be used.

Mixtures with phosphoorganic compounds may cause damage and death of sunflower. Important note! When using working solution of this herbicide in the mixture with mineral fertilizers (complex, microfertilizers etc.), active substances are absorbed faster, which may cause phytotoxicity and even death.

Resistance to wash-off

Resistant to wash-off from a plant in one hour following spraying.

Herbicide destruction

Disintegration in soil is mainly microbiological, to a lesser extent in anaerobic conditions. Disintegration and limitation in crop rotation are laid down in the table below. Working solution should be used within one day, after which, the efficacy reduces.

Crop rotation limitations

If between herbicide application and sowing of the next crop, a small amount of precipitation was observed, low (up to

+5 °C) or high (above +25 °C) temperatures persisted, herbicide disintegration in soil may be incomplete. If small amount of precipitation is observed for normal crop development, they will be insufficient for microbiological disintegration of active ingredient of Captora herbicide. Long period of abnormally low temperatures may also retard disintegration of these herbicides and increase the risk for the subsequent susceptible crop in crop rotation. Therefore, it is very important to consider limitations in crop rotation following application of the drug product.

Following application of Captora herbicide, the following crop rotation should be ensured:

- without limitations of strains and hybrids resistant to Clearfield herbicides
- in 4 months – wheat, rye
- in 9 months* – corn, barley, oats, rice, sunflower, soybean, peas, beans, sorghum
- in 18 months – vegetables, potato
- in 24 months – sugar and feed beetroot, radish, buckwheat, millet

Use of agents with similar mechanisms of action in fields with previous crop rotation should be avoided, i.e., ALS inhibitors (e.g., sulphonylureas etc.). Drug products of imidazolinone group should not be used on the same field more than once each three years.

Factors affecting Captora herbicide aftereffects

Any factor affecting microbiological activity affects the degree of drug product disintegration.

Soil factors

(type, structure, humidity, temperature, pH)

In heavy soils, disintegration is slower than in light ones. Sufficient amount of precipitation, warm weather from the moment of the agent application till sowing of the next crop in crop rotation increases microbiological degradation of active ingredient. Herbicide disintegration is intensified in the amount of moisture approximating the amount of full soil moisture capacity. Cold weather conditions during vegetation reduce microbiological activity, accordingly, microbiological disintegration reduces. Disintegration of the agent occurs under the temperature above +10 °C, active ingredient disintegration is intensified with temperature increase. Aftereffects of Captora are intensified with reduction of pH in soil: then lower is pH (acid reaction), the higher is the risk of aftereffects.

Control of seed drop

For efficient control of Clearfield sunflower seed drops, in the following crops, pure sulphonylureas should not be used. They should be used either in combination with dicamba and 2,4-D, or agents based on dicamba and 2,4-D in pure condition. It is recommended to use Lancelot herbicide with the application rate of 0.033 kg/ha.

* When pH of the soil is above 6.2 and the sum of precipitation is above 200 mm.

Oil seed rape hybrids

Gladius

Thanks to active investments into research and scientific activities, Syngenta has a powerful scientific and technical base for creation of investigation of new highly productive hybrids of winter rape. That's why these hybrids have a required set of agriculturally valuable features enabling our customers to obtain maximal profit. Winter rape hybrids of Syngenta are characterized by a high level of winter resistance, oiliness, resistance to lodging. Additionally, they perfectly demonstrate their productivity potential in the environment of Ukraine.

NEW



Conquers new heights of productivity



MATURITY GROUP Mid-early hybrid

Has a perfect combination of high yield and winter resistance. Characterized by medium intensive rates of development in autumn and in vegetation period. Height of plants is 160-170 cm.

RESISTANCE

Winter resistant, resistant to lodging.

RECOMMENDATIONS ON GROWING

Recommended for growing in all rape-growing regions, especially with sufficient level of moisturizing.

NK Octans



Perfect results in drought conditions



MATURITY GROUP Mid-early hybrid

Demonstrates high and stable yield in drought conditions. Characterized by medium intensive growth rates in the autumn. Readily reacts to application of growth regulators upon condition of early sowing. Height of plants is 160-170 cm.

RESISTANCE

High level of winter resistance, increased resistance to phomosis.

RECOMMENDATIONS ON GROWING

Recommended for growing in Central and Southern regions of Ukraine.

NK Petrol



Born to win



MATURITY GROUP Mid-early hybrid

Perfect level of yield. Flexible to various conditions of growing (registered in 25 countries). Requires application of growth regulators upon condition of sowing at early terms. Height of plants is 160-170 cm.

RESISTANCE

Increased resistance to early blight, high winter resistance. Adaptive to stress growth factors.

RECOMMENDATIONS ON GROWING

Recommended for growing in all territory of Ukraine.

NK Technic



Leader in winter resistance



MATURITY GROUP Mid-early hybrid

High and stable yield level. Characterized by intensive development in autumn, therefore, requires application of growth regulators upon condition of early sowing. Height of plants is 150-160 cm.

RESISTANCE

Extremely high level of winter resistance and adaptivity to stress growth factors. Resistant to lodging.

RECOMMENDATIONS ON GROWING

Recommended for growing in all rape-growing regions of Ukraine.

Tores



Right in a bull's eye!



MATURITY GROUP Mid-late hybrid

Greatly adapted to drought conditions. Demonstrates high and stable yield under low moisturizing conditions. Very intensely develops in autumn, therefore, requires application of growth regulators. Characterized by high growth rates in the period of vegetation restoration. Height of plants is 160-170 cm.

RESISTANCE

Winter resistant, drought resistant, resistant to lodging.

RECOMMENDATIONS ON GROWING

Recommended for growing in all rape-growing regions, especially, with unstable moisturizing level.

Spring barley hybrids

Species of winter barley for brewing industry are subject to careful selection in testing areas and in quality laboratories.

Agricultural and mechanical recommendations on production are being developed for species recognized by brewers and malt producers

Quench



In the best traditions of brewery

MATURITY GROUP	Medium mature species
USE	Brewery

Stably high yield and grain quality. Resistant to growing in the conditions of drought. Approved by malt producers, brewers and quality control organizations. It is included into MaltEurope and Soufflé brewing barley production programs in Ukraine.

RECOMMENDATIONS ON GROWING

This species recommended to be grown in main brewing barley growing areas. Sowing standard in the average is 4.0 million of similar seeds per ha. Sowing is recommended to be performed in medium terms depending on the growing region. The species belongs to intensive type. It is undemanding as to forecrops. Recommended protection system has to be based on comprehensive assessment of crop condition and should cover basic measures to ensure high phytosanitary condition of the field.

Scrubble*



Assured results under any conditions

MATURITY GROUP	Medium mature species
USE	Brewery

This species is created in Great Britain due to crossing of Quench and Masilia. Plastic and resistant to stress growing conditions. Successfully grown in Europe and demonstrates stably high yield – 8-9% more as compared with Quench. Recognized by CBMO, organization for quality control, and is included into the production program AB Inbev and other companies.

RECOMMENDATIONS ON GROWING

This species recommended to be grown in main brewing barley growing areas. Low-height species, plant height is about 75 cm. Sowing standard in the average is 4.0 million of similar seeds per ha. Sowing is recommended to be performed in medium terms depending on the growing region. The species belongs to intensive type. It is undemanding as to forecrops. Recommended protection system has to be based on comprehensive assessment of crop condition and should cover basic measures to ensure high phytosanitary condition of the field.

Winter wheat hybrids

Shuffle*

NEW



Profit exceeding expectations

MATURITY GROUP Mid-late species
USE Brewery

A species of new generation of spring barley in brewery industry. The species has been created in Great Britain due to crossing of Troon, Quench and Adonis species. It has improved yielding results, 9-12% higher as compared with Quench, and perfect quality parameters. The species has been recognized and is recommended by the organization for quality control HGCA.

RECOMMENDATIONS ON GROWING

This species recommended to be grown in main brewing barley growing areas in middle terms depending on growing zone. Low-height species, plant height is about 78 cm. Sowing standard in the average is 4.0 million of similar seeds per ha. The species belongs to intensive type. It is undemanding as to forecrops. Recommended protection system has to be based on comprehensive assessment of crop condition and contain two fungicide treatments for protection from the basic diseases. Protection from pests and weeds should cover basic measures to ensure high phytosanitary condition of the field.

Our main task in study of winter wheat species and selection work is genetic adaptation to environmental factors and productivity increase. For this, an integrated approach has been developed, which makes it possible to discover genetic potential through combination of high-qualified seed work and high technology of sort growing.

Sailor



Head on high yield

MATURITY GROUP Medium mature species
USE Commodity

Sailor has been created in Germany. It has an increased winter tolerance, high productivity and grain quality. Yielding parameters of the species in production are 8-9 t/ha, potential yield is 10 t/ha. Qualitative parameters of grain correspond to the first class, and the species has been recognized as valuable. Resistant to lodging and shedding, highly tolerant to basic fungous pathogens.

RECOMMENDATIONS ON GROWING

The species is recommended for growing in all agroclimatic zones of Ukraine. It is not demanding to sowing terms and forecrops. The species belongs to intensive type, it gives better results in the fields with high agrichemical background and after better forecrops. Sowing standard is 4.0-4.5 million of emerging seeds per ha. Recommended protection system has to be based on comprehensive assessment of crop condition and should cover basic measures to ensure high phytosanitary condition of the field.

Silage sorghum hybrids

Silage sorghum is a very attractive crop for agricultural producers, who have well-developed animal farms. One hectare of silage sorghum provides yield twice or thrice as much as corn. Growing silage sorghum has several benefits: reduction of production costs, clearing of the field following another crop, obtainment of more high-quality products. All of this is beneficial for your profitability. The ability of this crop to reasonably use moisture should be specifically emphasized. Also, it is highly tolerant to drought conditions. By its nutritive qualities, sorghum silage is as good as corn. Moreover, all the presented hybrids form no cyanamides.

G 1990



GROWTH ZONES Forest steppe, Steppe

Highly yielding hybrid of non-tassel silage sorghum. It has no harmful residues of cyanine complexes. Yielding potential is 800-1200 Cwt/ha of high-quality silage. Characterized by high stability of yield. Thanks to high drought resistance, it may significantly increase yield of silage mass in combined crops with corn in dry conditions of Ukraine.

RECOMMENDATIONS ON GROWING

Recommended ratio of corn and sorghum sowing is 1:1 (4 rows of corn: 4 rows of silage sorghum). Depth of sowing is 2-4 cm, width of row spacing is 70-75 cm. Sowing density is 180-240 thousand/ha in dense seeding. One seed unit contains 800 thousand of seeds (calculated per 4 ha of pure sowing or 7-8 ha of combined sowing).

SEED TREATMENT

Processing is performed by Maxim XL seed treatment product. Seeds are also processed by antidote ensuring resistance of plants to soil herbicides Primextra Gold and Primextra TZ Gold.

SS 506



GROWTH ZONES Forest steppe, Steppe

Highly yielding hybrid of sugar silage sorghum (with a tassel). It has no harmful residues of cyanine complexes. Yielding potential is 900-1400 Cwt/ha of silage. It has high ability to silaging. Characterized by high stability of yield and drought resistance, which may significantly increase yield of silage mass in combined crops with corn in dry conditions of Ukraine.

RECOMMENDATIONS ON GROWING

Recommended ratio of corn and sorghum sowing is 1:1 (4 rows of sorghum: 4 rows of corn). Sowing density is 180-210 thousand/ha. One seed unit contains 600 thousand of seeds (calculated per 2.5-3 ha of pure sowing or 5-6 ha of combined sowing with corn).

SEED TREATMENT

Processing is performed by Maxim XL seed treatment product. Seeds are also processed by antidote ensuring resistance of plants to soil herbicides Primextra Gold and Primextra TZ Gold.

Sugar beet hybrids



Syngenta hybrids of sugar beet provide a high level of sugariness and performance in raw material processing, early development and perfect field emergence, high yielding potential and complex resistance to diseases.

Classification of sugar beet hybrids by two characteristics::

Type of hybrid

N – yielding
NZ – yielding-sugary
Z – sugary

Resistance to diseases and pests

Rz – rhizomania
Cr – cercosporosis
Rt – rhizoctonia
Nt – nematodes
Ap - aphanomyces rot or root feeder



Triple resistance for strong protection against leaf diseases

CLASS Z-type, Rz-Cr-Rt
TYPE Hybrid for sugar industry

Hybrid is characterized by perfect storability in beet piles.

RESISTANCE

Unique combination of three features – high resistance to cercosporosis, rhizomania and rhizoctonia.

SOWING AND HARVESTING TERMS

The best choice for medium and late sowing terms. It has intensive green colour of leaves till late autumn, therefore, it is perfect for late harvesting terms.

RECOMMENDATIONS ON GROWING

Suitable for growing in all regions of beet growing of Ukraine.



A hybrid to obtain maximal yield

CLASS N-type, Rz-Cr
TYPE Hybrid of yielding type

Very high level of yielding and intensive initial growth. Best-seller in Syngenta portfolio for 2010-2013.

RESISTANCE

High resistance to cercosporosis and rhizomania. Tolerant to ramularia.

SOWING AND HARVESTING TERMS

Recommended for medium and late sowing terms.

RECOMMENDATIONS ON GROWING

Suitable for growing in forest steppe and forest areas.

Sugar beet hybrids

HI 0835



High ecological flexibility

CLASS N-type, Rz-Cr

TYPE Hybrid of yielding type

Classic yielding hybrid with a set of resistances for obtainment of high root yield with increased sugariness. For early sowing

RESISTANCE

Resistant to cercosporosis and rhizomania. Tolerant to ramularia, resistant to premature seeding.

SOWING AND HARVESTING TERMS

Suitable for medium and late sowing terms.

RECOMMENDATIONS ON GROWING

Recommended for growing in all regions of beet sowing.

Silenta



New level of yielding!

CLASS N-type, Rz-Cr

TYPE Hybrid of yielding type

Hybrid is characterized by high yield and increased level of sugariness.

RESISTANCE

Resistant to rhizomania. Tolerant to cercosporosis and powdery mildew.

SOWING AND HARVESTING TERMS

Suitable for medium sowing terms.

RECOMMENDATIONS ON GROWING

Recommended for growing in forest steppe and forest areas.

Attack



No chance for nematodes

CLASS NZ-type, Rz-Cr-Nt

TYPE Hybrid of yielding and sugary type

Highly productive hybrid of intensive type. Forms high yield and sugariness under the conditions of significant and medium nematode infestation. Suitable for early sowing.

RESISTANCE

Tolerant to nematodes and ramularia. It has medium resistance to cercosporosis.

SOWING AND HARVESTING TERMS

Suitable for medium sowing terms.

RECOMMENDATIONS ON GROWING

Recommended for growing in areas infested by nematodes. Greatly opens up its productivity potential in the conditions of sufficient moisturizing.

 **Volga**



Strong protection against leaf diseases and root feeder

CLASS NZ-type, Rz-Cr-Rt-Ap

TYPE Hybrid of yielding and sugary type

Hybrid is characterized by high content of sugar and increased level of yield. Sugar beet top is easily loosed without beating root crop.

RESISTANCE

High resistance to rhizomania, rhizoctonia and cercosporosis. Characteristic feature of this hybrid is its high resistance to root feeder damage.

SOWING AND HARVESTING TERMS

The best option for medium and late sowing terms. Intended for early and medium harvesting terms.

RECOMMENDATIONS ON GROWING

Recommended for growing in forest steppe and forest area.

 **HI 0450**



Triple resistance against leaf diseases

CLASS NZ-type, Rz-Cr

TYPE Hybrid of yielding and sugary type

Hybrid is characterized by high content of sugar and perfect combination of yield and sugariness. Its high performance and quality of sugar juice result in minimal sugar losses in molasses.

RESISTANCE

Resistant to rhizomania and cercosporosis. Insignificant damage can be caused by root feeder.

SOWING AND HARVESTING TERMS

Adapted to early sowing terms. Intended for early and medium harvesting terms.

RECOMMENDATIONS ON GROWING

Due to high flexibility to various soil and climatic conditions, it is suitable for growing in all regions of beet growing of Ukraine.

 **Okka***



Hybrid for intensive technologies

CLASS NZ-type, Rz

TYPE Yielding and sugary

Characterized by high yield and sugariness, if grown using intensive technologies. Reacts well to application of increased amounts of mineral fertilizers, intensively accumulates sugar upon condition of high-quality protection against leaf diseases. Roots are well storable and are suitable for long-term storage.

RESISTANCE

Resistant to rhizomania and pit-storage rot.

SOWING AND HARVESTING TERMS

Early and medium harvesting terms.

RECOMMENDATIONS ON GROWING

Ecologically flexible hybrid, suitable for growing in all regions of beet sowing.

* Registration is pending

Sugar beet hybrids

Olimpiada



Olimpiada is a new drought resistance standard

CLASS NZ-type, Rz-Cr

TYPE Hybrid of yielding and sugary type

Highly productive intensive hybrid with well-developed lamina. Perfectly demonstrates its benefits under the conditions of moisture deficiency in soils and high air temperatures.

RESISTANCE

Resistant to rhizomania and cercosporosis.

SOWING AND HARVESTING TERMS

Not suitable for early sowing terms. Intended for medium harvesting terms.

RECOMMENDATIONS ON GROWING

Despite high adaptation to dry growing conditions, the hybrid demonstrates excellent behaviour under the conditions of sufficient moisturizing level.

SY Badia *



Perfect performance

CLASS NZ-type, Rz-Cr

TYPE Yielding and sugary

Classic hybrid of yielding and sugary type, providing high sugar yield due to perfect combination of high productivity and sugariness. Thanks to its high technological quality of raw material, it is characterized by low sugar losses upon processing.

RESISTANCE

Resistant to rhizomania and cercosporosis.

SOWING AND HARVESTING TERMS

Medium and late terms of harvesting.

RECOMMENDATIONS ON GROWING

For conditions of Central and Western Ukraine.

Helita



Elite hybrid for your fields

CLASS NZ-type, Rz-Cr

TYPE Hybrid of yielding and sugary type

It combines extremely high yield and sugariness.

RESISTANCE

High resistance to rhizomania and ramularia. Tolerant to cercosporosis.

SOWING AND HARVESTING TERMS

Intended for early and medium terms of harvesting.

RECOMMENDATIONS ON GROWING

Suitable for growing in all regions of beet growing of Ukraine.





HERBICIDES

Axial 045 EC	50	Lancelot 450 WG	63	Reglone Super 150 SL	76
Beta Prophy ES	51	Lintur 70 WG	65	Reglone Forte 200 SL	78
Galera Super 364 SC	52	Lontrel Grand 750 WG	66	Starane Premium 330 EC	80
Gesaguard 500, FW	54	Lumax 537,5 SE	67	Treflan 480 EC	81
Goal 2E	55	Metronam 700 KC	68	Trophy 90 EC	83
Derby 175 SC	56	Milagro 240 SC	69	Ouragan Forte 500 SL	84
Dialen Super 464 SL	57	Pallas 45 OD	70	Fusilade Forte 150 EC	86
Dual Gold 960 EC	58	Peak 75 WG	71	Citadel 25 OD	88
Elumis 105 OD	59	Prima 911 SE	72		
Esteron 600 EC	60	Primextra Gold 720 SC	73	Herbicide application specifics	89
Callisto 480 SC	61	Primextra TZ Gold 500 SC	74	Syngenta herbicide classification	91
Captora 48 SC	62	Reglone Air 200 SL	75		



GENTLE TO CROPS,
UNMERCIFUL TO WEEDS



PRODUCT DATASHEET

Full name
Axial 045 EC

Active ingredient content
45 g/L pinoxaden
cloquintocet-mexyl (antidote)

Chemical group
Phenylpirazolines

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Product with a new active ingredient and unique surfactant for high-quality penetration
- ✓ Solving problem of gramineous weed plants in wheat and barley and preserves of yield potential
- ✓ Perfect control of a wide range of weeds plants and absence of resistance
- ✓ Destroys natural reservates of viral diseases
- ✓ Non-phytotoxic when complying with application recommendations
- ✓ Has no limitations for next crops in crop rotation

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / Waiting period
WINTER WHEAT, SPRING BARLEY	Annual gramineous weed plants	Spraying during vegetation from two leaves to flag leaf of crop inclusively	1,0	1/-

COMPATIBILITY

In tank mixtures, herbicide is compatible with most pesticides. However, in each separate case, the products should be tested for compatibility. For comprehensive grain crop protection against annual gramineous weeds and most dicotyledonous weed plants, it is recommended to mix Axial with Derby.

SPECIFICS OF APPLICATION

When complying with recommendations for use, Axial has a high efficiency and fast effect against gramineous weed plants, e.g., apera (Apera spp.), avena (Avena spp.), bristle grass (Setaria spp.), trigonella (Lolium spp.), hardinggrass (Phalaris spp.), foxtail (Alopecurus spp.) etc. Treatment with Axial is recommended to be performed following the application of herbicides against dicotyledonous, as gramineous weed plants emerge massively later than dicotyledonous. If tank mixture is required for complex control of annual gramineous and dicotyledonous weed plants, Axial is

recommended to be mixed with Derby. Rain causes no effect on the efficacy of action in 30 minutes after Axial application.

TEMPERATURE OF APPLICATION

Axial is efficient even at +5 °C. Optimal temperature of application is from +10 °C to +25 °C.

It is not recommended to use the product when plants are in stress condition and at abrupt temperature variations during the day.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha.

COMMENTS

Optimal development stage of gramineous weed plants for herbicide application is tillering.



ENTRUST YOUR SUGAR BEET
WITH A PROFESSIONAL

 **Beta Prophy**

NEW

MAIN BENEFITS OF THE PRODUCT

- ✓ Control of a wide range of weed plants, particularly, most challenging for sugar beet (such as orach, amaranth, bitterlings, all cruciferous)
- ✓ Possibility to use tank mixtures with other agents in order to solve challenges of weed plant control on a specific field
- ✓ Flexibility of use, selection of time and number of treatments, which enables easy adjustment of the agent to local conditions

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / Waiting period
SUGAR BEET	Annual dicotyledonous weed plants	Spraying in the phase of seed lobe 1(2) pair of true leaves on weed plant	3,0 (1,5+1,5)	2/7
			3,0 (1,0+1,0+1,0)	3/7

COMPATIBILITY

If required, may be mixed with fungicides, insecticides and fertilizers to be regularly used.

TEMPERATURE OF APPLICATION

+10 °C ... +25 °C (use in drought and extremely high temperatures should be avoided, and during frosting).

SPECIFICS OF PRODUCT APPLICATION

In case of emergence of perennial dicotyledonous weed plants (sow thistle), Beta Prophy is recommended to be used in combination with herbicides Lontrel or Lontrel Grand. In case of mass emergence of bitterlings, Beta Prophy should be mixed with Caribu. In case of emergence of gramineous weed plants, it should be mixed with Fusilade Forte. Application standard of mixture components depends on weed plant amount and development stages of challenging weed plants.

PRODUCT DATASHEET

Full name
Beta Prophy EC

Active ingredient content
71 g/L desmedipham
91 g/L phenmedipham
112 g/L ethofumesate

Chemical group
Phenylcarbamates

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
5 L



Galera™ Super

364 SC

MAIN BENEFITS OF THE PRODUCT

- ✓ Post-emergent herbicide against wide range of dicotyledonous weed plants in oil seed rape crop
- ✓ Efficient control of weed plants challenging for cruciferous crops: bedstraw, sow thistle, poppy, orach, chamomile
- ✓ Non-phytotoxic to crops provided the compliance with application standards

PRODUCT DATASHEET**Full name**

Galera Super 364 SC

Active ingredient content

267 g/L clopiralide
80 g/L pycloram
17 g/L amynopyralide

Chemical group

Pyridine carboxylic acid derivatives

Preparative form

Soluble concentrate

Toxicity class

WHO classification: III

Packaging

5 L

**USE OF THE PRODUCT**

Crop	Coverage	Application phase	Application rate, L/ha
WINTER OIL SEED RAPE	Annual dicotyledonous and perennial, including root and sprout weed plants	Spraying in autumn or in spring in the phase of 2-4 true leaves up to the phase of flower bud occurrence on crops	0,2-0,3
SPRING RAPE, MUSTARD		Spraying in the phase of 2-4 true leaves to the phase of flower bud occurrence on crops	0,2-0,3

COMPATIBILITY

If required, may be mixed with graminicides, and also with other commonly used herbicides, fungicides, insecticides and fertilizers in relevant crops. Before mixing of working solution, compatibility of agents should be verified.

SPECIFICS OF APPLICATION

Use of the drug product immediately following frost or before potential frost on the night after treatment should be avoided. Spraying should be performed on the moment of active growth of weed plants at the stage of 2-8 true leaves in annual and 6-8 leaves (developed rosette) in perennial dicotyledonous weed plants. The agent should not be used in crops in stress condition (e.g., drought, excessive soil moistening, in damage by frost, pests, diseases etc.), in abrupt fluctuation of day and night temperatures, before possible frost.

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +8 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

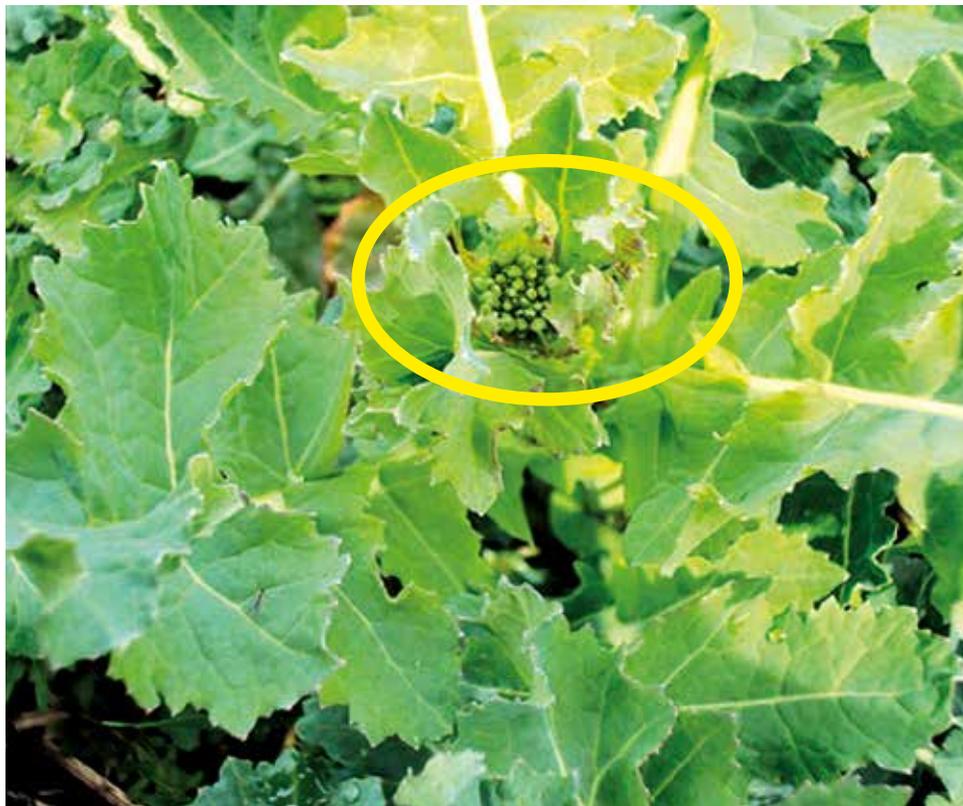
150-200 L/ha.

If used in spring, the agent should not be mixed with growth regulators or products with similar effect. Interval between treatments should be 7-10 days. Before using, please, read tare label carefully



Before using, please, read tare label carefully

APPLICATION WINDOW IN CROPS



The last time of Galera Super use is when flower heads have the diameter of not more than 1 cm

RESTRICTIONS AS TO CROP ROTATION

Following spring use of Galera Super herbicide in the same field, the following crops can be grown:

- in autumn: winter cereals, winter rape, grasses;
- in spring of the next year: cereals, spring rape, mustard, perennial grasses, sugar and feed beetroot, carrot, fennel, corn, sorghum, sunflower, tomatoes, potato, cabbage, flax.

Alfalfa and chicory may be grown provided sowing not earlier than in 10-11 months following drug product use.

Not earlier than in 14 months following product use: all above-mentioned crops, and lentil, chickpea, soybean, peas, beans.

If re-sowing is required (due to death of crops due to frost, drought, diseases etc.) following use of the drug product (including in autumn application) in the same field following performance of deep tillage, cereals, corn, rape, mustard, cabbage, flax, perennial may be grown.




Gesaguard® EXPERT IN PROTECTION OF SUNFLOWER AND VEGETABLES FROM WEED PLANTS


PRODUCT DATASHEET

Full name
Gesaguard 500 FW

Active ingredient content
500 g/L promotrine

Chemical group
Triazines

Preparative form
Suspension concentrate

Toxicity class
WHO classification: III

Packaging
5 L, 200 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Long protection period
- ✓ Perfect partner for tank mixtures
- ✓ Non-phytotoxic to crops provided the compliance with standards

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / Waiting period
SUNFLOWER	Annual dicoty- ledonous and grami- neous weed plants	Spraying of soil prior to sowing, during sowing or before emerging of crop	2,0–4,0	1/30
PEAS FOR GRAIN		Spraying of soil prior to emergence of crop	3,0–5,0	
GREEN PEAS			2,0	
CORIANDER		Spraying of soil prior to emergence of crops or in the phase of 2-4 true leaves	3,0–4,0	
POTATO		Spraying of soil prior to emergence of crops	3,0–4,0	
SOYBEAN		Spraying of soil prior to emergence of crops	3,0–5,0	
CARROT		Spraying of soil prior to emergence of crops or in the phase of 2-4 true leaves	2,0–3,0	1/45

COMPATIBILITY

Gesaguard can be mixed with other commonly used herbicides on appropriate cultures. For full control of main annual grain and dicotyledonous weed plants Gesaguard should be mixed with Dual Gold or Trophy in relevant crops. The combination of Dual Gold + Gesaguard (sunflower, soy, peas, potato) has demonstrated efficiency in practice.

SPECIFICS OF APPLICATION

Spraying is performed before crop emergence on a well-prepared and sufficiently moisturized soil (on carrot and coriander, spraying may also be performed on the stages from 2 to 4 leaves in a crop). Product application rate depends on weed plant amount and humus content in the soil. Higher doses are applied in soils with heavy mechanical composition and high

humus content. Depending on application rate and soil and climatic conditions, protection period of the product is 4 to 12 weeks. When using herbicide according to recommendations, no limitations as to crop rotation exist.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

250-350 L/ha.

COMMENTS

Several annual dicotyledonous weed plants are better controlled in the phase of early emergence. This feature should be considered when using Gesaguard.



NO ALTERNATIVES IN ONION PROTECTION

Goal™ 2E

EC

MAIN BENEFITS OF THE PRODUCT

- ✓ Wide application window
- ✓ Quick visual manifestation of action
- ✓ Has no aftereffects on crop rotation

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
ONION	Annual dicotyledonous weed plants	Spraying in vegetation period, fractional application depending on the phases of onion and weed plant development	0,05... 0,07–0,20... 0,30
APPLE TREE		Directed spraying of vegetating weed plants in spring	4,0–5,0
SUNFLOWER		Spraying of soil upon sowing, however, prior to crop emergence	0,8–1,0

COMPATIBILITY

The product is better to be used separately. It may not be mixed with graminicides. In the fields infested with corn bindweed and ragwort, it may be used in tank mixtures with herbicides on the basis of fluroxypire.

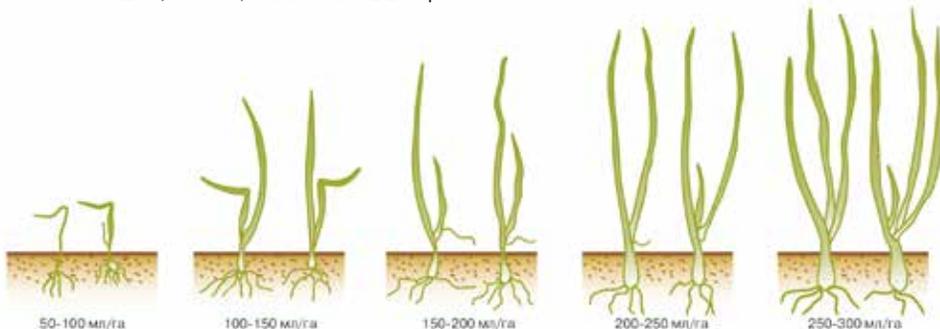
season. No bio-glues or other substances should be added. Crops should not be processed in case of high air and soil humidity. It should be used in the stress conditions of onion crops. Onion use for bunching is prohibited.

SPECIFICS OF APPLICATION

The first processing of onion crops may be performed already in the phase of 'whip' in the amount of 50 mL/ha. With each new (about 3 cm) leaf, a dosage may be increased by 50-100 mL/ha. Maximal permissible single dose is 500 mL/ha, however, not more than 2 L/ha per

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Spraying before emergence of crops in the amount of 300-350 L/ha. In the period of vegetation, 200-250 L/ha at low pressure (150 kPa).



PRODUCT DATASHEET

Full name
Goal 2E EC

Active ingredient content
240 g/L oxifluorophene

Chemical group
Diphenylethers

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
5 L





Derby™

175 SC

TOTAL DESTRUCTION OF OVERGROWN WEED PLANTS

MAIN BENEFITS OF THE PRODUCT

- ✓ Excellent control of catchweed bedstraw even in the phase of 14 whorls (the length above 20 cm) and other overgrown weed plants
- ✓ Wide application window – up to flag leaf
- ✓ Very mild to crops
- ✓ Has no limitations for subsequent crops in crop rotation

PRODUCT DATASHEET

Full name

Derby 175 SC

Active ingredient content

100 g/L flumetsulame
75 g/L florasulame

Chemical group

Triazole pyrimidines

Preparative form

Suspension concentrate

Toxicity class

WHO classification: III

Packaging

0,5 L



USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / Waiting period
SPRING AND WINTER WHEAT AND BARLEY	Annual and perennial dicotyledonous weed plants	Spraying during vegetation from beginning of tillering to flag leaf of crop, inclusively, particularly, by aerial spraying method	0,05–0,07	1/-

COMPATIBILITY

In tank mixtures, a herbicide is compatible with most pesticides. However, in each separate case, compatibility of products should be verified.

For complex control of annual gramineous and dicotyledonous weed plants, Derby is recommended to be mixed with Axial.

SPECIFICS OF APPLICATION

Efficient control of overgrown dicotyledonous weed plants poorly susceptible to sulphonylureas: bluebottle, field larkspur, rue, field violet, and mountain bluet, sunflower seed drop, including resistant to imidazolinones and sulphonylureas. It is recommended to apply when weed plants have at least 2 true leaves. A higher registered amount of product should be used in the following cases:

- in late phases of development and/or for control of more developed susceptible weed plants (> 8 leaves)
- if perennial weed plants are present in crops
- in case of very decimated crops
- in adverse weather conditions before and after spraying.

If complying with recommendations for use, Derby has high efficacy and fast effect against a wide range of dicotyledonous weed plants. Depending on the conditions, tank mixtures of herbicides should be used.

Variants of mixtures:

- Control of dicotyledonous and gramineous weed plants, to flag leave of a crop, Derby 0.07 L/ha and Axial 1 L/ha
- In severe contamination with white orach, prior to stem elongation of a crop:
 - Derby 0.07 L/ha and Dialen Super 0.25 L/ha
 - Derby 0.07 L/ha and Esteron 0.3-0.4 L/ha

Rain causes no effects on the efficacy of action in 60 minutes after Derby application.

TEMPERATURE OF APPLICATION

Efficient in temperature of even +5 °C. Optimal temperature of application is from +8 °C to +25 °C. It is not recommended to use the product on plants in stress condition and in abrupt fluctuations of daily temperatures.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha in case of ground spraying and from 50 L/ha in case of aerial spraying.



STOP TO PERENNIAL
WEED PLANTS!



MAIN BENEFITS OF THE PRODUCT

- ✓ Controls about 200 strains of dicotyledonous weed plants, including perennial weeds and weed plants resistant to 2.4-D
- ✓ Has no limitations for subsequent crops in crop rotation
- ✓ Prevents development of resistance to sulphonylurea group products
- ✓ Perfect partner for tank mixtures

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / Waiting period
WINTER WHEAT	Annual and perennial dicotyledonous weed plants, including resistant to 2.4-D and 2-methyl-4-chloro-phenoxyacetic acid	Spraying during vegetation from beginning of bushing to stem elongation of crops	0,8	1/-
SPRING WHEAT AND BARLEY			0,5-0,7	
CORN		3-5 leaves of crop	1,0-1,25	

COMPATIBILITY

Dialen Super in tank mixtures is compatible with most pesticides. However, in each separate case, the products should be tested for compatibility. It may be mixed with commonly used fungicides, insecticides and herbicides in spiked cereals. In order to intensify the effect against perennial dicotyledonous weed plants, it may be mixed with Ouragan Forte on leas and lands of non-agricultural purpose, with Milagro on corn, Peak on corn and cereals.

SPECIFICS OF APPLICATION

The product has optimal effect on annual weed plants in the phase of 2-4 leaves, on field bindweed with the length of 10-15 cm, on bedstraw in the phase of 3-5 bows, on sow thistle in the phase rosette (6-8 leaves). Temperature mode should be complied with. In abrupt changes of temperature, the lowest value should be

considered. The herbicide should not be used in hot weather. Crops should be treated only at recommended phases of crop development.

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +12 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha.



PRODUCT DATASHEET

Full name

Dialen Super 464 SL

Active ingredient content

120 g/L dicamba
344 g/L 2.4-D dimethylamine salt

Chemical group

Benzoic and aryloxyalkancarbon acid derivatives

Preparative form

Water soluble concentrate

Toxicity class

WHO classification: III

Packaging

10 L



UNIVERSAL SOLDIER
GUARDING YOUR CROPS

MAIN BENEFITS OF THE PRODUCT

- ✓ Extraordinary long protection period (6-8 weeks)
- ✓ Perfect partner for tank mixtures
- ✓ Non-phytotoxic for crops provided the compliance with standards
- ✓ May be used for many crops

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
SUGAR BEETS, SUNFLOWER, SOY	Annual grain and some dicotyledonous weed plants	Spraying of soil before sowing or before crop emergence	1,2–1,6
CORN, SPRING AND WINTER RAPE		Spraying of soil after sowing, however, before crop emergence	1,6
POTATO		Spraying of soil before seedling planting	
TOMATO (SEEDLINGS)		Spraying of soil before sowing or before crop emergence	1,2
CABBAGE (SEEDLINGS)		Spraying of soil before sowing, during sowing, after sowing, however, before crop emergence	
PEAS		Spraying of soil before seedling planting	1,3–1,6
TOMATO (DIRECT-SEEDED)		Spraying of soil after cutting of main rootstock, however, before crop emergence	1,6–2,0
TOBACCO		Spraying of soil before sowing or before crop emergence	1,6
HOPS			1,6–2,0
WATER MELON			
SORGHUM <i>(obligatory antidote processing of seeds)</i>			

COMPATIBILITY

In order to expand the control range of dicotyledonous weed plants, Dual Gold may be mixed with other herbicides in relevant crops. Today, the combinations of Dual Gold + Gesaguard (sunflower, soy, peas, potato), Dual Gold + lenacile, chloridazone and methamitron-based products (sugar beets), Dual Gold + clomazone-based products (rape) are widely used.

RECOMMENDED APPLICATION RATE
OF WORKING SOLUTION

300-350 L/ha.



PRODUCT DATASHEET

Full name

Dual Gold 960 EC

Active ingredient content

960 g/L S-metholachlor

Chemical group

Chloracetamides

Preparative form

Emulsion concentrate

Toxicity class

WHO classification: III

Packaging

5 L, 200 L



AN INTEGRATED SOLUTION AGAINST WEED PLANTS OF CORN



MAIN BENEFITS OF THE PRODUCT

- ✓ Wide application window – 2-8 (10) crop leaves
- ✓ Full control of wide range of annual and perennial grass and dicotyledonous weed plants
- ✓ Control of common milkweed
- ✓ Prevents emergence of several subsequent dicotyledonous weed plant waves thanks to its soil effect
- ✓ Non-phytotoxic for crops even in case of late application
- ✓ Improved formulation requiring no surfactant addition

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
CORN	Annual and perennial grain and dicotyledonous weed plants	Spraying during vegetation from 2 to 8 leaves of crop, inclusively	1,25–2,0*

RESTRICTIONS AS FOR CROP ROTATION

Next year after use of Elumis, it is not recommended to grow sugar beets, beans and vegetables. Next spring following tillage, sunflower may be grown.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-250 L/ha.

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +12 °C to +25 °C.

COMMENTS

Combination of two active ingredients ensures control of most challenging weed plants, such as wheatgrass, field bindweed, bitterling (species), sow thistle (species).



Product efficacy



PRODUCT DATASHEET

Full name
Elumis 105 OD

Active ingredient content
30 g/L nicosulphurone
75 g/L mesotrione

Chemical group
Sulphonylureas, triketones

Preparative form
Oil dispersion

Toxicity class
WHO classification: III

Packaging
20 L



* Maximal application standard should be used in case of mass occurrence of perennial and overgrown weed plants.

QUICK PENETRATION,
QUICK RESULT**Esteron™**

600 EC

**PRODUCT DATASHEET****Full name**

Esteron 600 EC

Active ingredient content905 g/L 2-ethylhexyl ether
2,4-dichlorophenoxy acetic acid,
in acid equivalent – 600 g/L**Chemical group**

Aryloxyalkanoic acid derivatives

Preparative form

Emulsion concentrate

Toxicity class

WHO classification: III

Packaging

20 L

**MAIN BENEFITS OF THE PRODUCT**

- ✓ Quick penetration into weed plants and quick occurrence of visual symptoms
- ✓ Perfect partner for tank mixtures
- ✓ Prevents development of resistance to ALS inhibitors
- ✓ Has no limitations for subsequent crops in crop rotation

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / waiting period
SPRING AND WINTER WHEAT AND BARLEY	Annual and some perennial dicotyledonous weed plants	Spraying during vegetation from beginning of tillering to stem elongation of crops	0,6–0,8	1/-
CORN		Spraying in phases from 3 to 5 leaves of crop	0,7–0,8	

COMPATIBILITY

The product may be mixed with herbicides, fungicides, insecticides. It is not recommended to mix it with growth regulators.

SPECIFICS OF PRODUCT APPLICATION The product should not be used immediately after frost or in anticipation of frost on a night before the processing. Spraying should be performed during active growth of weed plants in the phase of 2-10 leaves of annual and 10-15 cm (rosette) of perennial dicotyledonous weed plants.

It should not be used on crops in a stress condition (e.g., during drought, excessive soil moisturizing, in case of damage by frost, pests, diseases etc.).

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +8 °C to +22 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha.



NATURAL PROTECTION OF CORN



MAIN BENEFITS OF THE PRODUCT

- ✓ Controls weed plants resistant to other herbicides (e.g., black nightshade)
- ✓ Perfect partner for tank mixtures
- ✓ Prevents occurrence of resistance to sulphonylurea group products
- ✓ Prevents occurrence of several subsequent waves of weed plants due to its soil effect
- ✓ May be used at early crop and weed plant development stage

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
CORN	Annual and separate perennial dicotyledonous weed plants	Spraying of seecrops upon emergence till the phase of 3 to 8 leaves of corn, inclusively	0.2 + SAS* (obligatory)
POPPY	Annual dicotyledonous weed plants	Spraying of crops in the phase of 2-4 leaves of crop	0.2 + SAS* (obligatory)

COMPATIBILITY

May be used both separately and in tank mixtures, e.g., with post-emergent herbicides (Milagro, Peak). It is not recommended to use insecticides based on phosphoorganic compounds and thiocarbamates in 7 days prior or after application of Callisto. It is prohibited to use in crops of corn with seed treated by insecticides based on organic compounds.

RESTRICTIONS AS FOR CROP ROTATION

If corn treated by Callisto is to be re-sowed (due to drought, frost, damping-off), corn may be sowed immediately. In autumn of the same year, winter barley and wheat, ryegrass and winter rape may be sowed, if tillage has been performed. Next spring after tillage, sunflower, soybean, sorghum, rape, alfalfa may be sowed. Susceptible crops, e.g., beetroot (sugar, garden, feed), peas may be sowed in 18 months following Callisto application.

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +12 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha.



PRODUCT DATASHEET

Full name
Callisto 480 SC

Active ingredient content
480 g/l mesotrione

Chemical group
Triketones

Preparative form
Suspension concentrate

Toxicity class
WHO classification: III

Packaging
5 L



* Addition of surface-active substances (SASs) in the amount not less than 0.1 % to working solution standard.

HERBICIDE FOR IMI
SUNFLOWER HYBRIDS

NEW



PRODUCT DATASHEET

Full name
Captora 48 SC

Active ingredient content
33 g/L imasamox
15 g/L imasapire

Chemical group
Imidasolinones

Preparative form
Soluble concentrate

Toxicity class
WHO classification: III

Packaging
20 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Protection of sunflower against broomrape
- ✓ Reliable protection against weed plants in challenging areas
- ✓ Wide range of action
- ✓ Control of subsequent waves of weed plants (soil effect)

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
SUNFLOWER*	Monocotyledonous and dicotyledonous weed plants	Spraying of crops in the phase of 4 true leaves of crop	1,0–1,2

COMPATIBILITY

It is not recommended to use the product in tank mixtures with other herbicides (high-efficient product), POC insecticides and mineral fertilizers.

TEMPERATURE OF APPLICATION

Optimal temperature for application is from +14 °C to +25 °C.

SPECIFICS OF APPLICATION

Captora should be used only in sorts and hybrids of Clearfield sunflower at initial stages of weed plant development. It is not recommended to use the product, when sunflower is in stress condition.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

200-400 L/ha. In case of large amounts of plant residues on a soil, rate of working solution application should be not less than 250 L/ha. The highest effect is achieved when most weed plants are at their initial development phases.

CROP ROTATION RECOMMENDATIONS

Imidazolinone products may not be used in the same field more than once each three years. After use of the product, the following crop rotation should be maintained:

- without limitations – sunflower, rape, and corn species or hybrids resistant to imidazolinone herbicides
- in 4 months – wheat, rye
- in 9 months** – corn, barley ***, oats, rice, sunflower, soy, peas, beans, sorghum
- in 18 months – vegetables, potato

in 24 months – sugar and feeding beet, rape, buckwheat, millet.

COMMENTS

In separate cases after the use of the product, reduction of height and/or discoloration of plants have been observed, especially, if sunflowers are subject to environmental stress factors (low temperatures, extreme drought, extensive humidity). Usually, plants return to normal appearance and height within 1-2 weeks.

* Species and hybrids resistant to imidazolinones.

** If soil pH is above 6.2, and the total amount of precipitation is above 200 mm.

*** If total amount of precipitation is less than 200 mm, and pH is 6.2, there is a risk of phytotoxicity signs.



Before using, please, read tare label carefully

CROP ROTATION WITHOUT SOW THISTLE



MAIN BENEFITS OF THE PRODUCT

- ✓ Exterminates all species of sow thistle
- ✓ Wide range of action
- ✓ Prevents development of resistance to sulphonylurea group product
- ✓ Prevents occurrence of several subsequent waves of weed plants due to soil effect
- ✓ The highest efficacy against sunflower drops resistant to imidazolinones and sulphonylurea
- ✓ High efficacy against bottlebrush

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio / waiting period
SPRING AND WINTER WHEAT AND BARLEY, TRITICALE	Annual and perennial dicotyledonous weed plants, including exterminating effect against sow thistle;	Spraying during vegetation, including aerial spraying, on the bushing stages – second internode of crop, inclusively	0,033	1/-
CORN		Spraying during vegetation, including aerial method, on the stages of 3-7 leaves of crop, inclusively		

COMPATIBILITY

Lancelot may be combined with other commonly used pesticides in relevant crops. However, in each separate case, the products should be tested for compatibility. It is not recommended to mix it with growth regulators, although, it may be used with Moddus.

SPECIFICS OF APPLICATION

It is recommended to avoid use of the product immediately after frost or in anticipation of frost on a night before processing. Spraying should be performed during active growth of weed plants in the phase of 2 to 8 true leaves in annual and 6-8 leaves (developed rosette) in perennial dicotyledonous weed plants.

It should not be used in crops in a stress condition (e.g., during drought, excessive moistening of soil, damage by frost, pests, diseases etc.).

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +8 °C to +22 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

100-400 L/ha in case of land spraying and 10-50 L/ha in case of aerial spraying. To intensify herbicide effect against medium-susceptible weed plants and common horsetail (*Equisetum arvense*), it is recommended to increase the consumption norm of working solution to 300 L/ha or to add a surfactant.



PRODUCT DATASHEET

Full name
Lancelot 450 WG

Active ingredient content
300 g/kg aminopyralide
150 g/kg florasulam

Chemical group
Pyridinecarbonic acid derivatives,
triazolepyrimidines

Preparative form
Water-dispersion granules

Toxicity class
WHO classification: III

Packaging
0.5 kg



CROP ROTATION RESTRICTIONS AND PLANT RESIDUES

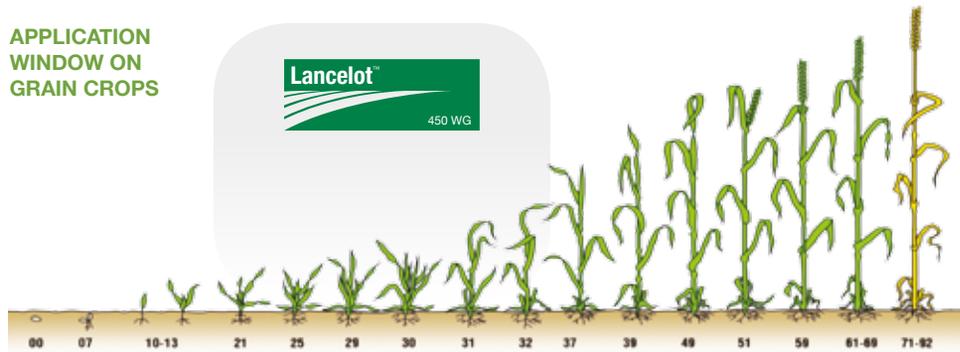
Straw and plant residues after harvesting should be left in the field.

- Main task following Lancelot application is to ensure rapid disintegration of plant residues prior to sowing of sensitive crops.
- To perform soil processing using disk tiller or plough, to embed useful plant residues at the depth of not less than 10 cm. Following wheat and barley harvesting, soil should be processed immediately combine treatment or not later than in 3 days after that.
- In order to accelerate straw disintegration, prior to embedding, it should be treated with destructors or carbamide solution in the amount of 8 kg a.i. of nitrogen per 1 ton of straw.

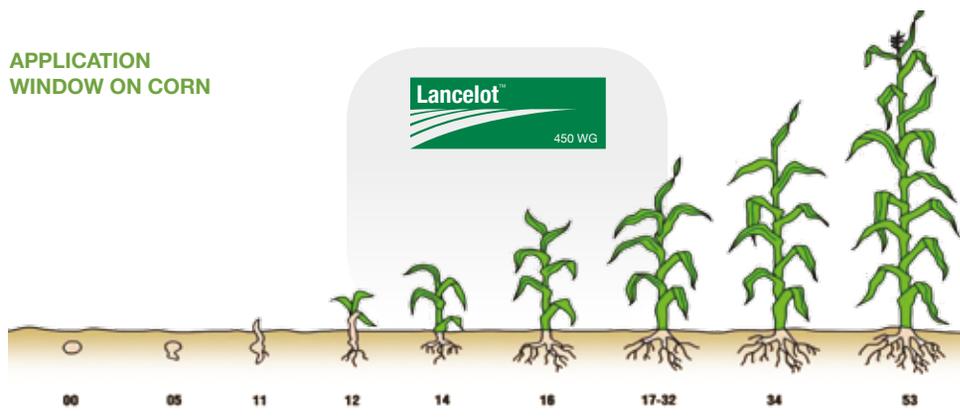
Upon application of Lancelot herbicide on cereals, the following subsequent crops may be grown in the same field:

- after 1 month (in re-sowing is required): cereals, corn, sorghum (prior to re-sowing, deep soil tillage should be performed);
- in autumn of the same year (after spring application): winter cereals, winter rape, grain grasses
- in spring of the next year: cereals, spring rape, corn, sorghum
- at least after 11 months following the product use and in case of precipitation at least 300 mm during this period: sunflower, potato, alfalfa, onion, cabbage, sugar beet, flax
- at least after 14 months following application, except for the above-mentioned crops: lentil, chickpea, feed beans, peas, carrot.

APPLICATION WINDOW ON GRAIN CROPS



APPLICATION WINDOW ON CORN



If re-sowing is required after use of the product, prior to re-sowing, deep soil tillage is required.



BETTER AND FASTER ACTION
AGAINST WEED PLANTS



MAIN BENEFITS OF THE PRODUCT

- ✓ Control of wide range of annual and perennial dicotyledonous weed plants, particularly, resistant to 2.4-D
- ✓ Destroys not only above-ground section, but also root system of weed plants
- ✓ Less dependent upon weather conditions in the period of use
- ✓ Has faster and bigger effect due to combination of two active ingredients
- ✓ Has no limitations for subsequent cultures in crop rotation

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio / waiting period
WINTER WHEAT	Annual and perennial dicotyledonous weed plants	Spraying during vegetation from the phase of 4 leaves to completion of crop bushing, inclusively	0,15–0,18	1/-
SPRING BARLEY		Spraying during vegetation from the phase of 3 leaves to completion of bushing	0,12–0,15	
LAWN GRASS		Spraying in the phase of lawn grass bushing		

COMPATIBILITY

Lintur may be mixed with other commonly used pesticides on relevant crops. However, in each separate case, the products should be tested for compatibility. It is not recommended to mix it with growth regulators.

SPECIFICS OF APPLICATION

It is recommended to avoid using the product immediately after frost or in anticipation of frost on a night after processing. It should not be used on crops in a stress condition (e.g., during drought, excessive soil moisturizing, damage by frost, pests, diseases etc.).

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +10 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha.



PRODUCT DATASHEET

Full name
Lintur 70 WG

Active ingredient content
41 g/kg triasulphuron
659 g/kg dicamba as sodium salt

Chemical group
Sulphonylureas, benzoic acid derivatives

Preparative form
Water-dispersion granules

Toxicity class
WHO classification: III

Packaging
1 kg





Lontrel™ Grand

750 WG

INSEPARABLE ELEMENT OF
PROTECTION AGAINST SOW
THISTLE

PRODUCT DATASHEET

Full name

Lontrel Grand 750 WG

Active ingredient content

750 g/kg clopiralid

Chemical group

Pyrindinecarboxylic acid derivatives

Preparative form

Water-dispersion granules

Toxicity class

WHO classification: III

Packaging

2 kg



MAIN BENEFITS OF THE PRODUCT

- ✓ Perfect control against all sow thistle species including their the root system
- ✓ Clearing of fields from sow thistles in subsequent crop rotation
- ✓ Perfect partner for tank mixtures (especially, with phenmedifame and desmedifame-based products) on sugar beets
- ✓ Easily dosed and stored
- ✓ Extermination of all composite family weed plants

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha
SUGAR BEETS, CORN, CABBAGE	Annual and perennial dicotyledonous weed plants, drops	Spraying of vegetating weed plants in the phase of rosette (high sow thistles – 15-20 cm) from the phase of 2 crop leaves	0,2
WINTER AND SPRING RAPE	Annual and perennial dicotyledonous weed plants	Spraying of crops in the phase of 6-8 leaves of annual weed plants; in the phase of rosette – beginning of generative shoot 2-8 cm (against sow thistles)	0,12–0,2
FIBRE FLAX (FOR TECHNICAL PURPOSES)		Spraying in the phase of “herringbone” of the culture	0,04–0,12
GRAIN CEREALS	Annual dicotyledonous, particularly, resistant to 2,4-D, and perennial root and sprout weed plants	Spraying from the phase of bushing to stem elongation of crop	0,12
GARLIC, ONION (EXCEPT FOR BUNCHING)	Annual dicotyledonous, particularly, resistant to 2.4-D, and perennial root and sprout weed plants	Spraying of vegetating weed plants in the phase of rosette (sow thistles high of 15-20 cm) from the phase of 2 leaves of crop	0,1–0,16

COMPATIBILITY

It may be mixed with fungicides, insecticides, liquid fertilizers. For control of sow thistles on sugar beet, it is recommended to use mixtures with phenmedifame and desmedifame-based products.

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +10 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha.

COMMENTS

On sugar beets, herbicides are better to be applied together with phenmedifame and desmedifame-based products during second processing.



PERFECT CHOICE FOR PRE- AND POST-EMERGENT CONTROL OF WEED PLANTS



MAIN BENEFITS OF THE PRODUCT

- ✓ It may be used as soil and post-emergent herbicide simultaneously (till the phase of 5 leaves of corn)
- ✓ Control of perennial dicotyledonous weed plants (on vegetation)
- ✓ It may be used in unstable climatic conditions
- ✓ Highly efficient against weeds resistant to other agents
- ✓ Optimal for use by No-Till and Strip-Till technologies
- ✓ Prolonged control of weed plants (for 10 weeks)

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
CORN	Annual grass and dicotyledonous weed plants	Spraying before seeding, after seeding, on emergence (3-5 leaves of crop)	3,5-4,0
APPLE TREES, VINEYARDS		Spraying of soil before emergence of weed plants or in the phase of 1-2 leaves of grain and 2-4 leaves in dicotyledonous weed plants	

CROP ROTATION LIMITATIONS

If re-sowing of corn processed by Lumax herbicide is required (drought, frost, damping off), corn may be sown immediately. In autumn of the same year, winter barley and wheat, ryegrass and winter rape may be sown, if tillage has been performed.

Next spring following tillage, sunflower, soy, sorghum, rape, alfalfa may be sown. Susceptible crops, such as beets (sugar, garden, feeding), peas may be sown in 18 months following use of Lumax.

COMPATIBILITY

In separate cases (e.g., in the garden), it may be used in mixtures with post-emergent herbicides (Reglone Super, Fusilade Forte). In corn, it is not recommended to use insecticides based phosphoorganic compounds and thiocarbamates 7 days pre- or post-application of Lumax, and it should not be used in corn treated by insecticides based on phosphoorganic compounds and thiocarbamates.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

300-350 L/ha.

COMMENTS

Corn. In case of early post-emergence application, the stage of annual grass weed plant development should be 1-2 leaves, and dicotyledonous, 2-4 leaves.

Apple trees, vineyards. Product contact with crops should be restricted. The use of product in irrigated light soils (due to potential washing out of active ingredient to root area).



PRODUCT DATASHEET

Full name
Lumax 537.5 SE

Active ingredient content
375 g/L S-metholachlor
125 g/L terbutylazine
37.5 g/L mezo-trione

Chemical group
Chloracetamides, triazines, triketones

Preparative form
Suspension emulsion

Toxicity class
WHO classification: III

Packaging
20 L





SAY NO TO DICOTYLEDONOUS
WEED PLANTS!



PRODUCT DATASHEET

Full name
Metronam 700 SC

Active ingredient content
700 g/L metamitron

Chemical group
Triazinones

Preparative form
Suspension concentrate

Toxicity class
WHO classification: II

Packaging
5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Perfect partner to be used with soil and post-emergent herbicides on sugar beet
- ✓ Significantly expands the coverage of such herbicides against annual dicotyledonous weed plants, including challenging ones (bedstraw, orach, bitterlings)
- ✓ Effective against weed plants both in the soil and post-emergent
- ✓ Non-phytotoxic to crops even in large amounts

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
SUGAR BEETS	Annual dicotyledonous weed plants	Spraying of soil prior to sowing, emergency or in the phase of 1-2 true leaves of crop	5,0-6,0
		Spraying in the phase cotyledon of weed plants with 8-10-day interval between processing	2,0

COMPATIBILITY

Metronam is compatible with insecticides, fungicides and nitrogen fertilizers.

Metronam (2.0-2.5 L/ha) is recommended as a partner for Dual Gold (1.6 L/ha) in case of soil application to expand the range of action against annual dicotyledonous weed plants. Also, in post-emergent application, Metronam (2.0-2.5 L/ha) is recommended as a partner for other phenmedifame and desmedifame-based products.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

250-350 L/ha.



THE SAFEST GRAMINICIDE
FOR CORN



MAIN BENEFITS OF THE PRODUCT

- ✓ Most selective to crops among all known sulphonylurea products (application phase is from 3 to 10 leaves of crop, inclusively)
- ✓ Destroys all gramineous weeds with their root system including perennial and including Aleppo grass and wheatgrass
- ✓ Highly efficient even in drought conditions
- ✓ Perfect partner for herbicides against dicotyledonous weed plants
- ✓ No aftereffects on subsequent crops in crop rotation

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
CORN	Annual and perennial grass (sorghum, wheatgrass) and most popular annual dicotyledonous weed plants	Spraying in the phase of 3-10 leaves of crop	0.16-0.2 + SAS*

COMPATIBILITY

The product may be applied both separately, and in tank mixtures with herbicides Peak, Dialen Super, Prima, Callisto, Esteron, Lancelot.

COMMENTS

Milagro may not be used at temperatures below +8 °C and above +25 °C. Phosphoorganic insecticides should be used in 7 days prior or in 4 days after application of Milagro.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

100-150 L/ha.



Efficacy of the product



PRODUCT DATASHEET

Full name
Milagro 240 SC

Active ingredient content
240 g/L nicosulphuron

Chemical group
Sulphonylurea

Preparative form
Suspension concentrate

Toxicity class
WHO classification: III

Packaging
1 L



* Addition of surface-active substances (SASs) in the amount not less than 0.1 % to working solution standard

HITS TWO TARGETS
WITH ONE SHOT

Pallas™

45 OD

MAIN BENEFITS OF THE PRODUCT

- ✓ Complex herbicide (simultaneously protects against annual grain and dicotyledonous weed plants)
- ✓ Solves the problem of barley drops in winter wheat crops
- ✓ Improved formulation

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / waiting period
WINTER AND SPRING WHEAT	Annual grain and dicotyledonous weed plants	Spraying during vegetation from the phase of 4 leaves to second internode of crop	0,4	1/-

PRODUCT DATASHEET

Full name
Pallas 45 OD

Active ingredient content
45 g/L pyroxsulame
90 g/L cloquintose-t-mexyl (antidote)

Chemical group
Triazolepyrimidines

Preparative form
Oil dispersion

Toxicity class
WHO classification: III

Packaging
5 L



COMPATIBILITY

The product may be mixed with other herbicides against dicotyledonous weed plants, fungicides and insecticides. It is not recommended to be mixed with growth regulators and phospho-organic insecticides. The interval between processing with such products should be 10 days.

SPECIFICS OF APPLICATION

Using the product at the temperature below +5 °C, immediately after frost or in anticipation of frost on a night before processing should be avoided. Spraying should be performed during active growth of weed plants in the phase from 2 to 6 leaves of annual dicotyledonous and from 2 leaves to the mid-bushing of annual grain weed plants.

The product should not be used on crops in a stress condition (e.g., drought, excessive soil moisturizing, damage by frost, pests, diseases etc.).

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +8 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha.



MAIN BENEFITS OF THE PRODUCT

- ✓ Highly efficient control of sunflower and rape drops, orach, field bindweed, bitterlings, burdock, and sow thistle
- ✓ Wide application window
- ✓ Prevents occurrence of several next waves of weed plants thanks to soil effect
- ✓ Efficient at low temperatures (from +5 °C). May be used in autumn.
- ✓ Perfect partner to intensify effect against weed plants on many crops

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio / waiting period
WINTER WHEAT*	Annual dicotyledonous, including, resistant to 2.4-D and MCPA, and separate perennial dicotyledonous weed plants	Spraying during vegetation from 3 leaves to flag leaf of crop, inclusively	0,015–0,020	1/–
BARLEY		Spraying from phase of bushing to flag leaf of crop		
CORN		3-8 leaves of crop		
SORGHUM		3-6 leaves of crop		
MILLET		Spraying from bushing to the phase of stem elongation of crop		
FLAX		Spraying in the phase of herringbone		
RICE	Dicotyledonous and broad-leaved boggy weed plants	3–4 crop leaves		

SPECIFICS OF APPLICATION

To ensure control of wider range of dicotyledonous weed plants on grain, corn and sorgo, Peak may be mixed with other herbicides, as Dialen Super, Logran, Milagro, Derby. When applying such mixtures, recommendations on the use of partner products should be met. Peak may be mixed with insecticides, growth regulators and fungicides.

CROP ROTATION ORGANIZATION

On the year of product application, re-sowing with crop (wheat, rye, barley, corn, millet) and flax is possible. Next year, flax, millet, corn and crops without any limitations may be sowed. Vegetable crops, sugar beet, sunflower, mustard, rape and phacelia may be sowed

not earlier than in 18 months post-application. To reduce the risk of aftereffects, specifically in soils with pH>7, it is recommended to use herbicide in the mixture with Esteron, Prima or Derby, reducing the norm of Peak consumption two-fold.

TEMPERATURE OF APPLICATION

Efficient at +5 °C. Optimal temperature of application from +10 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha.



PRODUCT DATASHEET

Full name
Peak 75 WG

Active ingredient content
750 g/kg prosulphuron

Chemical group
Sulphonylureas

Preparative form
Water-dispersion granules

Toxicity class
WHO classification: III

Packaging
0.1 kg



* Including aerial method.



PRODUCT DATASHEET

Full name

Prima 911 SE

Active ingredient content

6.25 g/L florasulam
452.5 g/L 2-ethylhexyl ether 2.4-D

Chemical group

Triazolepyrimidine, aryloxyalkancarbon acid derivatives

Preparative form

Suspension emulsion

Toxicity class

WHO classification: III

Packaging

5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Efficient control of weed plants poorly susceptible to sulphonylurea herbicides (pigweed, poppy, black nightshade etc.)
- ✓ Two different mechanisms of action prevent occurrence of resistance
- ✓ Quick penetration and quick action on weed plants
- ✓ No limitations for subsequent crops in crop rotation

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / waiting period
WINTER* AND SPRING WHEAT, WINTER AND SPRING BARLEY, RYE, TRITICALE	Annual and some perennial dicotyledonous weed plants	During vegetation from the beginning of bushing phase to second internode of crop	0,4–0,6	1/–
OATS		During vegetation from the beginning of bushing phase to crop stem elongation		
MILLET		During vegetation in the phase from 3 to 7 leaves of crop, inclusively		
CORN		During vegetation in the phase from 3 to 5 leaves of crop	0,4	
SORGHUM				

COMPATIBILITY

Product is compatible with fungicides, insecticides, anti-dicotyledonous herbicides, liquid nitrogen fertilizers and growth regulators of plants. Compatible with isoproturone and chlorotolurone-based graminicides. Non-compatible with phenoxaprop, clodinafopropargil and diclofoprop-based graminicides. Before preparing working solution, it is recommended to check mixability of the products in a small vessel.

SPECIFICS OF APPLICATION

It is recommended to avoid use of the product immediately after frost or in anticipation of frost on a night after processing. Spraying should be performed during active growth of weed plants in the phase of 2 to 8 of true leaves of annual and 6-8 leaves (developed rosette) of perennial dicotyledonous weed plants. It should not be used in crops in a stress condition (e.g.,

during drought, excessive moisturizing of soil, damage by frost, pests, diseases etc.).

The application standard may be increased in case of late stages of weed plant development, infestation of crops with perennial weed plants, in case of sparse crops, long period of cool weather, late crop processing (in the phase between crop internodes).

TEMPERATURE OF APPLICATION

Optimal temperature is from +8 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha in ground spraying and from 50 L/ha in aerial spraying.



START WITHOUT
WEEDS FOR MAXIMAL
YIELD



MAIN BENEFITS OF THE PRODUCT

- ✓ High selectivity to corn
- ✓ Comprehensive control of main annual weed plants
- ✓ Long period of protective action (6-8 weeks)
- ✓ High flexibility in use (before sowing, during sowing, pre-emergent or post-emergent of crops)
- ✓ Possibility to use on parent corn form

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
CORN	Annual grain and dicotyledonous weed plants	Spraying of soil before sowing, during sowing or post-emergent in the phase of 3-5 leaves of crop	2,5–3,5
SORGHUM *			

COMPATIBILITY

May be mixed with other commonly used Crop protection products in relevant crops. However, in each separate case, products should be tested for compatibility.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Pre-emergent spraying dosage is 300-350 L/ha.

COMMENTS

In post-emergent use on corn and sorghum, weed plant development phase should not exceed 2 true leaves.



Product efficacy



PRODUCT DATASHEET

Full name

Primextra Gold 720 SC

Active ingredient content

400 g/L S-metholachlor
320 g/L atrazine

Chemical group

Chloracetamides, triazines

Preparative form

Suspension concentrate

Toxicity class

WHO classification: III

Packaging

20 L, 200 L

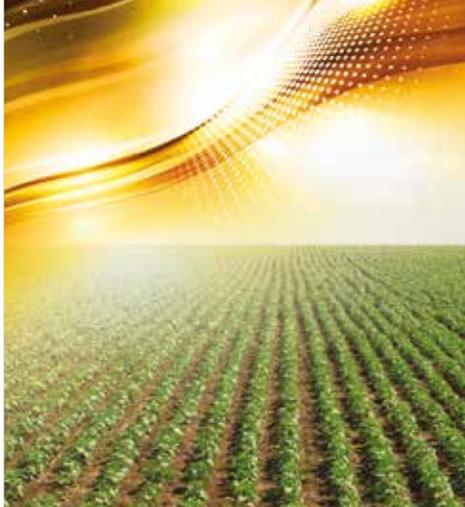


* Concep III antidote processing is required.



Primextra® TZ Gold

COMPREHENSIVE
AND RELIABLE
PROTECTION



PRODUCT DATASHEET

Full name

Primextra TZ Gold 500 SC

Active ingredient content

312,5 g/L S-metholachlor
187.5 g/L terbutylazine

Chemical group

Cholarecetamides, triazines

Preparative form

Suspension concentrate

Toxicity class

WHO classification: III

Packaging

20 L, 100 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Complex control of main annual weed plants
- ✓ Long protective action period (6-8 weeks)
- ✓ No phytotoxicity for sunflower and soy as compared with acetochlor-based herbicides
- ✓ Possibility to use on parent crop form
- ✓ No issues of post-effects and resistance

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
CORN	Annual grain and dicotyledonous weed plants	Spraying of soil before sowing, after sowing or post-emergent in the phase of 3-5 leaves of crop	4,0–4,5
SORGHUM*			4,5
SUNFLOWER**, POTATO		Spraying of soil pre-emergent of crop	
SOYBEAN**			4,0–4,5
TOMATO SEEDLINGS	Spraying of soil before seedling planting		

COMPATIBILITY

May be mixed with other commonly used Crop protection products on relevant crops. However, in each separate case, the products should be tested for compatibility.

SPECIFICS OF APPLICATION

In order to improve effects of the product, it is recommended to apply it to pre-sowing cultivation or under Europack, however, not deeper than 5 cm. If used post-emergent of weed plants, overgrowing of grain and dicotyledonous weed plants to the phase of more than 2 leaves should be avoided.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Pre-emergent spraying application standard is 300-350 L/ha.

COMMENTS

If used post-emergent on corn and sorghum, weed plant development phase should not be more than 2 true leaves.

If due to large amounts of precipitation, sunflower emergent plants and seedlings remain dampened with water in the period of herbicide effect, or they are affected by the product due to reflexion from soil surface, it may cause damage or death of emergent plants.



* Concep III antidote processing is required.

** In light (light-humic) soils, it is recommended to reduce product application standard to 3.0 L/ha.



AERIAL STANDARD IN AGRICULTURAL
CROP DESICCATION

 **Reglone® Air**

MAIN BENEFITS OF THE PRODUCT

- ✓ Specifically developed formulation for aerial processing
- ✓ Combination of surfactants in product formulation guarantees optimal drop fraction in application
- ✓ Extremely quick effect (non-washable by precipitation already after 30 minutes after processing)
- ✓ Accelerates ripening and uniformly distributes it through all plant organs, discontinues development of diseases

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / Waiting period
RAPE SEEDS	Desiccation	Spraying in 70% of crop head browning	1,0–2,25	1/7
SUNFLOWER		Spraying in the period of seedpot browning		1/4–6
SOYBEANS		Spraying in the period of bean browning of lower and middle layer of crop		1/6
POTATO		In 7-10 days pre-harvesting or in the period of completion of bulb formation (in very leafy crops, re-treatment in 3-5 days following the first one)	1,0–1,5	1–2/7
SORGHUM		Spraying in the period of waxy ripening of seeds	2,0–3,0	1/4–6
RICE		Spraying in the period of complete ripening	1,0–1,5	1/5

SPECIFICS OF APPLICATION

For desiccation, it is recommended to use only those types of planes, propellers and wings of which cause minimal air turbulence.

Helicopters are better to be used only in large areas with no danger of working solution contacting with neighboring crops due to drift.

The solution prepared should be used within one day.

TEMPERATURE OF APPLICATION

Upper temperature limited recommended for application of Reglone Air working solution is +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

50-100 L/ha.



PRODUCT DATASHEET

Full name
Reglone Air 200 SL

Active ingredient content
200 g/L diquat

Chemical group
Bipyridilium derivatives

Preparative form
Soluble concentrate

Toxicity class
WHO classification: II

Packaging
20 L







QUICK NON-SELECTIVE
CONTACT DESICCANT AND
HERBICIDE



PRODUCT DATASHEET

Full name
Reglone Super 150 SL

Active ingredient content
150 g/L diquat ion

Chemical group
Bipyridilium derivatives

Preparative form
Soluble concentrate

Toxicity class
WHO classification: II

Packaging
10 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Extremely quick effect (non-washable by precipitation already in 30 minutes upon processing)
- ✓ Safe for crops, humans and environment
- ✓ Accelerates ripening
- ✓ Removes undesirable plants if used as contact herbicide on vegetable crops

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / Waiting period
SUNFLOWER*	Desiccation	Spraying in initial phase of head browning	2,0–3,0	1/4–6
PEAS		Spraying in the period of yellowing of lower seedpots and with grain humidity up to 45 %		1/7
CEREALS*		Spraying of crops in 2 weeks to harvesting with grain humidity up to 30 %	1,5–2,0	1/7–10
ALFALFA (seed plantings)		Spraying upon browning of 85-90 % of beans	3,0	1/7
SORGHUM (seed plantings)		Spraying in the period of waxy ripening of seeds	4,0	1/4–6
CARROT (seed plantings)		Spraying on initial stage of full ripening of seeds in second grade umbels with total seed mass humidity up to 50 %	2,5–3,0	1/5–10
RICE		Spraying of crops in the phase of full ripening of plants in 5 days prior to harvesting	2,0	1/5



Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / Waiting period
FLAX	Desiccation	Spraying of crops in the phase of early yellow crop maturity	2,0–3,0	1/7–10
SPRING AND WINTER RAPE		Spraying of crops after browning of 70 % seedpots of crop		1/5–10
SOY		Spraying of crops in the phase of initial browning of beans at low and medium tier of crop		1/6
SUGAR BEETS (seed plantings)		Spraying in browning period of 30-40 % of clusters	4,0–6,0	1/10
TABLE, FEEDING BEETS (seed plantings)		Spraying in browning period of 30-400 % of clusters		1/8
RED CLOVER (seed plantings)		Spraying in browning period of 75-80 % of head	3,0–4,0	1/5–7
RADISH (seed plantings)		Spraying in the period of waxy maturity of seeds	4,0–5,0	1/10
FEEDING BEANS (seed plantings)		Spraying in the period, when seeds of lower beans are yellow, and raphe is black		1/8–10
TURNIP (seed plantings)		Spraying in the period of waxy maturity with seed humidity of 40-50 %	3,0–4,0	1/6–7
CABBAGE (seed plantings)		Spraying in the period of biological maturity of seeds with humidity up to 50 %	2,0–3,0	1/5–10
POTATO	Spraying of crops in 10 days to crop harvestin	1,5–2,0	1/10	
HOP	Annual and perennial grain and dicotyledonous weed plants		Directed spraying of vegetating weed plants upon achievement of crop height	1/5–7
ONION	Annual and perennial grain and dicotyledonous weed plants		Spraying before crop emergence	2,0–4,0

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

250–400 L/ha



NEW



DESICCANT FOR GENUINE PROFESSIONALS



PRODUCT DATASHEET

Full name

Reglone Forte 200 SL

Active ingredient content

200 g/L diquat ion

Chemical group

Bipyridilium derivatives

Preparative form

Soluble concentrate

Toxicity class

WHO classification: II

Packaging

10 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Improved formulation for ground application
- ✓ Even acceleration of ripening in all plant organs and discontinuation of disease development
- ✓ Reduces seed humidity, reducing expenses for drying
- ✓ Extremely fast onset of action (resistant to precipitation already in 30 minutes after processing)

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / Waiting period
SUNFLOWER	Desiccation	Spraying in the period of head browning	1,5-2,25	1/4-6
WINTER AND SPRING RAPE		Spraying of crops in the period of browning of 70% of seedpots		1/5-10
SOYBEAN		Spraying in the period of bean browning of lower and middle layer of crop		1/6
POTATO (FEED, SEED)	Desiccation	Spraying in the period of bulb formation completion and potato peel roughening	1,2-1,5	2/10
	Desiccation (very leafy sorts)	Spraying in the period of bulb formation completion and peel roughening, with treatment interval of 3-5 days		1/ -
	Annual grain and dicotyledonous weeds	Spraying of vegetating weeds in 2-3 days to mass plant seeding emergence	1,2-2,0	1/ -
GARDENS AND VINEYARDS	Annual grain and dicotyledonous weeds	Directed spraying of vegetating weeds in spring or in summer	1,3-1,7	2/ -

SPECIFICS OF APPLICATION

Desiccation is recommended to be performed in the evening or in cloudy weather.

For desiccation, it is recommended to use a self-propelled or tractor sprayers. The solution prepared should be used within one week.

TEMPERATURE OF APPLICATION

Upper temperature limited recommended for application of Reglone Air working solution is +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

250-400 L/ha.





syngenta[®]

Starane™ Premium

330 EC

WORLD STANDARD
AGAINST FIELD
BINDWEED**PRODUCT DATASHEET****Full name**

Starane Premium 330 EC

Active ingredient content

330 g/L fluroxypire

Chemical group

Pyridinecarbonic acid derivatives

Preparative form

Emulsion concentrate

Toxicity class

WHO classification: III

Packaging

5 L

**MAIN BENEFITS OF THE PRODUCT**

- ✓ High efficacy against field bindweed, bedstraw, hemp nettle, Geratopogonidae, sorrel in winter and spring cereals, onion and oil poppy
- ✓ Excellent control of field bindweed
- ✓ Wide application window – from bushing to flag leaf on geminous, up to 7th leaf on corn, quick penetration into weed plant leaves
- ✓ No restrictions for subsequent crops in crop rotation

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / waiting period
WINTER AND SPRING WHEAT AND BARLEY, TRITICALE, WINTER RYE	Annual and separate perennial dicotyledonous weed plants	During vegetation from bushing phase to flag leaf phase, inclusively	0,3–0,5	1/-
ONION (except for onion for bunching)		From the phase from 2 leaves of crop		
CORN		Spraying during vegetation in the phase from 3 to 7 leaves of crop, inclusively	0,5–0,6	
POPPY		Spraying of crops during vegetation in the phase of 4-6 true leaves of crop (till poppy closure in row spacing)	0,3–0,4	

COMPATIBILITY

Starane Premium is compatible with many fungicides, insecticides, anti-grain and anti-dicotyledonous weed herbicides, liquid nitrogen fertilizers and growth regulators for relevant crops. However, in each separate case, products should be tested for compatibility.

SPECIFICS OF APPLICATION

The product should not be used immediately after frost or in anticipation of frost on a night after the processing. Spraying should be performed during active growth of weed plants in the phase from 2 to 8 true leaves for annual weed plants and at the length of 15-20 cm for field bindweed. The product should not be used on crops in a stress condition (e.g., drought, excessive moistening of soil, damage by frost, pests, diseases etc.). The application standard may be increased

in case of late stages of weed plant development, infestation of crops with perennial weed plants, in case of sparse crops, long periods of cool weather.

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +8 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-250 L/ha for ground spraying and from 50 L/ha for aerial spraying.



EFFICIENT
AT ANY WEATHER



MAIN BENEFITS OF THE PRODUCT

- ✓ Long protection period for 8 weeks
- ✓ Efficient in unstable climatic conditions
- ✓ Non-phytotoxic for crops
- ✓ Control of wide range of grain and dicotyledonous weed plants

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
SUNFLOWER, CASTORBEAN, SOY	Annual grain and dicotyledonous weed plants	Spraying of soil with immediate burying prior to seeding, during seeding, after seeding, however, before crop emergence	2,0–5,0
FIBER FLAX (for technical purposes)			1,6–2,0
TOMATO, CABBAGE (seedling)		Spraying of soil with immediate burying before seedling planting	2,0–3,0
TOBACCO (seedling)			2,0–4,0
AUBERGINE, PEPPER (seedling)			1,8
CORIANDER		Spraying of soil with immediate burying before sowing or before crop emergence	6,0
TOMATO (non-seedling)			1,0–1,2
GARLIC		Spraying of soil with immediate burying before sowing in spring or in autumn (for winter crops)	2,0–3,0
CUCUMBERS		Spraying of soil with immediate burying in 15 days to crop sowing	0,9–1,2
ANISE		Spraying of soil with immediate burying before sowing or before crop emergence	3,0–4,0



PRODUCT DATASHEET

Full name

Treflan 480 EC

Active ingredient content

480 g/L trifluoraline

Chemical group

Dinitroanilines

Preparative form

Emulsion concentrate

Toxicity class

WHO classification: III

Packaging

20 L



SPECIFICS OF APPLICATION

To achieve the highest efficacy of the product, after its application, it should be covered by the soil to the depth of 6-8 cm as soon as possible (within 4 hours upon application). Optimal temperature of environment for use of the product is from +5 to +25 °C. If using the herbicide according to recommendations, no limitations in crop rotation exist.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

300–350 L/ha

COMMENTS

Treflan may be mixed with other commonly used herbicides in relevant crops

Sunflower, castorbean, soy: for control of wider range of weed plants, it is recommended to mix with Dual Gold 960 EC, e.c. or Trophy 90 EC, e.c.

Garlic: it is prohibited to market garlic in green condition.

Astragalus, caraway, common valerian, common fennel: only on plantations of the first year of vegetation.

Peppermint: if used as raw material for obtainment of ether oil..

Crop	Coverage	Application phase	Application rate, L/ha	
ONION (seed plantings)	Annual grain and dicotyledonous weed plants	Spraying of soil with immediate burying before crop planting	3,0–4,0	
BASIL, CARAWAY, CRANEBILL			4,0	
PEPPER MINT OF THE FIRST VEGETATION YEAR			1,5	
LUPINE			2,0	
YELLOW CRESS, CASSIS, POT MARIGOLD, LACINULATED NIGHTSHADE, MILK THISTLE, BUR BEGGAR-TICKS			2,5	
ASTRAGALUS, CARAWAY, COMMON VALERIAN, COMMON FENNEL	Annual grain and dicotyledonous weed plants	Spraying of soil with immediate burying in 1-2 days to sowing or seedling planting	4,0	
LAVENDER			3,0	
ANNUAL FLOWER (seed plantings)			Spraying of soil with immediate burying before sowing of cover crop	3,0
ALFALFA			Spraying of soil (with burying) before crop sowing	2,8
COCKHEAD (seed plantings)			Spraying of soil with immediate burying in 10-15 days to crop sowing	1,2–1,6
WATER MELON			Spraying of soil with immediate covering prior to sowing, during sowing, upon sowing, however, before crop emergence	1,5–2,0
WINTER AND SPRING RAPE				



RELIABLE SOIL
PROTECTION



MAIN BENEFITS OF THE PRODUCT

- ✓ Efficient control of most annual grain and separate dicotyledonous weed plants
- ✓ Perfect partner for tank mixtures (e.g., with Gesaguard)
- ✓ Long protection period (up to 8 weeks)

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
CORN	Annual grain and separate dicotyledonous weed plants	Spraying of soil before sowing (in poorly moisturized zones – with burying) or immediately upon sowing of crop	2,0–2,5
SUNFLOWER			1,5–2,0
SOYBEAN			1,5–2,0

COMPATIBILITY

For control of wider range of dicotyledonous weed plants, Trophy may be mixed with other herbicides for relevant crops. E.g., for sunflowers, the combination of Trophy + Gesaguard is commonly used.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

300-350 L/ha.



PRODUCT DATASHEET

Full name

Trophy 90 EC

Active ingredient content

900 g/L acetochlor

Chemical group

Chloroacetamides

Preparative form

Emulsion concentrate

Toxicity class

WHO classification: III

Packaging

20 L




Ouragan Forte®
**QUICK AND
RELIABLE**

PRODUCT DATASHEET
Full name

Ouragan Forte 500 SL

Active ingredient content

500 g/L potassium salt glyphosate

Chemical group

Glycine derivatives

Preparative form

Water-soluble concentrate

Toxicity class

WHO classification: III

Packaging

1 L, 20 L, 200 L


MAIN BENEFITS OF THE PRODUCT

- ✓ The highest solubility among glyphosphates
- ✓ Extremely quick effect (thanks to new wetting agent)
- ✓ Non-washable by precipitation already in 30 minutes after processing
- ✓ Reduced application rate
- ✓ Effect almost twice as quick as glyphosphates

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
FRUIT TREES AND VINEYARDS	Annual grain and dicotyledonous weed plants	Directed spraying of vegetating weed plants in spring or summer	2,0
LEAS		Directed spraying of vegetating weed plants in spring or summer	
LEAS	Perennial grain and dicotyledonous weed plants	Annual and perennial grain and dicotyledonous weed plants	4,0
FRUIT TREES AND VINEYARDS		Annual and perennial grain and dicotyledonous weed plants	
FIELDS INTENDED FOR SUNFLOWER, RAPE, ALFALFA, PERENNIAL GRASSES	Annual and perennial grain and dicotyledonous weed plants	Spraying of vegetating weed plants in spring in 2 weeks to sowing (before spraying, all mechanical processing should be discontinued, except for early-spring moisture discontinuation)	1,5–3,0
FIELDS INTENDED FOR PLANTINGS OF SPRING GRAIN CROPS, CORN, SUNFLOWER, CASTORBEAN, SUGAR BEET, VEGETABLE, SOY, FLAX	Annual and perennial weed plants	Spraying of vegetating weed plants	2,0–4,0
GRAIN CROPS	Annual and perennial weed plants	Spraying of crops in 2 weeks to harvesting (for drying and destruction of weed plants)	1,5–2,0



Crop	Coverage	Application phase	Application rate, L, kg/ha
OPEN COLLECTION AND DRAINING, AND IRRIGATION NETWORKS AND THEIR PERIPHERIES	Annual and perennial, particular, hydrophytic weed plants	Spraying of vegetating plants	4,0
LANDS OF NON-AGRICULTURAL PURPOSE (RIGHT-OF-WAYS, GAS AND OIL PIPELINES, WAYSIDES, RAILWAY EMBANKMENT, AIRDROMES)	Annual and perennial weed plants	Spraying of vegetating weed plants	2,0-4,0
AREAS INTENDED FOR RICE PLANTINGS	Perennial grain and dicotyledonous weed plants	Spraying of vegetating weed plants in 7-10 days to rice plantings	
AREAS INTENDED FOR HOP	Grain and dicotyledonous weed plants	Spraying of vegetating weed plants	

COMPATIBILITY

It may be mixed with commonly used pesticides on relevant crops, e.g., with Dialen Super, Prima or Esteron. However, in each separate case, products should be tested for compatibility.

SPECIFICS OF APPLICATION

The drug product should be used under favourable weather conditions, and when weeds are at the phase of active growth. It is not recommended to perform spraying, when weeds are in stress condition.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

100-150 L/ha.





Fusilade Forte®

QUICK AND RELIABLE



PRODUCT DATASHEET

Full name

Fusilade Forte 150 EC

Active ingredient content

150 g/L fluzazophole-P-butyl

Chemical group

Aryloxyphenoxypropione acid derivatives (FOPs)

Preparative form

Emulsion concentrate

Toxicity class

WHO classification: III

Packaging

1 L, 5 L, 20 L, 200 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Quick penetration and distribution in weed plants
- ✓ Non-phytotoxic for dicotyledonous crops
- ✓ Flexible use (application in any crop phase)
- ✓ Intensification of partner herbicide effect when used in mixtures

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
CARROT, TOMATO, CUCUMBERS, ONION (BUNCH, BULB)	Annual grain and weed plants	Spraying of vegetating crop (in the phase of 2-4 leaves of weed plants)	0,5*-1,0
	Perennial grain weed plants	Spraying of vegetating crop (at weed plant height of 10-15 cm)	1,0-2,0
SUGAR BEET	Annual grain weed plant	Spraying of vegetating crop (in the phase of 2-4 leaves of weed plants)	0,5*-1,0
	Perennial grain weed plants	Spraying of vegetating crop (at weed plant height of 10-15 cm)	1,0-2,0
WINTER AND SPRING RAPE	Annual grain weed plants	Spraying of vegetating crop (in the phase of 2-4 leaves of weed plants)	0,5*-1,0
	Perennial grain weed plants	Spraying of vegetating crop (at weed plant height of 10-15 cm)	1,0-2,0
POTATO	Annual grain weed plants	Spraying of vegetating crop (in the phase of 2-4 leaves of weed plant)	0,5*-1,0
	Perennial grain weed plants	Spraying of vegetating crop (at weed plant height of 10-15 cm)	1,0-2,0
CABBAGE	Annual grain weed plants	Spraying of vegetating crop (in the phase of 2-4 leaves of weed plant)	0,5*-1,0
	Perennial grain weed plants	Spraying of vegetating crop (at weed plant height of 10-15 cm)	1,0-2,0



Crop	Coverage	Application phase	Application rate, L/ha
FIBER FLAX	Annual grain weed plants	Spraying of vegetating crop (in the phase of 2-4 leaves of weed plant)	0,5*–1,0
	Perennial grain weed plants	Spraying of vegetating crop (at weed plant height of 10-15 cm)	1,0–2,0
SUNFLOWER, PEAS, SOY	Annual grain weed plants	Spraying of vegetating crop (in the phase of 2-4 leaves of weed plant)	0,5*–1,0
	Perennial grain weed plants	Spraying of vegetating crop (at weed plant height of 10-15 cm)	1,0–2,0
HOPYARDS	Annual and perennial grain weed plants	Spraying at weed plant height of 5-15 cm (regardless of crop development phase)	1,0–2,0
VINEYARDS	Perennial grain weed plants	Spraying of vegetating crop (at weed plant height of 10-15 cm)	2,0
BUCKWHEAT	Annual grain weed plants	Spraying of vegetating crop (in the phase of 2-4 leaves of weed plant)	0,5*–1,0
	Perennial grain weed plants	Spraying of vegetating crop (at weed plant height of 10-15 cm)	1,0–2,0

COMPATIBILITY

The product may be used separately and in mixtures with herbicides against dicotyledonous weed plants. However, in each separate case, products should be tested for compatibility. It is not recommended to mix with phospho-organic insecticides.

SPECIFICS OF APPLICATION

The product contains surfactants, therefore, for efficient application, concentration of working solution should be met.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Rate of working liquid application should not be above 100-150 L/ha.

COMMENTS

If used on peas and soy, it is not recommended to use in a tank mixture with MCPA and bentazone.



Citadel™

25 OD

NEW SOLUTION IN RICE AND
SORGHUM PROTECTION

PRODUCT DATASHEET

Full name
Citadel 25 OD

Active ingredient content
25 g/L penoxsulame

Chemical group
Triazolepyrimidine

Preparative form
Oil dispersion

Toxicity class
WHO classification: III

Packaging
5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ The only post-emergent graminicide for sorghum protection
- ✓ Flexibility in use (may be applied prior to flooding or after check flooding)
- ✓ Wide range of weed control and application window
- ✓ Selective to all rice species even at maximum ranges
- ✓ Quick effect against cocksbur

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / waiting period
RICE	Grass weed plants	Spraying from the phase of 2-4 leaves till the middle of bushing phase of chicken panis grass	1,0-1,2	1/-
	Grass, dicotyledonous and marsh weed plants	Spraying from the phase of 2-4 leaves to 6-7 leaves of clubroot	1,2-1,6	
		Spraying by aerial method in the phase of 3-4 leaves for rice and 5-6 leaves for marsh weed plants	1,5-1,6	
SORGHUM	Grass and dicotyledonous weeds	Spraying of sorghum in the phase from 2 to 5-6 leaves in crop development, from 2-4 leaves to bushing and 2-7 leaves in dicotyledonous	0,6-1,0	

COMPATIBILITY

Citadel is not recommended to be mixed with molinate-based products and phosphour organic insecticides. If required, it may be mixed with other herbicides, fungicides, insecticides, growth regulators and liquid fertilizers. Before preparing of working solution of product mixture, it is recommended to verify their physical mixability in a small vessel.

SPECIFICS OF APPLICATION ON RICE

The product should not be used immediately after frost or in anticipation of frost on a night before the processing. Spraying should be performed during active growth of weed plants in the phase of 2-4 leaves till the middle of bushing phase in cereals and 2-7 leaves in marsh weed plants. Herbicide application standards depending on the nature of infestation:

- 1.0 L/ha for low infestation with grain weed plants (barnyard grass or chicken panis grass) in the phase of 2-4 leaves;

- 1.2 L/ha for high infestation with grain weed plants (barnyard grass) and/or mainly grain weed plants in the middle phase of bushing, and in case of minor infestation with marsh weed plants in the phase of 2 leaves;
- 1.4 L/ha for high infestation with marsh weed plants (clubroot) and/or most marsh weed plants in the phase of 2-4 leaves;
- 1.6 L/ha for high infestation with marsh weed plants (clubroot) and/or most marsh weed plants in the phase of 6-7 leaves.

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +8 °C to +25 °C.

RECOMMENDED APPLICATION RATE
OF WORKING SOLUTION

150-400 L/ha for ground spraying and 25-60 L/ha for aerial spraying.



Herbicide application specifics

IT IS KNOWN THAT ONLY 50 % OF HERBICIDE EFFECTIVENESS DEPENDS ON PRODUCT QUALITY, AND THE REST 50 % DEPENDS ON THE METHOD OF APPLICATION. THEREFORE, TO ACHIEVE WHAT IS REQUIRED, NOT ONLY CORRECT HERBICIDE SELECTION IS IMPORTANT, BUT ALSO ENSURING ADEQUATE CONDITIONS FOR ITS APPLICATION. EFFECTIVENESS OF HERBICIDES IS AFFECTED BY TEMPERATURE, CONTENT OF ORGANIC SUBSTANCE IN SOIL, AIR AND SOIL HUMIDITY, PRECIPITATION, WEED PLANT DEVELOPMENT STAGE, TYPES OF SELECTED SPRAYERS, NUMBER OF WORKING SOLUTIONS AND A LOT OF OTHER FACTORS. BELOW, YOU MAY FIND SOME COMMON RECOMMENDATIONS.



Soil herbicides affect plants growing from seeds, therefore, they may control only annual weed plants. The exception is Lumax, which has an ability to act against perennial and annual dicotyledonous weed plants if processed post-emergent.

Soil herbicides have more or less prolonged action and may prevent several subsequent waves of weed plants. These advantages distinguish them from post-emergent herbicides acting only against plants, which have already emerged and are vegetating. Thus, application of soil herbicides makes it possible to discover biological potential of crops without adverse effects of weed plants.

What should be always taken into consideration about soil herbicides? Their efficiency depends on temperature variations to a lesser extent. If weather

conditions are favourable for emergence of weed plants, the product suppresses their development. However, it should be noted that if soil herbicide is used in the conditions of cold and drought, when plants may not emerge, an active ingredient will degrade, and when favourable conditions start, the efficiency of the product may reduce due to reduction of active ingredient amount in soil.

Soil herbicides are recommended to be buried in soil immediately upon application at the depth of 3-5 cm, where basic mass of potential weed plant seeds are located. This measure in the first place enables the transfer of product into more moisturized soil layer, where its effect will be higher, and secondly, to reduce wear-out of herbicide together with dust in case of wind erosion, as working solution penetrates to the depth of only 0.2-0.3 mm, and it may be easily worn off by wind. In such case, the problem of non-efficiency will be caused not by herbicide, but by the lack

hereof. Usually, soil herbicides are applied before or after sowing, however, before crop emergence. In corn and sorghum, such soil herbicides as Primextra Gold, Primextra TZ Gold and Lumax, it may be used upon emergence in the phase of 3-5 leaves. An important factor when using soil herbicides is the quality of soil preparation. Large soil aggregates significantly reduce effective action of the product, creating 'shadow' zones with its clots. Therefore, before applying herbicides, soil should be carefully excavated, bringing it to the condition of a uniform mass with the diameter of soil aggregates not more than 1 cm.



Such herbicides are applied to plants and weed plants, which are vegetating. Most of these products destroy only sprouted plants and may

not control subsequent waves, except for such post-emergent herbicides as Lancelot, Peak, Elumis, and Callisto. Therefore, it is required to keep the time to sprouting of as much as possible weed plants, which may damage crops. Also, in the period of application of these products, unfavourable weather conditions may occur, when their application is either impossible (rainy weather), or unreasonable due to stress condition of weed plants (drought, cold). Delay in their application also affects crop yielding. At the same time, we may observe which types of weed plants have sprouted, and relevantly choose optimal herbicide or their mixture. Furthermore, post-

emergent herbicides may effectively control perennial weed plants.

It should also be noted that post-emergent herbicides have clearly defined phases of crop application (depending on a herbicide), which should be met in order to prevent phytotoxic effect. Various products demonstrate action in a specific temperature range. E.g., Peak starts controlling emerged weed plants at the temperature of +5 °C, Dialen Super starts acting at +15 °C.

When using post-emergent herbicides, it should be noted that some of them (Fusilade Forte, Ouragan Forte) have surfactants in its composition, and their efficiency depends on concentration of working solution. Therefore, when using such products, the volume of working solution should not exceed 200-250 L/ha.

Contact herbicides affect a section of plant, which comes in contact with working solution. In order to achieve high efficacy of these products, all plant should be fully covered with the working solution. Therefore, calculation of the amount of working solution depends on the type of sprayer, type of nozzles, and area of plant leaves. Contact herbicides are most reasonably used for desiccation, as they reduce accumulating moisture and have much faster effect. They are also useful in treatment of separate crops before emergence of their spouts susceptible to glyphosate fumes (beet, vegetables, buckwheat etc.). Processing of weed plants emerging before crop emergence enables the plants to emerge without competition of undesired plants.

When selecting product application standard, the following should be considered: type of soil (for soil herbicides), development phase of weed plants, mixing ability of tank mixtures, susceptibility level of weed plants to effect of the product, type of nozzles and other factors. The effect of products may be increased, especially if used in unfavourable conditions, by surfactants (however, it should be noted that separate products already have them in their composition). When selecting herbicide application standard, it is recommended to define the level of its efficacy against a specific type of weed plant and to try to widely use tank mixtures or ready industrial complex products.

The sprayer should be correctly set-up in order to ensure uniform application of the product by all nozzles. The following conditions should also be considered: weather, phytosanitary, agricultural and technical.



MAIN RULES OF POST-EMERGENT HERBICIDE APPLICATION:

- Products should be applied within established crop development terms;
- Products should not be applied when weed plants or crops are in a stress condition;
- Temperature mode of application should be maintained;
- Optimal (the most susceptible to herbicide effect) weed plant development phases should be selected;
- Tank mixtures should be widely used, as various herbicides have various range of effectively controlled weed plants;
- Potential after-effects for subsequent crops in a crop rotation should be taken into consideration;
- The level of phytotoxicity on crops should be regarded.



NON-SELECTIVE HERBICIDES

This product group destroys all plants it comes in contact with, including crops. They are used before crop emergence or during preparation of the field for sowing and desiccation of plantings before harvesting. They may be of systemic (Ouragan Forte) or contact effect (Reglone Super). Non-selective products effectively destroy not only annual, but also perennial plants. They affect underground stems and rootstock, preventing their further growth. However, between processing with the product and mechanical soil processing, a certain amount of time should pass before the product comes down from the upper section of plants to the lower section. For Ouragan Forte, this amount of time is very small - 7-10 days.





CLASSIFICATION OF SYNGENTA HERBICIDES BY MODE OF ACTION

In order to optimally use herbicides, one should be aware of their reactions with plants. With this knowledge, the time and method of maximally effective use of the product or product combination may be established. First of all, one should be aware that herbicide action consists of several stages:

- Uptake of herbicide by a plant (form and composition of formulation, presence of adjuvants and surfactants are of a great importance)
- Transition of active substance to the place of action (depends on physical properties of active substance, such as solubility, purity of product etc.)
- Herbicide effect itself with external signs (depends on chemical activity of active ingredient, mechanism and place of action).

Considering all of this, one should not be surprised that different product with the same active substance have different efficiency on the same weed plants. Furthermore, such 'different' products may differ also by their after-effects.

Mode of action are biochemical or biophysical processes defining herbicide effect directly (inhibition of photosynthesis, disturbance of cell division mechanism, pigment synthesis blocking etc.).

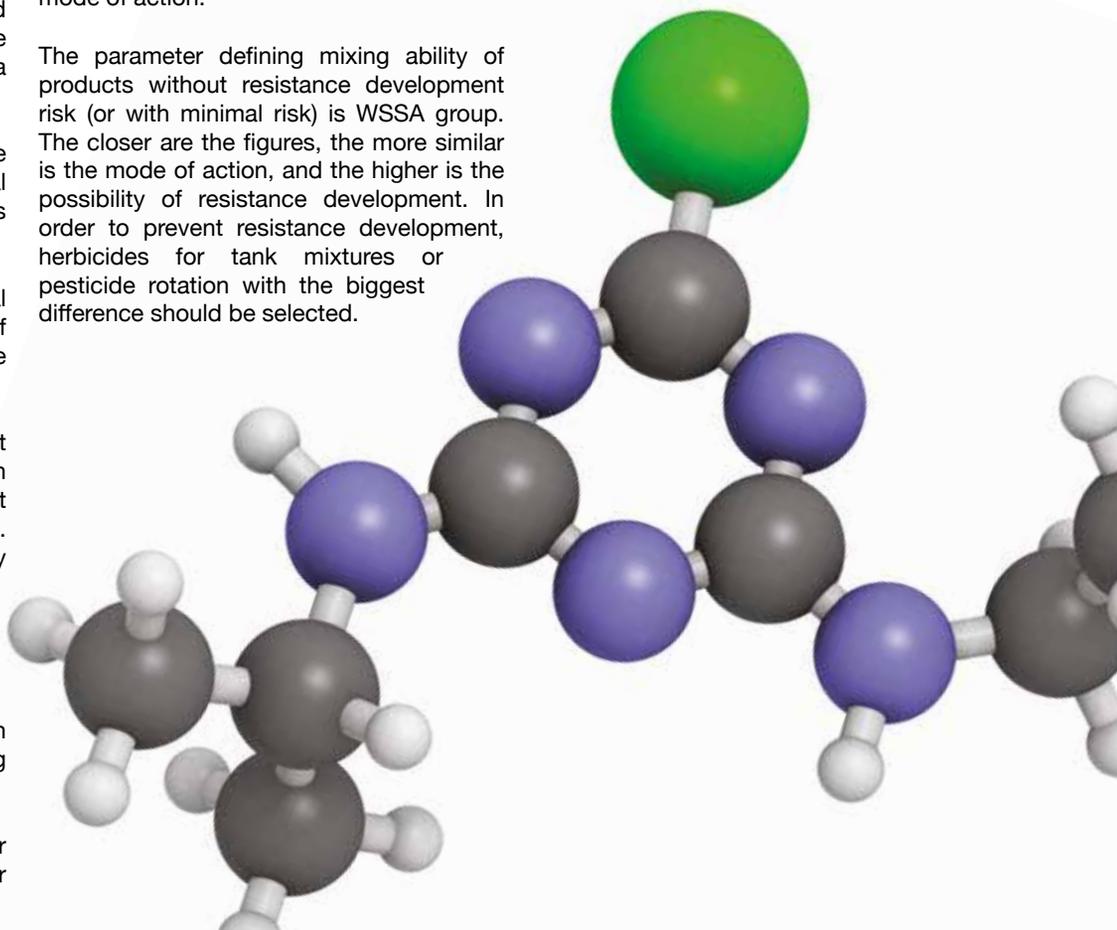
The place of action is directly a place (or a target), where herbicides react in one or

another way and reveal their toxicity on a cell level (co-enzyme NADP, enzyme 4-hydroxyphenylpyruvate dioxygenase (4-HPPD), acetolactate synthase (ALS), plastoquinone, cytoskeleton microtubules etc.).

Prolonged use of herbicides with active ingredients with similar mechanism or place of action cause occurrence of resistant populations of weed plants, control of which becomes more complicated and requires either gradual increase of product application standard (which is dangerous for environment), or replacement with another herbicide different from the previous one by mode of action.

The parameter defining mixing ability of products without resistance development risk (or with minimal risk) is WSSA group. The closer are the figures, the more similar is the mode of action, and the higher is the possibility of resistance development. In order to prevent resistance development, herbicides for tank mixtures or pesticide rotation with the biggest difference should be selected.

Active substances should be selected using the table "Classification of Syngenta herbicides by mode of action". It will also be useful for control of maintenance of pesticide rotation on the field. The classification has been developed according to the recommendations of the Herbicide Resistance Action Committee - HRAC.



HRAC group	Mechanism / Place of action	Chemical group	Active ingredient	WSSA group	Syngenta herbicides
A	Lipid synthesis inhibitors / ACCase inhibitors	Aryloxyphenoxypropionates	Fluazifope-P-butyl	1	Fusilade Forte
		Pinoxaden	Pinoxaden		Axial
B	ALS inhibitors	Sulphonylureas	Nicosulphuron	2	Milagro Elumis
			Prosulphuron		Peak
			Triasulphurone		Lintur Logran
		Imidazolinones	Imazomox		Captora
			Imazipire		
		Triazolepyrimidines	Penoxsulam		Citadel
			Piroxsulame		Pallas
			Florasulam		Derby Lancelot Prima
			Flumetsulam		Derby
		C₁	Photosynthesis inhibitors in photosystem II / Electron transfer blocking to plastoquinone		Triazines
Prometrin	Gesaguard				
Terbutylazine	Primextra TZ Gold				
Triazinones	Metamitrone			Metronam	
D	Photosynthesis inhibitors in photosystem I / NADP co-enzyme restoration process blocking	Bipyridilium derivatives	Diquate	22	Reglone Air Reglone Super Reglone Forte
E	PPO inhibitors	Diphenylethers	Oxifluorfen	14	Goal



HRAC group	Mechanism / Place of action	Chemical group	Active ingredient	WSSA group	Syngenta herbicides
F2	Pigment synthesis inhibition / 4-HPPD enzyme inhibition	Triketones	Mezotrione	28	Elumis Callisto
G	EPSP-synthase inhibitors	Glycine derivatives	Gliphosphate	9	Ouragan Forte
K₁	Cell division inhibitors / cytoskeleton microtubules depolymerization	Dinitroanilines	Trifluraline	3	Treflan
K₃	Cell division inhibitors	Chloracetamides	Acetochlor	15	Trophy
			Metholachlor		Dual Gold Primextra Gold Primextra TZ Gold
O	Synthetic auxines	Aryloxyacetic acids	2,4-D	4	Dialen Super Esteron Prima
		Benzoic acid derivatives	Dicamba		Dialen Super Lintur
		Pyridinecarboxylic acid derivatives	Clopiralide		Galera Super Lontrel Grand
			Fluroxipire		Starane Premium
			Picloram		Galera Super
			Aminopyralide		Galera Super Lancelot



SEED TREATMENT

Apron XL 350 ES	96	Celest Maxx 165 FS.	105
Cruiser 350 FS, Cruiser 600 FS	97	Celest Top 312, 5 FS.	106
Cruiser OSR 322 FS.	98	Certicoree 050 FS.	107
Maxim 025 FS, Maxim 480 FS.	99	Force 200 CS	108
Maxim Quattro 382,5 FS	101	Force Zea 280 FS.	109
Maxim Star 025 FS.	102	Seed treatment.....	110
Maxim Forte 050 FS.	103	Mode of action of main groups of seed treatment products.	111
Maxim XL 035 FS.	104		



THE BEST PROTECTION AGAINST
FALSE MILDEW AND VERTICILLIUM



PRODUCT DATASHEET

Full name
Apron XL 350 ES

Active ingredient content
350 g/L methalaxyl-M

Chemical group
Phenylamides

Preparative form
Fluid suspension concentrate

Toxicity class
WHO classification: III

Packaging
5 L, 20 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Reliable protection of seeds and young plants of internal and external infections
- ✓ Destruction of primary infection and control of secondary infection of emerging plants
- ✓ Prolonged protective action
- ✓ High tolerance to crop
- ✓ Processed seeds are stored till the next season without losing germination capacity

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t
SUNFLOWER	Downy mildew, verticillium, white rot	Pre-sowing seed treatment	3,0
SUGAR BEET	Downy mildew, root feeder		2,0
CUCUMBERS	Downy mildew, bacteriosis		2,5

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t
CABBAGE	Root rots	Pre-sowing seed treatment	0,5
ONION			1,0

COMPATIBILITY

Apron XL may be used both separately and as supplementary component in mixtures with other seed treatment products at high level of seed or soil infestation with false mildew.



MAIN BENEFITS OF THE PRODUCT

- ✓ Systemic effect ensures efficient protection against ground and post-emergent pests for 6-8 weeks
- ✓ Preservation of optimal crop density with minimal seed material consumption
- ✓ No adverse effects upon sowing qualities of seeds (particularly, those stored for a year after processing)
- ✓ Vigour-effect: the product stimulates and ensures general stress resistance of emerging plants
- ✓ Virus disease prevention

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t
SUGAR BEET	Click beetle, weevil, flea beetle, tortoise beetle, tenebrionid beetle, pygmy beetle, cockchafer larvae, apple aphid	Pre-sowing seed treatment	10,0–15,0
CORN	Click beetle, false click beetle, tenebrionid beetles, frit fly, apple aphid, flea beetle, western corn rootworm (diabrotica)		6,0–9,0 (144 mL/80 th. seeds)
SUNFLOWER	Click beetle, false click beetle, grey and southern beet weevil, tenebrionid beetle, apple aphid		6,0–10,0 (111 mL/150 th. seeds)
RAPE	Cruciferous and rape flea beetle, rape and cabbage stem weevil, rape turnip sawfly, apple aphid, click beetle, false click beetle, cockchafer larvae		4,0
FLAX	Flax flea-beetle		0,5
POTATO	Colorado beetle, click beetle, a set of soil and post-emergent pests		0,3
SORGHUM	Soil pest, apple aphid		5,0
WINTER WHEAT	Corn ground beetle, corn fly, leafhopper, apple aphid		0,4–0,5

It suppresses distribution of viral diseases destroying their main transmitters - aphid, leafhopper, thunder fly etc.

COMPATIBILITY

Cruiser is compatible with most products for treatment of seeds, except for those containing organic solvent. May be used in mixtures with Apron XL, Maxim XL, Maxim and other seed treatment products.



PRODUCT DATASHEET

Full name

Cruiser 350 FS
Cruiser 600 FS*

Active ingredient content

350 g/L thiamethoxam
600 g/L thiamethoxam

Chemical group

Neonicotinoids

Preparative form

Fluid suspension concentrate

Toxicity class

WHO classification: III

Packaging

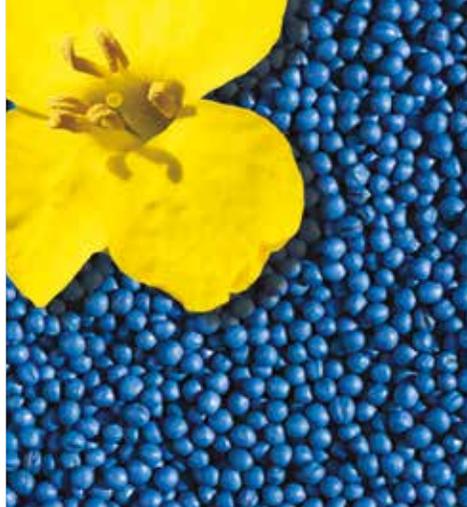
20 L, 200 L



* Cruiser 600 FS is intended only for treatment of sugar beet seeds on specialized seed plant, since product formulation is adapted exclusively for sugar beet seeds



RELIABLE PROTECTION OF
SEEDS AND EMERGING CROPS
OF OIL SEED RAPE



PRODUCT DATASHEET

Full name

Cruiser OSR 322 FS

Active ingredient content

33.3 g/L methalaxile-M
8 g/L fludioxonile
280 g/L thiamethoxam

Chemical group

Neonicotinoids, phenylamides,
phenylpyrolides

Preparative form

Fluid suspension concentrate

Toxicity class

WHO classification: III

Packaging

5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Perfect control of wide range of pests and diseases
- ✓ Safe for crops
- ✓ Vigour effect stimulates emergence of plants
- ✓ Plants treated with by the product have better resistance to cold
- ✓ Treated seeds retain their qualitative parameters for a year

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t
RAPE	<p>Pests: click beetle, cockchafer larvae, false click beetle, cruciferous flea beetle etc.</p> <p>Diseases: black stem, early blight, fusariosis, rhizoctonia disease, downy mildew, pythium</p>	Pre-sowing seed treatment	15,0
POPPY	<p>Pests: a set of ground and soil pests of emerging crops.</p> <p>Diseases: helminthosporiosis, fusarium root rot, downy mildew</p>		35,0

It suppresses distribution of viral diseases, destroying aphid, their main transmitters — plant louses.

COMPATIBILITY

Cruiser OSR is compatible with polymer products for seed coating, and with other agents for treatment of seeds in the form of aqueous liquid emulsions and neutral reaction. If any doubts appear, inspection should be performed.



STANDARD OF SEED TREATMENT
AGAINST DISEASES



MAIN BENEFITS OF THE PRODUCT

- ✓ Product of contact effect against wide range of diseases
- ✓ Prolonged protective action
- ✓ High efficacy against fusariosis
- ✓ High tolerance to crop
- ✓ Modern preparative form firmly staying on seeds

USE OF THE PRODUCT MAXIM 025 FS

Crop	Coverage	Application phase	Application rate, L/t
PEAS	Fusariosis, ascochyta leaf blight	Pre-sowing seed treatment with the product's suspension	1,0
CORN	Stem and root rots		
FLAX	Fusariosis, anthracnose, stem browning		
RICE	Blast disease		
POTATO, PARTICULARLY, SEED PLANTINGS	Dry rot, rhizoctonia disease, helminthosporiosis, common and silver scurf, black stem		0,75
LAWN GRASSES	A set of diseases	During vegetation	0,75*
WINTER WHEAT	Fusarium mould, root rots, kernel smut, fusariosis	Pre-sowing seed treatment	1,5–2,0



PRODUCT DATASHEET

Full name

Maxim 025 FS
Maxim 480 FS

Active ingredient content

25 g/L fludioxonile
480 g/L fludioxonile

Chemical group

Phenylpiroles

Preparative form

Fluid suspension concentrate

Toxicity class

WHO classification: III

Packaging

5 L, 200 L



* The standard is specified in litres per ha (L/ha). Application rate of working solution is 300 L/ha.

USE OF THE PRODUCT MAXIM 480 FS

Crop	Coverage	Application phase	Application rate, L/t
CABBAGE	Root rots	Pre-sowing seed treatment	1,0
ONION			

COMPATIBILITY

Maxim may be used in mixtures with Apron XL, Cruiser, Force Zea and other seed treatment products on respective crops.



NEW STANDARD OF SEED
AND EMERGING PLANT
PROTECTION FROM SOIL AND
SEED INFECTIONS

 **Maxim[®] Quattro**

MAIN BENEFITS OF THE PRODUCT

- ✓ Ensures maximal protection of corn seed and emergent plants even in the conditions of early sowing and cold return
- ✓ High efficacy and prolonged protection from root and stem fusariosis
- ✓ Due to optimization of emergence, saves additional investments into insecticide protection of plants
- ✓ Incredible control of pathogens of root and foot rots of fusarium, pithium and rhizoctonia strains.
- ✓ Long-term period of protective action and reduction of the pathogen resistance risk

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t	
CORN	Root and stem rots, seed soft rot	Product suspension treatment prior to sowing	1,0–1,5	13,6 ml / 1 seed unit per 80 thousand of seeds
			0,5*	

Maxim Quattro is supplied only to seed plants verified by Syngenta specialists, as the product requires specific application conditions.

COMPATIBILITY

May be used in mixtures with Cruiser, Force Zea. Compatible with polymer products for seed coating and with other products for seed treatment in the form of aqueous liquid suspensions with neutral reaction. Maxim Quattro is incompatible with organic solvent-based products



PRODUCT DATASHEET

Full name

Maxim Quattro 382,5 FS

Active ingredient content

15 g/L azoxystrobin
30 g/l methalaxyl-M
300 g/l thiabendazole
37.5 g/l fludioxonil

Chemical group

Strobilurines, phenylamides, benzimidazoles, phenylpiroles

Preparative form

Fluid suspension concentrate

Toxicity class

WHO classification: III

Packaging

20 L, 200 L



* Registration is pending.



ROADMAP TO
YOUR SUCCESS



PRODUCT DATASHEET

Full name
Maxim Star 025 FS

Active ingredient content
18.75 g/L fludioxonile
6.25 g/L cypriconazole

Chemical group
Phenylpiroles, triazoles

Preparative form
Fluid suspension concentrate

Toxicity class
WHO classification: III

Packaging
5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ High efficiency against fusariosis and fusarium mould
- ✓ Increased yield due to beneficial effect on morphological and hysiological properties of plants
- ✓ Enables obtainment of uniform sprouts
- ✓ Reduction of sowing rate due to improved field emergence
- ✓ Prolonged protection and reduced risk of pathogen resistance

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t
SPRING BARLEY	Volatile, covered and other types of smut, fusariosis and helminthosporiosis root rots, helminthosporiosis, moulding of seeds	Treatment of seeds prior to sowing	1,5–2,0
WINTER BARLEY	Covered and volatile smut, helminthosporiosis, powdery mildew		
WINTER WHEAT	Kernel smut and volatile smut, moulding of seeds, fusarium mould, fusariosis and helminthosporiosis root rot		1,0–2,0

COMPATIBILITY

Compatible with most products, apart from oil-based products. In each separate case, the products should be tested for compatibility.



FORMULA OF **MAXIMUM**
SEED PROTECTION



MAIN BENEFITS OF THE PRODUCT

- ✓ Maximal efficiency against foot and fusariosis root rots due to three active substances
- ✓ Increased efficiency against all main diseases
- ✓ Different mode of action of active substances prevents occurrence of resistance
- ✓ Increased yield of cereals due to protection against diseases and physiological stimulating effect
- ✓ Prolonged protective effect
- ✓ Formula M in the composition ensures better fixation of the product on the seeds and perfect control of treatment quality

USE OF THE PRODUCT

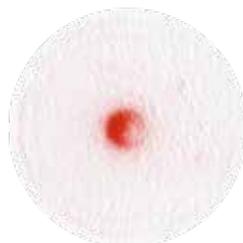
Crop	Coverage	Application phase	Application rate, L/t
SPRING BARLEY	Covered and volatile smut, dark-brown spotting, powdery mildew, root rots	Treatment of seeds prior to sowing	1,5–2,0
WINTER BARLEY	Covered and volatile smut, helminthosporiosis, powdery mildew		
WINTER WHEAT	Kernel smut and volatile smut, powdery mildew, Septoria spot, root rots		

COMPATIBILITY

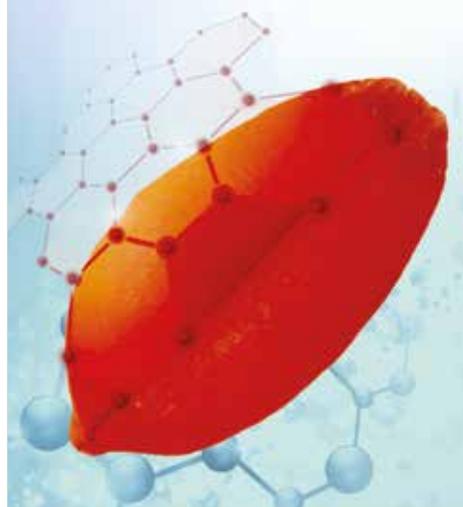
Compatible with most products, apart from oil-based products. In each separate case, the products should be tested for compatibility.



Other formulations



Formula M



PRODUCT DATASHEET

Full name

Maxim Forte 050 FS

Active ingredient content

25 g/L fludioxonile
15 g/L tebuconazole
10 g/L azoxystrobin

Chemical group

Phenylpyroles, triazoles, strobilurines

Preparative form

Fluid suspension concentrate

Toxicity class

WHO classification: III

Packaging

20 L





RELIABLE PROTECTION OF
SEEDS AGAINST SOIL AND
INTERNAL INFECTIONS



PRODUCT DATASHEET

Full name
Maxim XL 035 FS

Active ingredient content
25 g/L fludioxonile
10 g/L methalaxile-M

Chemical group
Phenylpyroles, phenylamides

Preparative form
Fluid suspension concentrate

Toxicity class
WHO classification: III

Packaging
5 L, 200 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Product of systemic, and contact effect against soil and grain infections and diseases of emerging crops
- ✓ Maintenance of optimal young crop density
- ✓ Systemic effect against internal infections
- ✓ No adverse effects on growth power even for a year post-processing
- ✓ Modern preparative form securely fixed on seeds

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t
SUGAR BEETS	Root feeder, seed mold	Pre-sowing seed treatment	9 mL per seed unit
PEAS, SOYBEAN	Moulding seeds, fusariosis root rot, downy mildew, ascochyta leaf blight		1,0
CORN	Stem and root rots, moulding seeds		6,0
SUNFLOWER	Moulding seeds, fusariosis root rot, downy mildew, white rot		5,0
SOY	Moulding seeds, fusariosis root rots, anthracnose, downy mildew, ascochyta leaf blight		
RAPE	Downy mildew, moulding seeds, fusariosis root rot, early blight, pythium		

COMPATIBILITY

Maxim XL may be used in mixtures with Apron XL, Cruiser, Force Zea and other seed treatment products registered in relevant crops.



BALANCED PROTECTION
AND BALANCED PRICE

 **Celest[®] Maxx**

MAIN BENEFITS OF THE PRODUCT

- ✓ Balanced protection against pests and diseases at initial stage of plant growth
- ✓ Ready-to-use mixture requiring no adjustment
- ✓ May be used after any preceding crop
- ✓ Stimulating effect of root system development in unfavourable seed emergence conditions
- ✓ Maximal profitability on various-purpose crops and various sowing terms

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t
SPRING WHEAT	Kernel smut and volatile smut, root rots (fusariosis, helminthosporiosis, foot), Septoria spot. Corn ground beetle, corn fly, cereal flea beetle, apple aphid, leafhopper	Pre-sowing treatment with product	1,5–2,0
SPRING BARLEY	Covered and volatile smut, helminthosporiosis, Septoria spot. Apple aphid, leafhopper, cereal leaf beetle, thunder fly, cereal flea beetle, corn ground beetle		
WINTER WHEAT	Kernel smut and volatile smut, root rots (fusariosis, helminthosporiosis, foot), Septoria spot. Corn ground beetle, corn fly, cereal flea beetle, apple aphid, leafhopper		
WINTER BARLEY	Covered and volatile smut, helminthosporiosis, Septoria spot. Apple aphid, leafhopper, cereal leaf beetle, thunder fly, cereal flea beetle, corn ground beetle		

COMPATIBILITY

Compatible with most products, apart from oil-based products. In each separate case, the products should be tested for compatibility.



PRODUCT DATASHEET

Full name
CELEST MAXX 165 FS

Active ingredient content
25 g/L fludioxonile
15 g/L tebuconazole
125 g/L thiamethoxam

Chemical group
Phenylpyroles, triazoles,
neonicotinoids

Preparative form
Fluid suspension concentrate

Toxicity class
WHO classification: III

Packaging
20 L





READY SOLUTION FOR YIELD
PROTECTION

PRODUCT DATASHEET

Full name

Celest Top 312.5 FS

Active ingredient content

25 g/L fludioxonile
25 g/L difenoconazole
262.5 g/L thiamethoxam

Chemical group

Neonicotinoids,
phenylpyroles, triazoles

Preparative form

Fluid suspension concentrate

Toxicity class

WHO classification: III

Packaging

5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Celest Top is an insecto-fungicide for complex protection of potato from rhizoctonia, alternariosis, scab, a complex of soil and ground pests. Upon sprouting and emergence, the product ensures an extremely long protection thanks to the synergy of active substances in its formulation.
- ✓ Ready-to-use mixture of fungicides and insecticide
- ✓ Highly technologic anti-resistant solution for complex protection of potato with a prolonged effect both in soil and following crop emergence.
- ✓ Vigor effect, i.e., stimulation of emergence, development of root system, increase of stress resistance.

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t
POTATO	A set of diseases (rhizoctonia disease, early blight, silver scab and common scab, fusariosis), a set of soil pests and pests of emerging crops (click beetle, cockchafer larvae, cabbage butterfly, false click beetle, apple aphid, Colorado beetle)	Bulb treatment	0,5–0,7
RICE	Rice blast	Dressing of seeds with product suspension before sowing	2,0
WINTER RYE AND WHEAT	Volatile smut, fusariosis and helminthosporiosis root rot, Septoria spot, powdery mildew. Corn ground beetle, corn fly, cereal flea beetle, apple aphid, leafhopper		1,5–2,0
WINTER AND SPRING BARLEY	Volatile smut, fusariosis and helminthosporiosis root rot, Septoria spot, powdery mildew. Corn ground beetle, corn fly, cereal flea beetle, apple aphid, leafhopper		

MODE OF ACTION

Systemic.

Fludioxonile effects formation of cellular membranes and synthesis of fungal aminoacids. This mechanism mode of action is specific only for phenylpyroles, due to which fludioxonile has a unique biological efficacy.

Difenoconazole inhibits the synthesis of ergosterol of fungal pathogens, due to which no further fungal pathogen cells growth occurs.

Thiametoxame interrupts transfer of nervous impulses in nervous system of insects, due to which they die when try to feed on plants growing from seeds treated by Celest Top.

COMPATIBILITY

Compatible with most products, apart from oil-based products. In each separate case, the products should be tested for compatibility.

USE ON POTATO

In processing of bulbs in 12-48 hours prior to seeding or while seeding.



HIGH QUALITY
AT MODERATE PRICE

Certicore®

MAIN BENEFITS OF THE PRODUCT

- ✓ Controls basic diseases on the surface and inside seeds
- ✓ Protects seeds and young emerged plants against moulding and other fungi
- ✓ Most effective dresser against pythiosis root rots

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t
WINTER WHEAT	Root rots, particularly and pythiosis, smut diseases, moulding seeds	Treatment of seeds with product before sowing	0,75–1,0
SPRING WHEAT*			
WINTER BARLEY	Pythiosis root rot, helminthosporiosis, smut diseases		
SPRING BARLEY	Covered and volatile smut, helminthosporiosis		

COMPATIBILITY

Compatible with most products, except for oil-based products. In each separate case, the products should be tested for compatibility



PRODUCT DATASHEET

Full name

Certicoree 050 FS

Active ingredient content

30 g/L tebuconazole
20 g/L methalaxile M

Chemical group

Triazoles, pheylamides

Preparative form

Fluid suspension concentrate

Toxicity class

WHO classification: III

Packaging

5 L





PRODUCT DATASHEET

Full name
Force 200 CS

Active ingredient content
200 g/L teflutrin

Chemical group
Synthetic pyrethroids

Preparative form
Capsulated suspension

Toxicity class
WHO classification: II

Packaging
20 L



FULL RANGE OF PROTECTION
AGAINST SOIL PESTS

MAIN BENEFITS OF THE PRODUCT

- ✓ Insecticide dresser with fumigant effect
- ✓ Similar efficacy against various types of soil pests, particularly, against cut worm
- ✓ Full absence of adverse effects upon seeding qualities of seeds
- ✓ Efficient even in dry conditions
- ✓ Ensures accurate sowing of seeds even with large amounts of soil pests

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t
SUGAR BEETS	Click beetle, click beetle larvae, pygmy beetle, beetroot aphid, burdock borer larvae	Pre-sowing seed treatment	14,0
SUNFLOWER	A set of soil pests		2,0

Force is supplied only to the seed plants verified by Syngenta specialists, as the product requires specific application conditions.

INNOVATIONS

Teflutrin is a special pyrethroid class insecticide. A unique feature of teflutrin distinguishing it among other pyrethroids is a release of active gas fraction, and therefore, protective sphere around the processed seeds in the range of 2-2.5 cm. Due to this, pests die even before damaging the plants, emerging crops or roots.



OPTIMAL DENSITY
FOR FORCED GROWTH



MAIN BENEFITS OF THE PRODUCT

- ✓ Control of soil pests even before their direct contact with emerging plants and seedlings
- ✓ Best protection against chafer and cutworm larvae
- ✓ Control of pests of emergent plants at early stages of corn development
- ✓ High efficacy independently of humidity and temperature of soil
- ✓ Bird repelling
- ✓ Optimization of sowing norms (depending on soil and climatic conditions)

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/t
CORN	A complex of soil pests (wireworm, false wireworm, chafer larvae, cutworm caterpillar), aphid, flea beetles, green sandpiper, western corn beetle, oat fly	Pre-sowing seed treatment with product suspension	5,0–6,0 (100 mL / 80 thousand of seeds)

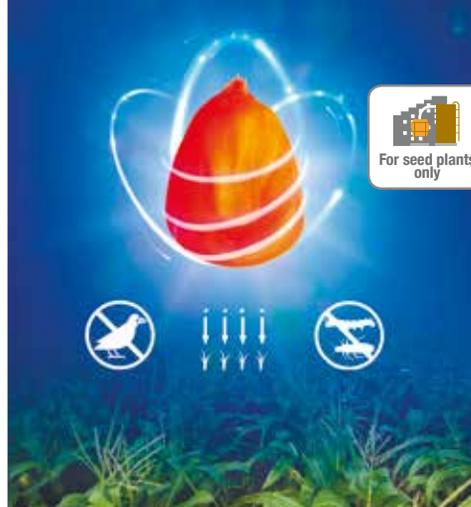
Force Zea is supplied only to seed plants verified by Syngenta specialists, as the product requires specific application conditions.

COMPATIBILITY

Force Zea may be mixed with other commonly used pesticides for seed treatment. However, in each separate case, compatibility of drug products should be verified..



The use of insecticide dresser with the defined norm per seed unit (100 mL of the product per 80 thousand of corn seeds) is possible only on specialized seed plant. Only treatment with a dresser in plant conditions ensures equal insecticide norm for each seed.



PRODUCT DATASHEET

Full name
Force Zea 280 FS

Active ingredient content
200 g/L thiamethoxam
80 g/L teflutrin

Chemical group
Neonicotinoids, synthetic pyrethroids

Preparative form
Fluid suspension concentrate

Toxicity class
WHO classification: III

Packaging
20 L, 50 L



About seed treatment

SEED TREATMENT IS ONE OF THE MOST IMPORTANT PRECONDITIONS OF PROFITABLE PRODUCTION OF HIGH-QUALITY YIELD. USE OF PROCESSED SEEDS HAS GREAT AND UNDENIABLE BENEFITS

Intensified agricultural manufacturing requires plant protection from harmful organisms from sowing. Seed treatment to provide optimal density of plants – is one of the most important measures in the protection system, that complies with the main principle – maximum effect in minimal negative influence on biocenosis components.

Firm fixation of products on seed surface ensures their minimal effect on useful agents.

Additionally to protection against pest and diseases, seed treatment products significantly improve sowing properties of processed seeds, since alongside with traditional seed treatment products, seeds may be processed with growth regulators and antidotes increasing crop tolerance to certain herbicides.

Seed treatment is performed in air-tight conditions under the supervision of qualified staff and is independent of weather conditions.

- In order to achieve maximal efficacy of the product, dressing of seeds should be performed in compliance with several conditions:
- use clean, undamaged seeds for dressing that contains no admixtures; this will ensure high quality of dressing and prevent extra use of products

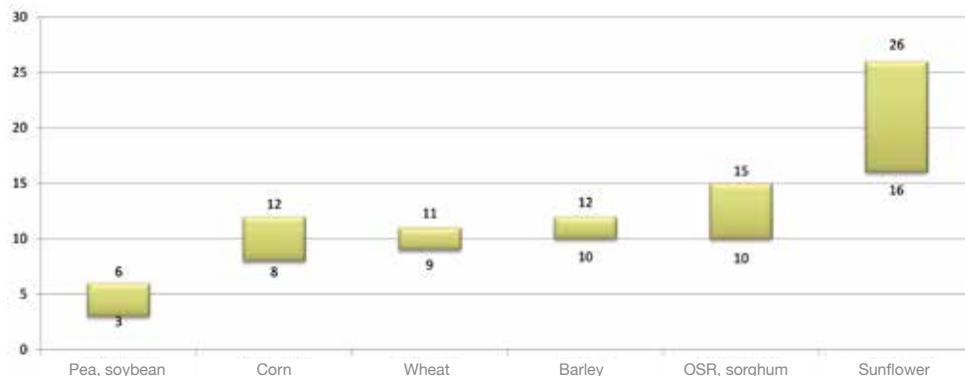


Fig 1. Working liquid consumption norms depending on the crop treated

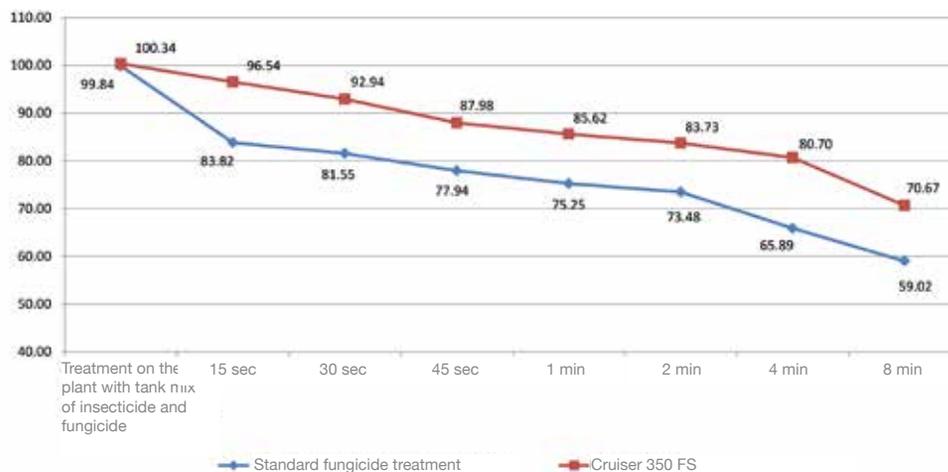


Fig . 2. Losses of active substance of fungicide and insecticide in re-treatment of corn seed with insecticide depending on seed treatment cycle duration



- carefully calibrate seed treatment device according to generally accepted methods. Norm of consumption is established according to the generally established principles (Fig. 1)
- regularly control dressing quality by coloring degree and product application

rate through visual control of even seed coating, calibration of dressing unit and analysis of the amount of active substance in seeds in the laboratory of Syngenta.

- avoid re-treatment with insecticide or any other products over corn seeds

already treated with fungicide in household conditions, as it causes losses of a large amount of active substance of fungicide (Fig. 2).

MODE OF ACTION OF MAIN CLASSES OF SEED TREATMENT

FRAC code	Mode of action	Chemical group	Active substance	Product	Resistance risk	Principle effect
E2	Cellular osmoregulation, aminoacid synthesis	Phenylpyroles	Fludioxonyl	Maxim 025 Maxim Quattro Maxim Star Maxim Forte Maxim XL Celest Maxx Celest Top Cruiser Osr	Low - Medium	Contact
A1	Inhibition of nucleic acid synthesis	Phenylamides	Methalaxyl-M	Apron XL Maxim Quattro Maxim XL Certicore Cruiser Osr	Medium	Systemic
3	Sterol biosynthesis in membrane (C 14-dimethylase)	Triazoles	Cyproconazole	Maxim Star	Medium	Systemic
			Tebuconazole	Maxim Forte Celest Maxx Certicore		
			Dyphenconazole	Celest Top		
11	Mitochondrial respiration of pathogen cells	Strobilurines	Azoxystrobine	Maxim Quattro Maxim Forte	High	Trans-laminar
4A	Antagonists of nicotine acetylcholine receptors	Neonicotinoids	Thiamethoxam	Celest Maxx Celest Top Cruiser OSR Cruiser Force Force Zea	Medium	Systemic
3A	Sodium channel modulators	Pyrethroids	Teflutrine	Force Force Zea	High	Contact and fumigation

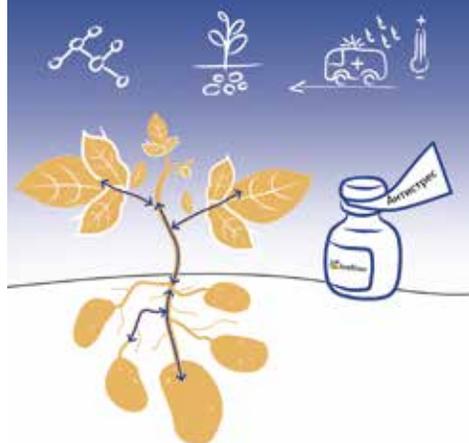


ORGANIC FERTILIZERS

Isabion, S	114
Organic fertilizers	115



BIOSTIMULATOR
OF YOUR HARVEST



PRODUCT DATASHEET

Full name
Isabion, S

Active ingredient content
625 g/L of aminoacids and peptides

Chemical group
Set of aminoacids, macro and microelements

Preparative form
Solution

Toxicity class
WHO classification: III

Packaging
1 L, 5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Aminoacids of animal origin are better absorbed and faster penetrate plant tissues
- ✓ Only Isabion has been registered for leaf and root nutrition
- ✓ Only Isabion effects simultaneously the plant survival, increase of the number and improvement of product quality, and is the fastest antistressant for plants in any stress conditions
- ✓ Most concentrated of all similar products

USE OF THE PRODUCT

Crop	Application phase	Application rate, L/ha
OPEN FIELD ROSES	Foliar fertilization in the period of vegetation (first: at initial plant emergence, second: in 14 days)	3,0–5,0
PROTECTED GROUND ROSES	Root fertilization in the period of vegetation (first: at initial plant emergence, second: intense emergent plant growth beginning, in 7 days, subsequent: in 14 days)	3,0–4,0
OPEN FIELD CARNATION	Foliar fertilization in the period of vegetation (first: at initial plant emergence, second: in 15 days)	3,0–5,0
PROTECTED GROUND CARNATION	Root fertilization in the period of vegetation (first: after planting to constant location, subsequent: in 15 days)	3,0–4,0
OPEN FIELD TOMATO	Foliar fertilization in the period of vegetation (first: at plant height of 10-15 cm, second: fruit formation)	2,0–5,0
PROTECTED GROUND TOMATO	Root fertilization in the period of vegetation (first: at plant height of 10-15 cm, second budding period, third: fruit formation)	3,0–5,0
OPEN FIELD CUCUMBERS	Foliar fertilization in the period of vegetation (first: at plant height of 10-15 cm, second: in 15-20 days)	
PROTECTED GROUND CUCUMBERS	Root fertilization in the period of vegetation (first: at plant height of 10-15 cm, second: budding period, third: fruit formation)	2,0–5,0
POTATO	Foliar fertilization in the period of vegetation (first: at plant height of 10-15 cm, second: in 15 days, third: start of intensive bulb formation)	2,0–5,0

ACTION SPECIFIC FEATURES

Only Isabion has simultaneous effect upon the take of plants, increase of the number and improvement of

quality of product, and is an anti-stress agent for roots and above-ground parts of plants. It contains not only organic compounds, but also may be mixed, if required, with various microelements.



Organic fertilizers

ONE OF THE MOST IMPORTANT TASKS OF MODERN AGRICULTURAL INDUSTRY IS TO ACCELERATE THE RATES OF AGRICULTURE DEVELOPMENT AND TO CREATE HIGHLY DEVELOPED ECONOMY SECTOR

These issues are mostly solved by qualified application of plant-protecting agents, seeds and fertilizers.

Fertilizers are the most efficient way to increase soil fertility, improve yield and quality of finished products.

These fertilizers make it possible to:

- manage fertilization processes
- increase product quality
- impact yields effectively.

Fertilizers make it possible to change metabolic processes and increase protection, starch and sucrose accumulation. It has been proven that efficiency of fertilizers depends on chalking of acid and plastering of salted soils and their combination in technically appropriate ways and reasonable use with other yield formation factors (selection of hybrids and species, CPPs, technologies).

Being aware of manufacturer requirements, Syngenta introduces a novel product intended to intensify your manufacture.





INSECTICIDES

Actara 240 SC, Actara 25 WG.....	118	Match 050 EC	133
Actellic 500 EC	120	Nurelle D 550 EC.....	134
Ampligo 150 ZC	122	Proclaim 50 SG	135
Vertimec 018 EC	124	Spintor 240 SC.....	136
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Karate Zeon 050 CS.....	130	Mode of action of main insecticides	139
Lufox 105 EC	132		



EXTENDED PROTECTION OF
YOUR HARVEST



PRODUCT DATASHEET

Full name

Actara 240 SC
Actara 25 WG

Active ingredient content

240 g/L thiamethoxam
250 g/kg thiamethoxam

Chemical group

Neonicotinoids

Preparative form

Suspension concentrate,
water-soluble granules

Toxicity class

WHO classification: III

Packaging

0.25 L, 0.04 and 0.25 kg



MAIN BENEFITS OF THE PRODUCT

- ✓ Long protection period (21-60 days depending on the rate and method of application)
- ✓ Wide coverage: registered in the world against more than 100 strains of pests
- ✓ Highest systematic effect due to high solubility of the active substance in a plant
- ✓ Safer for users than most other insecticides
- ✓ Efficient against soil pests
- ✓ Vigour effect in case of soil application

USE OF THE PRODUCT ACTARA 240 SC

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio / waiting period
WHEAT*	Cereal beetles, apple aphid, thunder fly, cereal leaf beetle, cereal bugs	Spraying in the period of vegetation	0,15–0,16	2/30
SUGAR BEET	Common and grey beetroot weevil, black weevil, tortoise beetle, flea beetle, tenebrionid beetle, leaf beetroot aphid		0,09	
PEAS	Peas aphid, peas maggot		0,11	
APPLE TREE	Bud weevil, Coenorrhinus pauxillus, fruit-treesnout beetle, apple blossom weevil, apple sawfly, apple aphid	Spraying in the phase bud pushing (pink bud)	0,15	2/14
PEAR TREE	Bud weevil, Coenorrhinus pauxillus, fruit-treesnout beetle, apple and pear blossom weevil, pear fruit sawfly, apple sawfly, apple aphid, slowworm	Spraying in the period of vegetation	0,15	
CABBAGE	Cruciferous flea beetle, cabbage aphid		0,07–0,09	
TOMATO, AUBERGINE, SWEET PEPPER	Colorado beetle		0,07–0,09	2/20
POTATO			0,07–0,09	



USE OF ACTARA 25 WG

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio/ Waiting period
WHEAT*	Sunn pest, cereal leaf beetle, apple aphid, thunder fly	Spraying in the period of vegetation	0,10–0,14	2/20
CABBAGE, TOMATO, AUBERGINE, SWEET PEPPER	Apple aphid, cruciferous flea beetle, click beetle, false click beetle	Soaking of seedling roots prior to planting to constant location	1.5-2.0 g/L of water per 250 of plants	–/–
TOBACCO	Cockchafer larvae, elater (click beetle), tenebrionid beetle, scarab beetle, cabbage butterfly			
POTATO	Colorado beetle	Application into rows while bulbs planting	0,8	1/20
CABBAGE, TOMATO, AUBERGINE	Cockchafer larvae, elater (click beetle), tenebrionid beetle, scarab beetle, cabbage butterfly	Application with irrigation water in drip irrigation	0,6	1/–
WILD STRAWBERRY**		Irrigation of plants with 0.25 % solution	3,6	
HORSE CHESTNUT	Chestnut needle miner	Applicator injection into stems (each 10-15 cm at the height of 1.0-1.5 m) before juice flow and hole sealing with a sealing compound	1 g/hole	1/–
COMMON PINE (SEEDLINGS)	Cockchafer larvae, elater (click beetle), tenebrionid beetle, scarab beetle, cabbage butterfly	Root soaking prior to planting	300 g per 10 L of water	1/–
		Irrigation of plants with 0.25 % solution	5,0	1/–
SUGAR BEET	Common and grey beetroot weevil, black weevil, flea beetle, tortoise beetle, tenebrionid beetle, leaf beetroot aphid	Spraying in the period of vegetation	0,08	2/–
PEAS	Peas aphid, peas maggot	Spraying in the period of vegetation. It is prohibited to use green peas	0,10	2/30
APPLE TREE	Bud weevil, Coenorrhinus pauxillus, fruit-treesnout beetle, apple blossom weevil, apple sawfly	Spraying in the phase bud pushing (pink bud)	0,14	2/14
	Apple fruit turnip sawfly, apple aphid	Spraying after blossom		

COMPATIBILITY

It may be used in tank mixtures with most insecticides, fungicides and some herbicides. In each separate case, products should be tested for compatibility as to precipitation.

SPECIFICS OF APPLICATION

- Optimal hours for performance of protection are from 6.00 till 9.00 or from 19.00 till 23.00 in windless dry weather at the temperature not above +25 °C.
- Volume of working solution depends on a crop and equipment.
- Protection zone for bee flight is not less than 4 km.
- Limitation terms for bee flight is at least 4 days.

SOLUBILITY

Unlike other neonicotinoids, Actara has optimal water solubility level, and, therefore, in cell juice. This results in high systemic activity of insecticide and protection of young plants.

«VIGOR»-EFFECT

If used in the soil, Actara has an effect upon plants as non-specific growth regulator resulting in powerful development of root system. This stimulating effect is called vigour effect or vital force effect.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

100-200 L/ha for field crops, 200-400 L/ha for vegetable crops of open field, 400-800 L/ha for covered soil crops, 800-1200 L/ha for fruit and berry crops, depending on tree crown volume

* Including aerial method.

** After harvesting.

NO ENTRY
FOR PESTS

PRODUCT DATASHEET

Full name
Actellic 500 EC

Active ingredient content
500 g/L pirimiphos-methyl

Chemical group
Phospho-organic compounds

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
1 L, 5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ High efficiency against pest
- ✓ The safest phospho-organic insecticide for humans and environment
- ✓ Quick effect and short waiting period
- ✓ Translaminar distribution of product in plants (destroys pests feeding in lower leaf sections)
- ✓ Powerful fumigant effect makes it possible to control pests in challenging locations
- ✓ Causes no effects on sowing properties of fumigated seeds
- ✓ Acaricidal properties suppress mite development

USE OF THE PRODUCT

Crop	Coverage	Application rate, L/ha	Application ratio/ Waiting period
SOYBEAN	Mite, apple aphid	1,2–2,0	2/30
SUGAR BEET	Weevil, burying beetle, flea beetle, leaf aphid	1,0–2,0	2/20
SWEET CHERRY	Cherry fly	0,8–1,2	1/20
PEACH	Apple aphid, oriental fruit moth		1/50
AUBERGINE	Apple aphid, Colorado beetle	0,3–1,5	2/20
SWEET PEPPER	Apple aphid, Colorado beetle		
OPEN FIELD CUCUMBER AND TOMATO	Whitefly, mite, apple aphid, thunder fly		
PROTECTED GROUND CUCUMBER AND TOMATO	Whitefly, mite, apple aphid, thunder fly, leaf miner, midge	15,0–20,0 mL / 10 L of water	3/3



Crop	Coverage	Application rate, L/ha	Application ratio/ Waiting period
WILD STRAWBERRY, RASPBERRY	Apple aphid, beetles, pyralid moth, leaf roller, geometrid moth, gall midge, turnip sawfly	0,6	2/-
BLACKBERRY, GOOSEBERRY		1,5	2/-
CORN (AERIAL METHOD)	Corn worm, apple aphid	1,2-2,0	2/-
VINEYARDS (BREED SHEDS OF ROOTSTOCK SPECIES)	Leaf phylloxera	3,0	2/-
OPEN FIELD DECORATIVE CROPS	Leaf roller, mite, apple aphid, thunder fly	0,5-1,5	4/20
PROTECTED GROUND DECORATIVE CROPS		2,4-3,6	4/3
PERENNIAL GRASSES (SEED PLANTINGS), ALFALFA FORAGE, CELERY, CLARY SAGE	Weevil, seed wasp, bugs, apple aphid, thunder fly, sage weevil, pyralid moth, sod webworm, burdock borer, gall midge	1,0-1,5	2/20
MEDICAL HERBS*	A set of pests*	0,6-1,2*	1-2/20-70*

RECOMMENDATIONS ON GRAIN DESINSECTION

Processing is performed in standard drain moisture. Grain layer thickness should not exceed 0.4 m.

TEMPERATURE OF APPLICATION

Optimal temperature of application: for field crops, vegetables, fruit and berry crops – from +10 °C to +25 °C, for grain disinfection – from +6 °C to +20 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

100-200 L/ha for field crops, 400-800 L/ha for crops on covered soil, 800-1200 L/ha for fruit and berry crops, depending on tree crown volume.

COMMENTS

Access for persons and warehouse loading upon ventilation for 2 days upon exposition end.

Grain sale for industrial and feed purposes – with the presence of product residuals not higher than MAN, in grain for baby foods – in absence of pirimiphos methyl.

RECOMMENDATIONS ON THE USE FOR WAREHOUSE PEST CONTROL

Processed facility	Target	Method processing	Application rate	Application ratio / waiting period
NON-LOADED WAREHOUSES PREMISES	Storage pests	Spraying of walls, ceiling and floor using backpack sprayer. Water use rate: metal – 30 mL/m ² , plaster - 70 mL/m ² , wood/cement – 50 mL/m ² , brick – 150 mL/m ²	0.5 mL/m ²	1/-
		Desinsection of premises using cold or hot fume generator. Application rate carrier (kerosene or paraffin oil) – 100 mL per 100 m ³	0.04 mL/m ³	
ADJACENT WAREHOUSE AREAS		Processing by humid method (up to 400 mL of working liquid per 1 m ²)	0.8 mL/m ²	
GRAIN COMMODITY, SEED, FORAGE		The amount of working solution per 1 ton of grain is 05.-2 L. The thickness of grain layer should be above 0.4 m.	16 ml/T	

* See "List of insecticides and agrochemicals"

NEW


**INCREDIBLE PROLONGED
ACTION AGAINST PESTS**


PRODUCT DATASHEET

Full name
Ampligo 150 ZC

Active ingredient content
100 g/L chlorantraniliprone
50 g/L lambda-cyhalothrin

Chemical group
Antranilamides

Preparative form
Mixed preparative form of KS and SK

Toxicity class
WHO classification: II

Packaging
5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ High efficacy against pests in a wider temperature range compared to other pesticides
- ✓ Innovative formulation ensures resistance to UV irradiation and prevents wash-out with rain already in one hour following treatment
- ✓ Has ovicidal effect
- ✓ High efficacy for all period of action on caterpillars regardless of their age
- ✓ High initial toxicity, the so-called knockdown effect against lepidopterous caterpillars
- ✓ Various modes of action prevents development of resistance

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
CORN	Cotton budworm and corn stem moth	Spraying in the period of vegetation 0.2-0.3 2/30	0,2-0,3	2/30
SORGHUM*			0,4	

COMPATIBILITY

The product is compatible with most pesticides, however, in each separate case, the mixed products should be verified for compatibility.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

250-300 L/ha for ground spraying,
50-100 L/ha for aerial spraying.





syngenta.



NO CHANCES
FOR MITES



PRODUCT DATASHEET

Full name
Vertimec 018 EC

Active ingredient content
18 g/L abamectin

Chemical group
Avermectin

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
1 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Effectively controls all types of mites, miners and thunder flies
- ✓ Excellent translaminar effect ensures resistance to washing away by rain, high level of pest control and the longest period of protection effect among acaricides
- ✓ Due to clearly expressed intestinal and moderate contact effect, the product effectively controls pests, however, stays safe for useful entomofauna

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
SOYBEAN*	Red spider	Spraying in the period of vegetation	0,6–1,0	-
APPLE TREE	Mite, apple aphid		1,0–1,5	3/14
STRAWBERRY			0,5–1,0	2/7
SWEET PEPPER, AUBERGINE	Mite, thunder fly, apple aphid, Colorado beetle		0,7–1,0	
CUCUMBER	Mite, white fly, apple aphid, thunder fly			
HOP YARDS	Red spider, hop aphid		0,75–3,0	3/20

SPECIFICS OF APPLICATION

Ground spraying in the period of vegetation in hop yards:

- at plant height of 2-4 m and working solution application rate of 500 L/ha – 0.75 L/ha of the product
- at plant height 6-7 m and working solution application rate of 1000-2000 L/ha – 3.0 L/ha of the product.

EFFECT SPECIFICS

In order to prevent resistance development, the product should not be used sequentially (more than three times) with other products of avermectine chemical group.

To increase efficiency of product against pests it is desirable to use working solution in the morning, in the evening or in bad weather conditions.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

200-400 L/ha for open field vegetable crops, 400-800 L/ha for protected groundcrops, 800-1200 L/ha for fruit and berry crops, depending on tree crown volume.



CONVENIENT
PERFECTION

 **Voliam Flexi®**

MAIN BENEFITS OF THE PRODUCT

- ✓ Combination of two active ingredients excellently controls all types of harmful insects
- ✓ Prolonged protection effect – up to 20-25 days
- ✓ Convenient in use
- ✓ High translaminar and systemic effect
- ✓ Resistant to rainwash

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
CABBAGE	Cabbage leaf beetle, cabbage aphid, cabbage bugs, cabbage flea beetle, stem and seed cabbage stem weevil, cabbage fly, cabbage white butterfly, cabbage moth, rape white butterfly, rape sawfly, leaf-eating burdock borer	Spraying in the period of vegetation	0,3–0,4	2/20
OPEN FIELD TOMATO	Leaf-eating burdock borer, Colorado beetle, tobacco thunder fly, potato moth, potato burdock borer			2/14
PROTECTED GROUND TOMATO	Leaf-eating burdock borer, aphid, tobacco thunder fly			2/7
VINEYARDS	Grape leaf roller, scarred snout beetle		2/35	
APPLE TREE	Coenorrhinus pauxillus, fruit-treesnout beetle, apple aphid, apple blossom weevil, seedworm, leaf roller, grey bud weevil, apple fruit sawfly		0,3–0,5	3/20

SPECIFICS OF USE AND RESTRICTIONS

Optimal hours for protection works are from 6.00 till 9.00 or from 19.00 till 23.00 in windless dry weather at the temperature not above +25 °C. Protection zone for bee flight is not less than 4 km.

Limitation terms for bee flight is are least 4 days.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

400-600 L/ha for open field vegetable crops,
400-800 L/ha for protected ground crops,
800-1200 L/ha for fruit and berry crops,
depending on tree crown volume.

600-800 L/ha – for vineyards.



PRODUCT DATASHEET

Full name
Voliam Flexi 300 SC

Active ingredient content
200 g/L thiamethoxam
100 g/L chlorantraniliprole

Chemical group
Neonicotinoids, antranilamides

Preparative form
Suspension concentrate

Toxicity class
WHO classification: III

Packaging
1 L



 **syngenta®**

PERFECT ACTION
WITH FUMIGANT EFFECT

Dursban™

480 EC



PRODUCT DATASHEET

Full name
Dursban 480 EC

Active ingredient content
480 g/L chloropyrifose

Chemical group
Phospho-organic compounds

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: II

Packaging
5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Destroys wide range of pests
- ✓ Efficient on all stages of pest development (imago, larva, egg)
- ✓ Due to fumigant effect, destroys pests in upper soil layer and challenging locations
- ✓ Negatively affects mite development

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
WINTER WHEAT	Corn ground beetle	Spraying in the period of vegetation	1,0–1,5	1/30
	Aphid	Spraying in the period of vegetation	0,8	2/30
SUGAR BEETS	Flea beetle	Spraying emerging crops	1,5	
	Common and beet weevil, burdock borer, tortoise beetle, pygmy beetle	Spraying in the period of vegetation	2,0–2,5	
	Sod webworm, burying beetle		1,5–2,0	
POTATO	Colorado beetle	Spraying in the period of vegetation	1,5	2/30
	Red spider, aphid	Spraying in the period of vegetation		2/30
HOPS	Alfalfa weevil	Spraying emerging crops	3,0	



Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
APPLE TREE	Seedworm, leaf roller, moth, mite, apple aphid	Spraying in the period of vegetation	2,0	2/40
PEACH	False scale insects		2,0	1/60
ALFALFA (SEED PLANTINGS)	Phytonomus		1,5	1/25
GRAPES	Grape leaf roller, mite, aphid		1,5–2,0	2/40

SPECIFICS OF USE AND RESTRICTIONS

Dursban may be mixed with fungicides (except for Bordeaux mixture and sulphur-containing products), growth regulators of plants.

When mixing with fertilizers, their compatibility should be obligatory tested. When mixing with nitrogen fertilizers, separate crops may demonstrate phytotoxicity.

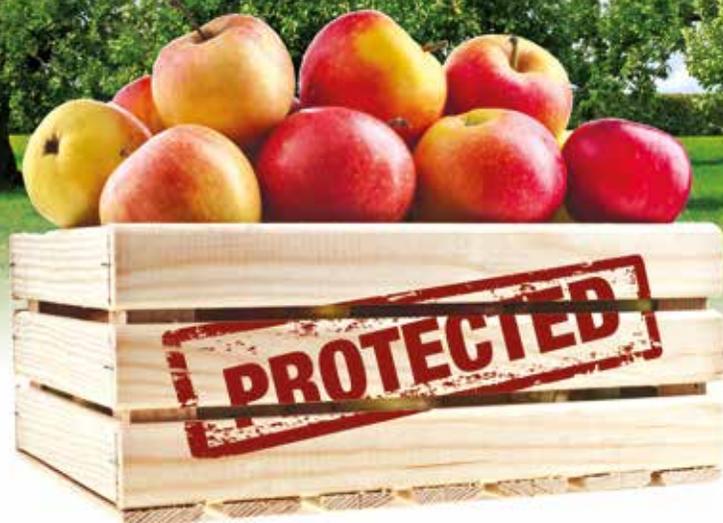
It is not recommended to use the product in the period of active growth of chloropyriphose-susceptible species of grapes.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

100-200 L/ha for field crops,

800-1200 L/ha for fruit and berry crops, depending on tree crown volume.

600-800 L/ha – for vineyards.





DOUBLE CONFIDENCE
IN RESULT



PRODUCT DATASHEET

Full name
Engeo 247 SC

Active ingredient content
141 g/L thiamethoxam
106 g/L lambda-cygalotrine

Chemical group
Neonicotinoids, pyrethroids

Preparative form
Suspension concentrate

Toxicity class
WHO classification: II

Packaging
5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Combination of powerful knock-down effect with long crop protection period from the inside
- ✓ Two different mechanisms of action of the product widen the range of controlled pests and prevent resistance
- ✓ Thermal stability (possibility to use at high and low temperatures) and photostability
- ✓ Convenient for users (low application rate, wide registration)
- ✓ Prolonged effect and high efficacy

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
WINTER WHEAT*	Sunn pest, aphid, thunder fly, leafhopper	Spraying in the period of vegetation	0,18	2/20
WINTER WHEAT	Corn ground beetle**		0,25–0,4**	1/20
WINTER BARLEY**	Sunn pest, cereal chafer, thunder fly, aphid, flea beetle, corn flies, cereal leaf beetle		0,15–0,18	2/20
SUGAR BEET	Common and grey beet weevil, tortoise beetle, flea beetle, leaf beetroot aphid		0,18	
VINEYARDS	Leaf phylloxera, pear leaf roller, scarred snout beetle			
PEAS	Peas aphid, peas weevil, peas seedworm			
APPLE TREE	Grey bud weevil (spruce budworm), fruit-treesnout beetle, Coenorrhinus pauxillus, apple blossom weevil, apple sawfly, apple green aphid			
POTATO	Colorado beetle			
ONION	Onion fly, thunder fly			2/14



Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
CABBAGE	Cruciferous flea beetle, cabbage aphid, white butterfly, cabbage moth, cabbage burdock borer	Spraying in the period of vegetation	0,18	2/14
TOMATO	Colorado beetle, large potato aphid		0,18	2/20
SUNFLOWER	Leaf-curling plum aphid, tumbling sunflower beetle		0,18	2/-
SORGHUM	Corn worm and other kinds of aphids, leafhopper		0,2-0,25**	2/-
HOP YARDS	Hop aphid, large alfalfa weevil, hop flea-beetle, green leafhopper, stem worm		0,18	2/20
NON-AGRICULTURAL LANDS	Grasshoppers (younger larvae)		0,18	2/-
CONIFEROUS SPECIES SEEDLINGS	Pine sawfly (common and red), buprestid beetle, Aradus cinnamomeus		0,18	1/-

SPECIFICS OF APPLICATION

The product should not be used in extreme weather conditions, when insects are in stress condition. Engeo is very efficient in low temperatures, as opposed to other insecticides. Optimal application temperature of Engeo is +8...+25°C.

ZEON TECHNOLOGY

Efficient form of Engeo was obtained using Zeon technology. This is a concentrate of microcapsular suspension extending the effect of pyrethroid component of the product and improves thermal stability of insecticide in general.

COMPATIBILITY

Engeo may be mixed with commonly used herbicides, fungicides, growth regulators of plants on relevant crops. However, in each separate case, the products should be tested for compatibility.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

100-200 L/ha for field crops, 200-400 L/ha for open field/vegetable crops,

400-800 L/ha for protected groundcrops,

800-1200 L/ha for fruit and berry crops, depending on tree crown volume.

600-800 L/ha for vineyards.



MICROCAPSULES
WITH MACRO-EFFECT



PRODUCT DATASHEET

Full name
Karate Zeon 050 CS

Active ingredient content
50 mg/L lambda-cyhalothrin

Chemical group
Pyrethroids

Preparative form
Microcapsulated water suspension

Toxicity class
WHO classification: III

Packaging
1 L, 5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Destroys a wide range of pests, including some species of mites
- ✓ High initial efficacy, the so-called knock-down effect
- ✓ Extended protection period as compared with other pyrethroid products
- ✓ Safer for users than other pyrethroid insecticides
- ✓ Photostability, thermostability, and precipitation resistance
- ✓ High economic efficacy

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
WINTER WHEAT*	Cereal beetles, flea beetle, thunder fly, cereal leaf beetle, tortoise beetle, apple aphid, winter burdock borer	Spraying in the period of vegetation	0,15–0,3	2/20
SPRING WHEAT*	Sunn pest, cereal leaf beetle, apple aphid, cereal beetles, thunder fly		0,15–0,2	1/20
RAPE	Cruciferous flea beetle, rape blossom weevil, white butterfly, bugs, apple aphid		0,15	2/14
SUGAR BEETS	Tortoise beetle, flea beetle, apple aphid		0,125–0,15	1/20
PEAS	Peas aphid, peas maggot		0,125	2/14
CORN	Corn worm, western corn rootworm		0,2–0,3	1/20 2/30
SORGHUM	Apple aphid, leafhopper, corn worm		0,2	2/20



Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
RICE	Rice midge, barley miner	Spraying in the period of vegetation	0,2	1/-
ONION	Onion fly			2/10
APPLE TREE	Apple seedworm, leaf roller		0,4	2/14
POTATO	A set of pests		0,1	
TOMATO, AUBERGINE				1/7
CUCUMBERS	Apple aphid, thunder fly		0,3	1/14
PEACH	Oriental fruit moth		0,15	2/14
WATERMELON	Watermelon fly		0,15-0,2	2/20
GRAPES	Leaf roller, rape blossom weevil		0,15	2/14
FIBER FLAX	Flax flea-beetle		0,15-0,4	1/-
MISCELLANEOUS HERBS	Herd and non-herd grasshoppers			

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

100-200 L/ha for field crops, 200-400 L/ha for open field vegetable crops, 800-1200 L/ha for fruit and berry crops, depending on tree crown volume,

600-800 L/ha for vineyards.

COMPATIBILITY

Actellic due to its fumigant effect destroys larvae, which have already bite into the stem, and sulphur fumes of Thiovit Jet force the larvae back into the surface and intensify the effect of Karate Zeon.

Partner for phospho-organic compounds: use Karate Zeon in mixtures with phospho-organic compound-based products (e.g., with Actellic, Dursban) has a specific synergic effect and increases the efficiency of product use as compared with their application separately.

Use in the gardens. Karate Zeon, unlike other pyrethroid compounds, not only causes no intensification of mite development, but rather has a suppressive acaricide effect upon specific mite types.

MICROCAPSULATION BY ZEON TECHNOLOGY

Zeon technology micro-capsulation determines most benefits of the product, as thanks to polymer capsules, Karate Zeon becomes safer for users and more photostable, and its protective term is increased to 7-10 days.

TEMPERATURE OF APPLICATION

Karate Zeon should be used at the temperature not above +25 °C.


WIDE STEP
TO QUALITY

PRODUCT DATASHEET

Full name
Lufox 105 EC

Active ingredient content
75 g/L phenoxy carb
30 g/L luphenurone

Chemical group
Carbamates, benzamides

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ High efficiency against pests due to combination of two active substances
- ✓ Powerful ovicidal effect (upon egg laying up to 5-7 days)
- ✓ Larvicidal effect: breaks caterpillar shedding processes
- ✓ Has sterilant effect upon imago (in direct contact)
- ✓ No phytotoxicity effect (creates no network even on fruits of highly-sensitive species)
- ✓ Safe for humans and favorable entomofauna

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
PEAR TREE	Apple seedworm, pear seedworm, pear slowworm, scale insects, mite	Spraying in the period of vegetation	1,0	2/30
APPLE TREE	Seedworm, leaf roller, mites, scale insects	Spraying in the period of vegetation		
GRAPES	Grape leaf roller, 1 generation		0,5	
	Grape leaf roller, 2-3 generations			

OPTIMAL APPLICATION PERIOD

In order to achieve the highest efficacy, Lufox should be applied during peak flying of pests (apple and pear seedworm), i.e., in 3-5 days to the beginning of mass egg laying.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

1000 L/ha for gardens. If the recommended water amount is reduced (depending on crown volume), it is not recommended to reduce product application rate.

600-800 L/ha for vineyards.



CHOOSE
SAFETY



MAIN BENEFITS OF THE PRODUCT

- ✓ Has a powerful larvicidal and sterilant effect on imago, and ovicidal effect on fresh egg-laying (up to 48 hours)
- ✓ Resistant to rainwash
- ✓ Has a powerful and prolonged translaminar activity
- ✓ Has no phytotoxic effect (creates no network even on fruits of highly-sensitive species)
- ✓ Safe for humans and favorable entomofauna

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
APPLE TREE	Seedworm, leaf roller, moth	Spraying in the period of vegetation	1,0	3/30
VINEYARDS	Grape leaf roller			
CABBAGE	White butterfly, cabbage burdock borer, cabbage moth		0,4	2/14
TOMATO	Beet borer and other species			
WILD PLANTS	Non-standard grasshoppers, 1-3 generation larvae		0,15	1/-

OPTIMAL APPLICATION PERIOD

To achieve the highest efficacy of Match, the product is recommended to be applied directly before mass egg-laying of pests.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

1000 L/ha for gardens.

If the recommended amount of water is reduced (depending on crown volume), the product application rate should not be reduced.

Cabbage, tomatoes: 500-600 L/ha. 600-800 L/ha for vineyards.



PRODUCT DATASHEET

Full name
Match 050 EC

Active ingredient content
50 g/L lufenuron

Chemical group
Benzamides

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
5 L



VICTORIOUS TANDEM
OF SPEED AND QUALITY

Nurelle™ D

550 EC



PRODUCT DATASHEET

Full name

Nurelle D 550 EC

Active ingredient content

500 g/L chloropyrifos
50 g/L cypermethrin

Chemical group

Phospho-organic compounds,
pyrethroids

Preparative form

Emulsion concentrate

Toxicity class

WHO classification: II

Packaging

5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Protects from wide range of pests from various rows
- ✓ Due to pyrethroid component, it has a powerful knockdown effect
- ✓ Due to fumigant effect, it destroys pests in challenging locations
- ✓ Has acaricidal effect

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
WINTER AND SPRING WHEAT	Sunn pest, cereal leaf beetle, corn ground beetle, cereal beetles, cereal apple aphid	Spraying in the period of vegetation	0,75–1,0	1/20
BARLEY	Cereal leaf beetle, corn ground beetle		0,5–0,75	1/30
SUGAR BEETS	Common and grey beet weevil, flea beetle, tortoise beetle		0,8	1/40
WINTER AND SPRING RAPE, MUSTARD	Cruciferous flea beetle, rape blossom weevil, cabbage stem weevil		0,5–0,6	2/30
APPLE TREE	Seedworm, leaf roller, moth, mite, apple aphid		1,0–1,5	2/40

COMPATIBILITY

Recommended to be used pure.

SPECIFICS OF PRODUCT USE

Not to be used in extreme weather conditions, when insects are in stress condition.

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +8 °C to +25 °C.

RECOMMENDED WORKING SOLUTION APPLICATION RATE

100-200 L/ha for field crops,

800-1200 L/ha for fruit crops, depending on crown volume.



SAFE IN ANY WEATHER
CONDITIONS FOR A LONG TIME



MAIN BENEFITS OF THE PRODUCT

- ✓ Destroys all lepidopterous insects living openly and secretly
- ✓ Effect starts from egg phase – has direct icidal effect
- ✓ Quickly penetrates into a plant during 2 hours with formation of reservoirs with active substance
- ✓ Efficiency independent of high temperatures, rain and acidity of the working solution
- ✓ Short waiting period – not more than 15 days
- ✓ Compatible with bioprotection

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio/Waiting period
APPLE TREE	Seedworm, leaf roller, leafminer	Spraying in the period of vegetation	0,4–0,5	2/14
GRAPES	Grape leaf roller		0,3–0,4	
CABBAGE	Cabbage moth, cabbage burdock borer, cabbage and rape white butterfly		0,2–0,3	
OPEN FIELD AND PROTECTED GROUND TOMATO	Cotton burdock, borer beet border, thrips		0,3–0,4	2/5

SPECIFICS OF USE AND RESTRICTIONS

Translaminar insecticide of natural origin, which penetrates plant tissues and creates reservoirs containing emamectin benzoate. Thanks to its efficiency, the product is independent of high temperatures and rain and ensures protection of plants from damages for up to 15 days.

RECOMMENDED WORKING SOLUTION APPLICATION RATE

400-800 L/ha for open field and protected ground vegetable crops,

800-1200 L/ha for gardens, depending on tree crown volume,

600-800 L/ha for vineyards. In order to increase the efficacy of the product against pests, it is recommended to use the product in the morning, in the evening or in cloudy weather.

PROCLAIM COVERAGE

Main effect	Side effects
Burdock borer	Thunder fly
Moth	Miner (<i>Liriomyza</i> spp)
Leaf roller	Mite
Seedworm	Slowworm
Geometrid moth	



PRODUCT DATASHEET

Full name
Proclaim 50 SG

Active ingredient content
50 g/kg emamectin benzoate

Chemical group
Avermectins

Preparative form
Water-soluble granules

Toxicity class
WHO classification: III

Packaging
0.5 kg



NOVEL INSECTICIDE
OF BIOLOGICAL ORIGIN**Spintor™**

240 SC

**PRODUCT DATASHEET**

Full name
Spintor 240 SC

Active ingredient content
240 g/L spinosad

Chemical group
Spinozines

Preparative form
Suspension concentrate

Toxicity class
WHO classification: III

Packaging
0,5 L

**MAIN BENEFITS OF THE PRODUCT**

- ✓ Product of biological origin of new insecticide class with unique mode of action
- ✓ Controls wide range of pests (lepidopterous, thunder fly, beetle, fly, ant)
- ✓ Safe for crops, useful entomofauna and users
- ✓ Has a high thermal stability and is rapidly absorbed by plants
- ✓ Ensures prolonged protection (14-16 days)

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
CUCUMBER, TOMATO	Oriental flower thrips, tobacco thrips	First processing is performed upon occurrence of pests, subsequent in 7-10 days	0.03-0.05 L/100 L of water	2/7
AUBERGINE				2/20
FLOWERS, DECORATIVE CROPS			0.04-0.05 L/100 L of water	3/7
CHERRIES, SWEET CHERRIES	Cherry Mediterranean fruit flies	Spraying in the period of pest flight peak	0,3-0,5	2/15
PEACH	Oriental seedworm	Spraying in the period at the beginning of pest larva rebirth	0,3	5/20

INNOVATIVE TECHNOLOGIES

Active ingredient of Spintor has been created through fermentation of bio-substrate obtained from *Saccharopolyspora spinosa*, soil actinomycete.

The product is much safer than others for humans, animals, birds and fish.

**RECOMMENDED WORKING SOLUTION
APPLICATION RATE**

400-800 L/ha for vegetable crops of openfield and protected ground.

800-1200 L/ha for fruit and berry crops, depending on tree crown volume.



POWERFUL PROTECTION
OF EMERGING CROPS



MAIN BENEFITS OF THE PRODUCT

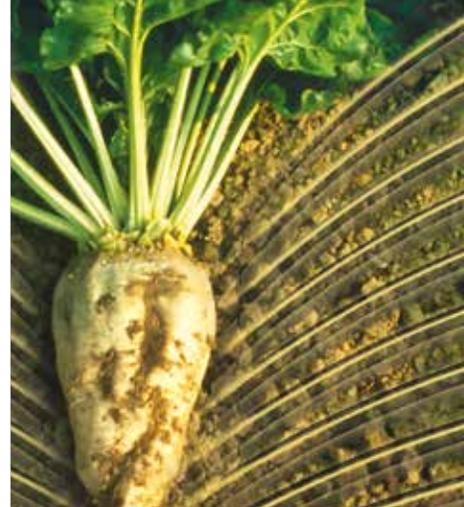
- ✓ Protects against all soil pests, except for nematodes
- ✓ Guarantees high field seed germination (no phytotoxicity)
- ✓ Prolonged protective effect (up to 30 days)
- ✓ Non-soluble in water and non-washable into lower soil layer

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio/ Waiting period
SUGAR BEET	A set of soil pest, pygmy beetle	Application onto a row during sowing	4,5–6,0	1/ –
WILD STRAWBERRY	A set of soil pests (soil pest larvae - may beetle, click beetle)	Application of granulated product into pits (in a row) when planting seedlings	10,0–12,0	1/30
POTATO	A set of soil pests	Application onto soil during crop sowing	5,0–15,0	1/30
TOMATO, CABBAGE			5,0–8,0	1/ –
RAPE			6,0–8,0	
SOYBEAN*	Wireworm, complex of pests			

SPECIFICS OF APPLICATION

For correct use of the product, Force 1.5 G it is required to use special applicators.



PRODUCT DATASHEET

Full name
Force 1.5 G

Active ingredient content
1.5 g/kg teflutrine

Chemical group
Pyrethroids

Preparative form
Granules

Toxicity class
WHO classification: III

Packaging
20 kg



* Registration is pending.

Insecticides specifics

INSECT FEEDING WITH VEGETATIVE OR GENERATIVE ORGANS OF PLANTS RESULTS IN DIRECT YIELD LOSSES AND REDUCTION OF ITS QUALITY, AS WELL AS IN DISTRIBUTION OF VIRAL AND FUNGAL DISEASES BY THEM. CONTROL OF PESTS USING INSECTICIDES PREVENTS SUCH LOSSES.

Depending on the ways of penetration into insect organism, insecticides are divided into 3 groups: intestine, contact, and fumigants. The accepted classification is rather conditional, as most insecticides may enter an insect organism by multiple ways, however, the only one is usually dominating, and others are secondary. Knowledge of the penetration way into insect organism makes it possible to define with maximal efficiency

the time of product application against the most susceptible insect development stage. Knowledge of the mode of action of insecticide helps to arrange scientifically substantiated insecticide rotation or their mixtures against various pests in order to prevent development of resistance. Depending on the mode of action, insecticides are divided into groups (see Table). Insecticide rotation in terms of time

against one and the same pest, and planning of tank mixtures should be performed with regard to the Table below, which has been prepared according to IRAC guidelines. Furthermore, the bigger is the difference in insecticide group number, the lower is the risk of resistance.



MODE OF ACTION OF MAIN CLASSES OF INSECTICIDES

IRAC groupe	Mode OF ACTION	Chemical group	Active ingredient	Syngenta Insecticides
1B	Inhibitors acetylcholinesterase	Phosphi-organic compounds	Pirymyphos-methyl	Actellic
			Chloropyrifos	Dursban Nurelle D
3A	Potassium channel modulator	Pyrethroids	Lambda-cyhalothrin	Ampligo Engeo Karate Zeon
			Cypermethrin	Nurelle D
			Teflutrin	Force 1,5 G
4A	Nicotine acetylcholine receptor antagonists	Neonicotinoids	Thiamethoxam	Actara 240 SC Actara 25 WG Engeo Voliam Flexi
5	Allosteric nicotine acetylcholine receptor modulators	Spinosines	Spinosad	Spintor
6	Chlorine channel activators	Avermectins	Avermectine	Vertimec
			Emamectin benzoate	Proclaim
7B	Juvenile insect hormone activator	Phenoxy carb	Phenoxy carb	Lufox
15	Type 0 chitin synthesis inhibitors	Benzoylamides	Lufenuron	Lufox Match
28	Ryanodine receptor modulator	Diamides	Chlorantranilipod	Ampligo Voliam Flexi



RETARDANTS

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CROP ARCHITECT

PRODUCT DATASHEET

Full name
Moddus 250 EC

Active ingredient content
250 g/L trinexapacetyl

Chemical group
Cyclohexandiones

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: II

Packaging
5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Increases stem resistance to lodging due to reduced length of internodes and increased stem thickness
- ✓ Improves structural stem strength
- ✓ Improves development of root system and increases sugar amount in plants
- ✓ Improves moisture absorption during vegetation in dry conditions
- ✓ Enables efficient use of genetic crop potential

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha
WINTER WHEAT	Yield increase	Spraying of crops during vegetation from the end of bushing to start of stem elongation	0,4–0,6*
WINTER BARLEY			
SPRING BARLEY			

COMPATIBILITY

Non-compatible with 2,4-D-based herbicides, dicamba, clopyralid.

TEMPERATURE OF APPLICATION

From +8 °C, however, not more than +25 °C.

SPECIFICS OF THE PRODUCT USE

It is not recommended to use Moddus in stress conditions of plant development (drought, temperature stress, herbicide suppression).

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

200-300 L/ha.



CONSTRUCTS AND CURES!



MAIN BENEFITS OF THE PRODUCT

- ✓ Contains two active substances: the most powerful retardant and highly efficient fungicide
- ✓ Improves root system development
- ✓ Assists sugar accumulation process for better hibernation
- ✓ Ensures simultaneous blooming and ripening
- ✓ Strongly protects rape against phomosis, powdery mildew, cylindrosporium and other basic diseases
- ✓ Has curative and preventive effects

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
SPRING RAPE	Simultaneous blooming, black stem, early blight, downy mildew	Spraying in the period of vegetation	0,3–0,5	1-2 / not established
WINTER RAPE	Simultaneous blooming, inhibition of plant growth and increased resistance of extreme weather conditions, phomosis, early blight, false mildew	In the phase of 5 leaves	0,3–0,5	1-2 / not established

COMPATIBILITY

Compatible with the majority of fungicides, insecticides and fertilizers. However, in each separate case, the products should be tested for compatibility. Not recommended to be applied with Galera Super. Interval between applications should be at least 5 days.

SPECIFICS OF USE AND RESTRICTIONS

Setar inhibits vegetative organ growth without disturbing nutritive agent accumulation process. Due to these, rape has better developed root system and significantly increases accumulation of various plastic substances, which results in better hibernation of crops and increase yield. As a fungicide, Setar has better effect of control phomosis, it also destroys other rape diseases. Active

ingredients of the product have systemic effects: plants absorb them within two hours.

TEMPERATURE OF APPLICATION

Optimal temperature of application is from +8 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

200-400 L/ha.



PRODUCT DATASHEET

Full name
Setar 375 SC

Active ingredient content
250 g/L diphenoxonazole
125 g/L paclobutrazole

Chemical group
Triazoles

Preparative form
Suspension concentrate

Toxicity class
WHO classification: II

Packaging
5 L



About retardants

AMONG GROWTH REGULATORS (RETARDANTS) IN THE MARKET OF UKRAINE, RETARDANTS OF GRAIN CROPS AND RAPE ARE COMMONLY KNOWN. THEY BELONG TO VARIOUS CHEMICAL GROUPS AND ARE APPLIED ON VARIOUS CROPS, HOWEVER, MOST OF THEM HAVE SIMILAR MODE OF ACTION. THE LATTER IS CLOSELY ASSOCIATED WITH GROWTH HORMONES OF PLANTS - GIBBERELLINS. GIBBERELLINS ARE RESPONSIBLE FOR GROWTH AND ELONGATION OF STEM OF PLANTS. RETARDANTS USED ON GRAIN CROPS AFFECT DIFFERENT STAGES OF GIBBERELLIN BIOSYNTHESIS, AND DUE TO THIS, SUCH PROCESS IS DISCONTINUED, AND THE DISTANCE BETWEEN INTERNODES IS REDUCED

Moddus was launched by Syngenta in Ukraine in 2010. This is a completely new product developed by scientists of the Company specifically for growth regulation of modern species of cereal cereals. Unlike the product based on chloromequat-chloride and azoles, active ingredient, of Moddus, trinexipacetyl, discontinues gibberellin synthesis at the earliest stage. Due to this, a crop has significantly thicker stems walls; the distance between internodes is reduced, which causes active development of root system. This feature distinguishes Moddus among other growth regulators of cereals. Plants become stronger, which prevent lodging, and due to increased root system volume, absorption of nutritional substances moisture from the soil is significantly improved. Lodging of crops is caused by two main factors. The former is associated with the length, strength and diameter of stem: the thinner it is and the lesser is its diameter, the quicker the so-called lodging occurs. The second factor is the strength, number (volume) and length of root system. Poorly developed grain crop root system results in root lodging. If Moddus is used,

no such changes occur. On the contrary, its effect is aimed at:

- Reduction and strengthening of stem
- Improvement and increase of root system
- Moisture saving during vegetation in dry conditions
- Improved sugar accumulation (to improve winter resistance and resistance to other stress conditions).

Moddus has been registered for winter wheat and winter and spring barley. The application rate is 0.2-0.6 L/ha. Why is the difference so significant? The thing is that Moddus is recommended to be used not only for single application (usually, at the end of bushing stage of cereals), but also for split application. E.g., on winter wheat, the common application is 0.2 L/ha from the end of bushing phase to the beginning of stem elongation, and the second application is 0.2 L/ha directly prior to emergence of first flag leaf.

Why the second application of this product is required? This is associated with the fact that modern species upon emergence of flag leaf (which is a main photosynthesis element) demonstrate considerable elongation of stem walls, and since the spike is usually massive due to its excessive weight, the plants may 'nid-nod', as they say. Therefore, stem lodging may occur due to stem elongation of plant section located between a flag leaf and the spike itself. In order to prevent this, Syngenta recommends re-treating the crops with Moddus directly before emergence of a flag leaf.

As already stated above, upon Moddus application in the phase of bushing, root system volume considerably increases, and this in its turn opens access to soil moisture and enables plants to absorb nutritional substances. Independent studies carried out in the University of Gessen demonstrate considerable effect of Moddus upon root system length as compared with chloromequat-chloride-based products.

Moddus is also efficient in terms of moisture assimilation in dry conditions: the plants processed with this product actually spend less water to form larger seed mass and thousand seed mass. Thus, the motto of Moddus (Architect of Crop) fully justifies itself, as the product not only is a gibberellin biosynthesis inhibitor, but also has effect on other physiological properties of crops, i.e., it actually builds crops.

It should also be noted that Moddus may be used in autumn, upon bushing of cereals. Syngenta Technical Development Department studies, particularly, in Russia, demonstrated that application of the product starting from autumn has effect upon bushing ratio; therefore, the number of productive stems is significantly increased. Furthermore, upon Moddus application due to thickening of stem walls and increase of root system volume, sugar content in plant tissues is improved and increased, which result in better winter resistance of crops. Industrial studies in Ukraine within the last few years fully confirm these data.





FUNGICIDES

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Alto Super®
STANDARD
OF YOUR WELL-BEING**PRODUCT DATASHEET****Full name**

Alto Super 330 EC

Active ingredient content80 g/L ciproconazole
250 g/L propyconazole**Chemical group**

Triazoles

Preparative form

Emulsion concentrate

Toxicity class

WHO classification: III

Packaging

20 L

**MAIN BENEFITS OF THE PRODUCT**

- ✓ Wide range of controlled diseases
- ✓ Rapid curative and long preventive effect makes it possible to prevent pathogen penetration and to stop its development even after plant damage
- ✓ Contains highly efficient systemic substance quickly penetrating and distributing all over the plant and protecting new shoots

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
WINTER WHEAT*	Brown, stem and yellow rust, powdery mildew, Cercospora spot, helminthosporiosis, Septoria spot of leaves, Septoria spot and fusariosis of spike	Spraying in the period of vegetation	0,4-0,5	2/30
SPRING BARLEY*	Brown rust, powdery mildew, leaf spotting			
SUGAR BEET*	Cercosporosis, powdery mildew		0,5	

COMPATIBILITY

Compatible with most pesticides. In each separate case, products should be tested for compatibility.

SPECIFICS OF APPLICATION

The highest efficiency of Alto Super is achieved if it is used at initial stages of disease development.

TEMPERATURE OF APPLICATION

Use within temperature ranges of +12 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Boom sprayer 150-200 L/ha,
Aerial spraying – not less than 50 L/ha.



EXTRA YIELD,
EXTRA QUALITY,
EXTRA INCOME

 **Amistar® Extra**

MAIN BENEFITS OF THE PRODUCT

- ✓ Wide preventive and quick curative effect against wide range of diseases
- ✓ Ensures prolongation of plant vegetation and increases yield due to:
 - increased efficiency of water use and improved photoassimilation,
 - nitrogen exchange optimization,
 - ethylene formation suppression
- ✓ Perfect photostability
- ✓ Prolonged protection period

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
CORN	Helmyntosporosis and other leaf spotting, rust, fusariosis, bubbly blotching	Spraying in the period of vegetation	0,5–0,75	2/–
WINTER WHEAT	Septoria spot, powdery mildew, brown leaf rust, fusariosis and Septoria spot of spike, early blight			2/30
SPRING BARLEY	Powdery mildew, net, dark-brown, stripe, leaf blotch, Septoria spot			2/–
SUGAR BEET	Cercosporosis, powdery mildew, downy mildew		0,75–1,0	2/30
RAPE*	Black stem, early blight, white and grey rot, downy mildew			1–2/–
SUNFLOWER	Black stem, stem blight, rust, downy mildew, powdery mildew		0,5–0,75	2/–
SOYBEAN	Downy mildew, powdery mildew, fusariosis, rust			
PEAS AND GREEN PEAS	Downy mildew, powdery mildew, rust, fusariosis, ascochyta leaf blight			



PROVEN
AMISTAR
TECHNOLOGY

CROP
ENHANCEMENT™

PRODUCT DATASHEET

Full name
Amistar Extra 280 SC

Active ingredient content
80 g/L ciproconazole
200 g/L azoxystrobin

Chemical group
Triazoles, strobilurines

Preparative form
Suspension concentrate

Toxicity class
WHO classification: II

Packaging
5 L



* Including aerial method.

COMPATIBILITY

The product is compatible with most pesticides used on cereals within the same terms. However, in each separate case, all product mixed should be tested for compatibility.

TEMPERATURE OF APPLICATION

To be used at the temperature not above +25 °C.

SPECIFICS OF APPLICATION

The product breaks life cycle of fungi, mainly, during spore germination, infection and growth of fungi. It is distributed through the leaves acropetally and translaminary. Due to high systemic effect of ciprocinazole, it may be used for prevention and treatment of wide range of pathogens (Septoria spot, powdery mildew, false powdery mildew, rust, blotching, cercosporosis, rhynchosporium, early blight, sclerotinia, grey rot, fusariosis, smut diseases etc.). Amistar Extra causes increase of yield and quality of grain through activation of biological reserves of plants: efficiency of moisture use is increased, plant ageing is suppressed thanks to photosynthesis prolongation (greening effect), and nitrogen exchange is improved.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Boom sprayer: 150-200 L/ha. Aerial spraying: not less than 50 L/ha.

1st
application

OPTIMAL NUMBER OF PRODUCTIVE STEMS

Lack of nitrogen, sulphur and phosphor, adverse lack of secondary root system

Celest[®] Top

Moddus[®]

Amistar[®] Extra

Formation of second grade conical growth.
Formation of blossom cluster and flower.



LACK OF MOISTURE AND
NUTRITIONAL ELEMENTS

CROP DENSITY

Formation of the number of plants and number of productive stems per area unit. Stresses cause death of plants, weak development of root system, and later, productive shoot casting and low general bushiness

BBCH 13 – 1st maximal nitrogen consumption peak

2nd
application

INTENSIVE BLOSSOM CLUSTER AND UPPER INTERNODE GROWTH

Intensive blossom cluster
and upper internode
growth

Amistar[®] Extra **Amistar[®] Trio**

Important use of fungicides, nitrogen fertilizers and microelements. The role of flag leaf is maximal



Lack of nitrogen, pathogen damage and stresses cause non-fullness of spike

EFFICIENCY OF MOISTURE AND
NUTRITIONAL ELEMENT USE

GRAIN FILLING OPTIMIZATION

ACHIEVEMENT OF GENETIC SPECIES
POTENTIAL

PROTECTION OF FORMED YIELD

BBCH 39 – 2nd maximal nitrogen consumption peak

3rd
application

PROTEIN CONTENT, MASS OF THOUSAND SEEDS, GRAIN QUALITY

Amistar[®] Extra

Engeo[®]

Amistar[®] Trio

Maintenance of nutritive conditions and reduction of stress effect to obtain maximal mass of 1000 seeds

Control of leaf and spike diseases and pests (aphid, thunder fly, Sunn pest)



Control of grain quality – application of fungicides and insecticides, especially on seed plantings. Air drought may significantly reduce the mass of thousand seeds. Important period for control of early blight and spike fusariosis, maintenance of grain fullness

GRAIN FILLING OPTIMIZATION

PROTECTION OF FORMED YIELD



CONCENTRATED EFFECT
OF THREE POWERFUL
COMPONENTS



MAIN BENEFITS OF THE PRODUCT

- ✓ Reliably protects plants against main range of diseases with increased control of leaf and spike blotching
- ✓ Balanced preventive and curative effect ensuring prolonged protection period
- ✓ Thanks to unique physiological effects upon plants, ensures additional yield and improves its commercial and seed quality
- ✓ Alleviates adverse effects of stress factors
- ✓ Prolonged protection period

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
WINTER WHEAT	Powdery mildew, rust diseases, Septoria spot of leaf and spike, fusariosis of spike, root rots	Spraying in the period of vegetation	1,0	2/30
WINTER BARLEY	Helminthosporiosis, powdery mildew		1,2	
SPRING BARLEY	Powdery mildew, net, dark-brown, stripe, leaf blotch, rust		1,0	
RICE*	Blast disease, rhizoctonia disease, helminthosporiosis, ramularia, leaf burn, early blight, cercosporosis, sheath rot. Improves absorption of soil water in drought conditions, stimulating root system development	Spraying of crops in the phase of bushing, emergence of flag leaf, 75% blooming for rice	1,2	3/30

COMPATIBILITY

Product is compatible with most pesticides used for cereals within the same terms. In each separate case, products should be tested for compatibility.

SPECIFICS OF APPLICATION

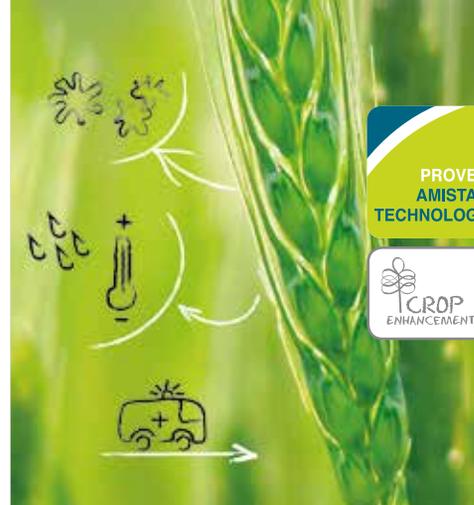
Fungicide has a protective and curative effect. Amistar Trio results in yield increase and improvement of grain quality through activation of plant reserves: increase of moisture use efficiency, suppression of plant ageing due to photosynthesis prolongation (greening effect), improved nitrogen exchange.

TEMPERATURE OF APPLICATION

To be used at the temperature not above +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Boom sprayer: 150-200 L/ha, aerial spraying: at least 50 L/ha.



PROVEN
AMISTAR
TECHNOLOGY



PRODUCT DATASHEET

Full name
Amistar Trio 255 EC

Active ingredient content

30 g/L ciproconazole
125 g/L propiconazole
100 g/L azoxystrobin

Chemical group
Triazoles, strobilurines

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: II

Packaging
5 L



* Including aerial method.

NEW



PRODUCT DATASHEET

Full name
Bontima 250 EC

Active ingredient content
62.5 g/l izopyrozame
187.5 g/l cyprodynil

Chemical group
Carboxymides, anylinopyrimidines

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
5 L



 **Bontima**® *

BRILLIANT TECHNOLOGY
BEHIND THE SCENES

MAIN BENEFITS OF THE PRODUCT

- ✓ Strong protective, treatment and eradication effect against a wide range of controlled barley diseases
- ✓ Prolonged period of protective action (4-6 weeks)
- ✓ Stimulation of photosynthetic activity of plants
- ✓ High efficacy under the conditions of droughty spring

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
SPRING, WINTER BARLEY	Leaf spotting, rhamulariosis, rhynchosporium, mildew, rust	Spraying in the period of vegetation	1,5–2,0	2/30

SPECIFICS OF APPLICATION

Optimal period for Bontima product is the time from bushing phase to beginning of crop blooming (BBCH 27-61). Treatment should be performed as prophylaxis of upon first signs of disease development.

TEMPERATURE OF APPLICATION

Use in the range of +10...25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

100-300 L/ha





Dithane™ M-45

CONTACT FUNGICIDE WITH WIDE
RANGE OF ACTION



PRODUCT DATASHEET

Full name
Dithane M-45

Active ingredient content
800 g/kg mancozeb

Chemical group
Dithiocarbamates

Preparative form
Wettable powder

Toxicity class
WHO classification: III

Packaging
25 kg



MAIN BENEFITS OF THE PRODUCT

- ✓ Specialized preparative form ensures perfect adhesion and prolonged period of protection effect
- ✓ Re-distribution of active substance along leaf surface during slight precipitation
- ✓ No resistance and presence of preventive effect
- ✓ Additional nutrition with magnesium and zinc

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio/Waiting period
WINTER WHEAT	Powdery mildew, Septoria spot, brown rust	Spraying in the period of vegetation	2,0–3,0	2/30
VINEYARDS	Mildew			5/30
APPLE TREE	Scab		1,2–1,6	5/20
POTATO	Phytophthora rot, macrosporiosis			3/20
TOMATO	Phytophthora rot, macrosporiosis			
SUGAR BEETS	Cercosporiosis	2,0–3,0		
RAPE	Early blight	Spraying in the period of vegetation, particularly by aerial method	2,5–3,0	2/30

COMPATIBILITY

Compatible with most pesticides. Not to be mixed with alkaline products and oil-based products.

- Safe for bees and favorable entomofauna
- Zinc salt content in active substance is 2.55 %
- Magnesium salt content in active ingredient is 16-18 %.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

100-200 L/ha for field crops,

200-400 L/ha for open soil vegetable crops,

800-1200 L/ha for fruit crops, depending on tree crown volume.

600-800 L/ha for vineyards.



PROTECT EACH BERRY IN A BUNCH OF GRAPE



MAIN BENEFITS OF THE PRODUCT

- ✓ The best systemic product for protection of grapes against a set of diseases with treatment effect
- ✓ Inherent gas phase (up to 4 cm of drop contact point)
- ✓ Prolonged preventive, treatment and residual activity (up to 30-40 days)
- ✓ Combination of two active ingredients disables resistance development
- ✓ Resistance to rainwash and high temperatures

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
GRAPES	Uncinula necator, black rot, red rot	Spraying in the period of vegetation	0,6–0,7	3/30

METHOD OF APPLICATION

Highly efficient against uncinula necator, black rot and red rot on grapes. Cifluphenamide has systemic effect. It is absorbed through leaves and acropetally mixed in transpiration flow to xylem, where it passes translaminar distribution in plant tissues. Efficient against all strains of diseases resistant to strobilurines, morpholines, triazoles. Curative properties of difenoconazole intensify curative properties of cifluphenamide. This enables efficient protection of plants not only for preventive purposes, but also at high infection background. At the

temperature of +25 °C, it has gas effect upon disease pathogens up to 4 cm from the place of contact. It has no effect upon appearance, fermentation and organoleptic parameters of grapes.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

600-800 L/ha.



PRODUCT DATASHEET

Full name
Dynali 90 DC

Active ingredient content
60 g/L difenoconazole
30 g/L cifluphenamide

Chemical group
Triazoles, amidoximes

Preparative form
Dispersable concentrate

Toxicity class
WHO classification: III

Packaging
5 L



NEW



THE POWER OF DOUBLE ACTION

PRODUCT DATASHEET

Full name
Embrelia 140 SC

Active ingredient content
40 g/L difenoconazole
100 g/L isopyrazam

Chemical group
Triazoles, pyrazol-carboxamides

Preparative form
Suspension concentrate

Toxicity class
WHO classification: III

Packaging
1 L



MAIN BENEFITS OF THE PRODUCT

- ✓ New class of fungicides
- ✓ Inhibits basic diseases of grain and stone fruit crops
- ✓ Treatment, protection and antispore effect
- ✓ Very marked preventive effect
- ✓ Reduces infectious reserve of mildew
- ✓ Used in the phase of blooming to the phase of ripening
- ✓ Safe for bees
- ✓ Ready anti-resistant solution

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
APPLE TREE	Scab, mildew	In the period of vegetation (stage of blooming – beginning of fruit ripening)	1,2–1,5	3/30

COMPATIBILITY

Compatible with most pesticides, however, in each separate case, compatibility should be verified.

SPECIFICS OF APPLICATION

For concomitant protection from scab, mildew, early blight, Phyllosticta leaf blight, frosty pod rot, it should be used in the period of blooming. Interval between treatments is 10-14 days.

TEMPERATURE OF APPLICATION

To be used at the temperature from +10 °C.

COMMENTS

Terms of application, number and interval between treatments are established separately, with regard to weather conditions, pathogen burden intensity, and physiological condition of trees.



SAFE AND EFFICIENT MODE OF ACTION AGAINST DISEASES



MAIN BENEFITS OF THE PRODUCT

- ✓ Efficient against 4 classes of fungi: Ascomycetes, Basidiomycetes, Deuteromycetes, Oomycetes
- ✓ New unique mode of action ensures lack of cross resistance of pathogens
- ✓ Destroys both hypha and spores of fungus
- ✓ Safe for plants, users and environment (waiting period for vegetable is only 5 days)

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period	
GRAPES	Mildew, Uncinula necator, grey rot, black blotching, infectious drying	Spraying before and after blooming	0,8	3/25	
CUCUMBER	Downy mildew, powdery mildew, anthracnose, ascochyta leaf blight	From 5 leaves to beginning of blooming, after blooming	0,6	3/5	
TOMATO	Phytophthora rot, early blight, brown blotching	Spraying in the period of vegetation, prevention or upon emergence of first signs of diseases		2/14	
ONION	Downy mildew, fusariosis withering			1/7	
CABBAGE	Rot agents during storage			0,8-1,2	3/14
HOP YARDS	False powdery mildew			0,8	2/7
POTATO	Phytophthora rot, early blight		0,6		

COMPATIBILITY

Compatible with most fungicides and insecticides. It is recommended to use in a complex protection system with Ridomil Gold, Topaz, Revus. In each separate case, products should be tested for compatibility. Tank mixtures with herbicides are not recommended due to non-concurrence of application terms.

SPECIFICS OF APPLICATION

Fungicide efficiency is significantly increased, if used twice in a row.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Grapes: 600-800 L/ha, vegetables: 200-400 L/ha.
Concentration of working solution: grapes: 0.1 %, vegetables: 0.15-0.25 %.

PRODUCT DATASHEET

Full name
Quadris 250 SC

Active ingredient content
250 g/L azoxystobine

Chemical group
Strobilurines

Preparative form
Suspension concentrate

Toxicity class
WHO classification: III

Packaging
1 L, 5 L





THE HIGHEST LEVEL OF SIMULTANEOUS
PROTECTION AGAINST
EARLY BLIGHT AND PHYTOPHTHORA
TOMATO AND POTATO ROT



PRODUCT DATASHEET

Full name

Quadris Top 325 SC

Active ingredient content

200 g/L azoxystrobin
125 g/L difenoconazole

Chemical group

Strobilurines, triazoles

Preparative form

Suspension concentrate

Toxicity class

WHO classification: III

Packaging

5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Intensified effect against early blight
- ✓ The highest treatment and prolonged protection effect
- ✓ High preventive level of protection against phytophthora rot
- ✓ Reduced effects of adverse stress factors upon plants
- ✓ Optimal anti-resistant solution

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
TOMATO	Early blight, phytophthora rot, Septoria spot	Spraying in the period of vegetation, prevention or upon occurrence of first signs of diseases	0,75–1,0	3/14
POTATO	Early blight, phytophthora rot			

COMPATIBILITY

Compatible with most fungicides and insecticides. It is recommended to be used in complex system of protection with Quadris, Ridomil Gold, Topaz, Revus. Tank mixtures with herbicides are not recommended due to non-concurrence of application terms.

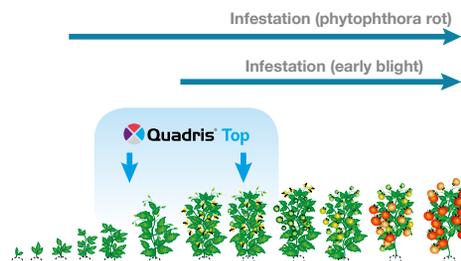
METHOD OF APPLICATION

Application should be avoided in case of damp leaf surface, or if precipitation is anticipated in 2.5-3 hours afterspraying. Drift to other crops should be prevented.

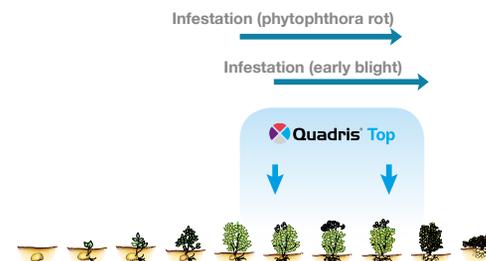
RECOMMENDED CONSUMPTION RATE OF WORKING SOLUTION

350-450 L/ha.

USE ON TOMATOES



USE ON POTATOS



EXPERT IN THE CONTROL OF
SEEDING BLIGHT OF SPIKE



NEW

MAIN BENEFITS OF THE PRODUCT

- ✓ Incredible stop effect and unique treatment effect against seeding blight of spike
- ✓ Efficient against a set of pathogens of spike diseases, particularly, against glume mold, septoriosis etc.
- ✓ Reduces the risk of accumulation of mycotoxines in grain, increases grain quality
- ✓ Has preventive and curing effect
- ✓ Formulation was developed specifically for application on spike

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
WINTER WHEAT	Fusariosis of spike, septoriosis, tan spot	Spraying in the period of vegetation	0,5–1,0	2/30
SPRING, WINTER BARLEY	Fusariosis, net blotch, phytophthora rot, spike eraly blight, rust	Spraying in the period of vegetation		

COMPATIBILITY

Compatible with most pesticides used in cereals in the same terms. However, in each separate case, mixed agents should be tested for compatibility.

SPECIFICS OF APPLICATION

The product is recommended as maximally efficient for protection of leaf apparatus and generative organs. It has perfect efficacy against spike diseases, especially fusariosis. Optimal treatment term for spike protection is the beginning of blooming.

TEMPERATURE OF APPLICATION

From +10 °C to +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Boom sprayer – 100-400 L/ha.

PRODUCT DATASHEET

Full name
Magnello 350 EC

Active ingredient content
100 g/L difenoconazole
250 g/L tebuconazol

Chemical group
Triazoles

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
5 L



NEW



PRODUCT DATASHEET

Full name
Pergado R 270 WG

Active ingredient content
25 g/kg mandypropanide
245 g/kg copper oxychloride

Chemical group
Mandelamides,
non-organic compounds

Preparative form
Water-dispersion granules

Toxicity class
WHO classification: III

Packaging
6 kg



Pergado R[®]

NEW COPPER-CONTAINING
FUNGICIDE

MAIN BENEFITS OF THE PRODUCT

- ✓ Creates protection screen under berry and leaf cuticule ensuring excellent protection against diseases
- ✓ Efficiency independant of weather conditions
- ✓ Prevents infestation with bacterial diseases
- ✓ Has no effect upon fermentation and taste qualities of wine
- ✓ Protection, treatment and anti-sporulant effect

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio/Waiting period
VINEYARDS	Mildew, anthracnose	Spraying	4,0–5,0	3/30
ONION	Downy mildew			3/14

SPECIFICS OF APPLICATION

Grapes. Pergado R, thanks to formation of protection screen under cuticles, ensures the best protection of blossom clusters and berries as compared with all other fungicides. Therefore, optimal terms of use of the product are the phases of protrusion and fissuring of blossom clusters (concomitant protection against anthracnose, red rots, black rots) and rice berry, i.e., berry closure into racemations. The highest efficiency is achieved, if Pergado R is used in the period of rice berry, when berries are joining into racemations after application of Rldomil Gold MC.

Onion. Pergado R forms protection screen under leaf cuticles that grows together with a leaf, and thus prevents infestation with downy mildew regardless of weather conditions. The highest efficiency is achieved, if Pergado R is applied after Rldomil Gold MC. The product contains copper; therefore, it is reasonable to be used for prevention of bacteriosis: in second half of vegetation or after hail, rainfall, dust storms, in case of insect damage.

Triple action on pathogen. Protective effect: maximal efficiency is achieved in prevention use (before crop

infestation). Treatment effect: use in 28-48 hours upon infestation. Antisporulant effect: processing before spore formation.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

600-800 L/ha for vineyards,

200-400 L/ha for vegetable crops.



A RECOGNIZED EFFICIENCY STANDARD
AGAINST PHYTOPHTHORA ROT



MAIN BENEFITS OF THE PRODUCT

- ✓ Demonstrates stably high efficiency in any weather conditions
- ✓ Quick penetration and high translaminar activity ensure reliable protection of upper and lower leaf surface
- ✓ Improved resistance to rainwash
- ✓ Short waiting period (potato – 7 days, tomato – 10 days)
- ✓ Improved potato bulb preservation in prolonged storage

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
POTATO	Phytophthora rot	Spraying in the period of vegetation, prevention or upon occurrence of first signs of diseases	0,5–0,6	4/7
TOMATO	Phytophthora rot			4/10
HOP YARDS	False powdery mildew		0,4–1,6	2/20

COMPATIBILITY

Compatible with most fungicides and insecticides. But in each specific case product compatibility should be checked.

SPECIFICS OF APPLICATION

In integrated protection systems, it is recommended to be applied upon processing with systemic fungicide Ridomil Gold MC. Ground spraying in the period of vegetation in hop yards:

- At plant height of 2-4 m and working solution consumption of 500 L/ha: 0.4 L/ha of product
- At plant height of 6-7 m and working solution consumption of 1000-2000 L/ha: 1.6 L/ha of product.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

500-2000 L/ha for hop yards,
350-450 L/ha for vegetable crops.



PRODUCT DATASHEET

Full name

Revus 250 SC

Active ingredient content

250 g/L mandypropamide

Chemical group

Mandelamides

Preparative form

Suspension concentrate

Toxicity class

WHO classification: III

Packaging

1 L, 5 L





TOP PROTECTION – HIGH YIELD



PRODUCT DATASHEET

Full name
Revus Top 500 EC

Active ingredient content
250 g/L mandypropamide
250 g/L diphenconazole

Chemical group
Mandelamides, triazoles

Preparative form
Suspension concentrate

Toxicity class
WHO classification: -

Packaging
1 L, 5 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Combination of two active ingredients guarantees the highest efficiency against early blight and phytophthora rot
- ✓ High resistance to washing – protects yield even in conditions that favor disease development
- ✓ Excellent preventive and treatment effect due to high translaminar and systemic activity

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
TOMATO	Early blight, phytophthora rot	Spraying in the period of vegetation	0,6	4/14
POTATO	Early blight, phytophthora rot		0,5–0,6	2/4

SPECIFICS OF APPLICATION

In integrated protection systems, it is recommended to be used at the beginning of potato blooming and in mass blooming of tomato. Compatible with most fungicides and insecticides. However, in each separate case, products should be tested for compatibility.

SPECIFICS OF APPLICATION ON POTATOES

Mandypropamide has a prophylactic and treatment effect in control of phytophthorosis. Due to translaminar activity, it is fixed in waxy deposit on leaves ensuring maximal protection against phytophthorosis. It terminates intergrowth of zoospores and sporogenes, inhibits haustorium formation, mycelium growth and spore carrying.

Diphenconazole is rapidly absorbed through the entire plant and destroys the pathogen of early blight thanks to its systemic effect, ensuring protective and treatment action. It terminates mycelium growth.

RECOMMENDATIONS FOR USE ON POTATO

Revus Top has a treatment and preventive effect, therefore, is recommended as prophylaxis or in first symptoms of disease, in order to avoid disease distribution and contamination of the entire yield.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

350-450 L/ha for vegetable crops

200-300 L/ha for potato.



THE BASIS OF FUNGICIDE
PROTECTION OF VEGETABLE
CROPS



MAIN BENEFITS OF THE PRODUCT

- ✓ Most biologically efficient combination of systemic and contact fungicides: reliable protection against diseases even in unfavourable weather conditions
- ✓ Preventive and treatment effect
- ✓ Protection of new shoots and bulbs
- ✓ Contact and systemic effect

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio/Waiting period
GRAPES	Mildew, black blotching	Spraying in the period of vegetation	2,5	3/25
POTATO AND TOMATO	Phytophthora rot, early blight		2,5	3/14
CUCUMBERS	Downy mildew		2,5	3/10
HOP	False powdery mildew		2,5	3/20
WINTER RAPE	Downy mildew, early blight		2,5	3/30
TOBACCO	Downy mildew		2,5	3/14
ONION (EXCEPT FOR BUNCHING)	False powdery mildew		2,5	3/30

COMPATIBILITY

Compatible with most fungicides and insecticides, however, in each separate case, the products should be tested for compatibility.

TERMS OF APPLICATION

It is recommended to be used in a complex protection system with Quadris, Topaz, Revus, Score fungicides.

In risk if intense disease development occurs, shorter processing intervals should be maintained (10 days).

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Grapes, hop: 600-800 L/ha.

Potato, vegetables: 300-450 L/ha.

Field crops: 150-200 L/ha.



PRODUCT DATASHEET

Full name

Rydomil Gold MZ 68 WG

Active ingredient content

640 g/kg mancozeb
40 g/kg methalaxyl-M

Chemical group

Phenylamides/dithiocarbamates

Preparative form

Water-dispersion granules

Toxicity class

WHO classification: III

Packaging

1 kg, 5 kg





EXCELLENT PROTECTION
AGAINST GREY ROT



PRODUCT DATASHEET

Full name

Switch 62,5 WG

Active ingredient content

375 g/L ciprodinil
250 g/L fludioxonil

Chemical group

Aniline-pyrimidines, phenylpyrroles

Preparative form

Water-dispersion granules

Toxicity class

WHO classification: III

Packaging

1 kg



MAIN BENEFITS OF THE PRODUCT

- ✓ Dual-component fungicide of contact and penetration effect
- ✓ Controls main disease pathogens causing fruit and berry rotting during storage (fruit rot, grey rot, other diseases)
- ✓ Permitted for use even in the phase of fruit ripening
- ✓ Short waiting period
- ✓ Improves storage properties of fruits

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio/ Waiting period
PEAR TREE, APPLE TREE, PEACH, APRICOT, PLUM, SWEET CHERRY	Fruit diseases during their storage	Spraying in the period of vegetation prior to harvesting	0,75–1,0	1/15
		Spraying in the period of vegetation		2/20
APRICOT, PEACH, PLUM, SWEET CHERRY, PEAR TREE	Monilia, blue moulds fungi, rot, fusariosis rot, early blight, grey rot	Spraying in the period of vegetation: before blooming	0,75	2/7
		after mass blooming	0,75–1,0	
WILD STRAWBERRY	Grey rot of berries, brown and white leaf blotch, powdery mildew	Spraying in the period of vegetation: before blooming	0,75	2/7
		after mass blooming	0,75–1,0	
VINEYARDS	Grey rot	Spraying in the period of vegetation	0,75–1,0	1–2/7
OPEN FIELD AND PROTECTED GROUND TOMATO AND CUCUMBERS	Diseases during storage (early blight, anthracnose, fusariosis, soft and grey rot)			2/10
OPEN FIELD AND PROTECTED GROUND ROSES	Fusariosis, early blight and grey rot			2/15

TERMS OF APPLICATION

Grapes: beginning of berry closure into racemation, start of fruit ripening, before harvesting.

Wild strawberry: period of blooming, after mass blooming, before harvesting.

Apple tree, pear tree, peach: before harvesting.

Tomato, cucumbers, open field and protected groundroses: in the period of vegetation.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Fruit and berry crops: 800–1200 L/ha.

Vegetable crops: 350–400 L/ha.

600–800 L/ha for vineyards.



TIME-PROVEN PROTECTION
AGAINST SCAB



MAIN BENEFITS OF THE PRODUCT

- ✓ The best systemic product for protection of apple trees, peach, tomato, potato against a set of diseases with treatment effect
- ✓ High preventive and treatment effect
- ✓ Stop-effect due to systemic effect
- ✓ Quick penetration into plant tissues (for 2 hours), non-washable by rain after processing
- ✓ Improves product quality, increases fruit formation

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
APPLE TREE	Scab, powdery mildew	Spraying in the period of vegetation	0,15–0,2	4/20
PEAR TREE				4/30
PEACH	Curly leaves, scab, powdery mildew	Spraying in the period of vegetation upon occurrence of first signs of disease	0,2	2/30
TOMATO	Early blight	Spraying in the period of vegetation	0,5–0,6	3/14
POTATO				2/14

METHOD OF APPLICATION

Highly efficient against powdery mildew in moderate damage. In case of significant damage, Score should be mixed with Topas. Interval between applications should be 10-12 days. The number of applications and intervals depend on disease development prognosis and weather conditions favourable for pathogen development.

In order to prevent resistance development, upon dual processing with Score, subsequent applications should be performed with products of other chemical groups.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Fruit and berry crops: 800-1200 L/ha.

Vegetable crops: 350-400 L/ha.

PRODUCT DATASHEET

Full name
Score 250 EC

Active ingredient content
250 g/L diphenconazole

Chemical group
Triazoles

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
1 L





PRODUCT DATASHEET

Full name
Tilt 250 EC

Active ingredient content
250 g/L propiconazole

Chemical group
Triazoles

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
5 L, 200 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Long-term experience of use as basic fungicide on wheat, barley and rice
- ✓ The most optimal efficient fungicide against barley blotching
- ✓ High systematic and prolonged effect

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/ Waiting period
WINTER RAPE	Inhibition of leaf growth and increase of resistance to extreme weather conditions	Spraying in the phase 5 leaves	0,5	2/30
WHEAT	Powdery mildew, rust (species), Septoria spot of leaf and spike, early blight, fusariosis of spike	Spraying in the period of vegetation		
BARLEY	Net, dark-brown, stripe, leaf blotch, powdery mildew, rust			
RICE	Blast disease			

COMPATIBILITY

The product is compatible in tank mixtures with pesticides with the same terms of use. However, in each separate case, the products should be tested for compatibility.

Rape. Autumn processing at the rate of 0.5 L/ha is performed in the phase of 5 leaves of crop (at the rate of 0.1 L/ha of product per 1 leaf). Also, early-spring processing is possible in order to improve development of root system and to prevent diseases.

SPECIFICS OF APPLICATION

Cereals. Product has maximal efficiency in prevention processing or upon occurrence of first signs of diseases.

In the system of fungicide protection, Tilt most reasonably should be used for first processing: winter wheat – bushing and stem elongation, spring barley – during bushing. Winter barley is usually infected on early stages of development, therefore, it is recommended to perform the first processing back in autumn.

TEMPERATURE OF APPLICATION

To be used at the temperature not more than +25 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha.



VICTORY OVER DISEASES AT LOW TEMPERATURES



MAIN BENEFITS OF THE PRODUCT

- ✓ Incredible stop effect and unique treatment effect against powdery mildew
- ✓ Efficient even at low temperatures
- ✓ Stops development of a set of leaf disease pathogens of wheat and barley at initial stages
- ✓ Quick effect and prolonged protective action (up to three weeks)
- ✓ Flexible in use (maximal effect in unstable weather)

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
WINTER AND SPRING WHEAT	Powdery mildew, Septoria spot, tan spot, rust (species), fusariosis, rhizoctonia disease	Spraying in the period of vegetation	0,8–1,0	2/–
WINTER AND SPRING BARLEY	Powdery mildew, rust, helminthosporiosis, tan spot, rhynchosporium, ramularia, Septoria spot and other blotching types, fusariosis			

COMPATIBILITY

The product is compatible in tank mixtures with pesticides with the same terms of use. However, in each separate case, the products should be tested for compatibility.

SPECIFICS OF APPLICATION

Efficient when used in unstable weather conditions in early spring and in autumn. The product is maximally efficient in prophylactic treatment or in first signs of disease development. In planning of fungicidal protection, it is recommended to be used for the first treatment in spring or in autumn. Use of Tilt Turbo in autumn enables significant improvement of phytosanitary condition of winter cereals, specifically, in case of leaf spotting development risk.

TEMPERATURE OF APPLICATION

May be used at the temperature above +6 °C.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

150-200 L/ha.



NEW

PRODUCT DATASHEET

Full name
Tilt Turbo 575 EC

Active ingredient content
450 g/L phenpropidin
125 g/L propiconazole

Chemical group
Morpholines, triazoles

Preparative form
Emulsion concentrate

Toxicity class
WHO classification: III

Packaging
5 L




Thiovit Jet®
**PERFECT SULPHUR
PREPARATIVE FORM**

PRODUCT DATASHEET
Full name

Thiovit Jet 80 WG

Active ingredient content

800 g/kg sulphur

Chemical group

Non-organic compounds

Preparative form

Water-dispersion granules

Toxicity class

WHO classification: III

Packaging

20 kg


MAIN BENEFITS OF THE PRODUCT

- ✓ Special preparation form ensures improvement of adhesion to treated surface
- ✓ High activity of gas phase
- ✓ Optimal size of active substance particles that cause no phytotoxicity
- ✓ In maximum norms prevents mite development

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio/Waiting period
VINEYARDS*	Uncinula necator, red spider	Spraying in the period of vegetation	5,0–8,0	4/30
APPLE TREE AND PEAR TREE*	Powdery mildew, fruit mite		8,0	
RAPE	Powdery mildew, early blight		6,0–8,0	2/30
CUCUMBERS	Powdery mildew, common red spider		3,0–5,0	3/14
CABBAGE (PROTECTED GROUND)	Cluroot disease of cabbage	Spraying of soil in greenhouses before seedling planting	100	1/–

SPECIFICS OF APPLICATION

Absence of sulphur particles sized less than 1 micron in preparative form minimizes the possibility of phytotoxicity.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Fruit and berry crops: 800-1200 L/ha, depending on crown volume.

Field crops: 150-200 L/ha.

Vegetable crop: 300-400 L/ha.

600-800 L/ha for vineyards.

ATTENTION!

Processing should be stopped before fruits start obtaining characteristic colouring!

Do not use Thiovit Jet earlier than in 14 days upon application of oil-based products!

Do not perform processing on wet leaves!

When mixing with phospho-organic products, their compatibility should be obligatory verified.



QUICK PROTECTION AGAINST POWDERY MILDEW



MAIN BENEFITS OF THE PRODUCT

- ✓ Prolonged effect
- ✓ Systemic effect ensures protection of all parts of plants: quick absorption reduces rainwash risk
- ✓ Protection and treatment effect
- ✓ Perfect partner in mixtures for complex protection

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
CUCUMBERS (OPEN SOIL)	Powdery mildew	Spraying in the period of vegetation	0,125–0,15	2/20
CUCUMBERS (COVERED SOIL)	Powdery mildew		0,25	3/3
VINEYARDS	Uncinula necator		0,15–0,25	4/20
BLACKBERRY (PLANT BEDS, MOTHER PLANTATIONS)	Uncinula necator		0,3–0,4	4/-
BLACKBERRY	American powdery mildew	Spraying in the period of vegetation 0,025–0,05 %	0,2–0,4	4/20
CHERRY (MOTHER PLANTATIONS)	Cocomycosis	Spraying in the period of vegetation 0,05 %	0,3–0,4	2/-
PEACH	Powdery mildew, fruit rot	Spraying in the period of vegetation	0,4	2/20
APPLE TREE	Powdery mildew		0,3–0,4	4/20
WILD STRAWBERRY		Spraying in the period of vegetation 0,05 %	0,3–0,5	2/-
RASPBERRY (PLANTING BEDS)	Purple blotch, grey rot	Spraying in the period of vegetation 0,05–0,1 %	0,3–0,6	2/-

SPECIFIC PROPERTIES OF THE PRODUCT

Due to systemic effect, active ingredient of Topas is distributed along a plant acropetally, translaminary and basipetally. Thanks to quick absorption by plants (30 minutes) and systemic effect, Topas has an expressed stop effect and treatment properties, even if infestation occurred in three days to product application. Highly efficient against black, aspergillar and black mold-like rot of grape berries (according to the data of the National Institute of Grape and Vine "Magarach").

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Fruit and berry crops: 800-1200 L/ha, depending on crown volume. Vegetable crops: 300-400 L/ha. 600-800 L/ha for vineyards.



PRODUCT DATASHEET

Full name

Topas 100 EC

Active ingredient content

100 g/L penconazole

Chemical group

Triazoles

Preparative form

Emulsion concentrate

Toxicity class

WHO classification: III

Packaging

1 L, 5 L





DETERMINATIVE FACTOR IN CONTROL OF FRUIT DISEASES



PRODUCT DATASHEET

Full name
Chorus 75 WG

Active ingredient content
750 g/kg ciprodinil

Chemical group
Anilinpyrimidines

Preparative form
Water-dispersion granules

Toxicity class
WHO classification: III

Packaging
1 kg



MAIN BENEFITS OF THE PRODUCT

- ✓ New class of fungicides
- ✓ Highly efficient protection with high and differentiated infection burden and at low temperatures
- ✓ Protection and eradication effect
- ✓ Acts against hibernating stages of disease pathogens
- ✓ Non-washable by rain after processing
- ✓ Improves product quality, prolongs storage

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio/ Waiting period
APPLE TREE	Scab, powdery mildew Monilia	Spraying in the period of vegetation	0,2 0,25	4/30
PEAR TREE	Scab Monilia		0,2 0,25–0,3	
PLUM	Monilia, shot-hole disease		0,2–0,3	
PEACH	Monilia, curled leaves, shot-hole disease			
APRICOT	Monilia, shot-hole disease			
CHERRY SWEET CHERRY	Monilia, cocomycosis, shot-hole disease			0,25–0,3
VINEYARDS	Mildew, Uncinula necator, grey rot		0,5–0,7	3/7
WILD STRAWBERRY	Powdery mildew, white and brown blotch, grey rot	Spraying in the period of vegetation before blooming	0,7	1/7
		Spraying in the period of vegetation after blooming	0,4	
SUNFLOWER	Grey rot	Spraying in the period of vegetation	0,75	1/–
LAWN GRASSES	Leaf blotch		0,6	2/–

OPTIMAL APPLICATION PERIOD

From the phase of green cone to blooming at the temperature of +5-10 °C. Causes no effect upon pollinating insects, soil organisms and useful entomo- and acarifauna. Early processing is recommended for preventive purposes. In mixtures with other products, obligatory compatibility testing is required.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

Fruit and berry crops: 800-1200 L/ha, depending on crown volume. Field crops: 200-250 L/ha. 600-800 L/ha for vineyards.



CONTACT FUNGICIDE WITH A
UNIQUE MODE OF ACTION



MAIN BENEFITS OF THE PRODUCT

- ✓ Stops spore and zoospore germination, occurrence of appressoriums, fungus hypha growth, and spore formation
- ✓ Blocks mobility of spores on soil surface
- ✓ Wide range of activity: protection of plants and bulbs in storage
- ✓ Excellent element of anti-resistant solutions
- ✓ Prolonged effect and reliable protection against diseases even in unfavourable weather conditions

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, L/ha	Application ratio/Waiting period
ONION	Downy mildew	Spraying in the period of vegetation	0,4	3/10
TOMATO	Early blight, phytophthora rot		0,3–0,4	4/10
POTATO	Early blight, phytophthora rot			4/7

COMPATIBILITY

Compatible with most fungicides and insecticides. However, in each separate case, the products should be tested for compatibility. May be used with desiccant REGLONE Super in desiccation of potato and onion.

SPECIFICS OF APPLICATION

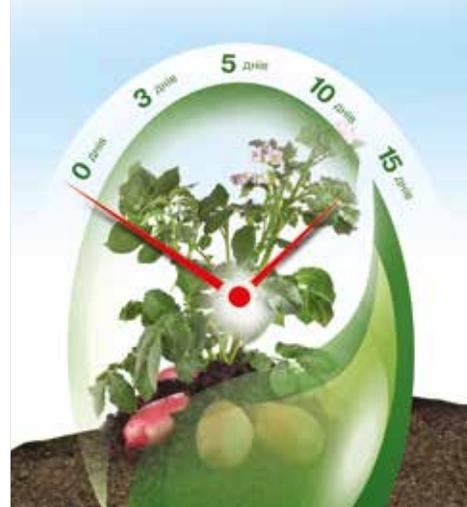
In intensive crop growth, maximal product application rates should be used for protection of young leaves and shoots.

Potato: first processing should be performed at plant height of 15-20 cm, the second – before herbage shrinkage beginning.

Tomato, onion: spraying is performed for preventive purposes in weather conditions favourable for development and dissemination of diseases.

RECOMMENDED APPLICATION RATE OF WORKING SOLUTION

300-400 L/ha.



PRODUCT DATASHEET

Full name
Shirlan 500 SC

Active ingredient content
500 g/L fluazinam

Chemical group
Dinitroanilines

Preparative form
Suspension concentrate

Toxicity class
WHO classification: III

Packaging
1 L, 5 L





UNIQUE VACCINE
FOR HEALTHY CROP



PRODUCT DATASHEET

Full name
Uniform 446 SE

Active ingredient content
322 g/L azoxystrobin
124 g/L methalaxyl-M

Chemical group
Strobilurines, phenylamides

Preparative form
Suspension emulsion

Toxicity class
WHO classification: II

Packaging
1 L



MAIN BENEFITS OF THE PRODUCT

- ✓ Simple solution of problems with root diseases
- ✓ Inhibition of a wide range of pathogens
- ✓ Protecting the root system protects the whole plant Has a systemic and treatment mode of action
- ✓ Increases plant stress resistance in dry conditions

USE OF THE PRODUCT

Crop	Coverage	Application phase	Application rate, kg/ha	Application ratio/Waiting period
OPEN GROUND TOMATO	A set of root diseases (fusariosis, pithium, rhizoctonia disease etc.)	In the period of vegetation with irrigation water through the systems of drip irrigation	0,4–0,9	2/7
PROTECTED GROUND TOMATO			10-15 mL per 1 m ³ of water	2/5
OPEN FIELD CUCUMBERS			0,4–0,9	2/7
PROTECTED GROUND CUCUMBERS			10-15 mL per 1 m ³ of water	2/5
ONION*			0,5–0,9	2/7
POTATO	Rhizoctonia disease, silver scab, anthracnose, phytophthora rot	Spraying of the furrow bottom during planting	1,5	1/60



COMPATIBILITY

Compatible with most insecticides, plant growth regulators. In each separate case, compatibility tests should be performed.

SPECIFICS OF APPLICATION

Timely supply of working solution in watering cycle ensures correct positioning of fungicide in a root zone. In light soils, it should be applied within the third quarter, and in hard soils, within the second third of the watering cycle.

GROUND APPLICATION OF FUNGICIDES

Fungicides applied into the soil should be well-soluble in water, poorly absorbed by soil and have medium disintegration rate.

Active substances	Solubility in water, mg/L	Soil absorption, mL/g	Half-life period (DT50), days
SUBSTANCES SUITABLE FOR SOIL APPLICATION	>1	<1000	20-60
AZOXYSTROBINE (UNIFORM)	6	500	68
FLUDIOXONYL (MAXIM)	1,8	1600	18
PENCICURON	0,3	>1000	37,7

RECOMMENDATIONS FOR SOIL APPLICATION OF UNIFORM

- Spraying of the furrow bottom during bulb planting using two nozzles fixed on potato planter
- The first nozzle sprays the of the furrow bottom before falling of a bulb
- The second nozzle sprays the walls of the furrow following bulb falling in its furrow
- Spray nozzles should be adjusted so that the width of the bottom furrow machined surface was 15-20 cm



Correct positioning of the nozzle 45-55 degrees from the vertical



The intersection of the axes of the spray - is the optimal location

ADVANTAGES OF USAGE ON POTATO

- Excellent systemic effect enables full protection not only for root system, but also for base part of a plant and protects from planting till blooming.
- The widest range of inhibited disease pathogens disinfects the soil, root and stems
- The most efficient active ingredient for soil application during planting
- Ready anti-resistant solution thanks to two active ingredients from different classes
- Quality harvest free from diseases
- Saves maximal number of plants per hectare.

RECOMMENDED WORKING SOLUTION CONSUMPTION NORM

On potato: 80-200 L/ha.

About fungicides

FUNGICIDES ARE SUBSTANCES USED FOR PLANT PROTECTION AGAINST FUNGAL DISEASE PATHOGENS. THIS GROUP ALSO INCLUDES CHEMICAL SUBSTANCES USED FOR PROTECTION OF PLANTS AGAINST BACTERIAL DISEASES (BACTERICIDES). THE POSSIBILITY TO CURE PLANTS OF FUNGAL DISEASES THROUGH PROCESSING OF LEAVES OR ROOT SYSTEM WITH PRODUCTS HAS BEEN ESTABLISHED BACK IN THE XIX CENTURY, WHEN THE ORIGIN OF FUNGAL DISEASES WAS DESCRIBED FOR THE FIRST TIME, AND WHEN FIRST NON-ORGANIC PROTECTIVE FUNGICIDES HAD BEEN CREATED, E.G. BORDEAUX MIXTURE ETC.

The steps in this direction had certain success: potato scab was suppressed by mercuric chloride, grapes anthracnose – by copper sulphate, pear burns – by zinc chloride. After emergence of protective fungicides, such as dithiocarbamates and captan, in 40-s, a great number of organic compounds were synthesized and tested in order to discover their treatment properties. In most cases, they were poorly efficient or, while destroying disease pathogens, adversely affected plant development. Constant need in fungicides encouraged development of modern systemic compounds, which are more efficient and safer for humans and animals and less harmful for environment.

Fungicides for processing of plants are distinguished into protective and curative (exterminative). Protective fungicides are used for prevention (preventively or prior to infestation). Curative fungicides are substances, processing with which following disease pathogen penetration suppresses development of pathogen in a plant. Fungicides are differentiated also by their systemic properties.

Systemic fungicides are substances able to move along vascular system of plants and protect new shoots emerging after processing. However, contact fungicides protect only those parts of plants that they come into contact with. Systemic fungicides in many cases have both protective and curative effect, and contact ones have only protective effect. Plants quickly absorb systemic fungicides; therefore, their efficiency depends on precipitation to a lesser extent than in contact ones. Diseases of plants may be caused by a great number of pathogens. Thus, in order to solve all range of plant protection issues against diseases (particularly, in order to reduce the possibility of resistance development), a wider range of fungicides and their combinations are required that are used both successively and consistently.

Today, Syngenta offers new generations of fungicides of different chemical classes:

- Triazoles (Tilt, Alto Super, Score, Topas)
- Morpholines (Tilt Turbo)
- Phenylamides (Ridomil Gold)
- Anilinopirimidines (Chorus)

- Strobilurines (Quadris, Amistar Extra, Amistar Trio)
- Mandelamides (Revus)
- Dinitroanilines (Shirlan)

Special attention should be paid to strobilurines, a novel fungicide generation. They have been developed in order to increase the efficiency of plant protection against pathogens of various classes (Oomycetes, Basidiomycetes, Deuteromycetes, Ascomycetes), i.e., against most diseases (powdery mildew, false mildew, phytophthora rot, rhynchosporium, rust, grey rot, blotching, other diseases). The specific property of this class is its effect upon plants.

Morpholine group should also be specifically described. Mechanisms of their action belongs to sterole synthesis inhibitors that provide quick stop effect upon leaf disease pathogens (especially, powdery and dew) even under the conditions of unstable temperature mode. Morpholines start acting at the temperature above +6 °C, which makes it possible to stop disease development as early as possible.



MODE OF ACTION OF MAIN FUNGICIDE CLASSES

FRAC code	Mode of action	Chemical group	Active ingredient	Product	Resistance risk	Mode of action
3	Sterole biosynthesis in membrane (C14-dimethylase)	Triazoles	Ciproconazole	Alto Super Amistar Extra Amistar Trio Magnello	Medium	Contact-systemic
			Difeconazole	Dynali Embrelia Quadris Top Revus Top Setar Score		
			Propiconazole	Tilt Tilt Turbo		
			Penconazole	Topas		
5	Sterole biosynthesis in membrane (8 and 7 isomerase and 14 reductase)	Morpholines	Fenpropidin	Tilt Turbo	Low-medium	Systemic
9	Methionine biosynthesis	Anilinopirimidines	Cyprodinil	Bontima Switch Chorus	Medium	Systemic
11	Mitochondrial breathing of pathogen cells	Strobilurines	Azoxystrobin	Amistar Extra Amistar Trio Quadris Quadris Top Uniform	High	Trnslaminar
M1	Multi-functional effect	Non-organic compounds	Sulphur	Thiovit Jet	Low	Contact
M3	Multi-functional effect	Dithiocarbamates	Mancozeb	Dithane M-45 Ridomil Gold MZ	Low	Contact
-	Mytosis disturbance	Dinitroanalines	Fluazinam	Shirlan	-	Contact
11	Sterole biosynthesis in membrane	Mandelamides	Mandipropamide	Pergado R Revus Revus Top	Low-medium	Systemic



AGROGUIDE

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AgroGuide

Syngenta has developed the program of support for its customers called AgroGuide. Science and modern technologies are the area to rely upon in a difficult agrarian business.

Today, Syngenta have four diagnostic centers: in Kharkov, Bila Tserkva, Odesa and Khmelnytsky. Diagnostic center is offered for the Company's clients a set of technical services and recommendations of technical experts ensuring in that way maximal advantages of using Syngenta's products.

Diagnostic centers possess modern high-quality equipment, where the employees of the laboratory perform phytosanitary expert examination of seed and plant material, performing bio assay carry over expertise, identification of plant pathogens and micotoxins with the methods of molecular biology (PCR diagnostics), identification of sunflower hybrids using DNA markers.

From 2015, Syngenta expands its range of technical services with new ultra-modern diagnostic method, i.e., enzyme-linked immunosorbent assay (ELISA) of pathogens of seed and plant material and plant pathogens real-time PCR diagnostics. Furthermore, Syngenta plans to launch the method of corn hybrid genetic identification using DNA markers as a service for the fake seeds estimation program in the territory of Ukraine.

Based on technical expert consulting, customers may identify the problem and solve it using Syngenta's integrated solutions. Product application quality control service will help the customers to avoid potential technological mistakes, to use the product expertly, and to avoid additional expenses.

Syngenta pays great attention to quality of CPP use. In this aspect, the company offers its customers free product application quality control service: analysis of seed treatment quality, control of product application quality in spraying, selection of sprayers for various types of CPPs and opportunity to obtain their free of charge within the framework of technical support of specific products.

AgroGuide is your guide in obtainment of high-quality generous yield and high income.

Services in the eyes of agricultural producers

74* %

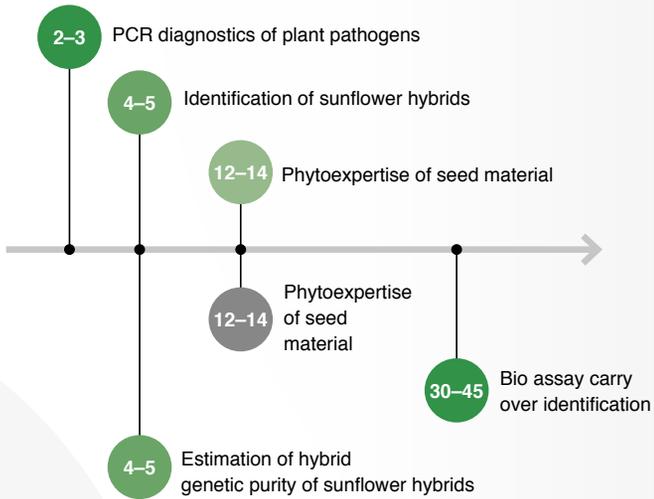
of farmers think that services are a very useful aspect in the market

94* %

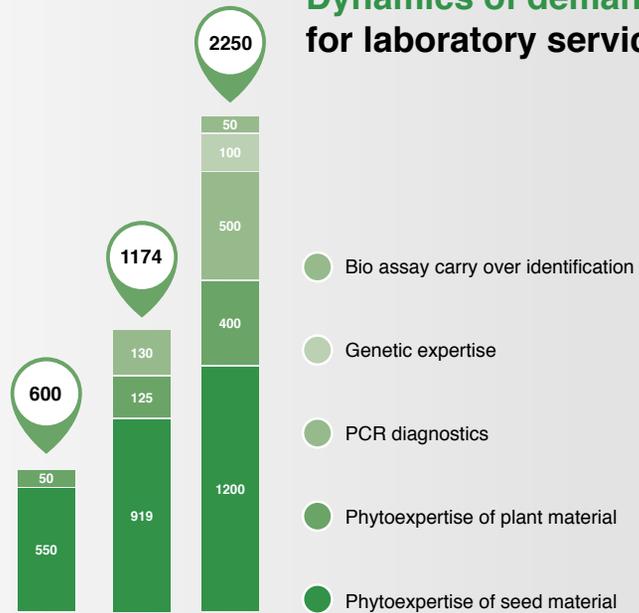
of customers, which used the services in 2013, comply with recommendations of Syngenta

* Among interviewed distributors, based on GfK Ukraine studies.

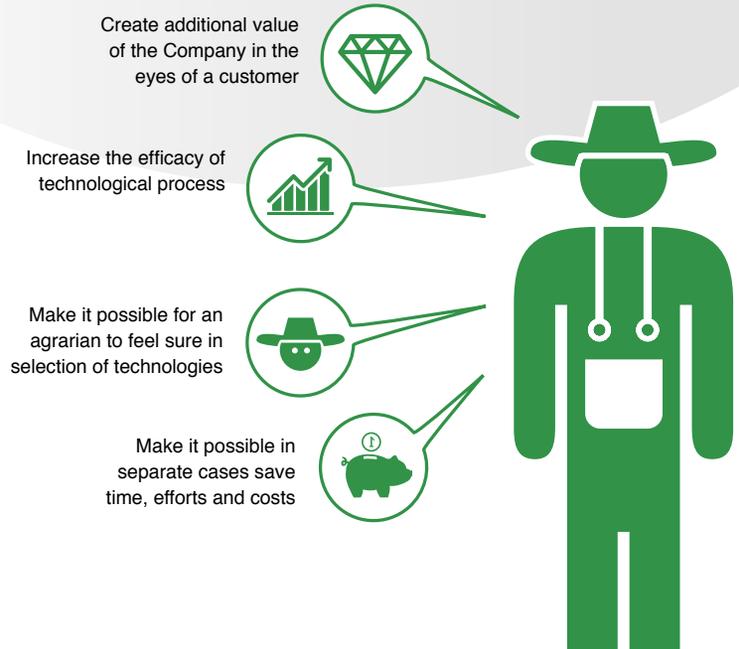
Duration of expert examination



Dynamics of demand for laboratory services



ACCORDING TO CUSTOMERS, THE SERVICES



Phytoexpertise of seed material

Formation of actual picture of phytopathologic condition of seeds and scientifically substantiated product selection:

- microbiological/bacteriological analysis of seed batch
- selection of optimal seed treatment product (product, rate of application, application technology)
- determination of seed germinating ability
- recommendations on agricultural approaches (sowing depth, sowing rate etc.).

Diagnostics methods comply with requirements of State Standard of Ukraine (SSTU) 4138-2002 "Seeds of Agricultural Crops. Quality Determination Methods". Algorithm of expertise has been verified and suggested for use by the Seed Care Institute, Stein, Switzerland.

Process of ordering of phytoexpertise of seed material for the Company's customers

- Agree the possibility to receive this service with the sales manager
- Select a medium seed sample according to the State Standard of Ukraine 4138-2002*
- Put a sample with weight of 2 kg into a branded bag and obligatory fill in with information on a label
- Send the sample to one of the diagnostic centers of Syngenta
- Study protocol with the sample expert examination results, conclusion and recommendations of a technical expert will be submitted to the farm through Syngenta's sales manager



Phytoexpertise of plant material

Expertise of plant material in order to determine phytopathological condition of plant material and scientifically substantiated selection of the products

- Incubation of plant material samples in laboratory conditions (in growth chamber)
- Microscoping of samples
- Development of a set of protection measures, among which agrotechnical, biological, chemical and other methods, preparation of recommendations regarding the sequence of their use

Process of ordering of phytoexpertise of plant material for the Company's customers

- Agree the possibility to receive this service with the sales manager
- Select a medium plant sample *
- Put a sample into a branded bag and obligatory fill in with information on a label
- Send the sample to one of the diagnostic centers of Syngenta
- Study protocol with the sample expert examination results, conclusion and recommendations of a technical expert will be submitted to the farm through Syngenta's sales manager



PCR diagnostics of seed and plant material

Diagnostics of infectious diseases of main agricultural crops and identification of toxicogenic fungi using polymerase chain reaction (PCR).

- Polymerase chain reaction (PCR) is a modern method of molecular biology aimed to determine infectious disease pathogens by the presence of their genetic material in a sample
- PCR diagnostics (or DNA-diagnostics) makes it possible to determine infectious pathogens in those cases, when with the help of other methods (particularly, visual diagnostics of a disease by its symptoms, determination of morphology of the pathogen and microscopy) technically it is impossible to perform

Process of ordering for the Company's customers

- Agree the possibility to receive this service with the sales manager
- Select a medium seed or plant sample *
- Put a sample into a branded bag and obligatory fill in with information on a label
- Send the sample to Bila Tserkva diagnostic center of Syngenta by over-night delivery
- Study protocol with the sample expert examination results, conclusion and recommendations of a technical expert will be submitted to the farm through Syngenta's sales manager



Real-time PCR diagnostics of plant pathogens

Diagnostics of infectious diseases of main agricultural crops, assessment of crop damage degree using real-time PCR

The method is based on the use of polymerase chain reaction (PCR). Real-time PCR differs from the classic method of PCR diagnostics by its possibility to measure the amount of DNA pathogen in a sample (assess accumulation of pathogen in a plant).

Process of ordering for the Company's customers

- Agree the possibility to receive this service with the sales manager
- Select a medium seed or plant sample *
- Put a sample into a branded bag and obligatory fill in with information on a label
- Send the sample to Bila Tserkva diagnostic center of Syngenta by over-night delivery
- Study protocol with the sample expert examination results, conclusion and recommendations of a technical expert will be submitted to the farm through Syngenta's sales manager



ELISA diagnostics of seed and plant material

Diagnostics of infectious diseases of main agricultural crops and determination of quantitative content of micotoxines in grain

- Enzyme-linked immunosorbent assay (ELISA) is an immunological method of determination of various macromolecules, particularly, specific compounds of plant disease pathogens based of specific antigen-antibody reaction
- Together with PCR, it enables identification of infectious disease pathogens in cases, when other methods (particularly, visual diagnostics of diseases by its symptoms, establishment of pathogen morphology and microscoping) are technically unable to do so. This method is specifically relevant for diagnostics of bacterial and viral disease pathogens

Process of ordering for the Company's customers

- Agree the possibility to receive this service with the sales manager
- Select a medium seed or plant sample *
- Put a sample into a branded bag and obligatory fill in with information on a label
- Send the sample to Bila Tserkva diagnostic center of Syngenta. Use over-night delivery for plant material.
- Study protocol with the sample expert examination results, conclusion and recommendations of a technical expert will be submitted to the farm through Syngenta's sales manager



Nematode identification

Expert examination of plant material and soil in order to identify moving nematodes

- Diagnostics of moving nematodes from above-ground plants and soil using modified Berman method
- Microscoping of samples
- Development of a set of protection measures, among which agrotechnical, biological, chemical and other methods, preparation of recommendations regarding the sequence of their use

Process of ordering for the Company's customers

- Agree the possibility to receive this service with the sales manager
- Select a medium soil or plant material sample *
- Put a sample into a branded bag and obligatory fill in with information on a label
- Send the sample to one of the diagnostic centers of Syngenta
- Study protocol with the sample expert examination results, conclusion and recommendations of a technical expert will be submitted to the farm through Syngenta's sales manager



Bio assay carry over identification

Assessment of effects of herbicide residues in soil on routine crops using biological tests. Bio assay carry over test makes it possible to:

- Determine the presence of aftereffects on routine crops
- Determine the range of agricultural crops, which may be grown next year on a specific field, and to timely adjust crop rotation
- Determine agrotechnical measures aimed to reduce aftereffects or accelerate disintegration of a pesticide

Process of ordering for the Company's customers

- Agree the possibility to receive this service with the sales manager
- Select a soil sample (obligatory consult with a technical expert)
- Obligatory fill in information on a label *
- Send the sample to one of the diagnostic centers of Syngenta
- Study protocol with the sample expert examination results, conclusion and recommendations of a technical expert will be submitted to the farm through Syngenta's sales manager



Field monitoring

Diagnostics of disease pathogen, determination of strain composition of pests, field control of main plant development conditions (soil density, soil pH, humidity etc.) and provision of recommendations on integrated plant protection

- Phytopathologic examination to determine infection background and to forecast the development of diseases to make a decision on optimal terms of fungicide application (a product, consumption norm, application terms)
- Entomologic examination for the purpose to identify typical composition and number of pests to make a decision on optimal terms of fungicide application (a product, consumption norm, application terms)
- Substantiated selection of herbicides considering the phase of crop development and typical composition of weeds. Integration of recommendations in a single weighed protection system
- Field control of basic plant development conditions using highly professional field equipment and provision of recommendations on adjustment of argotechnical measures

Process of ordering for the Company's customers

- Determine a particular service to be provided (purpose, task)
- Agree with a sales manager the possibility to obtain a certain service
- Notify the date of service provision, address of the farm



Identification of sunflower and corn hybrids

Establishment of seed and plant lot suitability - to specific sunflower and corn hybrids sold by Syngenta using DNA markers

- Seed or plant lot analysis using DNA markers (microsatellites)
- Establishment of suitability/non-suitability of a seed or plant lot to a certain sunflower or corn hybrid of Syngenta

Process of ordering for the Company's customers

- Agree the possibility to receive this service with the sales manager
- Provide all documents confirming the fact of purchase of the original Syngenta seeds
- Select a medium seed or plant sample *
- Put a sample of maximum 300 g into a branded bag and obligatory fill in information on a label
- Send the sample to Bila Tserkva diagnostic center of Syngenta
- Study protocol with the sample expert examination results, conclusion and recommendations of a technical expert will be submitted to the farm through Syngenta's sales manager



Estimation of genetic purity of sunflower and corn hybrids

Estimation of genetically determined sunflower or corn seed quality parameters, i.e., genetic purity and hybridity level, using DNA markers (microsatellites)

- Determination of genetic purity and hybridity level of sunflower or corn hybrids of Syngenta
- Possibility to establish sunflower or corn hybrid suitability to F1 or F2 and next generations
- Possibility to identify admixtures of extraneous sunflower or corn seeds in a sample of seed lot

Process of ordering for the Company's customers

- Agree the possibility to receive this service with the sales manager
- Provide all documents confirming the fact of purchase of the original Syngenta seeds
- Select a medium seed or plant sample *
- Put a sample of maximum 300 g into a branded bag and obligatory fill in information on a label
- Send the sample to Bila Tserkva diagnostic center of Syngenta
- Study protocol with the sample expert examination results, conclusion and recommendations of a technical expert will be submitted to the farm through Syngenta's sales manager



Product application quality control service

Spaying quality and CPP seed treatment control service. Quality control service ensures:

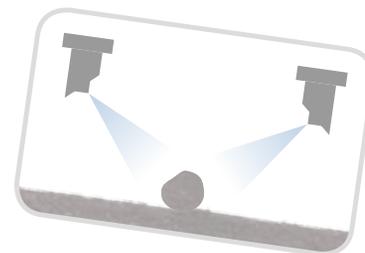
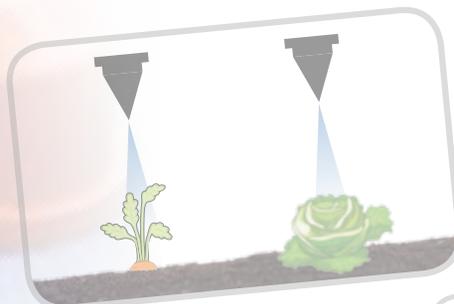
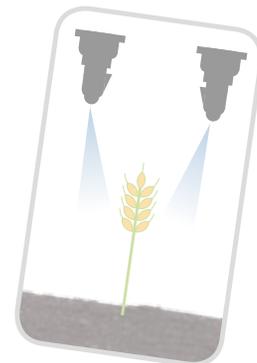
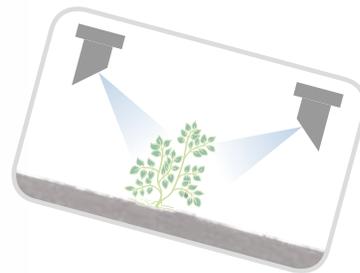
- Discovering of the full potential of Syngenta products due to targeted action of the active ingredient on target objects
- Selection of sprayers for various types of CPP application
- Optimization of working solution consumption norm
- Minimization of working solution drift
- Reduction of harmful effect on environment
- Increase of profitability of protective measures with reduction of costs on them
- Product application quality control in spraying (determination of coverage degree, density and size of drops, other parameters)
- Analysis of seed treatment through determination of active ingredient amount in a dresser of Syngenta on seed material

Process of ordering for the Company's customers

- Determine a particular service to be provided (purpose, task)*
- Agree with a sales manager the possibility to obtain a certain service
- Notify the date of service provision, address of the farm, equipment used in the farm



* You may find additional information at the official web-site www.syngenta.ua in section AgroGuide.



Specialization of diagnostic centers and expert examination duration

Service	Duration of expertise (days)	Diagnostic centers of Syngenta			
		BDC	ODC	KhDC	KhmDC
Phytoexpertise of seed material	10-14 (depending on crop)	yes	yes	yes	yes
Phytoexpertise of plant material	10-14 (depending on crop)	yes	yes	yes	yes
PCR diagnostics of seed and plant material	2-3	yes			
Real-time PCR diagnostic of plant material	1-2	yes			
ELISA diagnostics of seed and plant material	2-3	yes			
Nematode identification	3		yes	yes	yes
Bio assay carry over identification	30-40		yes	yes	
Sunflower and corn hybrid identification	3-4	yes			
Estimation of genetic purity of sunflower and corn hybrids	5-7	yes			

Contact information

DIAGNOSTICS CENTER	ADDRESS
Kharkiv Diagnostic Center (KhDC)	10 Dragomyrivska str., off. 6, Kharkiv
Bila Tserkva Diagnostic Center (BDC)	193 Tarashchanska str., Bila Tserkva, Kyiv oblast
Odesa Diagnostic Center (ODC)	36 Kosmonavtiv str., off. 704 and 705, Odesa
Kmelnytsk Diagnostic Center (KhmDC)	9a Svobody str., off. 4, Khmelnytskyi

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Technical Services Lead, Syngenta	Yarina Sheremet	+380 50 382 99 19	Yarina.Sheremet@syngenta.com
Product Application Technology Manager, Syngenta	Oleg Liudvinovskyi	+380 50 315 09 40	Oleg.Liudvinovskyi@syngenta.com

BILA TSERKVA DIAGNOSTIC CENTER			
Laboratory Manager	Zhanna Vdovychenko	+380 95 814 77 79	Zhanna.Vdovychenko@syngenta.com
Laboratory Specialist	Lyudmyla Shostak	+380 50 414 03 94	Lyudmyla.Shostak@syngenta.com
Laboratory Specialis	Lyudmyla Lapchenko	+380 50 314 20 58	Ludmila.Lapchenko@syngenta.com

KHARKIV DIAGNOSTIC CENTER			
Laboratory Manager	Tetyana Malyna	+380 50 334 91 62	Tetyana.Malyna@syngenta.com
Laboratory Specialist	Tetyana Sosiedkina	+380 50 412 10 55	Tetyana.Sosedkina@syngenta.com

ODESA DIAGNOSTIC CENTER			
Laboratory Manager	Olga Muradian	+380 50 335 79 77	Olga.Muradian@syngenta.com

KHMELNYTSK DIAGNOSTIC CENTER			
Laboratory Specialist	Natalia Sachuk	+380 95 281 51 08	Natalia.Sachuk@syngenta.com





Promissory
notes and bank
guarantees



**Support
Plus**



**WOSR
Insurance**



**Forward
Plus**

FINANCIAL SOLUTIONS

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Financial solutions

Syngenta is always willing to establish active partnership with its clients and suggests them not only high-quality seed and Crop protection products, and a set of efficient financial instruments

We strive to give our customers notable support, efficient instruments and possibilities for development. The range of our programs complies with the needs of agrarian businesses of various types and sizes and enables each one to find an interesting offer

VALORIZED PROMISSORY NOTES AND BANK GUARANTEES

- The ability to postpone a payment for a significant period and to pay for the product at the end of the season (November-December)
- Ability to compensate losses related to use of bank services with the help of discounts for Syngenta products
- Ability to use the obtained discount as a pre-payment for the products on order or to pay accounts payable with it
- Establishing mutually profitable partnership with leading banks, which, in their turn, are interested in long-term and mutually beneficial cooperation with agrarians

FINANCIAL SOLUTIONS:

financial success
confidence and certainty
flexibility and convenience
more possibilities

Main risks affecting solvency of agricultural producers

- 64 % of producers mention the risk of agricultural production price falling
- 79 % of producers mention the risk of low yield, and therefore the cost of sowing cannot be paid back
- 89 % of producers mention weather and climatic risks (droughts, heavy rains, frost-killing etc.)





Forward Plus

- Protection from price fall of agricultural production
- Confidence and ability to plan your activities
- Ability to use complicated and profitable financial instruments
- In 2014, the partnership got on average 30 dollars per ton higher than the market average



Support Plus

- Convenient and easy method of settlement with payments with suppliers using agricultural production
- 25 % of distributors participated in the program in the season summer-autumn 2014
- Up to 80 % of their accounts payable were closed by the participants through the program
- On average, 6%-higher prices than on market were offered to program participants



WOSR Insurance

- Full indemnification of seed and CPP cost that were used for seeding, without franchise
- Reliable insurance partner
- Insurance case experience: up to 1000 hryvnas per hectare was paid to the grower
- Easiness and transparency of documentation
- Protection from weather risks



More than **100 000 tons** production were sold and shipped within Financial Solutions programs in 2014



92* % of distributors know of at least one financial instrument offered by Syngenta



76* % of distributors use at least one financial instrument offered by Syngenta





ADDENDUM

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WOSR HYBRIDS



MATURITY GROUP	WINTER RESISTANCE LEVEL	TYPE	DROUGHT RESISTANCE (1 – Low drought resistance; 9 – high drought resistance)	INTENSITY OF DEVELOPMENT IN AUTUMN (1 – very intensive; 9 – very slow)	GROWING ZONES
----------------	-------------------------	------	--	--	---------------

NEW GLADIUS

CP

High

00

5

4

All territory of Ukraine

NK OCTANS

CP

High

00

8

4

Central and Southern regions

NK PETROL

CP

High

00

7

3

All territory of Ukraine

NK TECHNIC

CP

Very high

00

7

3

All territory of Ukraine

NEW TORES

СП

High

00

9

1

All territory of Ukraine



MATURITY GROUP
BROOMRAPE RESISTANCE, STRAINS
AREA OF USE
HEAT/DROUGHT RESISTANCE
TOLERANCE TO DISEASE
GROWING ZONES



SUNFLOW SEED

ML	A-E	Classic	Excellent	Satisfactory	Zone of Southern Steppe of Ukraine
ML	A-E	Classic	Good	Good	All zones of Ukraine
ML	A-E	Clearfield	Good	Good	All zones of Ukraine
ML	A-E	Classic	Good	Medium	All zones of Ukraine
ML	A-E	Clearfield	Good	Good	All zones of Ukraine
ME	A-E	Classic	Medium	Excellent	All zones of Ukraine
ME	A-G*	Classic	Excellent	Satisfactory	Zone of Southern Steppe of Ukraine
ME	A-E	Clearfield	Medium	Excellent	All zones of Ukraine
ME	A-E	Highly oleic, Clearfield	Excellent	Satisfactory	Zone of Southern Steppe of Ukraine
ME	A-E	Classic	Medium	Excellent	All zones of Ukraine
ME	A-E	Classic	Medium	Good	Forest Steppe, Central and Northern Steppe of Ukraine
ME	A-G*	Classic	Excellent	Good	All zones of Ukraine
ME	A-E	Clearfield	Excellent	Satisfactory	Zone of Southern Steppe of Ukraine
ME	A-G*	Classic	Excellent	Satisfactory	Zone of Southern Steppe of Ukraine
MM	A-E	Classic	Satisfactory	Good	Forest Steppe, Central and Northern Steppe of Ukraine
MM	A-E	Classic	Medium	Good	All zones of Ukraine
MM	A-E	Clearfield	Medium	Good	Forest Steppe, Central and Northern Steppe of Ukraine
MM	A-E	Highly oleic	Medium	Good	Forest Steppe, Central and Northern Steppe of Ukraine
MM	A-E	Classic	Good	Good	All zones of Ukraine
MM	A-G*	Classic	Good	Good	All zones of Ukraine
MM	A-G*	Classic	Good	Good	All zones of Ukraine
MM	A-E	Highly oleic	Good	Good	All zones of Ukraine
MLA	A-G*	Classic	Good	Excellent	Forest steppe and steppe of Ukraine
MLA	A-E	Clearfield	Good	Good	Steppe of Ukraine
MLA	A-E	Classic	Good	Excellent	Forest steppe and steppe of Ukraine
MLA	A-E	Highly oleic	Good	Medium	Steppe of Ukraine
MLA	A-E	Clearfield	Good	Good	All zones of Ukraine
MLA	A-E	Classic	Good	Excellent	Forest steppe and steppe of Ukraine

KAZIO/SANBRO MR

NK ROCKY

NK FORTIMI

SANLUCA RM

TRISTAN

ARENA PR

BOSFORA NEW

NK ALEGO

COLOMBY NEW**

NK DELFI

NK DOLBY

SY KADIX NEW**

SANAY MR

TRANSOL NEW

NK BRIO

NK KONDI

NK NEOMA

NK FERTI

OPERA PR

SY KUPAVA NEW**

SY LASCALA NEW**

TUTTI NEW

ESTRADA NEW

NK ADAGIO NEW

NK ARMONI

NK CAMEN

NK MELDIMI

SY EDENIS NEW

ML Middle-late
ME Mid-early

MM Medium mature
MLA Mid-late

* New races after F strain - tolerance.
 ** Registration is pending.

syngenta

WHEAT HYBRIDS



QUALITY

**YIELD,
t/ha**

**SEED RATE,
mln seed/ha**

**DROUGHT
RESISTANCE**

**WINTER
RESISTANCE**

GROWTH ZONES

SAILOR

1 class

8-9

4.5

High

High

Steppe,
forest steppe,
forest area

BARLEY HYBRIDS



TARGET USE

**YIELD,
t/ha**

**SEED RATE,
mln seed/ha**

**DROUGHT
RESISTANCE**

**WINTER
RESISTANCE**

QUENCH

Brewery

7-8

4-4.5

High

NEW SCRUBBLE*

Brewery

7.5-8.5

4-4.2

High

All territory
of brewery barley
growth

NEW SHUFFLE*

Brewery

8-9

4-4.2

High

SORGHUM HYBRIDS



PECULIARITIES

POTENTIAL YIELD

SEED UNIT

SOWING DENSITY

GROWTH ZONES

HYBRID G 1990

Very high drought
resistance

800-1200 Cwt/ha

800 thousand of
seeds

180-220 thousand/ha

All zones of Ukraine

HYBRID SS 506

High yield stability,
very high drought
resistance

900-1400 Cwt /ha

600 thousand of
seeds

180-220 thousand/ha

All zones of Ukraine



CORN HYBRIDS

GROWTH ZONES	MATURITY GROUP	TYPE OF GRAIN	FAO CODE
Forest area, Forest Steppe	ME	Flinty dent	200
Forest area, Forest Steppe, Steppe	ME	Flinty dent	210
Forest area, Forest Steppe	ME	Flinty dent	210
Forest area, Forest Steppe	ME	Flinty dent	220
Forest area, Forest Steppe	ME	Flinty dent	220
Forest area, Forest Steppe	ME	Flinty dent	230
Forest area, Forest Steppe	ME	Flinty dent	230
Forest area, Forest Steppe	ME	Flinty dent	240
Forest area, Forest Steppe	ME	Flinty dent	240
Forest area, Forest Steppe, Steppe	ME	Flinty dent	240
Forest area, Forest Steppe	ME	Flinty dent	240
Forest area, Forest Steppe	ME	Flinty dent	250
Forest area, Forest Steppe	ME	Flinty dent	250
Forest, Forest Steppe, Steppe	ME	Dent	250
Forest Steppe	ME	Dent	260
Forest area, Forest Steppe	ME	Dent	260
Forest area, Forest and Northern Steppe	ME	Dent	270
Forest area, Forest Steppe	ME	Dent	270
Forest Steppe	ME	Dent	280
Forest Steppe	ME	Dent	290
Forest Steppe	MM	Dent	310
Forest Steppe	MM	Dent	320
Forest Steppe, Steppe	MM	Dent	330
Forest Steppe, Steppe	MM	Dent	340
Forest Steppe, Steppe	MM	Dent	340
Forest Steppe, Steppe	MM	Dent	350
Forest Steppe, Steppe	MM	Dent	390
Forest Steppe, Steppe	MLA	Dent	400
Steppe	MLA	Dent	440

NERISSA
NK GITAGO
SY TIPTOP NEW
DELITOP
NK FALKONE
NK COOLER
SY ENIGMA NEW
SY NOVATOP
SY RESPECT
SY UNITOP NEW
AROBASE
SY TOPMAN
SY AMPLITUDE NEW
SY VERALIA
SY ONDINA
SY ARIOSO NEW
SY SIMBA
SY ELADIUM NEW
NK KANSAS
NK LEMORO
NK COBALT
NK TERMO
SY BATANGA NEW
NK LUCIUS
FURIO
CELEST
CISCO
NK PAKO

ME Mid-early

MM Medium mature

MLA Mid-late

SUGAR BEET HYBRIDS



	HYBRID TYPE	DISEASE RESISTANCE	HARVESTING TERMS	GROWTH REGION
GAZETA	Z (sugary)	Rz (rhizomania) Cr (cercosporosis) Rt (rhizoctonia)	Late	All beet sowing regions
BORUTA	N (yielding)	Rz (rhizomania) Cr (cercosporosis)	Medium and late	Forest steppe and forest area
NEW HI 0835	N (yielding)	Rz (rhizomania) Cr (cercosporosis)	Medium and late	All beet sowing regions
SILENTA	N (yielding)	Rz (rhizomania) Cr (cercosporosis)	Medium	Forest steppe and forest area
NEW ATTACK	Nz (yielding-sugary)	Rz (rhizomania) Cr (cercosporosis) Nt (nematodes)	Medium and late	Nematode-damaged zones. All beet sowing regions
VOLGA	Nz (yielding-sugary)	Rz (rhizomania) Cr (cercosporosis) Rt (rhizoctonia) Ap (aphanomyces rot or root feeder)	Early and medium	Forest steppe and forest area
HI 0450	Nz (yielding-sugary)	Rz (rhizomania) Cr (cercosporosis)	Early and medium	All beet sowing regions
NEW OKKA *	Nz (yielding-sugary)	Rz (rhizomania)	Early and medium	All beet sowing regions
OLIMPIADA	Nz (yielding-sugary)	Rz (rhizomania) Cr (cercosporosis)	Medium	South, forest steppe
SY BADIA *	Nz (yielding-sugary)	Rz (rhizomania) Cr (cercosporosis)	Medium and late	Central and Western Ukraine
HELITA	Nz (yielding-sugary)	Rz (rhizomania) Cr (cercosporosis)	Early and medium	All beet sowing regions

SYNGENTA CALL CENTRE



1

FARM
HOUSEHOLDS
(FIELD CROPS)

2

FARM
HOUSEHOLDS
(VEGETABLES)

3

SMALL PACK,
SMALL HOLDINGS
OR COUNTRY
HOUSES

4

PRODUCT
ORIGINALITY
MATTERS

5

OTHER
INFORMATION



0 800 50 04 49

(free of charge from all land-line telephones within Ukraine)

PRODUCTS AND TERMS OF THEIR APPLICATION ON SUNFLOWER



Downy mildew, verticillium, white rot	3,0 L/t	APRON XL					
Moulding seeds, fusariosis root rot, downy mildew, white rot	6,0 L/t	MAXIM XL					
Click beetle, false click beetle, grey and southern beetroot weevil, tenebrionid beetle, apple aphid	6,0–10,0 L/t (111 mL/ 150 thousand of seeds)	CRUISER 350					
A set of soil pests	2,0 L/t	FORCE					
Annual perennial and dicotyledonous weed plants	2,0–4,0 L/t	OURAGAN FORTE					
Annual grass and some dicotyledonous weed plants	1,6 L/t	DUAL GOLD					
	1,5–2,0 L/t	TROPHY					
Annual dicotyledonous and some grain weed plants	2,0–4,0 L/t	GESAGUARD					
Annual grass and dicotyledonous weed plants	4,5 L/t	PRIMEXTRA TZ GOLD					
	2,0–5,0 L/t	TREFLAN*					
Grain and dicotyledonous weed plants	1,0–1,2 L/t	CAPTORA ^{NEW}					
Annual and perennial grass weed plants	0,5–2,0 L/t	FUSILADE FORTE					
Grey rot	0,75 kg/ha	CHORUS					
Black stem, stem blight, Septoria spot, rust, false powdery mildew	0,75–1,0 L/t	AMISTAR EXTRA					
A set of ground pests	6,0–8,0 kg/ha	FORCE 1,5 G**					
Plum aphid, sunflower tumbling beetle	0,18 L/t	ENGENO					
Desiccation	1,0–2,25 L/t	REGLONE AIR					
	2,0–3,0 L/t	REGLONE SUPER					
	1,5–2,25 L/t	REGLONE FORTE**					
	2,0–4,0 L/t	OURAGAN FORTE					



PRODUCTS AND TERMS OF THEIR APPLICATION ON RAPE

CRUISER OSR									15,0 L/t	Pests: click beetle, cockchafer larvae, false click beetle, cruciferous flea beetle etc. Diseases: black stem, early blight, fusariosis, rhizoctonia disease, downy mildew, pythium
CRUISER 350									4,0 L/t	Pests: cruciferous flea beetle and a set of soil pests
MAXIM XL									5,0 L/t	Downy mildew, moulding seeds, fusariosis root rot, early blight, pythium
DUAL GOLD									1,6 L/t	Annual grass and dicotyledonous weed plants
TREFLAN*								1,2–2,0 L/t		
	FUSILADE FORTE								1,5–2,0 L/t	Annual and perennial grass weed plants
		GALERA SUPER						0,2–0,3 L/t	Annual and perennial dicotyledonous weed plants	
		LONTREL 300						0,3–0,5 L/t		
		LONTREL GRAND						0,12–0,2 kg/ha		
			SETAR					0,3 L/t	Inhibition of plant growth and increase of resistance to extreme weather conditions, black stem, powdery mildew	
				SETAR				0,5 L/t	Better branching, simultaneous blossoming, early blight, downy mildew	
				THIOVIT JET				8,0 kg/ha	Powdery mildew, early blight	
			RYDOMIL GOLD MZ					2,5 kg/ha	Downy mildew, early blight	
				AMISTAR EXTRA				0,75–1,0 L/t	Black stem, early blight, white and grey rots, downy mildew	
				DITHANE M-45				2,5–3,0 kg/ha	Early blight	
FORCE 1,5 G								5,0–8,0 kg/ha	A set of soil pests	
		NURELLE D						0,5–0,6 L/t	Cabbage stem weevil	
			KARATE ZEON					0,15 L/t	Rape blossom weevil	
						REGLONE SUPER		2,0–3,0 L/t	Desiccation	
						REGLONE AIR		1,0–2,25 L/t		
						REGLONE FORTE**		1,5–2,25 L/t		

SEED TREATMENT

HERBICIDE

INSECTICIDE

FUNGICIDE

RETARDANT

* Requires immediate seed covering in soil.
** Registration is pending.

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PRODUCTS AND TERMS OF THEIR APPLICATION ON SOYBEAN



Moulding seeds, fusariosis, root rots	1,0 L/t	MAXIM XL					
Annual and perennial weed plants	2,0-4,0 L/t	OURAGAN FORTE					OURAGAN FORTE
Annual grain and some dicotyledonous weed plants	1,3-1,6 L/t	DUAL GOLD					
	1,5-2,0 L/t	TROPHY					
Annual dicotyledonous and some grain weed plants	3,0-5,0 L/t	GESAGUARD					
Annual grain and dicotyledonous weed plants	2,0-5,0 L/t	TREFLAN					
	3,0-4,5 L/t	PRIMEXTRA TZ GOLD*					
Annual and perennial grain weed plants	1,0-2,0 L/t				FUSILADE FORTE		
Powdery mildew, false powdery mildew, fusariosis, rust, downy mildew	0,5-0,75 L/t				AMISTAR EXTRA		
Red spider	0,6-0,8 L/t				VERTIMEC**		
Mite, aphid	1,5-2,0 L/t				ACTELIC		
Desiccation	2,0-3,0 L/t						REGLONE SUPER
	1,5-2,0 L/t						REGLONE AIR



PRODUCTS AND TERMS OF THEIR USE OF WHEAT

CERTICORE										0,75-1,0 L/t	Smut diseases (kernel smut and volatile smut), root rots, particularly, pythiosis, moulding seeds, helminthosporiosis
MAXIM STAR										1,5-2,0 L/t	Moldy seeds fusariosis and helminthosporiosis root rots, smut diseases (flew, covered), snow mold, helminthosporioses
MAXIM FORTE										1,5-2,0 L/t	Smut diseases, fusariosis and helminthosporiosis root rots, dark-brown spotting, early manifestations of leaf and stem diseases, pythium
CELEST TOP										1,5-2,0 L/t	Fusariosis and helminthosporiosis root rots, stone smut, Septoria spot Corn ground beetle i cereal flea beetle, leafhopper, apple aphid, corn fly
CELEST MAXX										1,5-2,0 L/t	Smut diseases, fusariosis and helminthosporiosis root rots, Septoria blight, fusariose. Pests: corn ground beetle i cereal flea beetle, leafhopper, apple aphid, corn fly
										1,0 L/t	Annual grain weed plants
										0,015-0,02 kg/ha	Annual and perennial dicotyledonous weed plants, sunflower and rape drops
										0,05-0,07 L/t	Annual and separate perennial dicotyledonous weed plants, among them, bedstraw on late stages)
										0,4-0,6 L/t	Annual and separate perennial dicotyledonous weed plants
										0,6-0,8 L/t	Annual and separate perennial dicotyledonous weed plants
										0,033 kg/ha	Annual and perennial dicotyledonous plants, including exterminating effect against sow thistle, IMI and ALS-resistant sunflower drops
										0,3-0,5 L/t	Annual and separate perennial dicotyledonous weed plants, among them, field bindweed
										0,4-0,6 L/t	For increase of yield and improvement of hibernation, against lodging

SEED TREATMENT

HERBICIDE

RETARDANT



PRODUCTS AND TERMS OF THEIR APPLICATION ON BARLEY

CERTICORE						0,75-1,0 L/t	Smut diseases (volatile, black volatile and kernel smut of barley), root rots, particularl, pythiosis, moulding seeds, helminthosporiosis
MAXIM STAR						1,5-2,0 L/t	Moulding seeds, root rots (particularly fusariosis), smut diseases (volatile, covered), Fusarium mould, powdery mildew, helminthosporiosis
MAXIM FORTE						1,5-2,0 L/t	Smut diseases, fusariosis and helminthosporiosis root rots, dark-brown blotching of barley, early manifestations of leaf and stem diseases, pythium
CELEST TOP						1,0-2,0 L/t	Fusariosis and helminthosporiosis root rots, covered smut, powdery mildew, Septoria spot. Corn ground beetle, corn fly, cereal flea beetle, apple aphid, leafhopper, cereal leaf beetle, thunder fly
^{NEW} CELEST MAXX						1,5-2,0 L/t	Smut diseases, fusariosis and helminthosporiosis root rots., Septoria spot, brown rust, fusariosis. Pest: corn ground beetle and cereal flea beetle, leafhopper, apple aphid, corn fly
	DERBY					0,05-0,07 L/t	Annual and separate perennial dicotyledonous weed plants, among them, bedstraw at late stages
	PEAK					0,015-0,02 kg/ha	Annual and perennial dicotyledonous weed plants, sunflower and rape shed
	AXIAL					1,0 L/t	Annual grain weed plants
	PRIMA					0,4-0,6 L/t	Annual and separate perennial dicotyledonous weed plants
	ESTERON					0,6-0,8 L/t	
	LANCELOT					0,033 kg/ha	Annual and perennial dicotyledonous weed plants, including extminating effect against sow thistles; IMI and ALS-resistant sunflower shed
	STARANE PREMIUM					0,3-0,5 L/t	Annual and separate perennial dicotyledonous weed plants, among them, field bindweed
	MODDUS					0,4-0,6 L/t	Increase of yield, improvement of hibernation, agains logging
	TILT					0,5 L/t	Helminthosporiosis, rust, Septoria spot, powdery mildew
	TILT TURBO ^{NEW}					0,8-1,0 L/t	Powdery mildew, leaf blotch, rust, helminthosporiosis, rhynchosporium, fusariosis, Septoria spot
	BONTIMA* ^{NEW}					0,75-2,0 L/t	Helminthosporiosis, powdery mildew, Septoria spot
	MAGNELLO* ^{NEW}					0,5-1,0 L/t	Leaf and spike fusariosis, early blight, Septoria rot, glume mold
	ALTO SUPER					0,4-0,5 L/t	Brown rust, powdery mildew, helmintosporosis, Septoria spot, perinophorosis, fusariosis, early blight
	AMISTAR TRIO					1,0-1,2 L/t	Powdery mildew, Septoria spot of leaf and spike, helminthosporiosis
	AMISTAR EXTRA					0,5-0,75 L/t	Powdery mildew, net blotch, dark-brown, stripe, leaf blotching, Septoria spot
	NURELLE D					0,5-0,75 L/t	Cereal leaf beetle, corn ground beetle, winter burdock borer
					ACTELIC	16 mL/t	Non-loaded warehouses, processing of commercial, seed and forage grain by wet method
					ACTELIC	0,5 mL/m ²	
				REGNONE SUPER		1,5-2,0 L/t	Desiccation and weed plant extermination
				OURAGAN FORTE		1,5-2,0 L/t	

SEED TREATMENT

HERBICIDE

INSECTICIDE

FUNGICIDE

RETARDANT

* Registration is pending

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PRODUCTS AND TERMS OF THEIR APPLICATION ON SORGHUM



Antidote	0,3 L/t	CONCEP III							
Helminthosporiosis, moulding seeds, root rots	5,0 L/t	MAXIM XL							
Soil pests, apple aphids	4,0 L/t	CRUISER 350							
Annual and perennial weed plants	2,0-4,0 L/t	OURAGAN FORTE							
Annual grass and dicotyledonous weed plants	2,5-3,5 L/t	PRIMEXTRA GOLD							
	4,5 L/t	PRIMEXTRA TZ GOLD							
	1,6-2,0 L/t	DUAL GOLD							
Annual dicotyledonous, particularly, resistant to 2.4-D MCPA and separate perennial dicotyledonous weed plants	0.01-0.02 kg/ha				PEAK				
Annual and perennial dicotyledonous weed plants	0,4-0,6 L/t				PRIMA				
Annual grass and dicotyledonous weed plants	0,6-1,0 L/t				CITADEL <small>NEW</small>				
Apple aphid	0,2 L/t				KARATE ZEON				
A set of pests	0,18 L/t				ENGENO				
Desiccation	3,0-4,0 L/t							REGLONEE SUPER	
	2,0-4,0 L/t							OURAGAN FORTE	



PRODUCTS AND TERMS OF THEIR APPLICATION ON CORN

MAXIM						1,0 L/t	Stem and root rots
MAXIM XL						1,0 L/t	Stem and root rots, moulding seeds, volatile smut, blister smut
MAXIM QUATTRO <small>NEW</small>						1,0-1,5 L/t	Root rots, moulding seeds, volatile smut, blister smut
CRUISER 350						6,0-9,0 L/t (144 ml/80 thousand of seeds)	Click beetle, false click beetle, darkling beetles, frit fly, apple aphid, flea beetle, western corn rootworm (diabrotica)
FORCE ZEA						5,0-6,0 L/t (100 ml/100 thousand of seeds)	
TROPHY						2,0-2,5 L/t	Annual grass and some dicotyledonous weed plants
PRIMEXTRA GOLD						2,5-3,5 L/t	Annual grass and dicotyledonous weed plants
PRIMEXTRA TZ GOLD						4,0-4,5 L/t	
LUMAX						3,5-4,0 L/t	Annual grass and dicotyledonous weed plants (including some perennial dicotyledonous)
ESTERON						0,7-0,8 L/t	Annual and perennial dicotyledonous weed plants
PRIMA						0,4-0,6 L/t	
LANCELOT						0,033 kg/ha	Annual and perennial dicotyledonous weed plants
STARANE PREMIUM						0,5-0,6 L/t	
PEAK						0,015-0,02 kg/ha at pH ≥ 7	Annual and some perennial dicotyledonous weed plants (including field bindweed)
MILAGRO						0,16-0,2 L/t + ΠΑΡ*	Annual dicotyledonous (including resistant to 2,4-D and MCPA) and some perennial dicotyledonous weed plants (including sunflower and rape shed)
CALLISTO						0,2-0,25 L/t + ΠΑΡ*	Annual, perennial grass (e.g., sorghum, wheatgrass) and most common annual dicotyledonous weed plants
ELUMIS						1,25-2,0 L/t	Annual and perennial dicotyledonous weed plants
KARATE ZEON						0,2-0,3 L/t	Annual and perennial grass and dicotyledonous weed plants
AMPLIGO <small>NEW</small>						0,2-0,3 L/t	Cotton budworm and stem corn fly
AMISTAR EXTRA <small>NEW</small>						0,5-0,75 L/t	Fusariosis, helminthosporiosis and other spotting

SEED TREATMENT

HERBICIDE

INSECTICIDE

FUNGICIDE

* Obligatory.

PRODUCTS AND TERMS OF THEIR APPLICATION ON SUGAR BEET



Downy mildew, root feeder	2,0 L/t	APRON XL						
Root feeder	9 mL/seed unit	MAXIM XL						
A set of soil and ground pests	35,0 L/t	CRUISER 600						
Click beetle, click beetle larvae, pygmy beetle, beetroot aphid, burdock borer larvae	14,0 L/t	FORCE						
A set of pests	Thiamtoxame (15 g per SU) + teflutrin (6 g per SU)	FORCE MAGNA						
Annual grassgrain and dicotyledonous weed plants	1,2-1,6 L/t	DUAL GOLD						
Annual and perennial grass weed plants	1,0-2,0 L/t		FUSILADE FORTE					
Annual dicotyledonous and certain grass weeds	3,0 (1,0+1,0+1,0) L/t		BETA PROFi					
Annual dicotyledonous and perennial root and shoot weed plants	0,3-0,5 L/t			LONTREL 300				
Annual and perennial dicotyledonous weed plants, sunflower shed	0,2 kg/ha			LONTREL GRAND				
Cercosporosis, powdery mildew	0,5 L/t					ALTO SUPER		
Cercosporosis	2,0-3,0 kg/ha					DITHANE M-45		
Cercosporosis, powdery mildew, downy mildew	0,5-0,75 L/t					AMISTAR EXTRA		
A set of soil pests	4,5-6,0 kg/ha	FORCE 1,5 G						
Weevil beet common and grey, shield beetle, cruciferous flea beetle, apple aphid	0,18 L/t		ENGE0					
Weevil, tortoise beetle, flea beetle, aphid, tenebrionid beetle, leaf beetroot aphid	0,09 L/t		ACTARA					
Shield beetle, flea beetle, aphid	0,125-0,15 L/t			KARATE ZEON				
Weevil, shield beetle	0,8 L/t		NURELLE D					
Aphid, flea beetle, weevil, borer, shield beetle, pygmy beetle	0,8-2,5 L/t		DURSBAN					



PRODUCTS AND TERMS OF THEIR APPLICATION IN GARDENS

OURAGAN FORTE										2,0-4,0 L/t	Annual and perennial grain and dicotyledonous weed plants
	LUMAX									3,5-4,0 L/t	Annual grain and dicotyledonous weed plants
CHORUS								CHORUS		0,2-0,3 kg/ha	Scab, powdery mildew, monilia
THIOVIT JET								THIOVIT JET		8,0 kg/ha	Powdery mildew, fruit mite
	DITHANE M-45							DITHANE M-45		2,0-3,0 kg/ha	Scab
								SCORE		0,15-0,2 L/t	Scab, powdery mildew, early blight
								EMBRELIA* <small>NEW</small>		1,2-1,5 L/t	
								TOPAZ		0,3-0,4 L/t	Powdery mildew
	SWITCH								SWITCH	0,75-1,0 kg/ha	Diseases of fruits during storage in storage premises, monilia, blue mould rot, fusariosis rot, grey rot
	NURELLE D							NURELLE D		1,0-1,5 L/t	Seedworm, leaf roller, moth, apple aphid
	KARATE ZEON							KARATE ZEON		0,4 L/t	Seedworm, leaf roller
ACTARA								ACTARA		0,14-0,15 L/t	Bud weevil, Coenorrhinus pauxillus, fruit-treesnout beetle, apple blossom weevil, pear blossom weevil, apple sawfly, apple aphid, slowworm, apple sawfly, grey spruce budworm
ENGEO								ENGEO		0,18 L/t	Apple seedworm, leaf roller, Scrobipalpa ocellatella
								PROCLAIM <small>NEW</small>		0,4-0,5 kg/ha	
								DURSBAN		2,0 L/t	Seedworm, leaf roller, moth, apple aphid, false-scale insects
								LUFOX		1,0 L/t	Apple and pear seedworm, scale insects, mites
								MATCH		1,0 L/t	Apple seedworm, leaf roller, moth
VERTIMEC								VERTIMEC	VERTIMEC	1,0-1,5 L/t	Mite, miner, thunder fly, blind worm
VOLIAM FLEXY								VOLIAM FLEXY		0,3-0,5 L/t	Coenorrhinus pauxillus, fruit-treesnout beetle, apple aphid, apple blossom weevil, seedworm, leaf roller, weevil grey bud, fruit sawfly

HERBICIDE

INSECTICIDE

FUNGICIDE

* Registration is pending.

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MAIN WEEDS, DISEASES AND PESTS

Main weeds	218-227
Sunflower. Diseases and pests	228-229
Rape seed. Diseases and pests.....	230-231
Cereals. Diseases and pests.....	232-235
Corn. Diseases and pests.....	236
Sugar beet. Diseases and pests	237

Main weeds



Ambrosia artemisiifolia L.

PRODUCTS

- GESAGUARD
- ELUMIS
- ESTERON
- CALLISTO
- CAPTORA
- LANCELOT
- LONTREL GRAND
- LUMAX
- PEAK
- PRIMA



Convolvulus arvensis L.

PRODUCTS

- ELUMIS
- STARANE PREMIUM
- OURAGAN FORTE



Bromus secalinus L.

PRODUCTS

- ELUMIS
- PALLAS
- TREFLAN
- OURAGAN FORTE
- FUSILADE FORTE



Bromus sterilis

PRODUCTS

- ELUMIS
- PALLAS
- TREFLAN
- OURAGAN FORTE
- FUSILADE FORTE



Avena fatua L.

PRODUCTS

- AXIAL
- GOAL 2E
- ELUMIS
- CAPTORA
- MILAGRO
- PALLAS
- FUSILADE FORTE



Centaurea cyanus (All.) Dost.

PRODUCTS

- DERBY
- ELUMIS
- LANCELOT
- LONTREL GRAND
- PRIMA
- OURAGAN FORTE



Galinsoga parviflora Cav

PRODUCTS

- GESAGUARD
- DIALEN SUPER
- CALLISTO
- CAPTORA
- PEAK
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- TREFLAN



Hibiscus trionum L.

PRODUCTS

- ELUMIS
- CALLISTO
- CAPTORA
- LUMAX
- PEAK
- PRIMEXTRA TZ GOLD



Polygonum convolvulus L.

PRODUCTS

- ELUMIS
- LANCELOT
- LUMAX
- CAPTORA
- PEAK
- PRIMA
- PRIMEXTRA TZ GOLD
- TREFLAN



Polygonum lapatifolia

PRODUCTS

- ELUMIS
- LANCELOT
- LUMAX
- CAPTORA
- PEAK
- PRIMA
- PRIMEXTRA TZ GOLD
- TREFLAN



Sinapis arvensis L.

PRODUCTS

- GESAGUARD
- DERBY
- ELUMIS
- LANCELOT
- LUMAX
- CAPTORA
- PALLAS
- PEAK
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD



Buglossoides arvensis

PRODUCTS

- GESAGUARD
- ELUMIS
- LANCELOT
- CAPTORA
- PALLAS
- PEAK

Main weeds



Veronica hederifolia L.

PRODUCTS

- GALERA SUPER
- DERBY
- ELUMIS
- CALLISTO
- METRONAM
- PRIMA
- OURAGAN FORTE



Fagopyrum tataricum (L.) Gaertn.

PRODUCTS

- ELUMIS
- METRONAM
- PEAK
- OURAGAN FORTE



Capsella bursa-pastoris L.

PRODUCTS

- GESAGUARD
- GOAL
- DERBY
- ELUMIS
- ESTERON
- CALLISTO
- CAPTORA
- LUMAX
- METRONAM
- PALLAS
- LANCELOT
- PRIMA



Datura stramonium L.

PRODUCTS

- GESAGUARD
- GOAL
- ELUMIS
- CALLISTO
- CAPTORA
- LONTREL GRAND
- LUMAX
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- TROPHY



Galeopsis tetrahit L.

PRODUCTS

- GALERA SUPER
- GESAGUARD
- ELUMIS
- CALLISTO
- CAPTORA
- LUMAX
- PEAK
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- REGLONE
- SUPER
- STARANE PREMIUM
- TREFLAN



Stellaria media L.

PRODUCTS

- DERBY
- ELUMIS
- CALLISTO
- CAPTORA
- LANCELOT
- LINTUR
- LUMAX
- METRONAM
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- STARANE PREMIUM
- TREFLAN
- TROPHY
- OURAGAN FORTE



Brassica campestris L.

PRODUCTS

- GESAGUARD
- DERBY
- ELUMIS
- CAPTORA
- LANCELOT
- LUMAX
- PALLAS
- PEAK
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD



Urtica úrens

PRODUCTS

- GALERA SUPER
- ELUMIS
- CALLISTO
- METRONAM
- PRIMA



Lamium purpureum L.

PRODUCTS

- GALERA SUPER
- GESAGUARD
- ELUMIS
- CALLISTO
- LUMAX
- METRONAM
- PALLAS
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- TREFLAN



Melandrium album Mill.

PRODUCTS

- ELUMIS
- CALLISTO
- CAPTORA
- PEAK
- PRIMA



Echinochloa crus-galli L.

PRODUCTS

- AXIAL
- GOAL
- ELUMIS
- CAPTORA
- MILAGRO
- FUSILADE FORTE
- CITADEL



Descurainia sophia L.

PRODUCTS

- GOAL
- ELUMIS
- ESTERON
- LANCELOT
- PEAK
- PRIMA

Main weeds



Chenopodium album L.

PRODUCTS

- GESAGUARD
- DIALEN SUPER
- ELUMIS
- ESTERON
- CALLISTO
- CAPTORA
- LUMAX
- METRONAM
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- TROPHY



Papaver rhoeas L.

PRODUCTS

- GALERA SUPER
- DERBY
- ELUMIS
- ESTERON
- CAPTORA
- LANCELOT
- METRONAM
- PEAK
- PRIMA



Apera spica-venti L.

PRODUCTS

- AXIAL
- ELUMIS
- CAPTORA
- MILAGRO
- PALLAS
- REGLONE SUPER
- OURAGAN FORTE
- FUSILADE FORTE



Setaria sp.

PRODUCTS

- AXIAL
- ELUMIS
- CAPTORA
- MILAGRO
- PALLAS
- REGLONE SUPER
- OURAGAN FORTE
- FUSILADE FORTE



Euphorbia stricta L.

PRODUCTS

- GOAL
- ELUMIS
- ESTERON
- CAPTORA
- LANCELOT
- LUMAX
- REGLONE SUPER



Xanthium strumarium L.

PRODUCTS

- GALERA SUPER
- GOAL
- ELUMIS
- ESTERON
- CAPTORA
- LANCELOT
- LONTREL GRAND
- LUMAX
- METRONAM
- PEAK
- PRIMA
- REGLONE SUPER



Sonchus oleraceus L.

PRODUCTS

- GALERA SUPER
- GOAL
- ELUMIS
- ESTERON
- CALLISTO
- LANCELOT
- LONTREL GRAND
- PEAK
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD



Cirsium arvense L.

PRODUCTS

- GALERA SUPER
- CALLISTO
- LANCELOT
- LONTREL GRAND
- LUMAX
- REGLONE SUPER
- OURAGAN FORTE



Helianthus annuus L.

PRODUCTS

- ESTERON
- ELUMIS
- CALLISTO
- LANCELOT
- LONTREL GRAND
- LUMAX
- PRIMA



Solanum nigrum L.

PRODUCTS

- GALERA SUPER
- GOAL
- ELUMIS
- CALLISTO
- CAPTORA
- LONTREL GRAND
- METRONAM
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- STARANE PREMIUM
- TROPHY
- LUMAX



Elymus repens L.

PRODUCTS

- ELUMIS
- MILAGRO
- PALLAS
- OURAGAN FORTE
- FUSILADE FORTE



Galium aparine L.

PRODUCTS

- GALERA SUPER
- GOAL
- DERBY
- CAPTORA
- LANCELOT
- PRIMA
- REGLONE SUPER
- STARANE PREMIUM
- OURAGAN FORTE

Main weeds



Panicum capillare L.

PRODUCTS

- ELUMIS
- CAPTORA
- MILAGRO
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- TROPHY
- OURAGAN FORTE
- FUSILADE FORTE



Stachys annua L.

PRODUCTS

- ELUMIS
- CAPTORA
- MILAGRO
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- TROPHY
- OURAGAN FORTE
- LANCELOT



Raphanus raphanistrum L.

PRODUCTS

- GOAL
- DERBY
- ELUMIS
- ESTERON
- CAPTORA
- LANCELOT
- LUMAX
- METRONAM
- PEAK
- PRIMA
- OURAGAN FORTE



Anthemis arvensis L.

PRODUCTS

- GALERA SUPER
- ELUMIS
- CALLISTO
- CAPTORA
- LANCELOT
- LONTREL GRAND
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- REGLONE SUPER
- TROPHY
- OURAGAN FORTE



Matricária sp.

PRODUCTS

- GALERA SUPER
- ELUMIS
- CAPTORA
- LANCELOT
- LONTREL GRAND
- LUMAX
- METRONAM
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- REGLONE SUPER
- STARANE PREMIUM
- OURAGAN FORTE



Fumaria officinalis L.

PRODUCTS

- GALERA SUPER
- DERBY
- ELUMIS
- CALLISTO
- CAPTORA
- LANCELOT
- LUMAX
- PEAK
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD
- TROPHY



Consolida arvensis L.

PRODUCTS

- DERBY
- ELUMIS
- CAPTORA
- LANCELOT
- PALLAS
- REGLONE SUPER
- OURAGAN FORTE



Thlaspi arvense L.

PRODUCTS

- GOAL
- DERBY
- ELUMIS
- ESTERON
- CALLISTO
- CAPTORA
- LANCELOT
- LUMAX
- METRONAM
- PEAK
- PRIMA
- PRIMEXTRA GOLD
- PRIMEXTRA TZ GOLD



Viola arvensis L.

PRODUCTS

- DERBY
- ELUMIS
- CALLISTO
- LUMAX
- METRONAM
- PALLAS
- REGLONE SUPER
- OURAGAN FORTE



Equisetum arvense L.

PRODUCTS

- LANCELOT
- REGLONE SUPER
- OURAGAN FORTE



Cardaria draba L.

PRODUCTS

- DERBY
- ELUMIS
- ESTERON
- CAPTORA
- PEAK
- PRIMA
- REGLONE SUPER
- OURAGAN FORTE



Amaranthus retroflexus L.

PRODUCTS

- Gesaguard
- GOAL
- DUAL GOLD
- ELUMIS
- ESTERON
- CALLISTO
- CAPTORA
- LUMAX
- PRIMA
- TROPHY
- OURAGAN FORTE

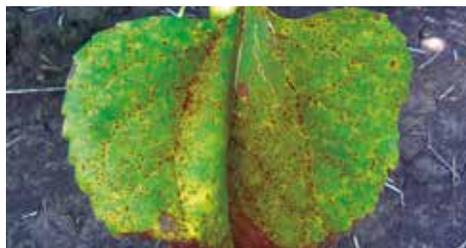
SUNFLOWER. Diseases and pests



Sclerotinia sclerotiorum (Lib.) de Bary

PRODUCTS

- APRON XL
- MAXIM XL



Puccinia helianthi Schw

PRODUCTS

- AMISTAR EXTRA



Plasmopara halstedii Novot

PRODUCTS

- AMISTAR EXTRA
- APRON XL
- MAXIM XL



Botrytis cinerea Pers.

PRODUCTS

- CHORUS



Phoma macdonaldii Sacc

PRODUCTS

- AMISTAR EXTRA



Diaporthe helianthi Munt

PRODUCTS

- AMISTAR EXTRA



Orobanche cumana Wallr.

PRODUCTS

- CAPTORA



Helicoverpa armigera (Hbn.)



Elateridae

PRODUCTS

- CRUISER



Homoeosoma nebulellum Schiff.



Agapanthia dahlia Richt.



Mordellistena parvula Gyll.

PRODUCTS

- ENGEO

RAPE. Diseases and pests



Alternaria ssp.

PRODUCTS

- AMISTAR EXTRA
- Dithane M-45
- CRUISER OSR
- MAXIM XL
- RYDOMIL GOLD
- SETAR
- THIOVIT JET



Erysiphe cruciferarum

PRODUCTS

- THIOVIT JET



Peronospora brassicae

PRODUCTS

- AMISTAR EXTRA
- CRUISER OSR
- MAXIM XL
- RYDOMIL GOLD
- SETAR



Phoma lingam

PRODUCTS

- AMISTAR EXTRA
- CRUISER OSR
- SETAR



Cylindrosporium concentricum

PRODUCTS

- AMISTAR EXTRA
- RYDOMIL GOLD



Brevicoryne brassicae

PRODUCTS

- KARATE ZEON
- CRUISER OSR



Meligethes aeneus

PRODUCTS

- KARATE ZEON



Eurydema ventralis

PRODUCTS

- KARATE ZEON



Ceuthorrhynchus quadridens

PRODUCTS

- KARATE ZEON
- NURELLE D
- CRUISER OSR



Pontia daplidice

PRODUCTS

- KARATE ZEON



Phyllotreta sp.

PRODUCTS

- KARATE ZEON
- CRUISER OSR

Cereals.

Diseases and pests



Tilletia controversa Kuehn

PRODUCTS

- MAXIM STAR
- MAXIM FORTE
- CELEST MAXX
- CELEST TOP
- Certicore



Ustilago tritici (Pers.) Jens

PRODUCTS

- MAXIM STAR
- MAXIM FORTE
- CELEST MAXX
- CELEST TOP
- Certicore



Urocystis tritici Koern.

PRODUCTS

- MAXIM STAR
- MAXIM FORTE
- CELEST MAXX
- CELEST TOP
- Certicore



Ophiobolus sp., *Fusarium* sp. etc.

PRODUCTS

- MAXIM STAR
- MAXIM FORTE
- CELEST MAXX
- CELEST TOP
- Certicore



Blumeria graminis (DC) Speer

PRODUCTS

- ALTO SUPER
- AMISTAR EXTRA
- AMISTAR EXTRA
- TILT
- TILT TURBO



Puccinia recondita etc.

PRODUCTS

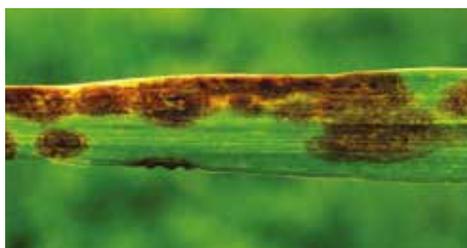
- ALTO SUPER
- AMISTAR EXTRA
- AMISTAR EXTRA
- TILT TURBO



Rhynchosporium graminicola Heinsen

PRODUCTS

- ALTO SUPER
- AMISTAR EXTRA
- AMISTAR EXTRA
- TILT TURBO
- MAXIM STAR
- MAXIM FORTE
- Certicore



Stagonospora nodorum Berk

PRODUCTS

- ALTO SUPER
- AMISTAR EXTRA
- AMISTAR EXTRA
- TILT
- TILT TURBO



Pyrenophora tritici-repentis (Died.) Drechsler

PRODUCTS

- ALTO SUPER
- AMISTAR EXTRA
- AMISTAR EXTRA
- MAXIM STAR
- MAXIM FORTE
- CELEST TOP
- TILT
- TILT TURBO



Drechslera teres Ito

PRODUCTS

- ALTO SUPER
- AMISTAR EXTRA
- TILT
- TILT TURBO
- MAXIM STAR
- MAXIM FORTE
- CELEST MAXX
- CELEST TOP
- Certicore



Drechslera graminea Ito

PRODUCTS

- ALTO SUPER
- AMISTAR EXTRA
- TILT
- TILT TURBO
- MAXIM STAR
- MAXIM FORTE
- CELEST MAXX
- CELEST TOP
- Certicore



Fusarium sp.

PRODUCTS

- ALTO SUPER
- AMISTAR EXTRA
- AMISTAR EXTRA
- MAXIM STAR
- MAXIM FORTE
- CELEST MAXX
- CELEST TOP

Cereals.

Diseases and pests



Mayetiola destructor Say.

PRODUCTS

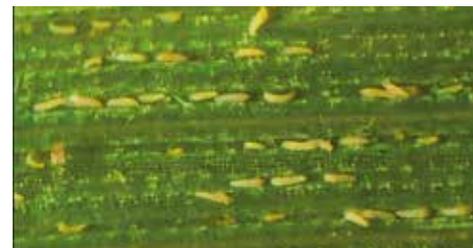
- ACTARA
- ENGEO



Chaetocnema sp.

PRODUCTS

- ACTARA
- ENGEO
- KARATE ZEON
- NURELLE D
- CELEST MAXX
- CELEST TOP



Siteroptes graminum Rent.

PRODUCTS

- NURELLE D



Eurygaster integriceps Put.

PRODUCTS

- ACTARA
- ENGEO
- KARATE ZEON
- NURELLE D



Agrotis segetum Schiff.

PRODUCTS

- NURELLE D
- KARATE ZEON



Haplothrips tritici

PRODUCTS

- ACTARA
- ENGEO
- KARATE ZEON
- NURELLE D



Oulema melanopus L.

PRODUCTS

- ACTARA
- ENGEO
- KARATE ZEON
- NURELLE D



Anisoplia sp.

PRODUCTS

- ACTARA
- ENGEO
- KARATE ZEON
- NURELLE D



Zabrus tenebrioides Fabr.

PRODUCTS

- DURSBAN
- NURELLE D
- CELEST MAXX
- CELEST TOP



Cephus pygmaeus L.

PRODUCTS

- ENGEO



Oscinella sp.

PRODUCTS

- ACTARA
- CELEST MAXX
- CELEST TOP

CORN. Diseases and pests



Sphacelotheca reiliana (Kuhn) G.P. Clinton

PRODUCTS

- MAXIM QUATTRO
- MAXIM XL



Ustilago zaeae (Beckm.) Unger

PRODUCTS

- AMISTAR EXTRA
- MAXIM XL
- MAXIM QUATTRO



Fusarium spp. (F. moniliforme J. Sheld. etc.)

PRODUCTS

- AMISTAR EXTRA



Helicoverpa armigera Hbn.

PRODUCTS

- ACTELIC
- AMPLIGO
- KARATE ZEON



Diabrotica virgifera virgifera LeConte

PRODUCTS

- ACTELIC
- KARATE ZEON



Ostrinia nubilalis Hb.

PRODUCTS

- ACTELIC
- AMPLIGO
- KARATE ZEON

SUGAR BEET. Diseases and pests



Ramularia betae Rostr.

PRODUCTS

- APRON
- MAXIM XL



Cercospora beticola

PRODUCTS

- AMISTAR EXTRA
- ALTO SUPER



Agriotes sputator

PRODUCTS

- DURSBAN
- ENGEO
- KARATE ZEON
- CRUISER 350
- NURELLE D



Aphis fabae

PRODUCTS

- ACTARA
- ENGEO
- KARATE ZEON
- NURELLE D



Curculionidae

PRODUCTS

- DURSBAN
- ENGEO
- KARATE ZEON
- CRUISER 350
- NURELLE D



Cassida nebulosa

PRODUCTS

- DURSBAN
- ENGEO
- KARATE ZEON
- CRUISER 350
- NURELLE D



SYNGENTA IN UKRAINE

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THE GOOD GROWTH PLAN

Something needs to change
Together, we need to
find solutions to these
unprecedented
challenges. Our future
depends on it.
We need to grow more
food using fewer
resources, while
protecting
nature and improving
life for people in rural
communities.

Humanity is facing its toughest
challenge. Every day, our planet wakes
with 200,000 more mouths to feed and
more farmland lost to erosion. Many
people who produce the world's
food are living in poverty, while biodiversity is
disappearing fast. We have only one planet, and
we're using its resources 50% faster than
it can take. What we're asking it to provide is simply
not sustainable.





MAKE CROPS MORE EFFICIENT

by increasing the average productivity of the world's major crops by 20% without using more land, water or inputs



RESCUE MORE FARMLAND

by improving the fertility of 10 million hectares of farmland on the brink of degradation



HELP BIODIVERSITY FLOURISH

by enhancing biodiversity on 5 million hectares of farmland



EMPOWER SMALLHOLDERS

by reaching 20 million smallholders and enabling them to increase productivity by 50%



HELP PEOPLE STAY SAFE

by training 20 million farm workers on labor safety, especially in developing countries



LOOK AFTER EVERY WORKER

by striving for fair labor conditions throughout our entire supply chain network

CORPORATE SOCIAL RESPONSIBILITY



Social responsibility is an integral part of our Company's activities. This is an important component of all we do, starting from development of new products and ending with control of environmental effects of our activities. We care about society, think about future generation and believe that all we do makes us and our country successful and rich.

We care about future generation

Syngenta Students Tainting Program is carried out to prepare future specialists, bring up a new generation of agrarians, to popularize agrarian profession.

Educational project for pupils and students widens their worldview thanks to new obtained knowledge and getting to know novel technologies needed to successfully do agricultural business.

We open the door to the world of agrarian business to the youth and invite them to visit our diagnostic laboratories, research centers, field days. Final objective of this project is pupils' understanding of a complicated plant growing process, respect to ground labor and willingness of some them to choose the profession related to agrarian area. Main idea of these projects is to ensure that the youth has an opportunity to have professional education in agrarian area, to prepare multi-functional specialist, who would be able to efficiently work in the conditions of unstable agrarian business.

Arsenal of Ideas is the biology zone in the Scientific Laboratory of the Innovative Educational Project for Children and Adolescents.

Young visitors of the laboratory have an opportunity to study and research seed, live plants and all things related with crop production. They study under the microscope the smallest elements of plant life, get to know that plants, the same as people, have diseases and need medicines to recover. Furthermore, in the biology zone, interactive cognitive events take place that



draw attention to the issues of environmental protection, providing people with resources, creation of potential optimization ways of this process, plant health and their important role for the entire planet.

We care about the society

Social vegetable garden is the initiative of Kyiv activists, to which Syngenta and its employees subsequently joined as sponsors, and who have supported creation of the first social vegetable garden in the public square and performance of educational workshops for children. Thanks to us, all those who wish have an opportunity to get to know more about plants, vegetable garden and its care. In such a way, we help the citizens of Kyiv to create beauty in their yards.

Visiting Nadia Orphanage in the town of Mokrets of Brovary district, we care about it and propagate corporate volunteering. We not only provide financial assistance, but also develop and educate children. "Let's discover the creative potential of children together" – this is the name of the program, within which our colleagues together with children participate in creative workshops and field events.

Support of Down Syndrome All-Ukrainian Charity Organization was performed through engagement of our colleagues to active participation in all charity sport events organized by the center to support children with special needs.

Producing each year New-Year's good luck cards, our Company supports children from the Creative Association of Children and Youth with Physical Disabilities. We sent the cards made by the hands of talented girls

and boys to congratulate our friends and partners.

Support of Associations. We support associations of towns and villages, where our representative offices are in place. We not only provide financial assistance to hospitals, schools, charity funds, and take direct part in the life of associations.

SYNGENTA IN UKRAINE

More than 10 years, Syngenta helps to farmers of all Ukraine to develop agricultural business.

In these years, a great number of farm units had an opportunity to assess the quality of Syngenta hybrids and confidence in reliability of plant-protecting agents offered by our company. Syngenta in Ukraine is represented in six business regions. Syngenta team in Ukraine is about 300 employees.



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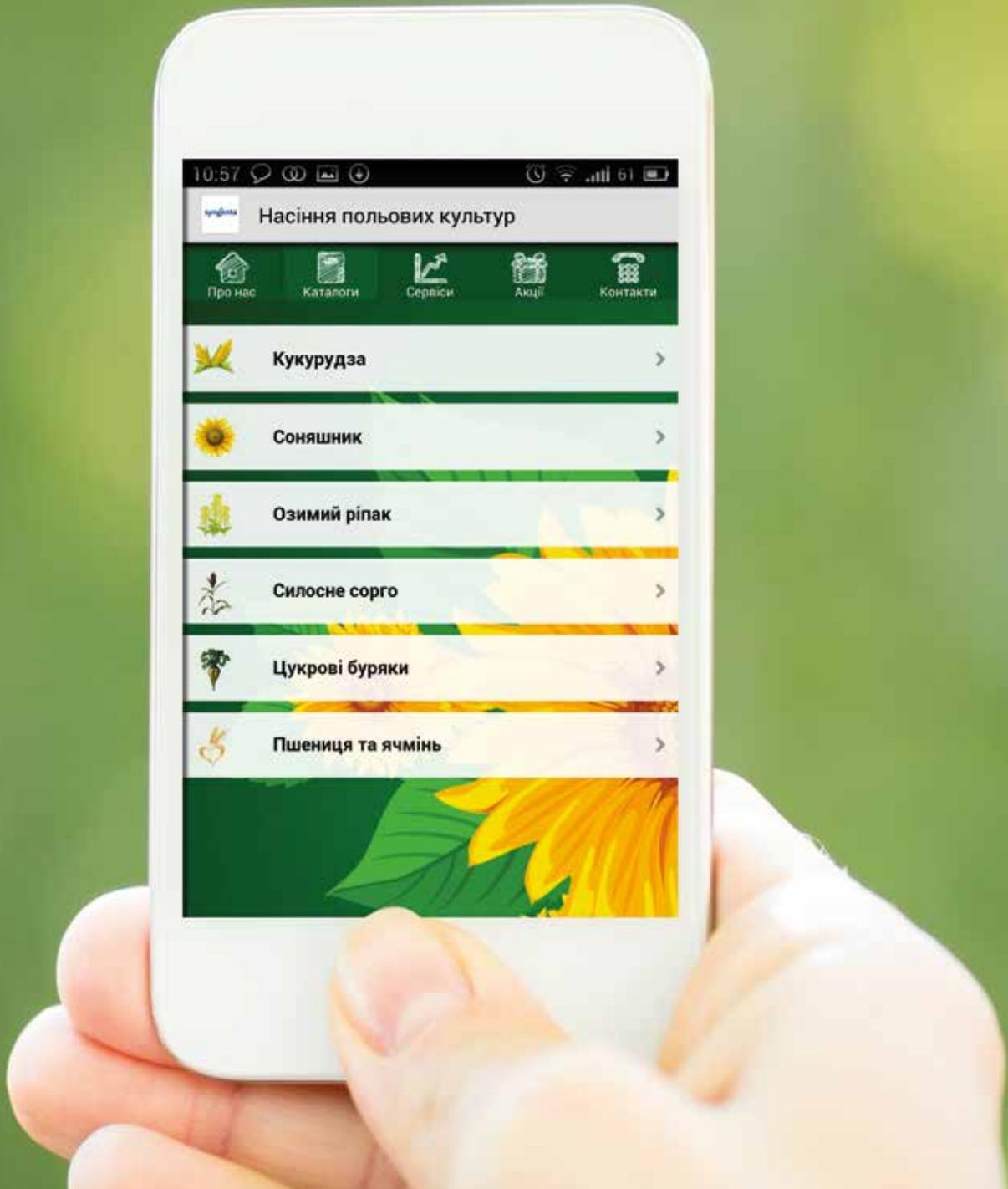
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Download Syngenta application

Syngenta Ukraine application will enable you to obtain required and relevant information thanks to updates available after installation of the application

Syngenta product catalogue and terms of their use, services for customers and contacts of specialists of the Company are always with you now thanks to the mobile application Syngenta Ukraine. Download the application to your smartphone, and you will always have a reliable assistant in your hard work, as after installation of the application, the program requires no Internet connection in order to function properly.





Online services

Visit our web-site, where you may find a lot of up-to-date and useful information: **www.syngenta.ua**



WEATHER FORECAST

Agronomic weather forecast from Syngenta



SERVICES

You may find updated list of Syngenta's services



CATALOGUES

Online catalogues of plant-protecting agents and seeds of Syngenta



VIDEO SECTION

You may find educational video materials from Syngenta and review video of events with participation of Syngenta



PROMOTIONS

List of current promotional offers from Syngenta and catalogue of promotional materials



SYNGENTA BUSINESS CARD



FINANCIAL SOLUTIONS

List of relevant financial solutions of Syngenta



DISTRIBUTORS

List and contact data of Syngenta's distributors in Ukraine

A wide-angle photograph of a vast field filled with numerous golden hay bales. The bales are arranged in rows, receding into the distance. The sky is a vibrant blue with soft, white clouds. The overall scene is bright and sunny, conveying a sense of agricultural productivity and natural beauty.

Bringing plant potential to life

Call centre: 0 800 500 449
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www.syngenta.ua