PHOSAGRO

FERIMUS

Product catalogue

Contents

About PhosAgro

PhosAgro is a Russian vertically integrated company and one of the world's leading producers of phosphorus-based fertilizers.

Our eco-efficient products boost farmers' crop yield and quality in over 100 countries on every inhabited continent. We produce more than 50 grades of fertilizers, ammonia and feed phosphates, apatite concentrate with 39% P_2O_5 or more.

The absolute priority of the company is the interests of the Russian farmers. PhosAgro confidently maintains the leading positions in supply of mineral fertilizers to the national market. It has almost doubled the supply volume over the last 5 years. We have a comprehensive knowledge base on crop growing on all types of Russian soils. We offer our customers the development of mineral nutrition systems for a wide range of crops in farms of various sizes: from small ones to large agricultural holdings.

Soil fertility care for the prosperity of life

Global company

Leader in the Russian and world markets by the production of eco-efficient mineral fertilizers. Implementation of different partnership projects all over the world.

Innovation

Search for the best solutions: modern approaches, production upgrading, application of the latest scientific farming developments and best practice.

Environmental friendliness

Care for the environment and ecological properties of products, enhancement of expertise in green chemistry and biotechnology, use of up-to-date gas emission and wastewater treatment systems.

Customer focus

Customer support in all farming aspects, development of the online trading platform. Creation and development of agricultural distribution centres and digital field systems.

How we work

The company's activities cover the full-cycle fertilizer production: mining and processing of high-grade phosphate rock, logistics infrastructure and distribution network.

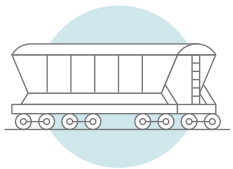
Agricultural consulting

We do not just produce fertilizers, but also assist our customers in the most efficient use of our products. We train in the principles of sustainable agriculture and responsible farming. We collect feedback from agricultural producers in order to develop our product line.

Mining and processing
We carry out mining of apatite-nepheline ore of magmatic origin in Murmansk region.
In contrast to feedstock from other producers, it contains almost no harmful impurities.

Production
We continuously develop and improve our products using up-to-date equipment and the latest scientific developments.

The flexible production model enables fast demand response.



Logistics
Our own logistics infrastructure (warehouses, mineral wagons, tanks, rolling stock cars, two port terminals) enables our uninterrupted supply.

Marketing and sales
Our sales offices, traders and distributors supply products and render services to agricultural producers on all inhabited continents. PhosAgro has the largest mineral fertilizer distribution network in Russia and is actively expanding it.

93%
Coefficient of apatite concentrate recovery from ore

>50
Fertilizer grades

~40%
Export supply through own port terminals

31
Distribution centres in Russia

Principles of building a plant nutrition system

Any plant absorbs mineral compounds from soil, air and water, and converts them into organic compounds necessary for growth and development. Crop yields and quality depend on availability of fertilizer elements and amounts of water.

Main application methods

Main
The main way to fertilize. Uniform distribution of fertilizer elements on the soil surface, maintaining roughly the same distance between solid fertilizer granules or liquid fertilizer drops.

Sowing
Fertilizing simultaneously with crop seeding. The main purpose is to provide effective plant nutrition at the initial stages of development and growth.

Topdressing:
- **Non-root topdressing**
Application of nutrients on the leaves of plants in dissolved form.
- **Root topdressing**
Application of nutrients under the root in dissolved form.

Fertilizer and application dose selection factors

- Availability of fertilizer elements in soil
- Temperature mode and amount of precipitation
- Crop fertilizing need
- Predecessor crop and its feed system
- Plant protection system
- Peculiarities of the variety and hybrid
- Availability of fertilizing equipment

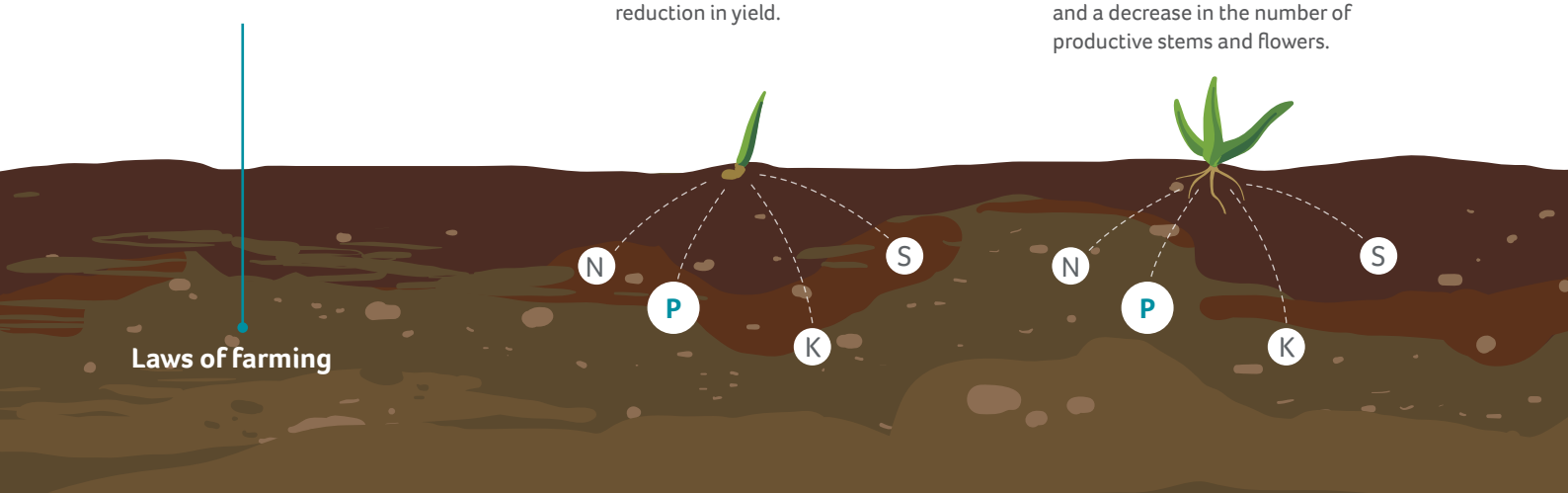
When applying mineral fertilizers, the balance of fertilizer elements and compatibility of fertilizers are to be considered. The shortage and imbalance of fertilizer elements prevent the plant from revealing the genetic yielding potential in full.

1

Initial stage
The plant consumes a small amount of fertilizer elements. **A phosphorus deficiency** during this period leads to a deterioration in root growth and a drastic reduction in yield.

2

Tillering
Anlage and differentiation of reproductive organs. **Deficiency of nitrogen, phosphorus, and potassium** leads to disruption of the development of the root system and a decrease in the number of productive stems and flowers.



Content of proteins, fats and carbohydrates in plant products under various growing conditions

Protein in wheat
9–15%

Starch in potato
10–24%

Sugar in sugar beet roots
12–21%

Fat in oilseeds
19–60%

Rational fertilization helps to

- Get maximum yields
- Improve product quality
- Increase the generation of vital substances for human and livestock nutrition by plants
- Boost agricultural production economics

3

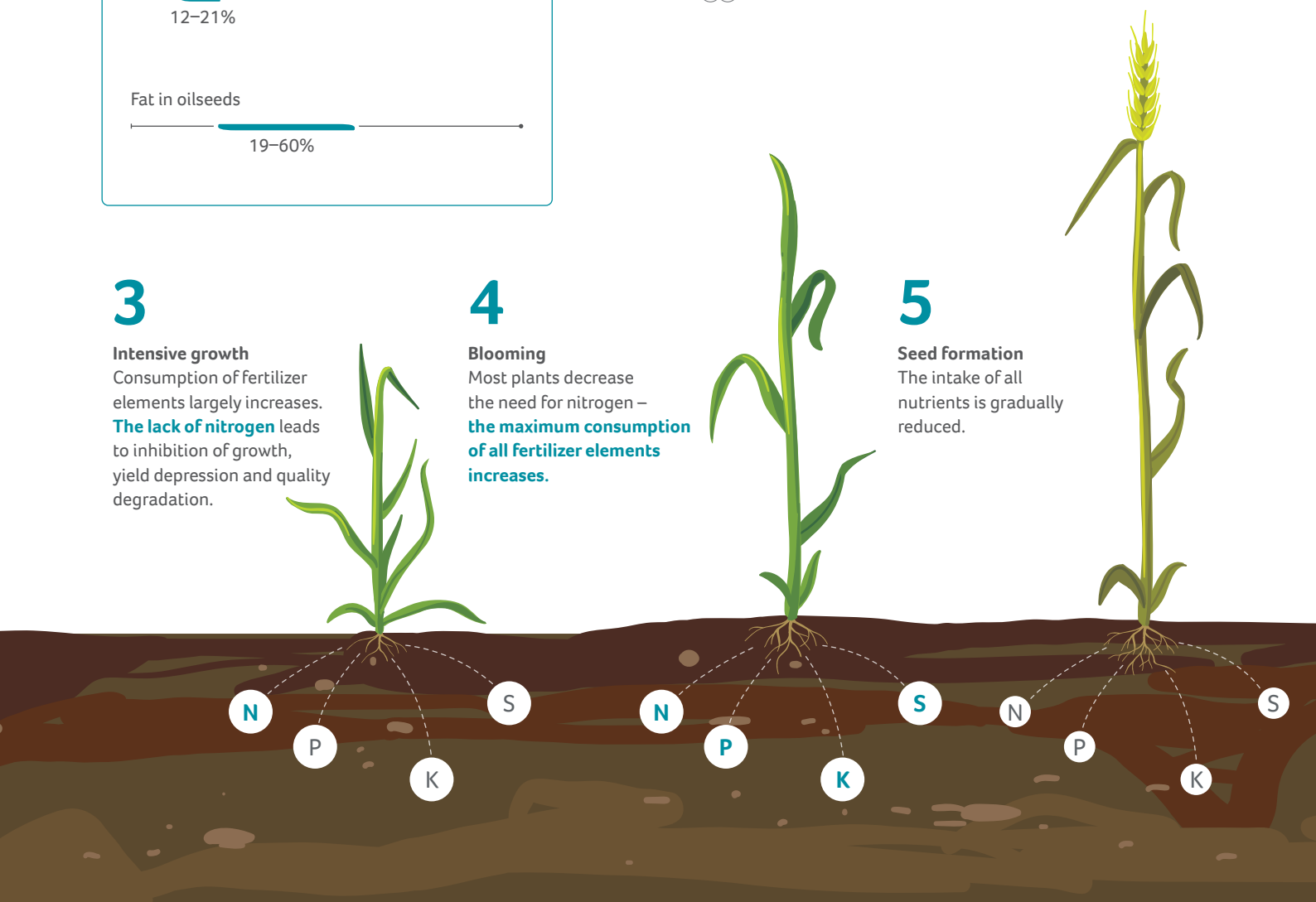
Intensive growth
Consumption of fertilizer elements largely increases. **The lack of nitrogen** leads to inhibition of growth, yield depression and quality degradation.

4

Blooming
Most plants decrease the need for nitrogen – **the maximum consumption of all fertilizer elements increases.**

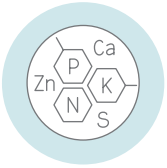
5

Seed formation
The intake of all nutrients is gradually reduced.



Product advantages

The right choice of modern fertilizer grades from our wide range ensures balanced mineral nutrition of crops under various soil and climatic conditions. This is a guarantee of consistently high yield and product quality with maximum economic effect.



Up to 8 fertilizer elements in a granule
The use of such fertilizers contributes to a good high-quality crop and high profitability of the economy.

Sulphur for high-quality yields
All our complex fertilizers contain sulphur in a sulphate form, thus ensuring high-quality yields by the level of protein and oiliness.

Ammonia nitrogen NH_4+
The ammonia form of nitrogen, in contrast to the nitrate, less energy-intensive in the process of transition to vegetable proteins, contributes to better absorption of phosphorus and is not washed out of the soil.

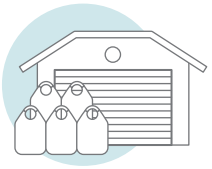
Environmentally safe feedstock
Phosphate ore mined in the Khibiny deposits developed by us has the world's lowest content of harmful impurities.

Uniform distribution of fertilizer elements
Each granule of our complex fertilizers that enters the soil contains the right proportions of fertilizer elements.

Water-soluble and plant-available phosphorus
FosAgro fertilizer brands are characterized by a high content of water-soluble phosphorus, which makes it more accessible for plant roots in the soil.

Wide range
The line of innovative grades of complex fertilizers containing macro- and microelements is suitable for any soil and climatic conditions.

Easy product selection
We offer PhosAgro feed systems and product brand categories to simplify the choice of the desired fertilizer grade.



Increased caking resistance
Our fertilizers do not cake during transportation and storage.

Perfectly balanced formula

Macroelements

N

Nitrogen
It stimulates the growth of the vegetative mass, increases the size and protein content of the grain yield and green mass. Nitrogen is included in proteins. Ammonia nitrogen is not washed out of the soil, in contrast to nitrate nitrogen. It contributes to better phosphorus intake and is absorbed directly by plant roots.

P

Phosphorus
Phosphorus is used in photosynthesis, energy conversion, cell division and growth, and transfer of genetic information. It contributes to strong root system growth, improves water intake by plants. Enhances resistance to disease and drought, accelerates ripening, improves grain quality.

K

Potassium
It ensures normal photosynthesis, intensifies synthesis and flow of carbohydrates from plant leaves to storage organs. Provides stability of grain, tubers, root crops even in dry years, increases starchiness and sugar content.

Mesoelements

S

Sulphur
It is required for many metabolic processes. It is included in three essential amino acids, necessary for protein synthesis. It improves phosphorus absorption by high calcium soils. Regulates redox processes, photosynthesis and plant growth.

Ca

Calcium
It plays a key role in soil fertility, maintaining the structure of cell walls and the integrity of cell membranes. Eliminates excess soil acidity. Increases caking resistance of the crop. Improves the availability of molybdenum, manganese, zinc, boron.

Mg

Magnesium
It is a key element for the synthesis of chlorophyll in plants, involved in photosynthesis and protein synthesis. Essential for vegetative growth. It is contained in small amounts in most of our complex fertilizers.

Microelements

Zn

Zinc
It is necessary for functioning of enzyme systems and protein synthesis. It controls the formation of essential growth and development regulators by plants. It contributes to larger phosphorus uptake by the plant. Most effective on sandy chernozems.

B

Boron
It is necessary for plants to develop new cells in growing organs and tissues. Essential for flowering and formation of fruits and seeds. It is especially effective on carbonate soils.

Sustainable development

The key element of the Strategy-2025 is PhosAgro's contribution to global issues. We acclaim the global growing attention to ecology, food safety and human health.

We recognise the need for radical transformation in the way that we think and behave, with the Global 2030 Agenda and the UN Sustainable Development Goals (SDGs) serving as a basis for such transformation. Ensuring product excellence, safety and environmental protection as required by the UN SDG is the top priority for us, our consumers and partners.

In 2019, FAO (Food and Agriculture Organization of the United Nations) adopted the International Code of Conduct for the Sustainable Use and Management of Fertilizers in order to end hunger, increase food safety, promote the production, distribution and use of safe fertilizers.

The Code contains recommendations for the governments of all countries to establish legal restraints on the sale and use of fertilizers with the high content of heavy metals that may enter the soil.

The document appeals to fertilizer producers to use clear labels on their products that contain the information about the content of pollutants and the potential environmental impact.

The European Union has already adopted a decision on the restriction of the turnover of phosphorus fertilizers with the high content of heavy metals and arsenic. Restrictions will be binding on fertilizer market participants from July 2022.

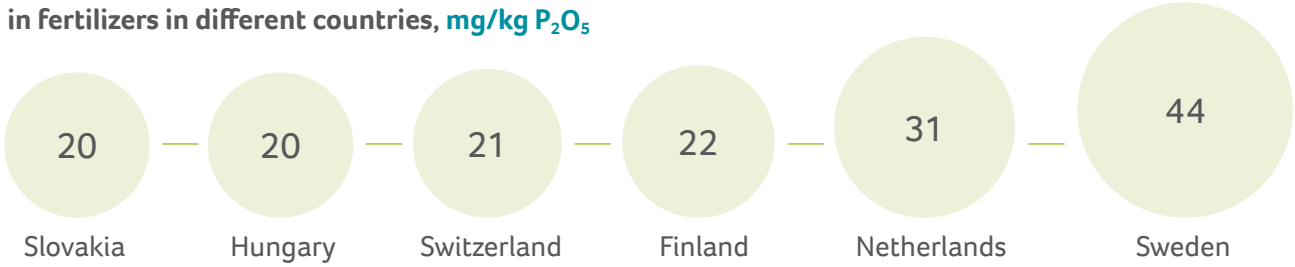
At this stage, products with the cadmium content exceeding 60 mg/kg P_2O_5 will be banned.

As a responsible producer whose products are used by consumers in more than 100 countries, we support the approval of the rules and the code and comply with the strictest safety standards for human health and the environment.

By producing environmentally preferable products with proven characteristics, PhosAgro makes a signicant contribution to sustainable consumption and production. The responsible approach to the management of soil fertility on an industrial scale will mitigate the environmental impact that comes from agriculture.

In July 2022, the law on cadmium allowance in phosphorus-based fertilizers (not more than 60 mg/kg P_2O_5) will come into force in the EU. The restrictions are already applied by 29 countries, including 21 EU states.

Maximum permissible cadmium content in fertilizers in different countries, mg/kg P_2O_5



> $134 million*

cost of environmental protection in 2021

*The official average annual exchange rate of the United States dollar against the rubble is set by the Central Bank of the Russian Federation in 2021

10 %

reduction of pollutant emissions per tonne of products in 2021 relative to 2020

PhosAgro directly promotes 11 of the United Nations sustainable development goals (SDG)

Priority SDGs impacted positively by the Company

SDG	Prioritization result
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Expanding the use of mineral fertilizers which, due to their natural composition (zero/minimum concentration of radionuclides and heavy metals), minimize potential adverse impact on human health.
17 PARTNERSHIPS FOR THE GOALS	Strengthening the Global Partnership in favor of sustainable development complemented by partnerships with the involvement of multiple stakeholders who mobilize and share knowledge, expertise, technologies and financial resources in order to support the achievement of the Sustainable Development Goals in all countries, especially developing ones.
6 CLEAN WATER AND SANITATION 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	Improved infrastructure, telecommunications, road network, power and water supplies, improved access to health care and education.
2 ZERO HUNGER	Use of mineral fertilizers boosts food production and contributes to the availability of nutrients required for human health.
11 SUSTAINABLE CITIES AND COMMUNITIES	Positive impact on the infrastructure development and demographic changes in the regions of presence.
13 CLIMATE ACTION	Fertilizers play an important role in improving the quality of soils – natural absorbers of greenhouse gases.
8 DECENT WORK AND ECONOMIC GROWTH	Support of employment.
4 QUALITY EDUCATION	Development of skills of both employees and the younger generation.

Priority SDGs for which the Company minimizes its adverse impact

SDG	Prioritization result
8 DECENT WORK AND ECONOMIC GROWTH	Inflation, price rise and limited accessibility of housing for workers not involved in the mining industry; long-term depopulation, income differences, prevalence of jobs for unskilled and low-skilled employees.
6 CLEAN WATER AND SANITATION 12 RESPONSIBLE CONSUMPTION AND PRODUCTION 15 LIFE ON LAND	Environmental impact caused by improper use of fertilizers: agriculture-related emissions of greenhouse gases, degradation of natural ecosystems, drains, leaks and contamination, bogging of fresh-water bodies and loss of biological diversity.
3 GOOD HEALTH AND WELL-BEING 13 CLIMATE ACTION	Air emissions (including greenhouse gases and solid impurities in the atmosphere) affect the health condition.
8 DECENT WORK AND ECONOMIC GROWTH	Harsh working conditions, heath impacts for workers, risk of fatalities and industrial accidents inherent in the mining industry.
6 CLEAN WATER AND SANITATION 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Discharges may cause pollution of surface and ground waters, soils, and may also affect the ecosystem functioning.

Green Label – your key to healthy soil*

We have developed the Green Label to communicate the absence of cadmium concentrations harmful to human health and soils in PhosAgro products.

Cadmium content in our fertilizers is significantly less than 20 mg/kg P_2O_5. This is a major factor in reducing the impact on the soil, which ultimately contributes to a healthier yield.

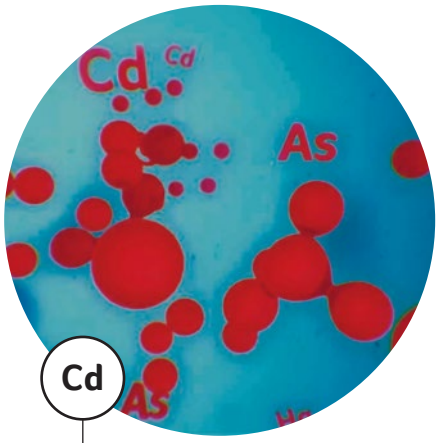
Heavy metals, such as cadmium, are particularly dangerous to humans.

Due to the application of fertilizers containing high cadmium levels, this toxic element accumulates in soils and transfers from the soil to people through the food chain. Cadmium is particularly dangerous to human health. High levels of heavy metals in the human body can lead to serious immune-system deficiencies and can also cause cancer.

To maintain healthy soils and uphold the general trend towards a healthy lifestyle, the EU intends to cap cadmium levels in phosphate fertilizers at 60 mg/kg of P_2O_5. Some countries have already introduced more drastic caps on cadmium levels.

EU

Today in Europe, phosphate products with a high cadmium content (from 20-60 mg/kg P_2O_5 and above) account for almost 40% of total consumption**.



< 60 mg/kg P_2O_5 – in 2022

Cd content in phosphate rock in different countries

Country	Russia	Morocco	USA	Jordan	China	Tunisia	Mexico
Rock type	Igneous	Sedimentary					
Cd, mg/kg P_2O_5	<0.3	40-122	25-114	15-19	<7-9	136	13,3

* The Green Label environmental statement affirms that the product is free from dangerous cadmium concentrations capable of harming soils.
** Estimates are based on IFA and CRU data and take into account the share of phosphate-based products with high cadmium content in the total turnover of phosphate-based products in Western Europe, Central Europe and the Baltic states.

Eco-efficient nutrients

The Regulation (EU) 2019/1009 on the control of agrochemicals in agriculture distinguishes a special group of environmentally preferable mineral fertilizers with a reference low cadmium content – equal to or lower than 20 mg Cd per kg P_2O_5. This group of mineral fertilizers received the right for voluntary labelling with a special mark.*

PhosAgro** has become the first company in the Russian mineral fertilizer industry to receive a certicate of compliance with the Ecological Union's Vitality Leaf standard and the right to use the internationally recognised ecolabel on its products.

The Vitality Leaf ecolabel certifies that the assessment of a product's life cycle proved it to be more environmentally preferable compared to peers.

In addition, PhosAgro was ahead of all Russian companies in completing certication under the national standard for products with improved characteristics stipulated by Federal Law No. 159-FZ On Agricultural Products, Raw Materials and Food with Improved Characteristics dated 11 June 2021.

To inform consumers, the EU has also developed rules for the voluntary labelling of safe fertilizers with cadmium content of less than 20 mg/kg P_2O_5. To this end, PhosAgro's phosphate-based products are labelled in accordance with the EU regulations.

In addition, companies may use their own labels highlighting low cadmium content confirmed by product testing. PhosAgro has already exercised this right, as the cadmium content in our products is below the threshold marked by the relevant label. The Green Label was developed as part of the EU initiatives to restrict fertilizers with higher content of heavy metals and will guarantee that the product is of high quality and its cadmium content is significantly lower than 20 mg per kg of P_2O_5.

Cd

≤ 20 mg/kg P_2O_5

* Where an inorganic macronutrient fertiliser has a cadmium (Cd) content equal to or lower than 20 mg/kg phosphorous pentoxide (P_2O_5), the statement 'Low cadmium (Cd) content' or similar, or a visual representation to that effect, may be added. Source: Regulation (EU) 2019/1009, Annex III.

** Here PhosAgro means JSC Apatit, PhosAgro Group's subsidiary.

APAVIVA®

Nitrogen-phosphorus
and complex fertilizers

Specifics

Apaviva complex fertilizers contain two (nitrogen and phosphorus) or three (nitrogen, phosphorus and potassium) basic macroelements, as well as essential mesoelements (sulphur, magnesium). Almost all of our complex fertilizers contain sulphur in varying amounts. Sulphur increases capacity of all crops: technical, cereal and legumes. Our complex fertilizers are easy to transport and use. A wide range of fertilizers suitable for various soil and climatic conditions.

NP 12-52

Monoammonium phosphate (MAP)

Best solid granular fertilizer to provide crops with phosphorus and nitrogen that are easy to uptake. These nutrients are vital for quick sprouting and vegetation. The temporary moderate acidification of the soil solution around the fertilizer granule brings the largest effect for nutrition systems on soils with the neutral and faintly alkaline reaction. Ammonia nitrogen contributes to better phosphorus intake by plants.

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.0 %

strength, MPa
min. **3**

pH
4.5–4.8

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
12 %	**52** %	**90**	**95**	—	**2.0** %	—	—	**0.4–0.6** %	—

APPLICATION

Period

Autumn **Spring**

Method

Main **During sowing**

ADVANTAGES

High croppage

High-quality plant products

Ensures good root system growth

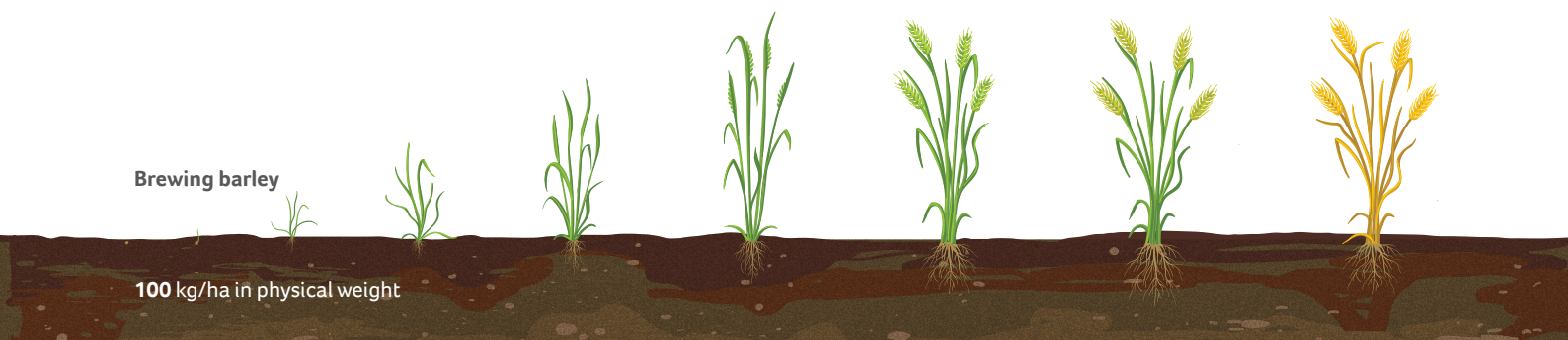
APPLICATION

Crops

All crops

Soils

Neutral and alkaline soils



Brewing barley

100 kg/ha in physical weight

NP 18-46

Diammonium phosphate (DAP)

Most concentrated phosphate-based fertilizer. It is perfect for any agriculture crop to provide full phosphorus nutrition throughout crop growth and development, as well as a starter dose of nitrogen and low sulphur.

It can be applied in autumn for tilling and in spring during sowing, as well as for pre-sowing cultivation. Dissolving in soil, it provides temporary alkalization of pH of the soil solution around the fertilizer granule, thus stimulating better uptake of phosphorus from the fertilizers on acid soils. Fertilizer's sulphur also contributes to the better intake of nitrogen and phosphorus by plants.

≥95%
ø 2–5 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **3**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
18 %	**46** %	**90**	**95**	—	**2.5** %	—	—	—	—

APPLICATION

Period

Autumn **Spring**

Method

Main **During planting (of tubers)**

ADVANTAGES

- Optimal fertilizer for winter cereals
- Ensures good root system growth
- High croppage
- High-quality plant products

APPLICATION

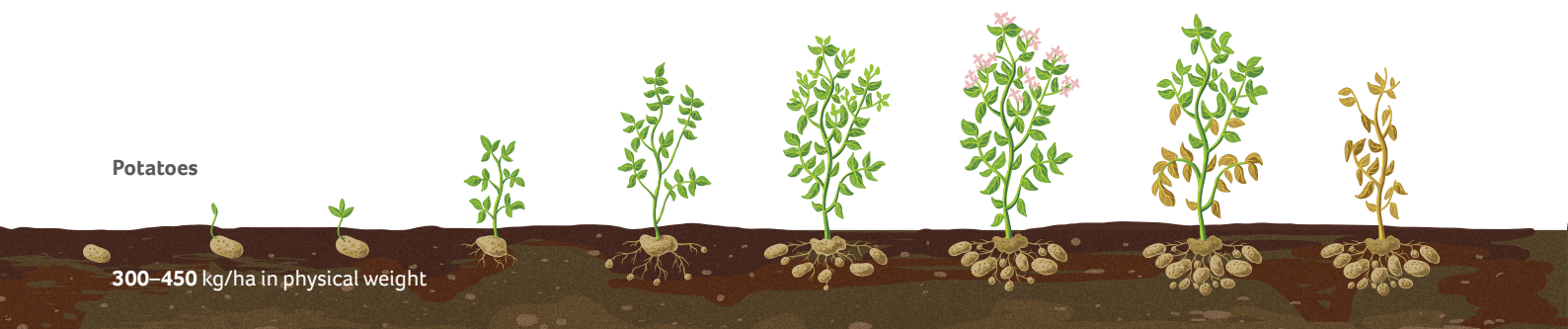
Crops

All crops

Soils

All soils

Potatoes



300–450 kg/ha in physical weight

NP 10-46

Monoammonium phosphate (MAP)

A granular fertilizer providing open-access phosphorus and low nitrogen to agricultural plants. It is an excellent starter fertilizer applied during sowing (planting). Temperature decrease provides the necessary phosphorus nutrition of plants. It provides temporary acidification of the soil around the granule, thus demonstrating some advantages on neutral and alkaline soils.

≥97%
ø 1–6 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **3**

pH
4.5–4.8

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
10 %	**46** %	**90**	**95**	—	**2** %	—	—	**0.5** %	—

APPLICATION

Period

Autumn **Spring**

Method

Main **During sowing**

ADVANTAGES

- High croppage
- Increases resistance to low temperatures and other adverse factors
- High-quality plant products
- Accelerates ripening of fruits and seeds

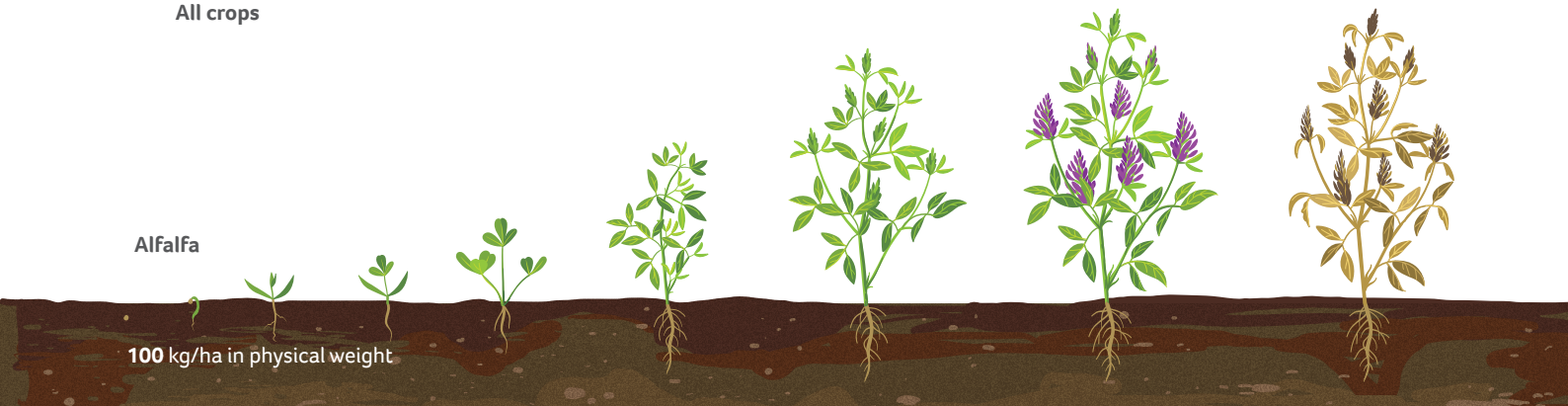
APPLICATION

Crops

All crops

Soils

All soils



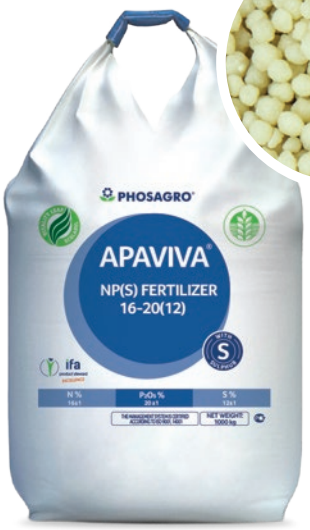
Alfalfa

100 kg/ha in physical weight

NP(S) 16-20(12)

A complex three-component fertilizer containing nitrogen, phosphorus and sulphur. It is particularly good for soils with high potassium and low labile sulphur content. High sulphur content makes this grade vital for oilseeds – rapeseed, sunflower, flax, because sulphur promotes oil accumulation in seeds. Optimized sulphur nutrition is also essential for wheat and soybeans because sulphur promotes protein accumulation in grains.

≥97%
ø 1–6 mm



Digestible form P_2O_5
of total phosphates, not less
94.7 %

of digestible phosphates, not less
99.7 %

strength, MPa
min. **3**

pH
6.9–7.1

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
16 %	**20** %	**90**	**95**	—	**12** %	—	—	**0.4–0.6** %	—

APPLICATION

Period
- **Autumn**
- **Spring**

Method
- **Main**
- **During sowing**

ADVANTAGES

- Ensures high yields on soils with low labile sulphur
- Increases protein in grains and oil in seeds
- Starter spring fertilizer for chickpeas, soybeans, rape, sunflower and flax
- Mixes well with other fertilizers

APPLICATION

Crops
- **Soybeans**
- **Chickpea**
- **Rape seed**
- **Flax**
- **Grain**
- **Sunflower**
- **Maize**

Soils
- **All soils**

200 kg/ha in physical weight

NP(S) 20-20(14)

A complex sulphur-containing fertilizer for high potassium soils. This grade is particularly useful for spring applications when crops require larger amounts of sulphur. Its application helps to ensure the active growth of plants, build immunity and strength. Quality of the final product is also improved, increasing the protein content in grains and the oil content in sunflower seeds and rapeseed. It is a perfect starter fertilizer for maize.

≥97%
ø 1–6 mm

Digestible form P_2O_5
of total phosphates, not less
94.7 %

of digestible phosphates, not less
99.7 %

strength, MPa
min. **3**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
20 %	**20** %	**90**	**95**	—	**14** %	—	—	**0.1–0.3** %	—

APPLICATION

Period
- **Autumn**
- **Spring**

Method
- **Main**
- **During sowing**

ADVANTAGES

- Strengthens crop immunity to diseases
- Ensures high quality of grains, seeds and beans
- Ensures the best intake of nitrogen and phosphorus from fertilizers
- Accelerates crop growth through boosting the activity of enzyme systems

APPLICATION

Crops
- **Grain**
- **Sunflower**
- **Rapeseed**
- **Maize**

Soils
- **All soils**

150–200 kg/ha in physical weight

NP(S) 14-40(7)

A complex three-component fertilizer containing nitrogen, phosphorus and sulphur. It is particularly good for soils with low labile phosphorus, high potassium and low labile sulphur. A wide nitrogen/phosphorus ratio enables the effective use of this fertilizer during sowing when placed near seeds.

Digestible form P_2O_5
of total phosphates, not less
94.7 %

of digestible phosphates, not less
99.7 %

strength, MPa
min. **3**

pH
4.6–4.9

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
14 %	**40** %	**90**	**95**	—	**7** %	—	—	**0.3–1.0** %	—

APPLICATION

Period
- **Autumn**
- **Spring**

Method
- **Main**
- **During sowing**

ADVANTAGES

- Applied on low phosphorus soils, eliminates sulphur deficiency
- Applied for legumes responding well to sulphur when a moderate dose of nitrogen is required.
- Increases protein in grains and oil in seeds
- Improves plant nutrition with phosphorus at low spring temperatures

APPLICATION

Crops
All crops

Soils
All soils

Chickpea

100 kg/ha in physical weight

NPK(S) 10-26-26(2)

A classic complex fertilizer used in traditional farming systems as the main fertilizer for both clean-cultivated crops with plowing in autumn and winter crops. Its use is especially advantageous in soil zones with a low content of labile phosphorus and potassium, where the responsiveness of cultivated crop to Diammophosca is higher than on fertile soils.

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
10 %	**26** %	**90**	**95**	**26** %	**2** %	—	—	**0.3–1.0** %	—

APPLICATION

Period

Autumn **Spring**

Method

Main **During sowing**

ADVANTAGES

- Fully covers crops' need for phosphorus and potassium, provides a starter dose of nitrogen
- 100% doses perfectly restores soil fertility for a future harvest
- Most efficient on soils with high mineral nitrogen content
- Applied for technical (potatoes, sugar beets, sunflowers) and cereal crops (winter wheat and barley)

APPLICATION

Crops

All crops

Soils

All soils

Sugar beet

450 kg/ha in physical weight

NPK(S) 8-20-30(2)

This grade is high in potassium and phosphorus and low in nitrogen, which is good for main application since autumn. It is particularly valuable for crops that require large amounts of available phosphorus and potassium in the soil. It is highly efficient on soils with low potassium content, fine-textured soils with a leaching water regime.

It is a universal fertilizer, perfect for perennial grasses, sugar beets and potatoes, as well as cereals and legumes on high sulphur soils.

≥97%
ø 1–6 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
8 %	**20** %	**90**	**95**	**30** %	**2** %	—	—	**0.3–1.0** %	—

APPLICATION

Period

Autumn **Spring**

Method

Main **During sowing**

ADVANTAGES

- Low nitrogen contributes to the development of tubercles on legume roots
- Perfect nutrient proportions for autumn application for potatoes, sugar beets and other root crops
- Most efficient when used as the main fertilizer applied before perennial grass sowing
- Suitable for potatoes and beets, reduces machine passes through a field

APPLICATION

Crops

All crops

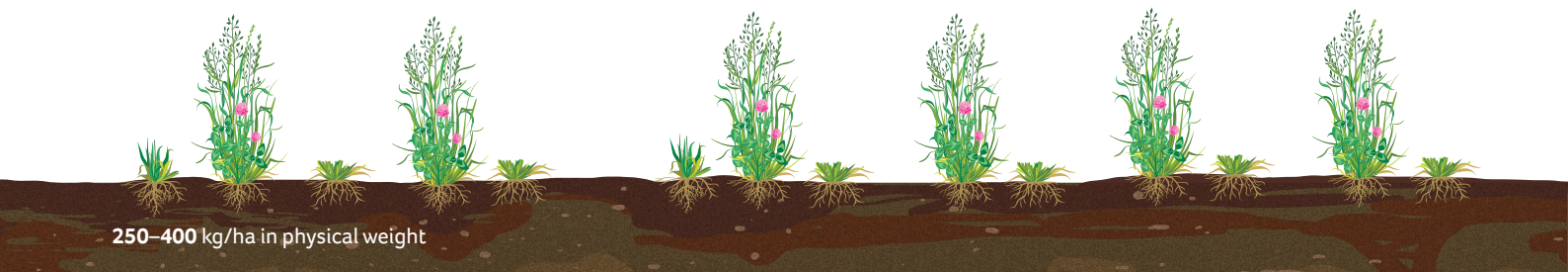
Soils

All soils

Perennial grass mixture

1st year of use

2nd and 3rd years of use



250–400 kg/ha in physical weight

NPK(S) 15-15-15(10)

A complex universal fertilizer for any soils and crops, most effective when applied for tilled and technical crops – before pre-sowing cultivation or during sowing. It is also a perfect starter fertilizer for spring cereals. The sulphur content ensures high intake of nitrogen and phosphorus by plants, and potassium facilitates faster transport of synthesis products (carbohydrates) to root vegetables and seeds.

≥97%
ø 1–6 mm

Digestible form P_2O_5
of total phosphates, not less
94.7 %

of digestible phosphates, not less
99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
15 %	**15** %	**90**	**95**	**15** %	**10** %	—	—	**0.3–1.0** %	—

APPLICATION

Period
- **Autumn**
- **Spring**

Method
- **Main**
- **During sowing**

Crops
- **All crops**

Soils
- **All soils**

Spring wheat

200 kg/ha in physical weight

ADVANTAGES

- Consistent results irrespective of soil or crop characteristics
- High sulphur content increases the efficiency of nitrogen and phosphorus use by plants
- Contributes to improving the quality characteristics of the crop: increasing the protein content in grain, oil in seeds and the quality of tubers and root crops

APPLICATION

NPK(S) 13-19-19(6)

Most concentrated complex fertilizer for both basic autumn application on the soil after winter harvesting, and spring application as a pre-sowing and starter fertilizer. It provides technical, cereal and tilled crops with all the phosphorus, potassium and sulphur required. Right proportions of nutrients and water-soluble form enable plants to use the nutrients to maximum effect. It requires no additional nitrogen nutrition when applied for sunflower.

≥97%
ø 1–6 mm

Digestible form P_2O_5
of total phosphates, not less
94.7 %

of digestible phosphates, not less
99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
13 %	**19** %	**90**	**95**	**19** %	**6** %	—	—	**0.3–1.0** %	—

APPLICATION

Period
Autumn **Spring**

Method
During sowing

ADVANTAGES

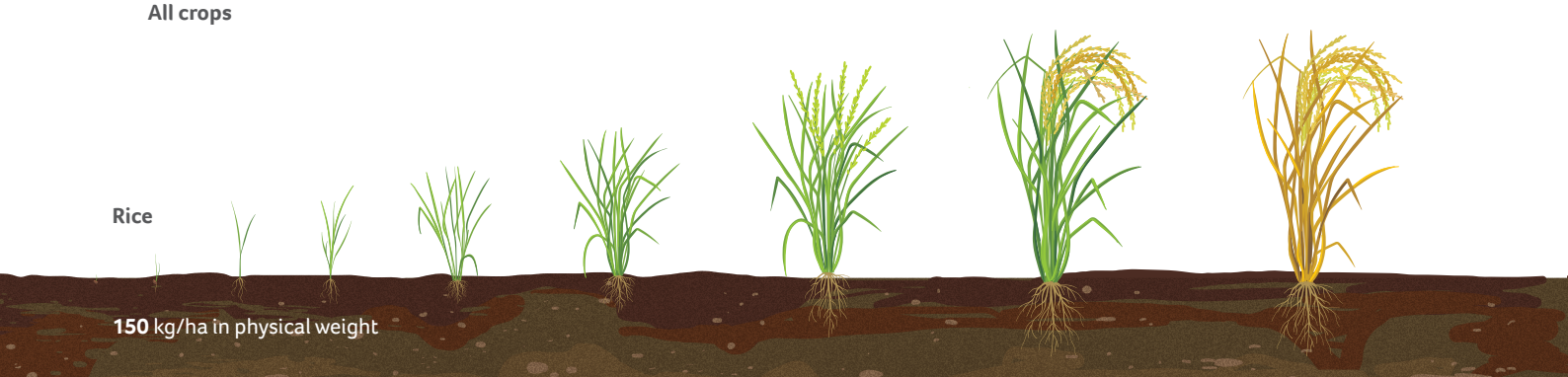
- Sulphur in a sulphate form ensures the best intake of nitrogen and phosphorus
- Improves quality indicators of grain and root and tubers
- Facilitates maximum yields in case of local application
- A perfect starter fertilizer for sunflower and potatoes

APPLICATION

Crops
All crops

Soils
All soils

Rice



150 kg/ha in physical weight

NPK 12-32-16

Complex fertilizer containing nitrogen, phosphorus, potassium and, in a small amount, sulfur. It can be used on different types of soils, especially soils with low labile phosphorus and high labile potassium.

It is recommended for all crops, especially containing more phosphorus than potassium in the yield (spiked cereals, maize, legumes).

≥97%
ø 1–6 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
12 %	**32** %	**90**	**95**	**16** %	**1** %	—	—	**0.3–1.0** %	—

APPLICATION

Period

Autumn **Spring**

Method

Main **During sowing**

ADVANTAGES

- Applied on soils with low labile phosphorus
- Improves plant nutrition with phosphorus at low spring temperatures
- Applied for legumes (soybeans, peas, alfalfa) when a moderate dose of nitrogen is required
- Starter fertilizer in feed systems for maize, sugar beets

APPLICATION

Crops

All crops

Soils

All soils

Peas

150 kg/ha in physical weight

APAVIVA® +

Nitrogen-phosphorus and complex fertilizers with microelements

Specifics

In addition to the basic macroelements (nitrogen, phosphorus and potassium) and mesoelements (sulphur, magnesium), fertilizers of this category also contain calcium and microelements (boron and zinc). Microelements are the most essential tool to control the rate of physiological and biochemical processes in plants. We recommend relying on the crop's need for each microelement, as well as on the results of agrochemical soil research during the selection of the fertilizer grade in order to boost both quantity and quality of crops.

NPK(S) 8-20-30(2)+0.3B*

This grade is exceptionally highly effective on soils with low potassium, light in terms of their aggregate-size distribution, on soils with a percolative regime and on calcareous soils with low presence of labile forms of boron. Both main and starter applications are recommended.

*Sales of this product are only possible upon completion of registration. Information about this grade is intended solely to inform the user about the future expansion of the product range.

≥97%
ø 1–6 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, %	citrate solubility, %	K_2O	S	Zn	B	MgO	CaO
8%	20%	90	95	30%	2%	—	0.3%	0.3–1.0%	—

APPLICATION

Period

Spring, Autumn

Method

Main, Before sowing

ADVANTAGES

- Low nitrogen content contributes to development of nodules on the roots of legumes
- Ratio of the main elements in combination with boron is ideal for autumn application for root crops, sunflower, and potatoes
- Boron in a single granule with NPK allows full root nutrition with the microelement
- Highly effective when used as the main fertilizer before sowing perennial grasses with legumes element

Crops

Tomato, Soybeans, Sunflower, Potato, Sugar beat, Mustard

Soils

All soils

Sugar beat

400–450 kg/ha in physical weight

NPK(S) 8-20-30(2)+1Zn*

Complex fertilizer recommended for soils with insufficient exchangeable potassium, highly-humous and bleached soils. Suitable for main and pre-sowing application.

*Sales of this product are only possible upon completion of registration. Information about this grade is intended solely to inform the user about the future expansion of the product range.

≥97%
ø 1–6 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, %	citrate solubility, %	K_2O	S	Zn	B	MgO	CaO
8%	20%	90	95	30%	2%	1%	—	0.3-1.0%	—

APPLICATION

Period

Autumn **Spring**

Method

Main **Before sowing**

ADVANTAGES

Low nitrogen content contributes to development of nodules on the roots of legumes

Ratio of the main elements in combination with zinc is ideal for autumn application for maize and grain

Zinc in a single granule with NPK increases disease resistance, as well as drought and frost resistance of winter cereals

Highly effieicnt if applied as the main fertilizer used before sowing perennial grasses

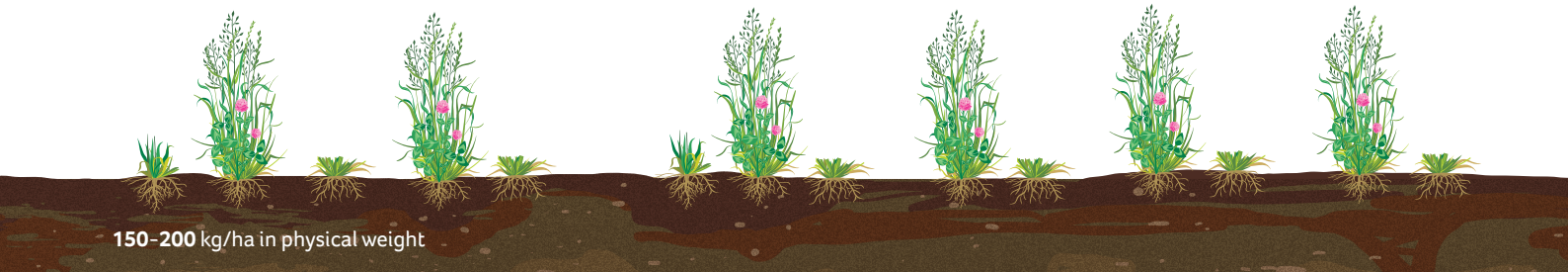
Crops

Grain **Beet** **Flax** **Buckwheat** **Potato** **Clover** **Maize**

Soils

All soils

Perennial grass mixture



150–200 kg/ha in physical weight

NPK(S) 10-26-26(2)+0.3B*

Efficient complex fertilizer for main application for soils with low presence of labile forms of microelements. Especially efficient in irrigated agriculture with a percolative regime.

*Sales of this product are only possible upon completion of registration. Information about this grade is intended solely to inform the user about the future expansion of the product range.

≥97%
ø 1–6 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, %	citrate solubility, %	K_2O	S	Zn	B	MgO	CaO
10%	**26**%	**90**	**95**	**26**%	**2**%	—	**0.3**%	**0.3–1.0**%	—

APPLICATION

Period

Autumn

Method

Main

Before sowing

ADVANTAGES

- Covers the need of crops for phosphorus and potassium and provides plants with a starting dose of nitrogen
- Allows to eliminate the limiting factor for nutrients
- Highly efficient for autumn application for crops that have a significant need for boron
- Well suited for soils with a low content of labile phosphorus and potassium

Crops

- **Sugar Beet**
- **Spring rape seed**
- **Potato**
- **Soybeans**
- **Sunflower**
- **Maize**

Soils

- **All soils**

Sugar beat

400–450 kg/ha in physical weight

NPK(S) 10-26-26(2)+1Zn*

Complex multicomponent fertilizer for main and sowing application on soils with low phosphorus and potassium content. Highly efficient on soils with low zinc content, on calcareous soils with neutral and weakly alkaline reaction, as well as when using high doses of phosphorus fertilizers.

*Sales of this product are only possible upon completion of registration. Information about this grade is intended solely to inform the user about the future expansion of the product range.

≥97%
ø 1–6 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, %	citrate solubility, %	K_2O	S	Zn	B	MgO	CaO
10%	**26**%	**90**	**95**	**26**%	**2**%	**1**%	—	**0.3–1.0**%	—

APPLICATION

Period

Spring

Autumn

Method

Main

Before sowing

During sowing

ADVANTAGES

Compensates for the lack of labile phosphorus and potassium and replenishes Zn in soil

Provides plants with a starter nitrogen dose

Replenishes soil fertility when applying 100% dose

Highly efficient as the main fertilizer before sowing grain crops

Crops

Beet

Flax

Maize

Soils

All soils

Legume grasses

Sunflower

Potato

Sunflower

150–200 kg/ha in physical weight

NPK(S) 13-17-17(6)+0.15B+0.6Zn

A unique grade that contains three main macroelements, a mesoelement (sulphur) and microelements (boron and zinc). The fertilizer is perfect for growing almost all crops on soils with low labile sulphur, boron and zinc. It provides balanced local nutrition of plants during pre-sowing application. It is particularly good for the main application on the soil.

≥97%
ø 1–6 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
13 %	**17** %	**90**	**95**	**17** %	**6** %	**0.6** %	**0.15** %	**0.2** %	—

APPLICATION

Period

Autumn **Spring**

Method

Main **During sowing**

ADVANTAGES

- Fuels plant growth and development
- Contributes to better fruit and seed set
- Ensures the most balanced nutrition of crops

Crops

All crops

Soils

pH>7,5

All soils

Maize

200 kg/ha in physical weight

NPK(S) 14-18-18(6)+0.3B

A complex fertilizer suitable for soils with low labile phosphorus, potassium, sulphur and boron. It is perfect for crops with the high need for sulphur and boron, especially oilseeds – sunflower, rapeseed. It is a vital grade for all cabbage crops responding well to the application of boron fertilizers, as well as for sugar beets and potatoes.

≥97%
ø 1–6 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
14 %	**18** %	**90**	**95**	**18** %	**6** %	—	**0.3** %	**0.2** %	—

APPLICATION

Period

Autumn **Spring**

Method

Main **During sowing**

Crops

All crops

Soils

All soils

ADVANTAGES

Simultaneous application of high doses of phosphorus and potassium on the soil

Provides high yield and excellent quality of vegetable crops

Contributes to better fruit and seed set

Cabbage

600 kg/ha in physical weight

NPK(S) 14-18-18(6)+0.3Zn*

Complex highly-concentrated fertilizer with a high zinc content. Increases absorption of phosphorus both from the fertilizer granules and from the soil. Completely eliminates the need for additional foliar application for vegetation with zinc-containing preparations subject to optimal application rate. Highly efficient on all cereal crops. Recommended for medium and low nutrient-rich soils. Used at seeding for soils with a high nutrient content.

*Sales of this product are only possible upon completion of registration. Information about this grade is intended solely to inform the user about the future expansion of the product range.

≥97%
ø 1–6 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, %	citrate solubility, %	K_2O	S	Zn	B	MgO	CaO
14%	18%	90	95	18%	6%	0.3%	—	0.2%	—

APPLICATION

Period

Autumn **Spring**

Method

Broadcasting **During sowing** **For tilling**

ADVANTAGES

Highly efficient for maintaining and increasing soil fertility

Simultaneous application of 6 main nutrients in high dosages fully meets the need of plants for zinc

Increases drought resistance and overall immunity of plants, features a high coefficient of use of moisture from the soil by plants

Crops

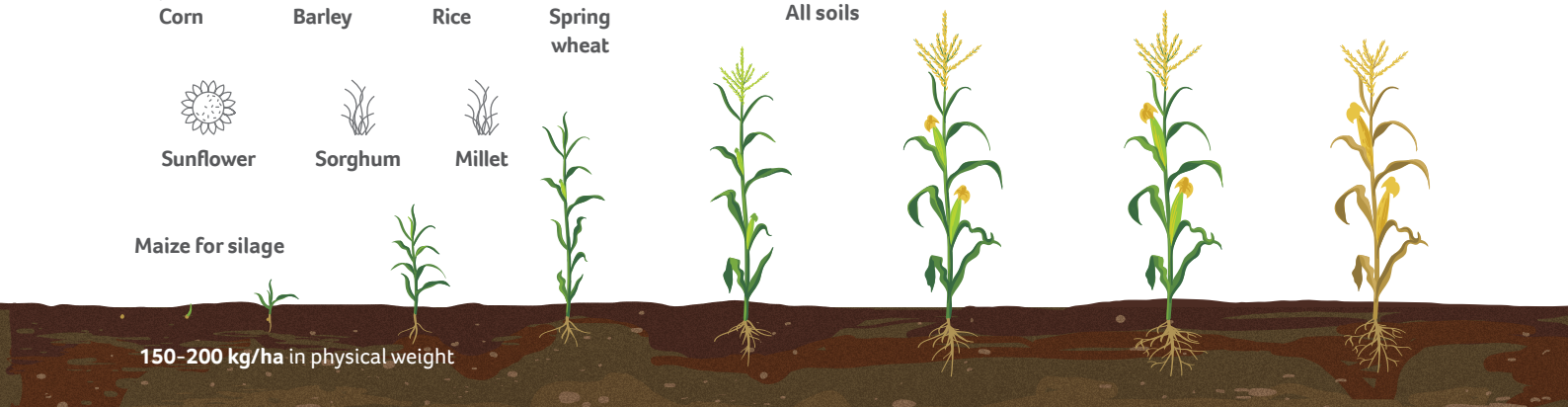
Corn **Barley** **Rice** **Spring wheat**

Sunflower **Sorghum** **Millet**

Maize for silage

Soils

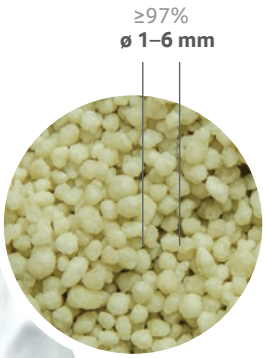
All soils



150–200 kg/ha in physical weight

NPK(S) 15-15-15(10)+0.3B

All-purpose complex fertilizer optimal for use as a starter fertilizer for most crops on all types of soils. High sulfur content has a positive effect on metabolism of plants and on their ability to use macroelements from soil much more efficiently. Boron promotes full-fledged pollination of plants, improves growth and maturation of seeds and fruits.



Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, %	citrate solubility, %	K_2O	S	Zn	B	MgO	CaO
15%	15%	90	95	15%	10%	—	0.3%	0.3-1.0%	—

APPLICATION

Period

Spring, Autumn

Method

Main, Before sowing, During sowing

ADVANTAGES

- High sulfur content increases resistance to adverse environmental factors while increasing the quality and yield of agricultural crops
- Balanced ratio of main elements gives an excellent impetus to plant development
- Ratio of main nutrition elements in combination with boron are ideal for starter application for oilseeds and potato
- Boron in a single granule with NPK provides comprehensive root nutrition with this microelement

Crops

Beet, Flax, Sunflower, Rape seed, Maize, Peas

Soils

All soils

150–200 kg/ha in physical weight

NPK(S) 15-15-15(10)+1Zn*

Complex fertilizer with an optimal ratio of macro-, meso- and microelements. Increased sulfur content provides a significant effect on low-humic, waterlogged and loamy sand soils, as well as when using high doses of nitrogen fertilizers. Zinc helps increase frost resistance and heat resistance of plants, participates in photosynthesis and respiration of plants. Most efficient with local application during sowing.

*Sales of this product are only possible upon completion of registration. Information about this grade is intended solely to inform the user about the future expansion of the product range.

≥97%
ø 1–6 mm

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, %	citrate solubility, %	K_2O	S	Zn	B	MgO	CaO
15%	**15**%	**90**	**95**	**15**%	**10**%	**1**%	—	**0.3–1.0**%	—

APPLICATION

Period

Spring **Autumn**

Method

Main **Before sowing** **During sowing**

ADVANTAGES

- High sulfur content increases utilization coefficient of nitrogen and phosphorus from both fertilizer and soil
- Balanced amount of main nutrients in combination with zinc are ideal for pre- and post-sowing application
- Zinc increases disease, as well as drought and frost resistance of winter cereals
- Highly efficient when used as a sowing fertilizer for accelerated seed germination and plant development

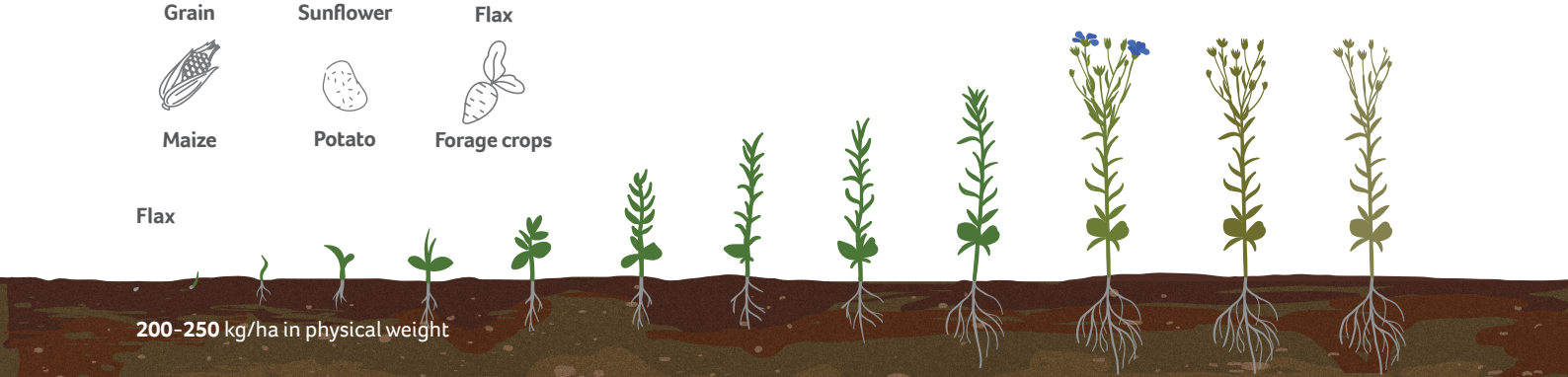
Crops

Grain **Sunflower** **Flax**
Maize **Potato** **Forage crops**

Soils

All soils

Flax



200–250 kg/ha in physical weight

NP(S) 14-40(7)+1Zn

Complex fertilizer for potassium-rich soils, sod-podzolic, heavy loamy and gumbo soils. It increases plant immunity and resistance to adverse environmental factors.

≥97%
ø 1–6 mm

Digestible form P_2O_5
of total phosphates, not less
94.7 %

of digestible phosphates, not less
99.7 %

strength, MPa
min. **3**

pH
4.6–4.9

COMPOSITION

N	P_2O_5	water solubility, %	citrate solubility, %	K_2O	S	Zn	B	MgO	CaO
14%	40%	90	95	—	7%	1%	—	0.3-1.0%	—

APPLICATION

Period
- Autumn
- Spring

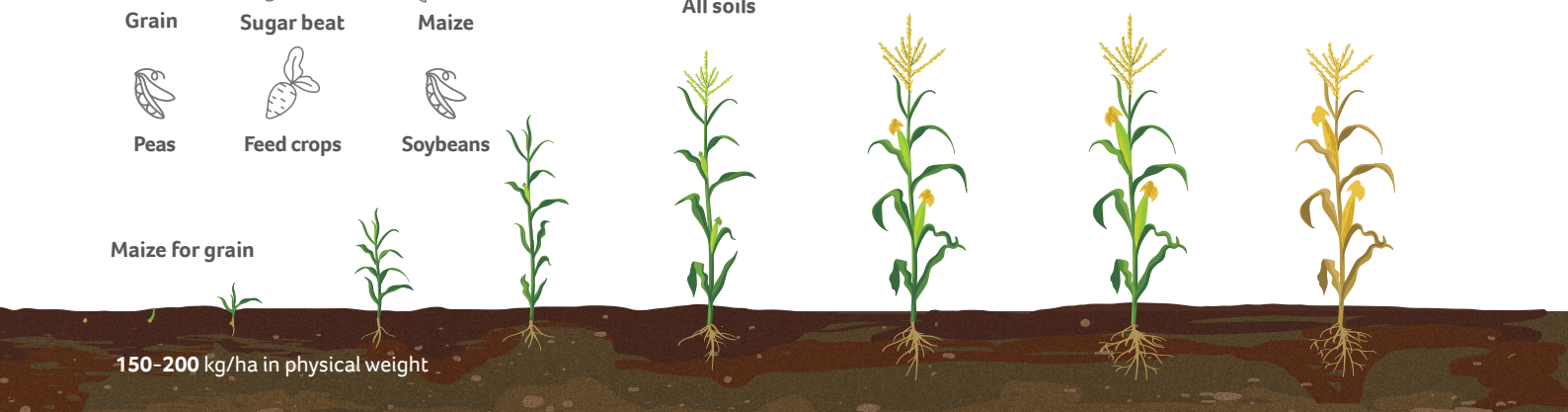
Method
- Main
- During sowing

ADVANTAGES

- Improves plant nutrition with phosphorus at low spring temperatures
- Promotes development of high-quality grain, seeds, and beans
- Ratio of nitrogen and phosphorus in combination with zinc is ideal for autumn application for root crops and maize
- Sulfur and zinc in a single granule together with other main nutrition elements help to achieve high quality of grains

Crops
- Grain
- Sugar beat
- Maize
- Peas
- Feed crops
- Soybeans

Soils
- All soils



NP(S) 20-20(14)+0.4Zn

A complex fertilizer for maize and cereals containing macro-, meso- and microelements in one granule. Containing zinc, the fertilizer is perfect for cultivating technical crops requiring intensive growth and strength immunity. It prevents temporary stress of plants during the transition from grain to root nutrition.

Digestible form P_2O_5

of total phosphates, not less

94.7 %

of digestible phosphates, not less

99.7 %

strength, MPa
min. **5**

pH
6.0–7.2

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
20 %	**20** %	**90**	**95**	—	**14** %	**0.4** %	—	**0.2** %	—

APPLICATION

Period

- **Autumn**
- **Spring**

Method

- **Main**
- **During sowing**

ADVANTAGES

- Accelerates metabolism and guarantees timely ripening
- Ensures high quality of grains and seeds
- Energizes plants for intensive growth
- Strengthens crop resistance to diseases

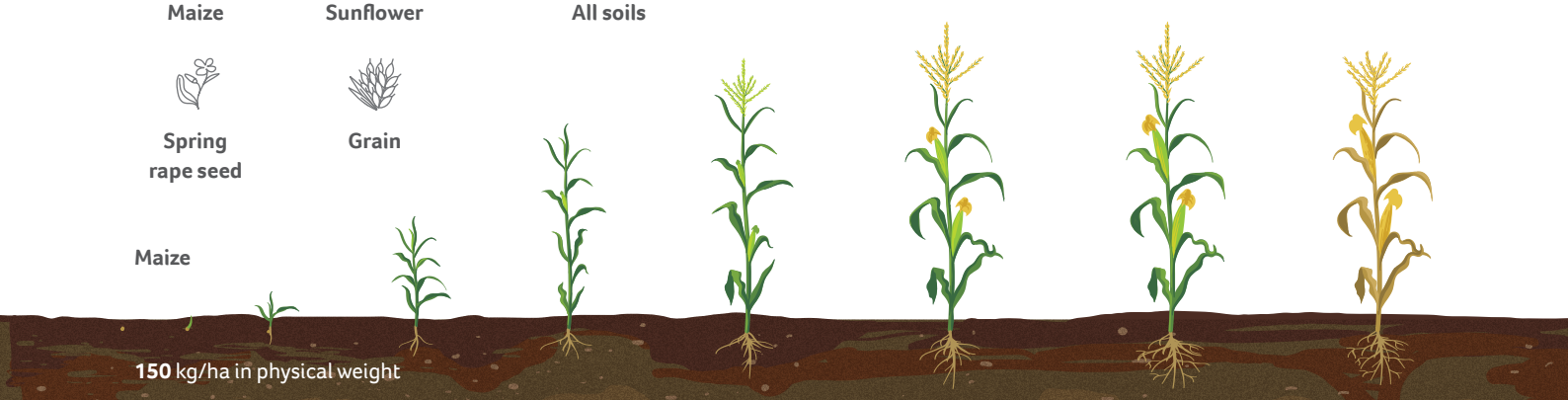
Crops

- **Maize**
- **Sunflower**
- **Spring rape seed**
- **Grain**

Soils

- **All soils**

Maize



150 kg/ha in physical weight

NITRIVA®

Nitrogen fertilizers

Specifics

Traditional sources of open-access nitrogen for plants. They are effectively applied for all types of soils and cultivated crops. Nitrogen is included in the proteins. Therefore, the nutritional value of food depends on the availability of nitrogen in plants. Nitrogen is required for most cultivated plants in larger amounts than other fertilizer elements.

N 34.4

Ammonium nitrate

A concentrated granular nitrogen fertilizer to provide agricultural plants with nitrogen in the early spring, as well as after cut and grazing to promote aftergrowing, active growth and development of green material. It contains equal amounts of ammonia and nitrate nitrogen, and is a universal and high-performance mineral fertilizer. The prolonged use gives an acidifying effect on the soil, thus requiring periodic calcification.

strength
> 8 N/granule

pH
5.0–5.5

COMPOSITION

N	P_2O_5	water solubility, %	citrate solubility, %	K_2O	S	Zn	B	MgO	CaO
34.4 %	—	**100**	—	—	—	—	—	**0.2–0.5** %	—

APPLICATION

Period

Autumn **Spring**

Method

Main **During sowing**

Crops

All crops, except for legumes and rice

Soils

Alkaline soils

Perennial grass mixture

1st year of use

200 kg/ha in physical weight

200 kg/ha in physical weight

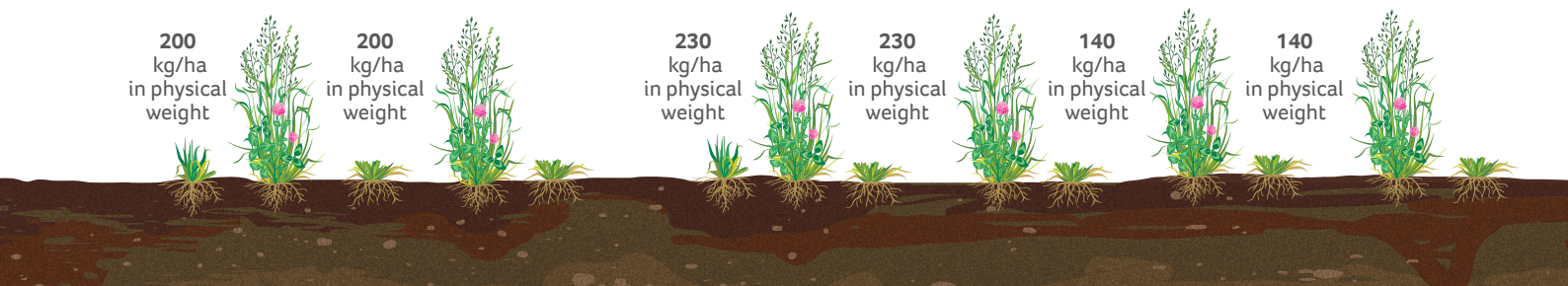
2nd and 3rd years

230 kg/ha in physical weight

230 kg/ha in physical weight

140 kg/ha in physical weight

140 kg/ha in physical weight



ADVANTAGES

- Best source of quick-release nitrogen
- Effective for a wide range of crops
- Balanced nitrogen nutrition provided by nitrate and ammonium forms of nitrogen
- Increases the protein and oil content in farmed products

Ammonium sulfate

Ammonium sulfate is a highly effective nitrogen fertilizer with a high sulfur content. Used in growing the most common cereals, oilseeds, feed and vegetable crops.

Ammonium sulfate stimulates the growth and development of plants, improves product quality, and reduces the risk of increasing nitrates in products. Nitrogen in ammonium sulfate is presented in the ammonium form and is highly effective in systems of prolonged nitrogen nutrition. Accelerates the decomposition of crop remains, improving soil fertility. When treating crops with plant protection products, it is recommended to add ammonium sulfate to the solution of post-emergence herbicides to increase the effectiveness of weed control by reducing the alkalinity of water.

COMPOSITION

N	P_2O_5	water solubility, %	citrate solubility, %	K_2O	S	Zn	B	MgO	CaO
20.5%	—	—	—	—	22%	—	—	0.4–0.6%	—

APPLICATION

Period

Autumn, Spring, Summer

Method

Main, During sowing, Leaf and root topdressing

ADVANTAGES

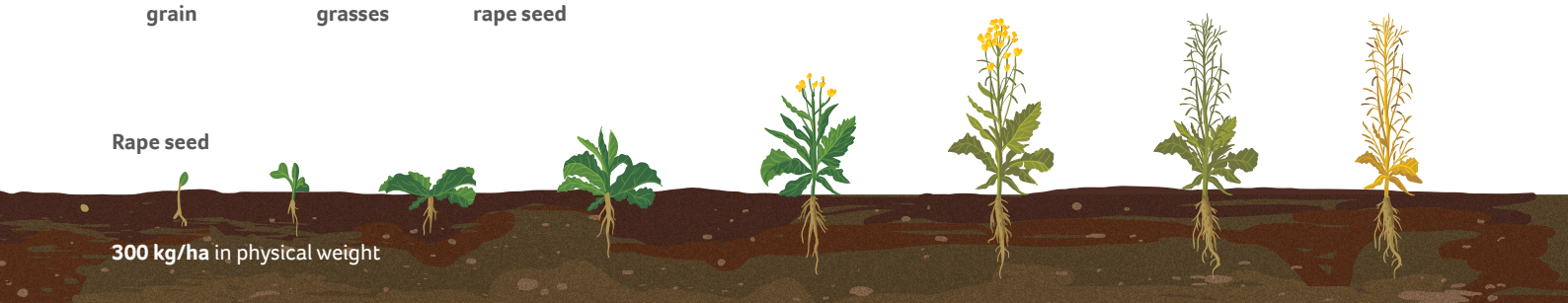
- Accelerates the decomposition of crop remains, improving soil fertility
- Nitrogen in the ammonium form is not washed out of the soil and is used in the technologies of prolonged nitrogen nutrition
- Source of nitrogen and sulfur for plants
- Increases the protein content in wheat grain and oil content in rapeseed

Crops

Potato, Rice, Flax, Cabbage, Maize, Winter grain, Forage grasses, Winter rape seed, Sunflower

Soils

Neutral and alkalescent



300 kg/ha in physical weight

N 46.2

Urea

The most concentrated granular nitrogen fertilizer to provide agricultural plants with nitrogen throughout the growth and development period, supplying plants with all three forms of open-access nitrogen: amide, ammonium and nitrate (after transformation in soil). It is suitable for soils with pH < 6.5. Its transformation in soil results in alkalization and further acidification of the soil solution. This nitrogen fertilizer is the most eco-friendly and harmless for plants, providing a wide range of uses: from autumn application during tillage for crop quality increase to use as an anti-stress agent. It is the only form of nitrogen fertilizer for rice.

prilled

strength
> 7 N/granule

pH
8.0–10.0

COMPOSITION

prilled N	P_2O_5	water solubility, %	citrate solubility, %	K_2O	S	Zn	B	MgO	CaO
46.2 %	—	**100**	—	—	—	—	—	—	—

APPLICATION

Period

Autumn **Spring**

Summer

Method

Main **During sowing**

Leaf and root topdressing

ADVANTAGES

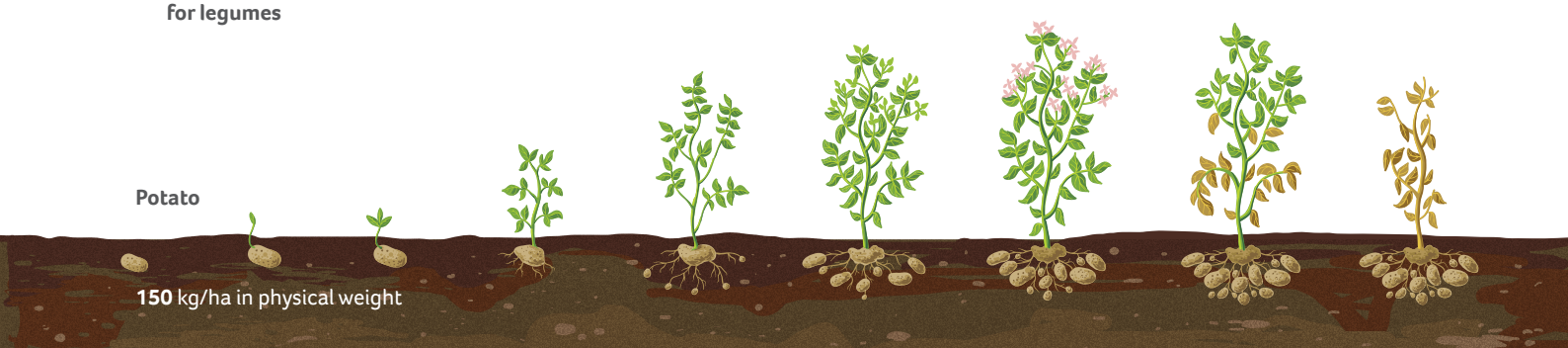
- Has a positive effect on extended root formation
- Provides highly effective nitrogen nutrition with a prolonged effect
- Can be applied in a high dosage in one single application
- Increases the protein and oil content of field crops

Crops

All crops, except for legumes

Soils

Acid soils



APALIQUA®

Liquid complex fertilizers

Specifics

APP are easier to use because they are mixed with other fertilizers. The use of APP ensures a more accurate and uniform application of nitrogen and phosphorus to the soil. APP are perfect for foliar application, when phosphorus adjustment at the stage of vegetation is required.

NP 11-37

Ammonium polyphosphate

A unique liquid nitrogen-phosphorus fertilizer produced in Russia only by PhosAgro. Maximum phosphorus availability and absorption by plants compared to traditional solid phosphorus-based fertilizers, especially on soils with high calcium carbonate content. It ensures yield increase for different crops during foliar application. It is most effective in dry weather conditions. It is easy to store on farms.

Density, kg/l
1.44

Conversion rate, %
≥ 57

Dosage, l/ha
30–70

COMPOSITION

N	P_2O_5	water solubility, % of total P_2O_5	citrate solubility, % of total P_2O_5	K_2O	S	Zn	B	MgO	CaO
11%	**37**%	**100**	**100**	—	—	—	—	—	—

APPLICATION

Когда

- **Autumn**
- **Spring**
- **Summer**

- **Main**

Method

- **During sowing**
- **Leaf and root topdressing**

ADVANTAGES

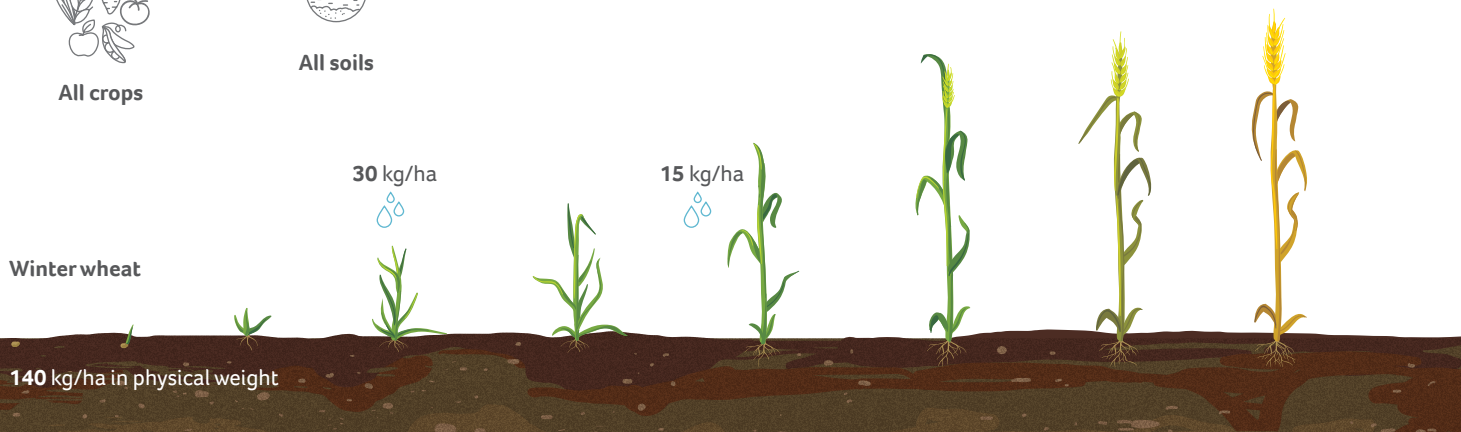
- Provides efficient use in low doses
- Suitable for foliar and root application
- Ensures prolonged phosphorus nutrition
- Enables broad time frame for application
- Provides great efficiency of a phosphate fertilizer
- Requires no moisture for dissolving due to its liquid form

Crops

- **All crops**

Soils

- **All soils**



APAFEED®

Feed additive

Specifics

Defluorinated feed phosphate. The addition into the diet of livestock and poultry fills the lack of phosphorus and calcium. It provides metabolism, strengthening the bone, immune and reproductive systems. It is perfect for livestock and poultry.

NITRIVA® Feed

Feed additive

Specifics

Feed urea is an efficient source of non–protein nitrogen in cattle and sheep feed. Promotes an increase in dairy productivity in dairy cattle breeds and efficient muscle mass building in beef cattle and sheep breeds.

Monocalcium phosphate

$Ca(H_2PO_4)_2$

Monocalcium phosphate is a food supplement for livestock and poultry diet to replenish calcium and phosphorus that contribute to the formation of strong bone tissue and skeleton, improve metabolism, functions of the nervous, immune and reproductive systems, increase productivity. Mineral additives of this composition are especially recommended for feeding herbivorous animals.

strength, MPa
4 on average

pH
min. 3.4

COMPOSITION

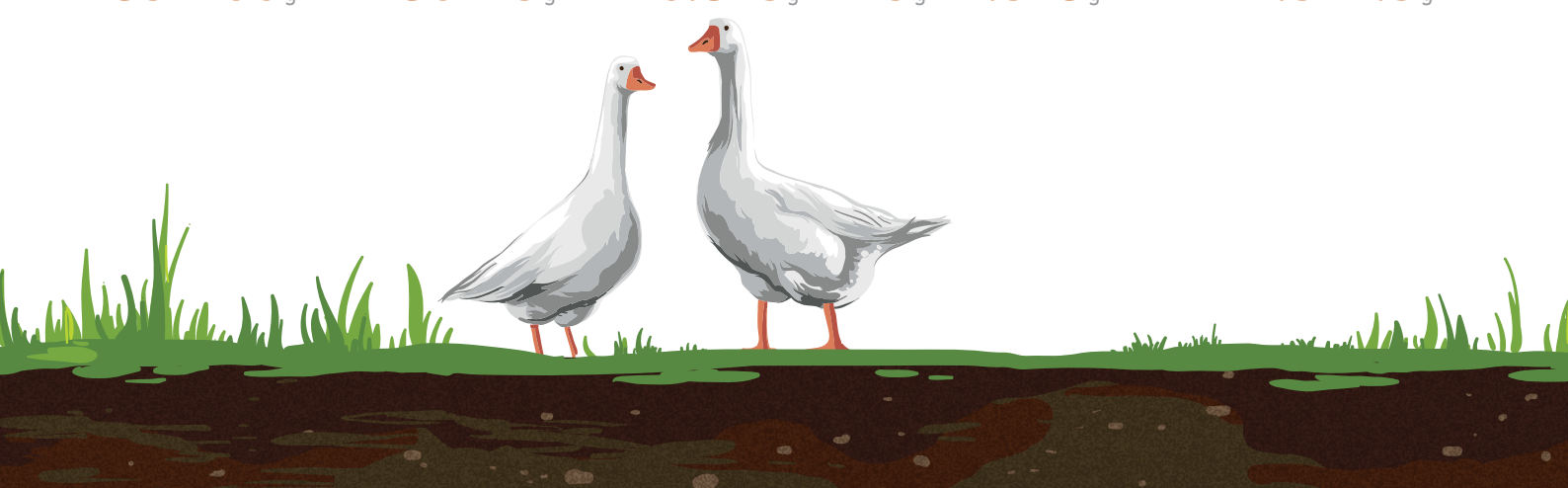
Phosphorus	Calcium	Moisture
22–23 %	**15–17** %	**max. 4.0** %

ADVANTAGES

- Increases productivity
- Promotes healthy breed
- Improves the nutritional value of meat, milk
- Reduces the fattening period
- Contributes to conservation of young livestock
- Reduces feed consumption

FEEDING

Milking cows	Bulls	Lambs	Ewes	Young sheeps	Poultry
35–100 g	**30–75** g	**0.8–5** g	**2–5** g	**1.5–3** g	**1.5–2.5** g



Recommendations

By phosphorus content and availability, monocalcium phosphate meets the world market's requirements both in terms of satisfaction of the physiological need of poultry for phosphorus and in terms of environmental protection.

Ensures uniform digestion. This leads to better intake and greater daily gain of broilers and piglets

Acts as a mould inhibitor and can be considered as a ready-mixed feed conserving agent

Reduces the number of bacterial and fungal organisms and prevents their generation

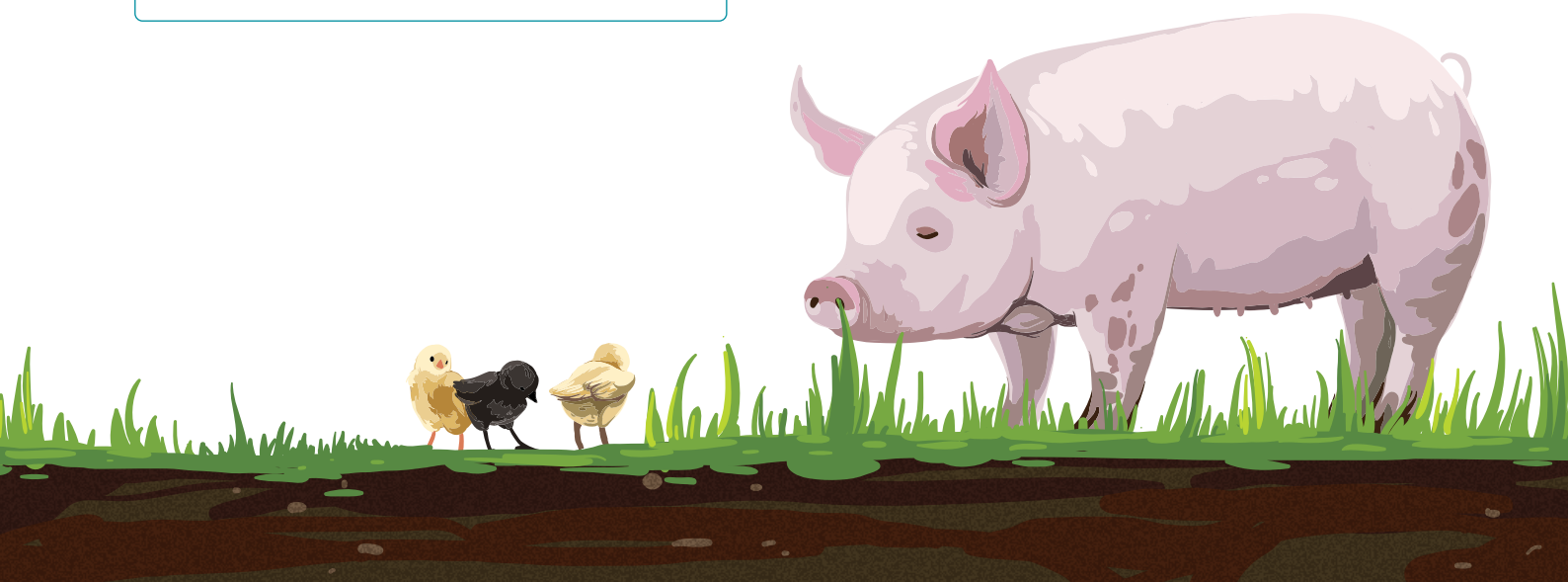
Has a light non-aggressive effect. The minimum pH of its 1% solution is 3.5. It does not destroy proteins and vitamins

Intake of 1 gramme of available phosphorus by livestock and poultry

based on the data of leading Russian institutions

	Share of available phosphorus	Consumption
Monocalcium phosphate	**99%**	**4.6g**
Dicalcium phosphate	92%	4.6g
Defluorinated phosphate	87%	6.4g
Tricalcium phosphate	40%	22.4g

Lower costs to meet the daily need for phosphorus when using monocalcium phosphate which has the highest total phosphorus content and features good digestibility. This reduces customer's overhead costs and providing variability of ready-mixed feeds, premixes and protein-vitamin mineral supplements.



Feed grade urea

$CO(NH_2)_2$

Urea is used to replenish the deficiency of available protein in the diet. It is an industrial chemical product of the interaction of ammonia and carbon dioxide.

Feed urea is used to replenish the nitrogen deficiency in diets of ruminants. The use of feed additives replenishes crude protein deficiency in diets of ruminants, which leads to their growth, development and increased productivity.

COMPOSITION

Urea	Nitrogen	Biuret	Mass fraction of total water
≥97 %	≥46 %	≤1.4 %	≤0.5 %

ADVANTAGES

- Supplies nitrogen to microorganisms of the digestive tract
- Has a positive effect on the synthesis of milk and muscle bulk
- Contains no genetically modified products
- Partially replaces and reduces the consumption of other feeds and additives
- Can replace 20-25% of the required protein in livestock's diets
- Compatible with all feed ingredients, drugs and other feed additives

FEEDING

Cows	Calves older than 6 months	Fattening calf bulls	Sheep
80–150 g	40–50 g	100–120 g	13–18 g

The highest daily dose of urea per 5 kg of live weight of cattle and sheep shall not exceed 1 g. The daily dose is fed for 2-3 times. It is introduced gradually into the diet during 10-15 days, starting with small doses, without breaks. In case of breaks, feeding shall be proceeded with small doses.

Recommendations

Urea is provided with ready-mixed feed, concentrated mixture or silo, thoroughly mixed. Feeding doses with ready-mixed feed or concentrates (grain feed):

Cattle

2.5–3 %
of feed mass

Sheep

3–4 %
of feed mass

It is introduced with molasses as 1:8–9. When feeding with the silo, the additive is mixed with the silo immediately before livestock feeding in the ratio of up to 1% of the silo mass, or the silo is treated with an aqueous solution prepared 1-3 hours before consumption in the ratio of 1 kg of urea per 2-3 litres of water.

The daily dose is fed for 2-3 times. The highest daily dose of feed urea per 5 kg of live weight of cattle and sheep shall not exceed 1 g.

The additive is compatible with all feed ingredients, medicines, and other feed additives. Livestock products after application of this feed additive can be used for food purposes without any restrictions.

PHOSAGRO®

www.phosagro.com

FERIMUS

www.ferimus.co.uk
info@ferimus.co.uk