

EXCLUSIVE WORLDWIDE DISTRIBUTOR



Beart & Gibson

 **MELIORANT • PLUS**

Application of organo-mineral fertilizer Meliorant-PLUS for growing crops

ORGANIC-MINERAL FERTILIZER ON A HUMATE BASIS



Organic fertilizer Meliorant-PLUS is the product of process sediments bioconversion, followed by their provision with land-reclaiming and fertilizing properties.

Efficiency of Meliorant-PLUS consists not only in the quantitative composition of macrolements (NPK) content, but in combination of organic and land-reclamation properties.

The product's comprehensive effect on agrochemical indicators of soil fertility is as follows:

- increases biological activity of soil through an organic part applied, enriched with useful soil microflora;
- humate part of the product improves conditions of plants mineral nutrition with macro- and microelements, provides plants with enzymes, growth promoters and acts as an antistress substance in poor weather conditions;
- on soils with acidic reaction of soil solution, Ca and Mg bivalent cations act as ameliorants, but on soils with neutral reaction - provide depression of physiologically and chemically acid fertilizers.



COMPREHENSIVE EFFECT OF THE PRODUCT ON AGROCHEMICAL INDICATORS OF SOIL FERTILITY



FAST FACTS

It is known that application of calcium- and magnesium-containing compounds during liming reduces the availability of both sulfur and zinc adoption from soil. Meliorant-PLUS contains calcium and magnesium and thus provides efficient use of the fertilizing effect of S and Zn due to the fact that these elements are also contained in its organic part.

PHYSIOLOGICAL IMPORTANCE OF ELEMENTS CONTAINED IN MELIORANT-PLUS FOR PLANTS NUTRITION

Ca

Calcium enhances formation of membranes and cell walls of plants, photosynthesis processes, it is essential to the movement of carbohydrates, affects transformation of nitrogen substances, accelerates decomposition of proteins in the germination process and regulates acid-base balance of medium.

Mg

Magnesium forms part of the chlorophyll molecule, being integral to the process of photosynthesis, synthesis of pectin substances and phytin, which accumulates in grains. In plants, magnesium is involved in transportation of phosphorus, activates phosphatase and accelerates carbohydrates formation, as well as affects redox processes in plant tissues.

S

Sulfur forms part of all plant proteins and of many organic compounds that contain valuable amino acids \times methionine and cystine, contributes to photosynthesis processes, increases chlorophyll content, as well as respiration intensity and enzyme activity.

Zn

Zinc participates in many physiological processes that occur in plants, particularly in photosynthesis; synthesis of amino acids, chlorophyll, organic acids, vitamins in redox processes; in exchange of carbohydrates, lipids, phosphorus and sulfur.



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PHYSIOLOGICAL IMPORTANCE OF ZINC (ZN)



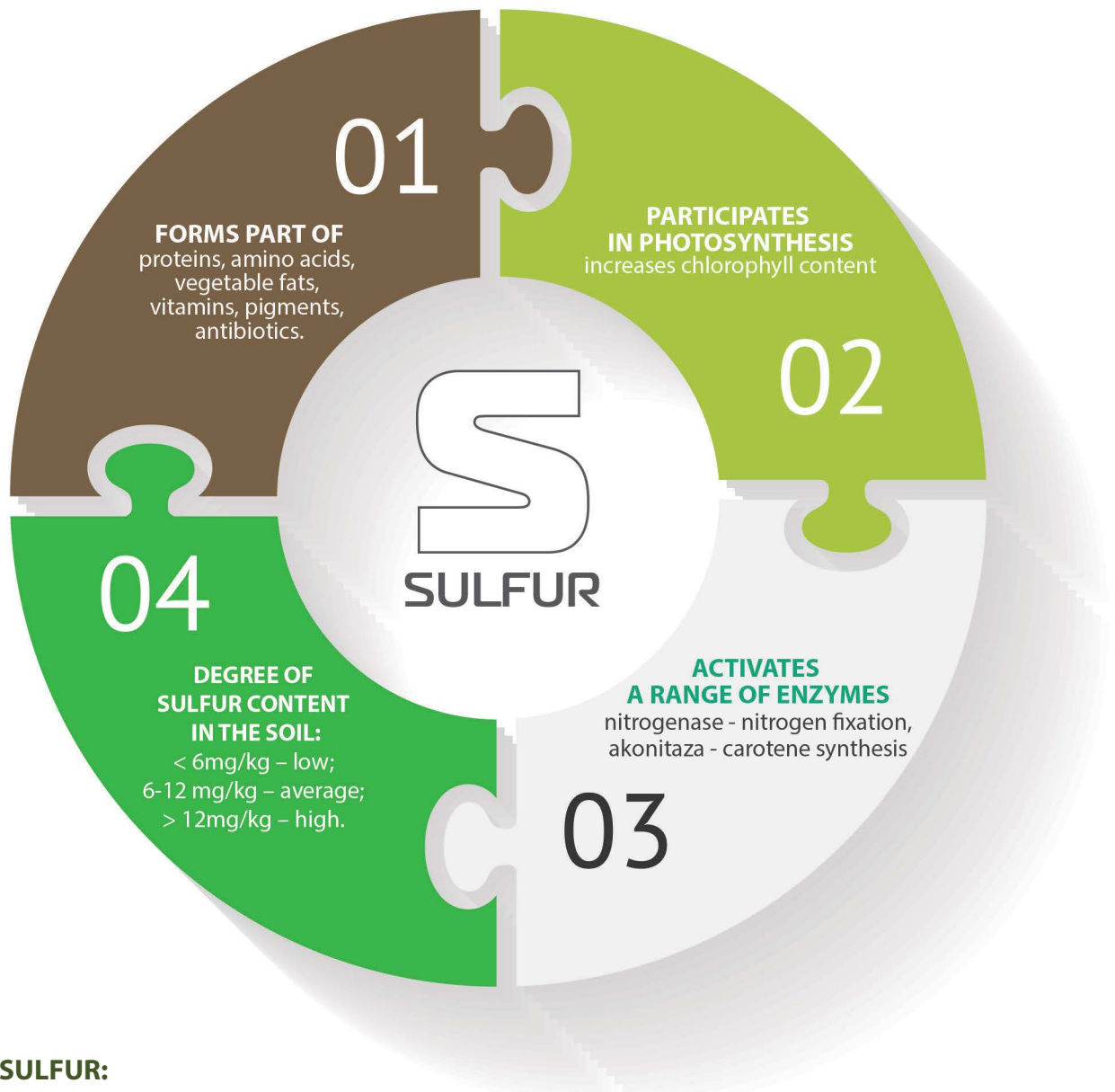
Moreover, ZINK:

- activate redox enzymes related to plants breathing.
- affects synthesis of tryptophan amino acid, of auxin hormone precursor, of B1 and B6 vitamins.
- improves drought resistance and cold resistance of crop.
- increases the crop resistance to bacterial and fungal diseases.

ZINC deficiency symptoms:

- Pale-yellow stripes parallel to the leaf midrib appear on young leaves;
- Leaves are severely damaged and discolored to red;
- Internodes are decreased;
- Grains content in spadices reduces.

PHYSIOLOGICAL IMPORTANCE OF SULFUR



Moreover, SULFUR:

- promotes active development of legume bacteria, increases nitrogen digestion by plants from fertilizers (1 part of sulfur required for its deficiency recovery in plants is equivalent to 15 parts of potential loss of nitrogen);
- increases resistance of crops to rugged environment (low temperatures, drought, soil dehydration);
- Thiophilic crops: perennial grasses (alfalfa, clover), legumes (peas, soybeans), sunflower, winter wheat and spring wheat.

SULFUR deficiency symptoms:

- General chlorosis of plants is noted, young leaves become brown (yellow-brown) and old leaves become pale-green;
- Stalks become thin with reduced stalk growth as compared with the root system;
- Leaf distortion is noted in a form of spoon;
- Pods are deformed.



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CHEMICAL COMPOSITION OF MELIORANT-PLUS

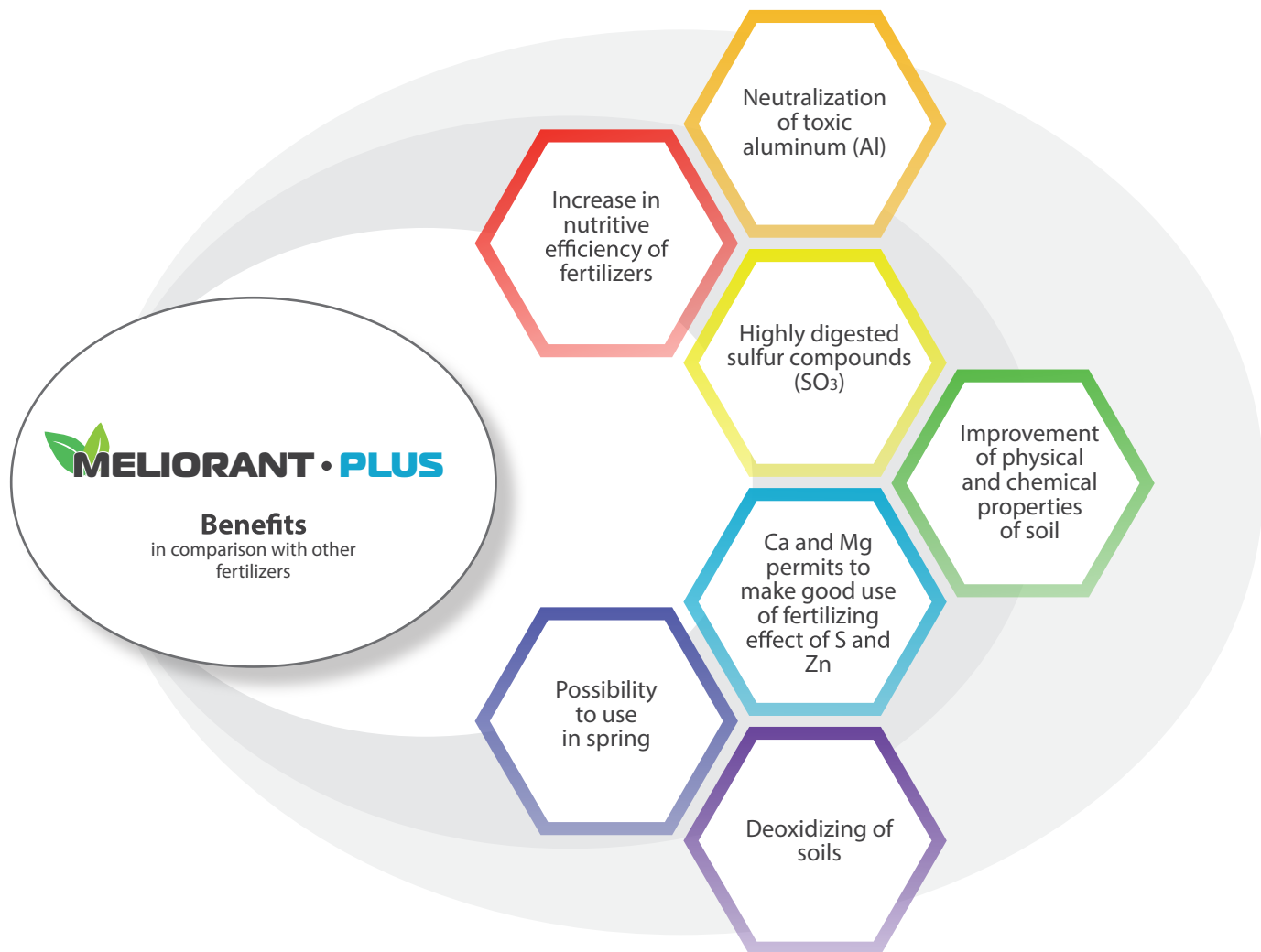
1 ton of the product contains about:

| | | | |
|--------|--|------|---|
| 200 кг | organic substances on the humate basis | 5 кг | total potassium (K ₂ O) |
| 350 кг | exchangeable calcium (CaO) | 2 кг | total phosphorus (P ₂ O ₅) |
| 40 кг | exchangeable magnesium (MgO) | 2 кг | total nitrogen (N) |
| 6 кг | sulfur (SO ₃) | | |

Meliorant-PLUS contains considerable amount of mobile forms of zinc (Zn) - up to 8,000 mg/kg, and other agronomically valuable minerals (iron Fe, manganese Mn, copper Cu).



EFFICIENCY OF MELIORANT-PLUS CONSISTS NOT ONLY IN THE QUANTITATIVE COMPOSITION OF MACROELEMENTS (NPK), BUT IN COMBINATION OF ORGANIC AND LAND-RECLAMATION PROPERTIES AS WELL

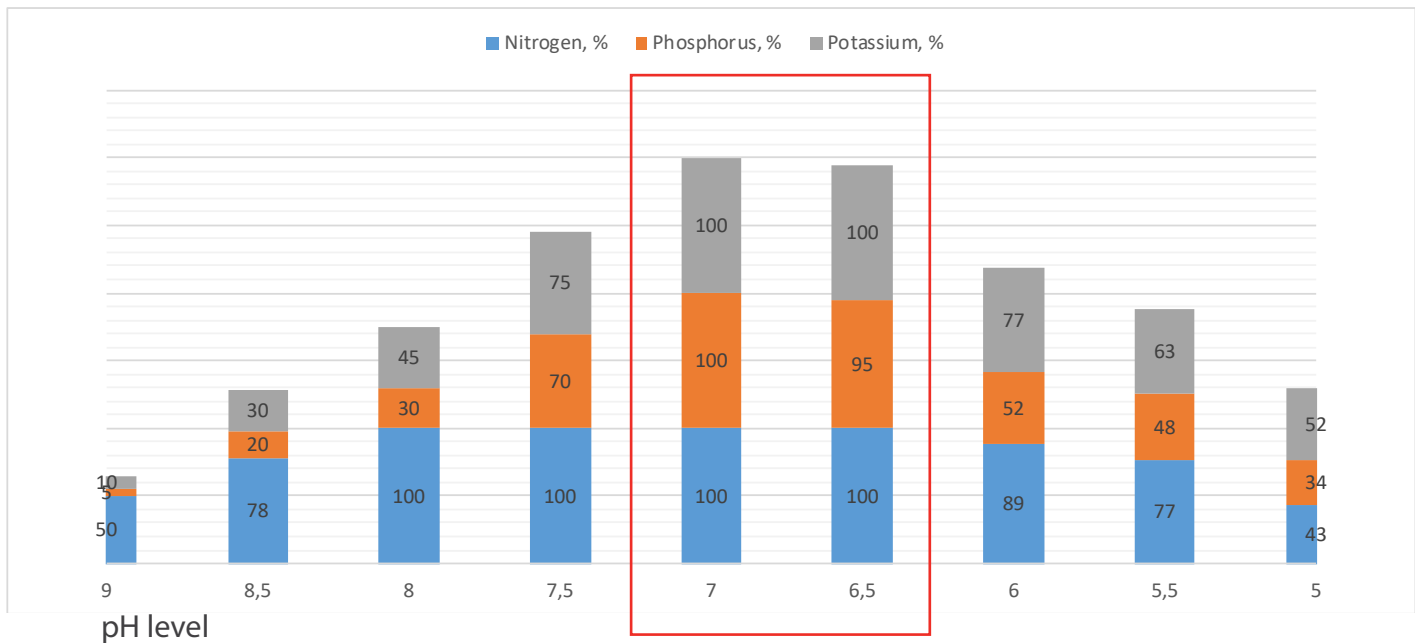


Restrictions in chemical fertilizers addition to a soil resulting in optimization of plants mineral nutrition.

Care of biological condition of soils.

Economic feasibility of the ameliorant.

Dependence of basic nutritive elements digestion on pH level of soil



Meliorant-plus provides recovery of soil pH to the optimum value 6.5-7.0

pH 6.5-7.0 is the optimum indicator of actual acidity of the soil solution, upon which nutrient substances from applied chemical fertilizers are used to the maximum. Reduction of pH value to 5.5 and less results in decrease in macroelements release from soil during plants nutrition.

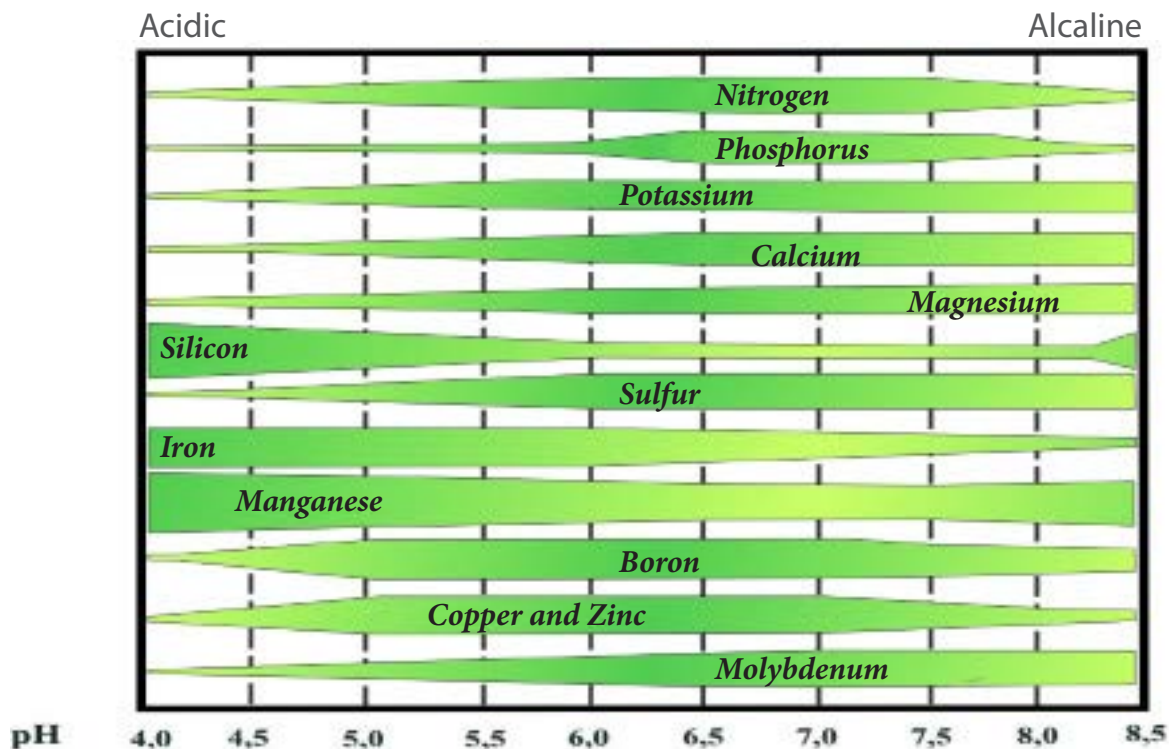
Use of **MELIORANT-PLUS** organic fertilizer having the properties of a neutralizer soil acidity, maximizes the cost of fertilizers and allows to reduce the final cost of production.



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Influence of soil pH on availability of macro- and microelements for plants



The availability of soil elements for plants nutrition is foremost affected by reaction of soil solution (water and saline pH), as well as by root secretion of plants, biological activity of soil (activity of microorganisms), balance of fertilizer elements (interaction) and use of mineral fertilizers and chemical ameliorants.

All these features are provided by application of our complex product MELIORANT-PLUS.

IMPORTANT FACTORS of MELIORANT-PLUS application:

- providing simple and extended soil fertility recovery;
- increase in nutrient synergism in soil subject to availability of calcium, magnesium, sulfur and microelements in the ameliorant;
- optimization of plants mineral nutrition;
- equilibration of oxide-regenerating potential to balanced values;
- prevention of soil cover degradation related to its decalcification and dehumification in the absence of Meliorant

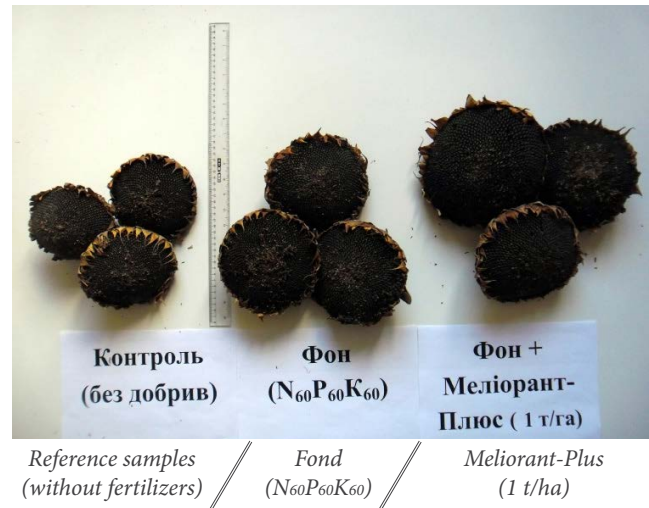
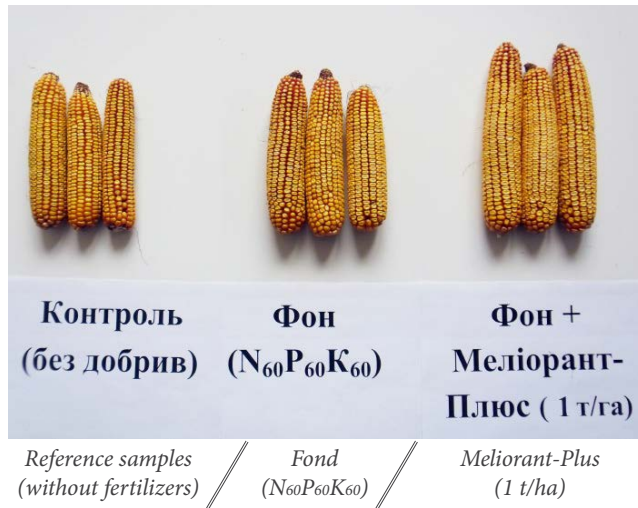


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BIOLOGICAL EXPERTISE

Biological expertise of the organic fertilizer Meliorant-PLUS with de-acidifier properties was performed at the National Research Center «Institute of Agriculture of National Academy of Agricultural Sciences (NAAS)» on the gray forest soils (State Enterprise Experimental Farm «Chabany») and on the typical low-humic black soil at the Panfil'skaya Experimental Station of the National Research Center «Institute of Agriculture of NAAS».



According to the results of the biological expertise it was found that single application of Meliorant-PLUS product at a dose of 1 t/ha provides the following:

- reduction of medium-acidic reaction of the soil solution, approaching to be neutral;
- increase in total humus content in the arable soil layer (0-20 cm) of light loamy soil from 1.1 to 1.3%, and of middle loamy soils - from 3.2 to 3.5%;
- optimization of nitrogen and phosphate fond in the soil - up to 10%, potassium - up to 20%, as compared to reference samples without fertilizers;
- increase of grain yield of winter wheat, corn, sunflower, root crops sugar beet compared to the control without fertilizer from 15 to 40%, depending on weather, and improving the quality of crops.



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MODE OF APPLICATION

Meliorant-PLUS is recommended for application to the soil for the purpose of complex feeding plants. It is applied under cereals, legumes, oilseeds, melons, vegetables, fruit and berry crops and also under lawns, trees, shrubs and ornamental plants in the landscape gardening. It is most effective to apply to pre-sowing cultivation. Applies as in the open and closed soil. In addition, Meliorant-PLUS neutralizes soil acidity.

FOR AGRICULTURAL ENTERPRISES AND FARMS

- 1 t/ha with the air-dry mass (20% humidity)

IN THE PRIVATE SECTOR

- 10 kg per 100 sq.m for 20% humidity



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CONTACT INFORMATION

For more information and to place an order,
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www.beartandgibson.com

OUR ADDRESS:

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United Kingdom

HP2 5SE

Packaging:

1-3 kg polypropylene bags,
5, 10 kg polypropylene buckets,
500-1,000 kg big bags.



ADDITIONAL INFORMATION

T: 00 44 (0) 1442 508 939

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