



Agro.Bio

MANUFACTURER OF BIOLOGIES

GROWTH ADDITIVES

CROP PROGRESS

+40%

**Protection from hot and
cold weather,
agrochemicals.
Improvement of harvest
quality.**



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Chernihiv city



100% natural
100% organic

Potassic Humate + Phosphorus (P)



Price: 55 UAH/l

Environmentally-friendly complex fertilizer and growth stimulator for agricultural plants, of organic origin, without chlorides; its main primary plant nutrients are humic acids (15%) that stimulate growth of roots and vegetative mass; it contains water soluble and 100% available compound for plant life; potassium humate and phosphorus are rapidly absorbed even at low soil temperatures, activating the activity of microorganisms in the soil, accelerating the processes of decomposition, humification, improving qualitative and quantitative indicators of the products grown; it is a prophylactic stress agent, normalizing metabolism and can be used in all phases of plant development (excluding flowering).

Phosphorus (P) is a macro-element that is especially important for plants during the formation of the ovary and during maturation of the fruits. Phosphorus participates in all processes of metabolism, in particular photosynthesis (accelerates growth of organs (vegetative and generative) and plant development (accelerates growth)), respiration, energy metabolism (accelerates the processes of proteins breakdown and their transition into plant reproductive organs); it participates in the creation of cell membranes, improves the processes of water absorption (the plant uses less water), acts as an integral part of phosphorus-containing organic compounds (nucleotide with proteins, namely, nucleoproteins, etc.), nucleoside polyphosphates (ATP, AMP, ADP), coenzymes – NADP etc.; it is involved in the transmission of organism innate characters, in stimulation of the intensity of flowering crops (vegetables, fruit, grains). Due to phosphorus, the winter resistance of crops and the quality of products increase even in the absence of water.

Phosphorus deficiency: with insufficient quantities, biosynthesis of proteins, photosynthesis, respiration, evaporation are slowed down and nitric nitrogen is accumulated. Plants attain dark green or blue color of leaves, reddish, purple, dark sometimes black color of dead leaves appear, and trees have a growth retardation of sprouts, the size of leaves decreases and reddish veins are formed. Vegetable crops lose taste, the root crop of carrots becomes lighter, the flower plants form less flowers and its color loses the expression. The growth of plants vegetative organs (sprouts and root system, leaves become small) slows down, which effects in reducing of frost resistance. Flowering of plants and ripening of fruits are delayed; drop of leaves takes place faster.

With insufficient phosphorus amount the nitrogen effect will be especially exhibited, and therefore, when fertilizing the soil it is necessary to add nitrogen and phosphorus in equal quantities (to balance their effect). Fixation of phosphorus occurs as a result of its interaction with calcium, magnesium, aluminum.

The composition of the fertilizer Potassic Humate + Phosphorus "AgroBio" includes:

highest content of natural humic acids (humic and fulvic)	15.0%
mass fraction of potassium.	4.6%
P ₂ O ₅ (phosphorus).	36 g / l

Multicomplex



Price: 120 UAH/l

Multicomponent fertilizers **Potassic Humate + phosphorus** (Si, Fe, Mg, S, Zn, Co, Cu, Mn), **Sodium Humate + phosphorus** (Si, Fe, Mg, S, Zn, Co, Cu, Mn) are produced on the organic leonardite basis, balastless; they contain the maximum amount of natural humic and fulvic acids (15.7%), potassium, sodium (4.6%), phosphorus (1%), amino acids, vitamins and trace minerals (Si, Fe, Mg, S, Zn, Co, Cu, Mn) produced by AGRO.BIO. Fertilizers stimulate the growth and development of agricultural plants' organs, enhance the assimilation of nutrition elements, increase metabolism, and reduce the plants' stress under adverse environmental conditions. When applying multicomponent fertilizers, it is not necessary to change the existing production agro technologies during plant cultivation. Preventive fertilization during foliar fertilizing and root nutrition is used in all phases of a plant organism development (excluding flowering), but their use is of primary importance for vegetation restoration after

the influence of stress factors.

Composition:

1. Humic acids	64,9 g/l
2. Fulvic acids	87,62 g/l
3. P ₂ O ₅	36,7 g/l
4. K ₂ O	38,9 g/l
5. MgO	1,72 g/l
6. SO ₃	7,1 g/l
7. Mn.	1,04 g/l
8. B.	0,93 g/l
9. Zn.	1,04 g/l
10. Cu.	0,7 g/l
11. Mo.	0,46 g/l
12. Co.	0,35 g/l

B (Boron)



Boron provides almost 100% insertion into the plant's organism during foliar application. Boron is directly involved in transporting of sugars, lignin synthesis; it is necessary for the formation of viable pollen and ovary. Its use is effective for preventing measures and in case of minor-nutrient element deficiency, especially when growing croppers in subacid and acid soils. The additional stimulating action of the preparation basis – potassium humate – promotes activation of the plant growth and development processes, restores the balance of boron.

Boron (B) is a medium-active trace mineral not included into the group of metals, which is especially important in plant nutrition and propagation, after zinc, none of the metabolic processes passes without boron (synthesis of carbohydrates, protein biosynthesis - synthesis of nucleic acids (DNA, RNA), photosynthesis (activates the formation of chlorophyll, assimilation of CO₂), phytohormones, transport of sugars), acts as a regulator when using stimulants and inhibitors for growth and development of crops, enhances the formation of root nodule nitrogen-assimilating bacteria, activates the effect of enzymes, distributes growth regulating substances, ascorbic acid from leaves, roots to the reproductive organs.

Price: 90 UAH/l

Plants need boron during the entire vegetative period to form vegetative (especially young roots) and generative (flowers, in the formation of pollen, seeds) organs; boron participates in the formation of cell walls, plant tissue structures, in the processes of cell fission, accelerates the processes of flowering, formation of seeds, promotes fertilization and increases seed growing potential, forms the plants' resistance to diseases; but it is not able to redistribute between organs within the plant. Most of the boron is localized – in ovary, pollen, stamens and accumulated in leaves, flowers, less represented in roots, and is absent in the stems. Vegetable and fruit and berry plants require 10 times more boron than cereal crops.

Boron deficiency: the insufficient amount of boron leads to the drying of vegetative tips, the dieback of apical points, roots, leaves, weak flowering or its absence; small twisted leaves that yellow, when the fruit is formed appear; quantitative and qualitative indicators decrease. Lack of boron leads to the development of diseases (for beets – chlorosis of leaves, dry rot; for flax – bacterial blight; inflorescence of cauliflower – is getting brown, hollow heart is appearing; for grapes – declines: for apples – black rot; for pears – corkiness, watery spots), also the difficulties appear with the fixation of nitrogen from the air by plants. The shortage of boron appears under excessive introduction of nitrogen fertilizers or liming of soils, as well as under drought conditions, especially on carbonate and waterlogged soils.

Composition:

1. N (nitrogen). . .	30 g/l	5. Humic	
2. B.	100 g/l	acids	30,8 g/l
3. P ₂ O ₅ (phosphorus)	17,4 g/l	6. Fulvic	
4. K ₂ O (potassium)	18,4 g/l	acids	24,8 g/l

Zn + S

(Zinc + Sulphur)



Price: 110 UAH/l

The biologically available form of Zn allows to restore the balance of this important minor-nutrient element in case of its insufficient amount as soon as possible. Zinc is a part of many enzymes responsible for the absorption and use of water by plants.

The basis of the preparation – is humate that increases drought resistance and reduces the impact of the lack of this trace element.

Sulfur is an important component of almost all proteins.

Zinc (Zn) acts as an important trace element, has a great influence on the redox processes in the plant organism, participates in the synthesis of the growth-promoting hormone (auxin), in the formation of ATP, chlorophyll, mineral nutrition elements, in the cell fission, in the formation of mitochondria; accelerates the flowing of protein biosynthesis (amino acid), acts as a component of 40 respiratory enzymes, increases the content of ascorbic acid, dry basis, affects the processes (nutrition, move of substances), permeability of membranes; accelerates growth and development, enhances processes of the reproductive organs (during fertilization), increases plants resistance to disease, enhances drought-, heat- and frost resistance of plants.

Zinc contributes to the absorption of copper, boron, and the reduction of elements in the soil – iron, potassium, manganese, lead, cadmium; it regulates the exchange of phosphorus. Insufficient zinc is often observed on neutral and mildly alkaline carbonated soils; its additional use on sour soils may be inappropriate.

Sulphur (S) on a level with phosphorus and nitrogen acts as an important factor in plant nutrition with major-nutrient element. Sulfur is a component of proteins, in particular the irreplaceable component of amino acids (cystine, cysteine, methionine) and phytohormones; is involved in metabolic processes such as protein biosynthesis, in redox processes, affects the functioning of the hydrolytic enzymes activity, the synthesis of carbohydrates; increases the intensity of assimilation; is involved in plant' cell fission, promotes the formation of chlorophyll iron-sulphur proteins electron transfer during photosynthesis; has positive effect on nodule bacteria formation during nitrogen fixation; helps to shape young leaf tissue, generative organs (including seeds); is a part of vitamins (theanine, biotin, B group); improves the nutrition with major- and minor nutrient elements (nitrogen, phosphorus, potassium, calcium, magnesium, boron, copper, zinc and molybdenum); increases plant resistance to pests, stress factors (drought, temperature changes) and affects crop yields.

Composition:

1. N (nitrogen) . .	48 g/l	6. Humic acids	30,8 g/l
2. P ₂ O ₅ (phosphorus)	17,4 g/l	7. Fulvic acids	24,8 g/l
3. K ₂ O (potassium)	18,4 g/l		
4. Zn.	100 g/l		
5. SO ₃	110 g/l		

Mn + S

(Manganese + Sulphur)



Price: 90 UAH/l

The preparation combines potassium humate and Mn. This trace element is an active component of enzymes responsible for respiration processes, photosynthesis, nitrate and nitrite recovery. Rapid action of the preparation with foliar application reduces the effects of stress and restores the optimum Mn content in the plant, resulting in a maximum yield of cropper.

Manganese (Mn) – is a trace element most necessary for plant nutrition after iron, its quantitative content in the plant is – 0,001%; it has the ability to be quickly digested by a plant, to move through its organs and regulate the flow of other elements; it affects growth processes, change of microbiological activity and the content of organic matter in agricultural crops; increases resistance to adverse factors, improves fruiting. Manganese takes an active part in the processes of photosynthesis (the transfer of electrons - due to the ability to change the chemical valence, the accumulation of chlorophyll, the formation of sugar, vitamins – ascorbic acid); of respiration (reduction of transpiration and increase of water-regulating ability, transfer of phosphorus from lower vegetative organs to the upper reproductive organs); of metabolism (carbohydrate metabolism, biosynthesis of proteins – amino acids, polypeptides, multi fractional proteins, etc.); of redox reactions; is a part of 10 groups of active enzymes (arginase, phosphotransferase, etc.).

Manganese deficiency: the insufficient manganese amount effects the formation of plastids and the process of photosynthesis; the plants are damaged by gray speck, their leaves become light green, the ratio of elements in the nutrition is deteriorated that leads to lethal yellowing, decline (small yellowish spots appear on leaves, that eventually lead to the extinction of their parts), to spotting of the roots; reduces frost resistance of agricultural plants. The most sensitive to the lack of the element: cereal crops (oats, barley) are damaged by gray speck, vegetable (spinach, beet) on which the spotted chlorosis is observed, legumes (beans, peas) – the seeds form black, brown spots, and fruit and berry crops (apple, peach) – various necrotic changes of leaflets, which further leads to a decrease or absence of fruiting. In most cases (for plants, if manganese is less than 10-25 mg / kg of dry weight) it leads to deficiency and manifests itself on soils after liming, at pH 6.0-6.5, at low temperatures, insufficient light intensity, high content of organic matter, in particular phosphorus and calcium.

Composition:

1. N (nitrogen)	48 g/l	6. Humic acids	30,8 g/l
2. P ₂ O ₅ (phosphorus)	17,4 g/l	7. Fulvic acids	24,8 g/l
3. K ₂ O (potassium)	18,4 g/l		
4. Mn.	100 g/l		
5. SO ₃	110 g/l		

Fe + S (Iron + Sulphur)



Price: 90 UAH/l

Iron (Fe) – an important element in the life of plants, which is responsible for the biosynthesis of chlorophyll. The oxidation-reduction processes, respiration and photosynthesis arise with its (Fe) participation. Iron enzymes are involved in the transformation of energy and nitrogen substances. Combined with Agro.Bio potassium humate and sulfur-containing component ferric chelate, it quickly eliminates the cause and effects of chlorosis, activates the most important processes in the plant's organism and, accordingly, significantly increases the quantity and quality of products.

Indicators of iron shortage. Unlike the signs of magnesium deficiency, the first indicators of iron shortage appear on the young leaves, not on the old. The discoloration spreads across the whole leaf blade, and the green color remains only in narrow stripes along the veins. Since the green color is vital for plants, with autumn leaf color they (plants) are weakening, stop growing and die in parts.

The application of iron salts in the soil to treat chlorosis caused by iron deficiency is in most cases useless, since fertilization with iron ions due to the adverse properties of the soil immediately transform them into difficult soluble compounds. However, there is a very effective treatment of chlorosis. The preparation should be slightly laid in the ground or applied, like other fertilizers. Recently, the preparations also appeared that are effective even in case of surface treatment. Leaf-feeding of plant with iron (leaves spraying) is ineffective.

Sulphur (S) on a level with phosphorus and nitrogen acts as an important factor in plant nutrition with major-nutrient element. Sulfur is a component of proteins, in particular the irreplaceable component of amino acids (cystine, cysteine, methionine) and phytohormones; is involved in metabolic processes such as protein biosynthesis, in redox processes, affects the functioning of the hydrolytic enzymes activity, the synthesis of carbohydrates; increases the intensity of assimilation; is involved in plant' cell fission, promotes the formation of chlorophyll iron-sulphur proteins electron transfer during photosynthesis; has positive effect on nodule bacteria formation during nitrogen fixation; helps to shape young leaf tissue, generative organs (including seeds); improves the nutrition with major- and minor nutrient elements (nitrogen, phosphorus, potassium, calcium, magnesium, boron, copper, zinc and molybdenum); increases plant resistance to pests, stress factors (drought, temperature changes) and affects crop yields.

Склад:

1. N (nitrogen) . .	48 g/l	6. Humic acids	30,8 g/l
2. P ₂ O ₅ (phosphorus)	17,4 g/l	7. Fulvic acids	24,8 g/l
3. K ₂ O (potassium)	18,4 g/l		
4. Fe.	100 g/l		
5. SO ₃	110 g/l		

Cu + S (Copper + Sulphur)



Copper is largely responsible for the formation of plants' generative organs and the intensity of photosynthesis, strengthens immunity and contributes to increasing of croppers' resistance to lodging. Important are the preventive and curative effects of copper ions in case of fungal diseases development. Combined with Agro.Bio potassium humate and sulfur the preparation greatly increases the yield of cereals and other crops, eliminating chlorosis and blind-seed disease.

Copper (Cu) is an important trace element that is part of the enzymes (polyphenol oxidase, plastocyanin, superoxide dismutase, cytochrome c oxidase, diaminoxidase) and a complex of compounds with organic substances that perform vital functions for metabolism (protein, carbohydrates biosynthesis, protein cell walls metabolism etc.), increases the intensity of the processes of photosynthesis, respiration, the functioning of the conducting tissue (xylem), participates in the nitrogen fixation and recovery, affects the formation of DNA and RNA, the growth and development of plants' organs, in particular, reproductive; contributes to the accumulation of nutrients (for grain crops – protein,

Price: 90 UAH/l

for root tubers – starch, for root crops – sugar, for oil-plants – fats, for fruits – ascorbic acid, sugars); increases yields, enhances frost and drought resistance, and for cereals contributes to the formation of resistance lodging, increases plants' resistance to stress factors (drought, temperature changes), diseases (fungal, viral).

Copper deficiency: when the amount of copper is insufficient, the agricultural plants reproductive and storage organs initiation slows down (less pollen grains are formed, which can cause infertility of spores); it leads to the death of stains, chlorosis, changes in leaves color (light spots, flavescence, brown tint), to the formation of white spots on the edges, the leaves twist and die, to the weak formation of seeds (for cereals – blind-seed disease of spikelet); the process of photosynthesis slows down, that leads to a decrease or stopping of the growth of vegetative organs (root systems, new sprigs, buds dying (particularly apical), wilting of terminal leaves); loss of turgor by the cell.

Sulphur deficiency: when the amount of sulfur is insufficient, a pale green color on the young leaves is formed (external characters are similar to nitrogenous nutrition deficiency (although with lack of nitrogen changes are observed on the old leaves)), after a while they turn yellow, acquire a red tint (anthocyanins are accumulated), and then die.

Composition:

1. N (nitrogen) . .	48 g/l	6. Humic acids	30,8 g/l
2. P ₂ O ₅ (phosphorus)	17,4 g/l	7. Fulvic acids	24,8 g/l
3. K ₂ O (Potassium)	18,4 g/l		
4. Cu.	70 g/l		
5. SO ₃	110 g/l		

S + B + Mo

(Sulphur + Boron + Molybdenum)



Price: 100 UAH/l

In the soil **sulphur** is present in plant organic residues and humus (in this form, it is unavailable for plant organism); the sulfur transformation in the direction of mineralization with the participation of microorganisms is necessary, but this process in the soil environment passes too slowly.

The major part of sulfur is absorbed by the soil from the atmosphere (SO₂) and is available from precipitation. It is necessary to fertilize agricultural croppers with sulfates, which contain sulfur and are combined with other main substances most available to the plant (sulfur content 10-25% of the total quantity).

Molybdenum (Mo) contributes to the processes of growth, development, and is a component of many enzymes.

Molybdenum (Mo) is one of the most important trace elements (plants contain from 0,0005% to 0,002%), although the plant's nutritional needs of Mo are relatively small in quantity, it plays a significant role in growth and development, and is a component of many enzymes, including specific enzyme (nitrate reductase), which contributes to the recovery of nitrates in crops, participates in enzymatic processes in the move of electrons, the metabolism of nitrogen (enzymes of nitrogenase (multienzyme), nitrate reductase), accelerates the synthesis of proteins, amino acids,

amides; interacts with elements such as: potassium, magnesium, phosphorus, manganese, copper, iron, cobalt; increases the amount of chlorophyll in the leaves and promotes the intensity of the processes of photosynthesis, respiration, synthesis of vitamins, nucleic acids; increases the ability of nitrogen fixation by nodule bacteria of legumes, improves calcium nutrition; promotes increased frost resistance, drought tolerance, performs a protective reaction from the toxic effects of aluminum. Molybdenum accumulates in young organs, and at the end of the vegetation, mainly in seeds; the element is most needed by such crops as: legumes, vegetables (cabbage, tomatoes, radish, salad, parsley, etc.).

Molybdenum deficiency: with insufficient amount of molybdenum (less than 0,01 mg / kg of dry weight), the external signs of deficiency are similar to those of nitrogen deficiency – brown or brownish black spots appear on the lower leaves (the veins left green) and their surface loses shape, edges swirls, growth is paused. With deficiency of molybdenum, the processes of vital activity in plants (nitrogen exchange, accumulation of nitrates) are violated, especially for cabbage family (the leaves become lanceolate, twist and wrinkle, tissues have a thin structure, sometimes transparent, the coloration has a dim-gray color); for cucumbers – chlorosis appears (at leaves edges); for tomatoes – the leaves turn yellow, swirl; for legumes and fruit and berry croppers – yellow-green spots are formed on the. The more nitrogen-containing fertilizers are used for soil nutrition, the greater the plants' need in fertilizers with molybdenum.

Composition:

1. P ₂ O ₅ (phosphorus)	17,4 g/l	6. Humic acids	30,8 g/l
2. K ₂ O (Potassium)	18,4 g/l	7. Fulvic acids	24,8 g/l
3. B.	50 g/l		
4. Mo.	5 g/l		
5. SO ₃	110 g/l		

N + B + Mo

(Nitrogen + Boron + Molybdenum)



Price: 120 UAH/l

It is difficult to overestimate the importance of nitrogen in the life of plants. This is the main trace element, which increases the vegetative mass of the plant. Nitrogen acts as the main building material of plant bodies, is part of chlorophyll, proteins, nucleic acids. The organic combination of nitrogen, boron, molybdenum and Agro.Bio potassium humate in the preparation guarantees a rapid growth and development of croppers, fully revealing their varietal potential.

Nitrogen (N) is one of the most important major nutrient element for the plant, which increases yields and is absorbed in the form of ammonia or nitric acid (only legumes have the ability to absorb atmospheric nitrogen with nodule nitrogen-assimilating bacteria), therefore, the need for nitrogen fertilization is constant. Nitrogen takes an active part in the process of biosynthesis of proteins (the proteins formation), affects the growth and development of agricultural plants (activates the growth of vegetative organs - stems, leaves), increases the protein content in reproductive organs (fruits, seeds); the main part is in the enzymes, proteins, nucleic acids (DNA, RNA), as well as chlorophyll, vitamins, alkaloids; it increases the level of digestibility from the soil, such elements as potassium, phosphorus, calcium, manganese, magnesium, molybdenum, copper.

Boron (B) is a medium-active trace mineral not included into the group of metals, which is especially important in plant nutrition and propagation, after zinc, none of the metabolic processes passes without boron (synthesis of carbohydrates, protein biosynthesis - synthesis of nucleic acids (DNA, RNA), photosynthesis (activates the formation of chlorophyll, assimilation of CO₂), phytohormones, transport of sugars), acts as a regulator when using stimulants and inhibitors for growth and development of crops, enhances the formation of root nodule nitrogen-assimilating bacteria, activates the effect of enzymes, distributes growth regulating substances, ascorbic acid from leaves, roots to the reproductive organs.

Molybdenum (Mo) is one of the most important trace elements (plants contain from 0,0005% to 0,002%), although the plant's nutritional needs of Mo are relatively small in quantity, it plays a significant role in growth and development, and is a component of many enzymes, including specific enzyme (nitrate reductase), which contributes to the recovery of nitrates in crops, participates in enzymatic processes in the move of electrons, the metabolism of nitrogen (enzymes of nitrogenase (multienzyme), nitrate reductase), accelerates the synthesis of proteins, amino acids, amides; interacts with elements such as: potassium, magnesium, phosphorus, manganese, copper, iron, cobalt; increases the amount of chlorophyll in the leaves and promotes the intensity of the processes of photosynthesis, respiration, synthesis of vitamins, nucleic acids; increases the ability of nitrogen fixation by nodule bacteria of legumes, improves calcium nutrition; promotes increased frost resistance, drought tolerance, performs a protective reaction from the toxic effects of aluminum. Molybdenum accumulates in young organs, and at the end of the vegetation, mainly in seeds; the element is most needed by such crops as: legumes, vegetables (cabbage, tomatoes, radish, salad, parsley, etc.).

Composition:

1. P ₂ O ₅ (phosphorus)	17,4 g/l	6. Humic acids	30,8 g/l
2. K ₂ O (Potassium)	18,4 g/l	7. Fulvic acids	24,8 g/l
3. B.	50 g/l		
4. Mo.	5 g/l		
5. N (nitrogen).	90 g/l		

SODIUM HUMATE + phosphorus



Price: 55 UAH/l

Sodium Humate + Phosphorus ballastless made of leonardite produced by AGRO.BIO is an ecologically safe multiple-nutrient fertilizer and growth stimulator of organic origin; its main active substances are humic and fulvic acids with sodium and phosphorus. The preparation Sodium Humate + Phosphorus affects the processes of plant life, in particular, improves the flow of mineral substances from the environment, activates microorganisms in the soil and accelerates the process of distribution, humification, phosphorus compounds, even at low soil temperatures are rapidly absorbed, positively affecting the activity of soil enzymes (dehydrogenases, proteases, phenol oxidase, etc.); accelerates processes of metabolism, biosynthesis, respiration resulting in growth and development activation; positively affects the

seeds growth processes, does not have harmful effects (absence of ballast salts); has stimulating effect, contains water-soluble available nutrients (humic acids in the dissolved state penetrate through the leaf blade into the structure of the tissue and are rapidly digested) and improves the quantitative and qualitative indices of agricultural croppers.

Composition:

1. Humic acids (Humic and Fulvic).	15%
2. Weight part of sodium.	4,6%
2. P ₂ O ₅ (phosphorus).	37 g/l

Mo (Molybdenum)



Price: 400 UAH/l

The preparation contains biologically active molybdenum. In tandem with potassium humate, this preparation quickly eliminates the signs of Mo deficiency, promotes acceleration of the processes of biological nitrogen fixation, synthesis of vitamins and chlorophyll; increases the intensity of photosynthesis, activates the processes of nitrogen transformation. It is recommended to use it for the prevention, especially in soils with significant acidity.

Molybdenum (Mo) is one of the most important trace elements (plants contain from 0,0005% to 0,002%), although the plant's nutritional needs of Mo are relatively small in quantity, it plays a significant role in growth and development, and is a component of many enzymes, including specific enzyme (nitrate reductase), which contributes to the recovery of nitrates in crops, participates in enzymatic processes in the move of electrons, the metabolism of nitrogen (enzymes of nitrogenase (multienzyme), nitrate reductase), accelerates the synthesis of proteins, amino acids, amides; interacts with elements such as: potassium, magnesium, phosphorus, manganese, copper, iron, cobalt; increases the amount of chlorophyll in the leaves and promotes the intensity of the processes of photosynthesis, respiration, synthesis of vitamins, nucleic acids; increases the ability of nitrogen fixation by nodule bacteria of legumes,

improves calcium nutrition; promotes increased frost resistance, drought tolerance, performs a protective reaction from the toxic effects of aluminum. Molybdenum accumulates in young organs, and at the end of the vegetation, mainly in seeds; the element is most needed by such crops as: legumes, vegetables (cabbage, tomatoes, radish, salad, parsley, etc.).

Molybdenum deficiency: with insufficient amount of molybdenum (less than 0,01 mg / kg of dry weight), the external signs of deficiency are similar to those of nitrogen deficiency – brown or brownish black spots appear on the lower leaves (the veins left green) and their surface loses shape, edges swirls, growth is paused. With deficiency of molybdenum, the processes of vital activity in plants (nitrogen exchange, accumulation of nitrates) are violated, especially for cabbage family (the leaves become lanceolate, twist and wrinkle, tissues have a thin structure, sometimes transparent, the coloration has a dim-gray color); for cucumbers – chlorosis appears (at leaves edges); for tomatoes – the leaves turn yellow, swirl; for legumes and fruit and berry croppers – yellow-green spots are formed on the. The more nitrogen-containing fertilizers are used for soil nutrition, the greater the plants' need in fertilizers with molybdenum.

Composition:

1. Mo.	40 g/l
2. Humic acids (Humic and Fulvic).	15%
3. K ₂ O (Potassium).	18,4 g/l
3. Humic acids.	30,8 g/l
4. Fulvic acids.	24,8 g/l

Amino energy

(Nitrogen, patented, specific product formula)



Price: 220 UAH/l

The active substances of Amino Energy Agro.Bio are of natural origin. The combination of Agro.Bio potassium humate and a specific form of nitrogen allows obtaining a powerful active anti-stress product, which use during the growing season will help to minimize product losses. Prompt processing of coppers after exposure to extreme weather conditions contributes to a better recovery of plants and smoothes the influence of negative factors. It enhances and accelerates the absorption of potassium, calcium and magnesium by coppers.

Nitrogen (N) is one of the most important major nutrient element for the plant, which increases yields and is absorbed in the form of ammonia or nitric acid (only legumes have the ability to absorb atmospheric nitrogen with nodule nitrogen-assimilating bacteria), therefore, the need for nitrogen fertilization is constant. Nitrogen takes an active part in the process of biosynthesis of proteins (the proteins formation), affects the growth and development of agricultural plants (activates the growth of vegetative organs - stems, leaves), increases the protein content in reproductive organs (fruits, seeds); the main part is in the enzymes, proteins, nucleic acids (DNA, RNA), as well as chlorophyll, vitamins, alkaloids; it increases the level of

digestibility from the soil, such elements as potassium, phosphorus, calcium, manganese, magnesium, molybdenum, copper.

Young plants are most in need of nitrogen, in particular various sorts of cabbage (white cabbage (late, early), red cabbage, and Brussels sprout), asparagus, leeks, pumpkin, celery, rhubarb. Agriculture plants consume a significant portion of nitrogen from the soil (grain crops - 100-150 kg / ha, vegetable plants - 150-50 kg / ha).

Nitrogen deficiency: when the amount of nitrogen in the soil is insufficient, the growth slows down (leaves reduce), the vegetation period shortens, the plant's flowering weakens (the initiation of a smaller number of fruit buds); plants lose intense green coloration to pale green color (the chlorophyll formation is violated, chlorosis appear), flavescence and early falling of leaves start; cereal coppers have weak tillering, vegetable coppers obtain old leaves of yellow-green color, fruit and berry – red leaves; a large part of the fruit become small with a dense pulp, abscission of fruits starts after the ovary, which leads to a decrease in yield.

Composition:

1. K_2O 120 g/l
2. N^* 130 g/l
3. Humic acids. 57 g/l
4. Fulvic acids. 87 g/l

Imperium



The preparation' composition contains two unique groups of substances of natural origin, the mutual effect of which leads to a powerful bio-stimulating effect. It is used for a specified purpose of increasing of quantitative and qualitative characteristics of agricultural products, stabilizing plants after treatment with pesticides, overcoming the effects of cold shock. It is effective in gardening when planting stone fruits and grain crops. It is a humat with plant hormones and chemical compounds. **The preparation is under certification (February, 2019). We are accepting the applications.**

Price: 350 UAH/l

Atlant



Due to the combination of manganese and zinc salts, as well as physiologically active components of organic origin (Agro.Bio potassium humat and organic compounds, as well as phytohormons: Brassinosteroid, Fucoidan, betaine, laminarin, auxin), the stimulation of the immune system of plants is derived, the growth of the top and root system is increased. The preparation promotes the better absorption of mineral nutrition elements by plants, improves the quality of commercial yield. **The preparation is under certification (February, 2019). We are accepting the applications.**

Price: 170 UAH/l

Salutem



The combination of the preparation's components has an activating effect on the seeds during preplanting cultivation, allowing to obtain even, thoroughly sound sprouts with significant growth potential in a short time. Provides a reliable start for further active growth and development of plants and, accordingly, high yields. Cytokinins and auxins of the preparation activate all vital processes in the plant's body.

Price: 130 UAH/l

Composition:

- | | | | |
|---|----------|-----------------|--------|
| 1. K ₂ O (Potassium) | 46 g/l | 6. Humic | |
| 2. P ₂ O ₅ (phosphorus) . . | 43,5 g/l | acids | 77 g/l |
| 3. Kinetin | 0,01 % | 7. Fulvic | |
| 4. Indole butyric acid | 0,007 % | acids | 62 g/l |
| 5. Gibberllic acid | 0,007 % | | |