

COMPLEX ORGANO-MINERAL
HIGH-ANALYSIS
SAPROPEL FERTILIZERS

"BLAGO"



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The rapid world-wide rise in prices for mineral fertilizers and the associated increase in the cost of agricultural products make the agrarians look for new technologies for cultivation of profitable, eco-friendly high-quality goods. In that respect, complex high-analysis liquid organo-mineral fertilizers of the "BLAGO" series produced from natural raw materials (lacustrine sapropel) have proved to be very effective and cost-efficient.

Sapropel lacustrine is a complex product. It cannot be regarded as the result of a simple accumulation of decomposed remains on the bottom of a lake. To become a sapropel, they undergo various stages of transformation. From this point of view, a lake is a natural laboratory in which the most complex biological processes occur.

The conditions for sapropel formation at the bottom of a lake are very mild: low positive temperature, minimal exposure to light and oxygen. These parameters have not changed for many thousands of years, due to which, as a result of the decomposition and synthesis reactions, a natural material rich in nutrients and biologically active substances, has been formed, beneficially influencing the development of living organisms. The composition of sapropel in a balanced ratio includes organic and mineral substances, as well as useful soil microorganisms. But its riches are reliably concealed by physical and chemical properties that prevent the direct use of such a valuable raw material in agricultural production.

Sapropel has long attracted the attention of Russian scientists. In 1913, under the supervision of Academician V. I. Vernadsky, a program of scientific research on the exploitation of sapropel was developed, but, despite interesting scientific studies and proposed technological schemes for its (sapropel) processing, they have not proceeded out of the experimental stage. And only in 1996, St. Petersburg and Leningrad Oblast scientists and specialists managed to develop and patent a cheap and effective technology of decomposition of sapropel, which allowed the industrial exploitation of such a unique raw material. The technology is distinguished by a soft, sparing effect on sapropel, which completely preserves the riches accumulated in it during many millennia, while the technology used in the production of the "BLAGO" fertilizer allows stabilizing the parameters of the fertilizer within a fairly narrow range, which makes "BLAGO" technologically useful for processing agricultural crops and for farm operation.



FERTILIZERS OF THE "BLAGO" SERIES ARE INTENDED FOR:

- presow treatment of seed and planting material (soaking seeds, tubers, bulbs; plant roots dipping before transplanting or planting);
- foliar and root fertilizing;
- the increase of the efficiency and reduction of application rates for mineral fertilizers when combined with them.
- enrichment and improvement of soil structure, acceleration of composting processes.



COMPOSITION OF "BLAGO" BRAND FERTILIZERS

"BLAGO" fertilizer gained from a sapropel extract, when applied in the amount of 0,4-0,6 l per ha, provides a stable yield increase for various crops (from 15% to 80%), commensurable with augmentation after application of mineral fertilizers – hundreds of kg per ha, and organic – tens of tonnes per ha. According to production tests, the economic return on using the "BLAGO" makes 20 or more times.

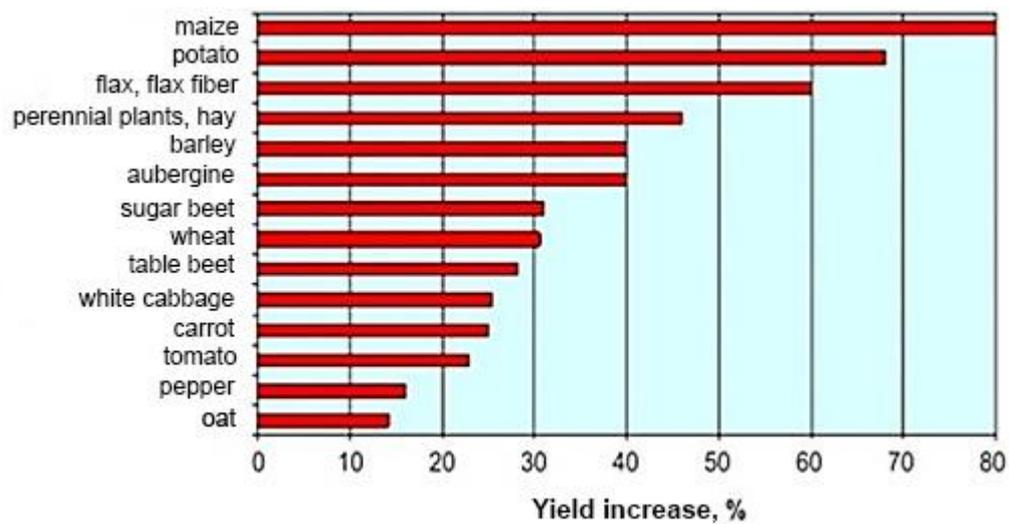
Fertilizers of the "BLAGO" series can be used for growing all types of vegetable, fruit and berry, grain, and industrial crops in open or protected soil, including the possibilities of organic farming.

		"BLAGO 1"	"BLAGO 2"	"BLAGO 3"	"BLAGO 4"	"BLAGO 5"																																																																																									
																																																																																															
PURPOSE		universal, for all types of crops, ornamentals, potted plants, lawn grasses	for vegetable, fruit and berry crops, or root crops	for grain crops and legumes, cereal crops and perennial grasses	for industrial crops	for cabbage groups and oil crops																																																																																									
COMPOSITION		<p>Humic acids (humic, fulvic and gimatomelanoic acids) stimulate the growth and development of plants, intensify metabolic processes, present an additional source of energy, and protect plants from unfavorable environmental factors.</p> <table border="1"> <tr> <td>Humic acids content, not less than, g/l</td> <td>20</td> <td>20</td> <td>20</td> <td>20</td> <td>20</td> </tr> <tr> <td>Fulvic acids content, not less than, g/l</td> <td>6.9</td> <td>6.9</td> <td>6.9</td> <td>6.9</td> <td>6.9</td> </tr> </table> <p>General content of soluble salts, g/l, including:</p> <table border="1"> <tr> <td colspan="7">Macro- and micronutrients (N, P, K, Ca, Mg, Fe, S, Si, Se, B, Mn, Zn, Cu, Mo, Co, Ni, J, Br, etc.)</td> </tr> <tr> <td colspan="7">present nutrients (many of which are contained in the fertilizer in the form of chelates), enrich the soil.</td> </tr> <tr> <td rowspan="3">N P K</td> <td>Nitrogen (N)</td> <td>8-13</td> <td>115-125</td> <td>75-80</td> <td>100-110</td> <td>125-135</td> </tr> <tr> <td>Phosphorus (P₂O₅)</td> <td>9-17</td> <td>40-50</td> <td>40-50</td> <td>40-60</td> <td>40-60</td> </tr> <tr> <td>Potassium (K₂O)</td> <td>16-22</td> <td>120-130</td> <td>100-110</td> <td>120-130</td> <td>130-140</td> </tr> <tr> <td rowspan="6">In chelate form, Not less than</td> <td>Magnesium (MgO)</td> <td>0.9</td> <td>0.9</td> <td>0.9</td> <td>0.9</td> <td>0.9</td> </tr> <tr> <td>Manganese (Mn)</td> <td></td> <td>2.5</td> <td>0.9</td> <td>1.5</td> <td>2.0</td> </tr> <tr> <td>Zinc (Zn)</td> <td></td> <td>0.9</td> <td>0.7</td> <td>0.9</td> <td>0.9</td> </tr> <tr> <td>Copper (Cu)</td> <td></td> <td>0.5</td> <td>0.5</td> <td>0.6</td> <td>0.6</td> </tr> <tr> <td>Boron (B)</td> <td></td> <td>0.8</td> <td>0.5</td> <td>0.6</td> <td>0.9</td> </tr> <tr> <td>Molybdenum (Mo)</td> <td></td> <td>0.5</td> <td>0.4</td> <td>0.4</td> <td>0.5</td> </tr> <tr> <td></td> <td>Cobalt (Co)</td> <td></td> <td>0.3</td> <td>0.3</td> <td>0.3</td> <td>0.3</td> </tr> </table>					Humic acids content, not less than, g/l	20	20	20	20	20	Fulvic acids content, not less than, g/l	6.9	6.9	6.9	6.9	6.9	Macro- and micronutrients (N, P, K, Ca, Mg, Fe, S, Si, Se, B, Mn, Zn, Cu, Mo, Co, Ni, J, Br, etc.)							present nutrients (many of which are contained in the fertilizer in the form of chelates), enrich the soil.							N P K	Nitrogen (N)	8-13	115-125	75-80	100-110	125-135	Phosphorus (P ₂ O ₅)	9-17	40-50	40-50	40-60	40-60	Potassium (K ₂ O)	16-22	120-130	100-110	120-130	130-140	In chelate form, Not less than	Magnesium (MgO)	0.9	0.9	0.9	0.9	0.9	Manganese (Mn)		2.5	0.9	1.5	2.0	Zinc (Zn)		0.9	0.7	0.9	0.9	Copper (Cu)		0.5	0.5	0.6	0.6	Boron (B)		0.8	0.5	0.6	0.9	Molybdenum (Mo)		0.5	0.4	0.4	0.5		Cobalt (Co)		0.3	0.3	0.3	0.3
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<p>Useful microorganisms decompose organic remains, enable the formation of humus and increase soil fertility, better the mineral nutrition of plants and increase the yield output. Suppress the development of pathogenic microflora, decompose harmful chemical compounds, increase the resistances of plants to diseases and pests.</p> <table border="1"> <tr> <td>Four groups of helpful soil microorganisms</td> <td>Ammonifying bacteria, amylolytic bacteria, pedotrophs, urobacteria in the amount corresponding to the natural background of sapropel</td> </tr> </table>							Four groups of helpful soil microorganisms	Ammonifying bacteria, amylolytic bacteria, pedotrophs, urobacteria in the amount corresponding to the natural background of sapropel																																																																																							
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<p>Biologically active substances (amino acids, proteins, enzymes, vitamins, etc.) participate in the processes of biosynthesis, improve the quality and nutritional value of products.</p> <table border="1"> <tr> <td>Substances in the amount corresponding to the natural background of sapropel.</td> <td>amino acids (threonine, methionine, lysine, cystine, etc.); vitamins (B1, B2, B3, B6, B12, C, D, E, PP, provitamin A, carotenoids, folic acid, etc.); enzymes: catalyzing oxidative reactions (catalase, peroxidase) and hydrolysis reactions (amylase, urease); macro- and micronutrients (N, P, K, Ca, Mg, Fe, S, Si, Se, B, Mn, Zn, Cu, Mo, Co, Ni, J, Br, etc.); proteins, mono- and polysaccharides, pectins, melanoidins, phytohormones.</td> </tr> </table>							Substances in the amount corresponding to the natural background of sapropel.	amino acids (threonine, methionine, lysine, cystine, etc.); vitamins (B1, B2, B3, B6, B12, C, D, E, PP, provitamin A, carotenoids, folic acid, etc.); enzymes : catalyzing oxidative reactions (catalase, peroxidase) and hydrolysis reactions (amylase, urease); macro- and micronutrients (N, P, K, Ca, Mg, Fe, S, Si, Se, B, Mn, Zn, Cu, Mo, Co, Ni, J, Br, etc.); proteins, mono- and polysaccharides, pectins, melanoidins, phytohormones.																																																																																							
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APPLICATION OF "BLAGO" SERIES FERTILIZERS PROVIDES:

1. Cultivated crops yield increase (up to 15-80%), depending on the species, type, the level of soil fertility and weather conditions;
2. Improved plant survivability during transplantation, increased growth energy and field germination capacity of seeds;
3. Mineral fertilizers application rates reduction by 30% or more;
4. Biostimulation of plant growth and acceleration of crops ripening (for 1-2 weeks);
5. Development of a strong root system, metabolism activation and absorption of mineral macro- and micronutrients;
6. Increased resistances to diseases and unfavorable weather factors;
7. Enhanced longevity, quality and the looks of agricultural products
8. Weakening of the toxic effect of heavy metals and chemical plant protection products;
9. Enhanced taste, reduced nitrate concentration, increased content of amino acids, proteins, carbohydrates, vitamins, fat, organic acids and other useful components.

Increase in the yield output of different crops, according the results of production tests of sapropel-based fertilizers conducted in 2000-2016, as shown in the diagram.



According to a number of experts belonging to Russian Science and Research Institutes, sapropel-based fertilizers are the most promising entities for a wide variety of application models in modern eco-friendly agricultural production. The efforts of the specialists resulted in the development of new technologies intended to increase the concentration of active substances, the stability of product parameters and, as a result, its effectiveness and adaptability.

