

HYDROHUMATE

HUMIC PEAT PRODUCT



ЗАО «БЕЛНЕФТЕСОРБ»

Standard/ registration number (BY):

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Our company, ZAO "Belneftesorb" has been producing liquid humic concentrate, Hydrohumat for more than 10 years. The product increases germination of seeds, accelerates growth of plants, improves quality and extends periods of storage of vegetables, grain, beans, flower and decorative crops, fruit trees and decorative trees and bushes and also garden lawn seed. It reduces the level of nitrates in vegetables by 40-50%. Hydrohumat is well known for its high concentration of active ingredients - humic and fulvic acids and also natural minerals. The levels of humic acids in our product is 75-80 grams/Litre which is the highest in Belarus. Our production of Hydrohumat is on an industrial scale and we currently export to a wide variety of Countries in Eastern Europe and the European Union. Since 2014 our product Hydrohumat has become one of the components of scientific composition in a state program "Tandem" in Germany which aims to increase productivity and rehabilitation of soil fertility. The consumption rate on average is 1:100 (according to the table of application).

Hydrohumate is a representative of the new generation of humic phytohormones that are produced after the deep processing of peat. The presence of the broad spectrum of natural organic and mineral bioactive compounds is peculiar of Hydrohumate. The active compounds of Hydrohumate are represented by the broad spectrum of bioactive compounds, including modified humic acids about **80%**, fulvic acids – **8-10%**, humin-like substances – **9-10%**, amino acids (glycine, lysine, threonine, methionine, tyrosine, etc.) and biogenic amines (tyramine, etc.) – about **2-3%**, low-molecular organic acids (amber, malonic, apple and oxalic acids, etc.) – **18-20%**, phenolcarbonic acids (salicylic, benzene carbonic, ferulaic, coumaric, vanilic and gallic acids, etc.) – up to **2%**.

Parameters	Norms
External form	Deep brown watery solution with weak specific smell
pH	9-10
Dry Matter, %	11,5
Organic Matter, %	9,3
Humic acids, % (in dry matter)	80,5
Humic acids, gr/L	65-75
Maintenance of micro and macro elements, mg/kg:	
Total nitrogen (N), mg/kg	2870
Total phosphorus (P), mg/kg	70
Total potassium (K), mg/kg	32
Maintenance of micro and macro elements, % in dry matter:	
Sulphur	4,3
Calcium	0,62
Manganese	0,016
Silicon	0,29
Iron	1,03
Magnesium	0,134
Copper	0,0009
Zink	0,0004
Molybdenum	<0,002
Selenium	0,003
Bor	0,026
Cobalt	<0,002

Mass shares of dangerous components, in dry matter, mg/kg	
Arsenic	1,72
Quicksilver	<0,004
Lead	0,76
Kadmium (movable form)	0,091

Advantages of Hydrohumat		
70- 80%	increases energy	improves effect
total content of humin substances in Hydrohumate. Moreover, there is a broad spectrum of macro- and microelements necessary for the growth and development of agricultural crops.	of seed germination, improves germinating capacity. The early passing of the initial development stages is facilitated by the promotion of the activity of cytokinins, gibberellins and auxins – endogenous growth regulators contained in plants.	of soil enzymes and microorganisms. Hydrohumate also improves soil structure due to direct physical and physiological effect on soil biota.
sorption properties	facilitates activation	anti-oxidant activity
of Hydrohumate are based on its ability to effectively bound the metabolites excreted by plants during their life, thus reducing the soil “fatigue” appearing after the growth of crops according to single-cropping system on the humus-poor soils. These properties allow to use Hydrohumate on the soils contaminated by pesticides and heavy metals as it binds them into insoluble compounds thus preventing from consumption by plants.	respiratory, transport, energetic and metabolic processes in plant cells. Improves plant nutrition, protein, phosphoric and nucleic metabolism, photosynthesis, thus increasing the content of enzymes, pigments and vitamins and having a positive effect on the propagation, growth and development of plants, productivity and quality of agricultural products.	determines the properties of Hydrohumate as a substance improving the resistance of plants to unfavorable factors of the environment (droughts, frosts, pesticide contamination, abundant fertilization) and to negative changes in plant organism appearing as a result of stress conditions. Hydrohumate also improves the resistance of plants to fungal and bacterial infections as it is stipulated by its immune potentiating properties.

The important aspect of Hydrohumate application is the possibility of the reduction of the quantity of mineral fertilizers by 25-30%. The comparative testing of Hydrohumate with potassium, sodium and ammonium humates demonstrated its better biological effect: increase of productivity and peculiar high quality of products, including the reduction of nitrates accumulation by vegetables and green crops by 30-60%, increase of gluten in corn up to **5%**, starch in potatoes by **10-15%**, vitamins in vegetables and root crops.

The high concentration of active substances in Hydrohumate, low consumption during application (1-2L for hektare), significant agrichemical effect, ecological cleanliness and low price makes the application of Hydrohumate economically sound.

- improves germination and germination capacity
- improves growth and development of plants
- increases productivity of cereal crops by 12-17%, potatoes by 10-18%, herbage of feed crops by 30-40%
- ecologically clean harvest with higher content of vitamins, protein and carbohydrates
- reduces nitrate content in vegetables, root crops and herbaceous crops by 45-50%
- increases resistance of plants to unfavorable conditions
- improves immunity of plants and reduces disease incidence
- safe for humans, animals, bees and soil microflora

CROPS	TREATMENT METHOD	CONSUMPTION RATE	TREATMENT FREQUENCY
Cereal crops (fall rye and fall wheat, triticale, spring barley, corn)	Incrustation of seeds together with protectants. Consumption of working fluid – 10 l/ton.	0.2-0.5 l/t	1
	Spray treatment at the tillering period – boot stage. Consumption of working fluid – 300 l/ha.	0.5-1.0 l/ha	1
Cucumbers (open and protected ground)	Preplant treatment of seeds. Steeping for 12 hours. Consumption of working fluid – 2 l/kg.	1.2 ml/kg	1
	Spray treatment of vegetative plants at the stage of 2-3 true leaves, the consequent 2-3 treatments with 10-15 days interval. Consumption of working fluid – 400 l/ha.	2.0-2.5 l/ha	3
Tomatoes (protected ground)	Preplant treatment of seeds. Steeping for 12 hours. Consumption of working fluid – 2 l/kg.	1.2 ml/kg	1
	Watering of roots. First time – after prickling-out of seedlings, the consequent two treatments with 10-15 days interval. Consumption of working fluid – 400 l/ha.	2.0-2.5 l/ha	3
Potatoes	Preplant treatment of tubers. Consumption of working fluid – 50 l/t.	0.2-0.25 l/t	1
	Spray treatment of plantlets and at bud-formation period. Consumption of working fluid – 300 l/ha.	1.0-1.5 l/ha	2
Peas, broad bean	Preplant treatment of seeds. Consumption of working fluid – 20 l/t.	0.5 l/t	1
Sugar beet	Spray treatment of seeds at the stage of 3 pairs of true leaves and in 30 days after the first treatment. Consumption of working fluid – 200 l/ha.	2 l/ha	2
Fiber flax	Spray treatment of seeds at the herringbone stage. Consumption of working fluid – 200 l/ha.	2 l/ha	1
	Spray treatment of seeds at the bud-forming stage. Consumption of working fluid – 300 l/ha.	1.5 l/ha	1
Cabbage	Preplant steeping of seeds for 24 h at 18-20°C. Consumption of working fluid – 2l/kg.	0.6 ml/kg	1
	Spray treatment at the stage of 2-3 leaves and a week before bedding-out. Consumption of working fluid – 0.5 l/sq.m.	0.2 ml/m ²	2
	Spray treatment after the full establishment of seedlings and in the beginning of heading stage. Consumption of working fluid – 500 l/ha.	0.3 l/ha	2
Red beet	Spray treatment of vegetative plants at the stage of 3 pairs of true leaves, at the stage of fasciation and a month before the harvesting. Consumption of working fluid – 400 l/ha.	2.0 l/ha	3
Carrot	Spray treatment of vegetative plants at the stage of full germination, at the stage of fasciation and a month before the harvesting. Consumption of working fluid – 400 l/ha.	2.0 l/ha	3
Marrow-squash	Spray treatment of vegetative plants at the blooming period, than once each 10 days. Consumption of working fluid – 200 l/ha.	2.0 l/ha	5
Millet	Preplant treatment of seeds. Consumption of working fluid – 10 l/t.	0.2 l/t	1
	Spray treatment at the stage of bud-formation with 1% solution of the substance. Consumption of working fluid – 200 l/ha.	2 l/ha	1
Decorative deciduous trees	Spraying of plants of 1% preparation solution: the first – in a phase of blooming of leaves, the subsequent – with an interval of 15 days. Consumption of working liquid of 500 l/hectare.	5 l/ha	2-3
Ornamental deciduous shrubs	Spraying of plants of 1% working liquid in a phase of blooming of leaves, the subsequent – with an interval of 15 days. A consumption of working liquid – 400 l/hectare.	4 l/ha	3
Annual flower plants	Spraying of plants of 1% working liquid in a phase of 4 real leaves, the subsequent processings – with an interval of 15 days. A consumption of working liquid – 300 l/hectare.	3 l/ha	3
Lawn herbs	Spraying of 1% working liquid at the beginning of growth, the subsequent – with an interval of 10-15 days after bevelling. A consumption of working liquid – 300 l/hectare.	3 l/ha	3-4
Orchids	Watering of 1 times in 10 days.	10 ml/10l	