

THE SIGNIFICANCE OF HUMIC ACIDS IN NATURE

One of the most fundamental factors influencing soil fertility and the efficiency of agricultural production is the quantity and quality of organic matter in the soil. The decisive role is played mainly by its stable form, consisting mainly of the so-called humic substances, including humic acids. In agriculture, the application of humic acids is nothing new, as they are also present in many organic fertilizers such as manure, various types of compost and peat.

However, unlike the mentioned fertilizers, **HUMAC® Agro contains activated humic acids with a more complex structure and in greater concentration.** Our product is manufactured from one of the purest sources of Leonardite. When activating the raw material, we use technology that preserves the natural structure and functionality of humic acids.



HUMAC® Agro

A NATURAL SOIL CONDITIONER WITH HIGH CONTENT OF ACTIVATED HUMIC ACIDS THAT STIMULATES SOIL FERTILITY AND STABILIZES SOIL TOXICITY

- Significantly improves the structure of the soil and increases its porosity, thereby improving the water and air regime of the soil.
- Improves the infiltration of water into the soil and its water retention capacity, which significantly reduces the risk of water erosion and at the same time increases the amount of water available to plants in the soil.
- Improves nutrient management primarily by increasing the capacity of the soil sorption complex and optimizing soil pH, but also by stimulating root growth and the development of beneficial microorganisms in the soil.
- To a large extent, it prevents the loss of nutrients from the soil (it also acts as a nitrification inhibitor), but at the same time it also creates conditions for their access (important mainly from the point of view of the availability of phosphorus and microelements).
- Contains all naturally occurring macro, micro and trace elements for plants in a readily accessible form and also contains all naturally occurring amino acids.
- Binds many hazardous substances in the soil, such as heavy metals, pesticide residues, PCB congeners, dioxins and others into stable complexes, thus significantly limiting their penetration from the soil into plants and thus creating conditions for growing healthier foods (it also assists in the biodegradation of organic pollutants).
- Increases the resistance of plants to adverse biotic and abiotic factors, positively affects their health and hygienic quality, respectively boosts immune health.
- Comprehensively harmonizes the soil environment and improves conditions for plant growth.
- Increases the yield and nutritional value of cultivated plants, which together with lower consumption of fertilizers significantly increases the profitability of agricultural production.

Declared product composition:

Humic acid content: min. 62% in dry matter

Humidity: max. 20%

pH value (1% aqueous suspension): 6.5.

Contains all naturally occurring macro, micro and trace elements chelated to natural amino acids.

Packaging: 5 kg buckets (powder), 25 kg PE bags, 500 kg & 1000 kg big bags (granules)





Restores life to soils



100% natural origin without chemical processing and additives

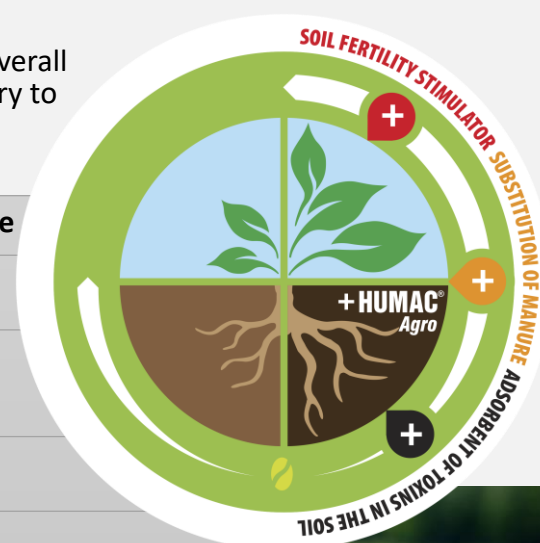
Scope of use, dosage and method of application

HUMAC® Agro can be applied to all commonly grown staple and specialty crops (including ornamental greenery and lawns) except those that require significantly different soil pH compared to neutral (e.g. blueberries). The basic dosage of the product is 200 - 500 kg / ha. Humic acids require some time to fully reveal their positive effect on soil and plants. Therefore, it is best to apply the product in the period from autumn to early spring before planting. However, it can be applied at any time during the growing season. For best results, it is recommended to work in the product into the top 10 cm layer of soil. If conditions do not allow this type of application, the product can easily be spread on the soil surface. Repeat applications are recommended after every 3 – 4 years. During this whole period, we recommend reducing the volume of all mineral fertilizers and especially nitrogen fertilizers by up to 30-50% in the area where HUMAC® Agro was used, compared to regular application rates based on standard fertilizer application calculations.

HUMAC® Agro has a positive effect on soil fertility, production quality and overall profitability of crop production. However, in addition to its use, it is necessary to observe the generally applicable principles for sustainable agriculture.

Dosage of HUMAC® Agro - agriculture / forestry / ornamental horticulture

Basic dosage on arable land depending on the content of humic substances in the soil	200-500kg/ha
Leafy vegetables (salad, spinach), Brassicaceae vegetables (cabbage, kale, cauliflower, broccoli), cucurbits & nightshade (cucumber, tomato, pepper, pumpkin, egg plant), legumes	350-500kg/ha
Root vegetables and intensive crops (red beets, carrots, celery, parsley and potatoes)	300-400kg/ha
Fruit crops and vineyards - area application	350-500kg/ha
Fruit and ornamental trees and shrubs, vineyard – application to individual plants	10-40kg / 100 pcs application during or after planting to individual plants
Field crops (cereals, maize, rape, sunflower, soybeans, etc.)	200-500kg/ha
Herbs	250-300kg/ha
Ornamental plants and shrubs	2-3kg/100 m2
Deciduous and coniferous trees	2-3kg / 10pcs = 20-30kg / 100pcs when planting to the roots
Lawn	200-500kg/ha
Composting	3-5% of the product is gradually added to the composted mass
Replacement of manure in the dose of 40-50t / ha	400-500 kg/ha
Soils without topsoil and reactive soils	1-3t / ha with mineral fertilizers and grass seeds repeatedly for 2-3 years.



HUMAC® Agro is approved for use in organic farming for the production of organic produce (within the EU).
Permit #: 1867/2008-920



HUMAC® - Humic acids activated for life