



ЖИВОЕ
ЗЕМЛЕДЕЛИЕ



**INNOVATIVE BIOTECHNOLOGICAL
BIOCOMPLEX
AGROFLORIN and AUXINOLEN**

Urgency of the Issue

The constant annual growth in the use of pesticides, mineral fertilizers and chemical plant protection products (PPP) in agriculture to the prejudice of ecology and common sense is leading to anthropogenic devastating consequences:

- ***The soils get destroyed, and the humus (fertile) layer gets eliminated.***
The use of pesticides and mineral fertilizers results in abrupt soil mineralization which brings about reduced contents of oxygen and nutritional chemicals in the soil, increased mobility of soil-forming elements and their washing out.
- ***Natural system of the soil biocoenosis gets upset.***
The abrupt growth of the pesticide and herbicide burden on the soil results in suppression and elimination of the natural soil microflora, extreme growth and increased resistance (tolerance) of phytopathogenic flora, weeds as well as harmful insects to crop protection chemicals.
- ***Growth of phytopathogenic flora and accumulated toxic substances in the soil and plants.***
The impaired balance of the soil biocoenosis system and suppressed natural soil microflora leads to decelerated processes of plant residue decay and accumulation of toxic substances in the soil: lignin, phenols and other phytotoxins which favors extreme growth of phytopathogenic flora. This results in increased vulnerability of agricultural crops and seed materials to phytopathogens, extremely suppressed growth of agricultural crops and considerably lower yields.

Scientific reference

“The soil that is not poisoned by chemical substances is a home for a huge numbers of bacteria – up to 10 tons per hectare and about the same quantities of worms and other “living material” by V.I. Vernadsky”.

These all microorganisms that inhabit the soil and are kept in natural balance make the soil biocoenosis system and serve as a source of nutritional substances, microelements that are required for plants to live, and form the fertile (humus) soil layer. The main secret of soil fertility and high yields is, therefore, the fact that ***the more bacteria are present in the soil the more fertile is the soil and the bigger are crops.***

Analytical reference

For more than a decade the world has been experiencing annual decrease in the area of agriculturally used lands by 76.3 thousand ha and thinning of fertile (humus) layer from 6 to 2.5 %.

The areas treated with biological PPPs account for about 2% of the total amount of work in plant protection carried out in Europe in 2012 which makes 772.7 thousand ha. Meanwhile, biogungicides account for about 98%. The use of biological products is mostly targeted at cereals and grain legume crops: about 87% of total treated lands

(672.5 thousand ha). Works to protect potatoes, vegetables, melons and gourds account for about 4%, industrial crops – 3%, other crops account for 2% and less.

The environmentalization of agricultural production is an indispensable prerequisite for efficient development of farming enterprises that is aimed at providing rehabilitation and remediation of soil resources and soil fertility.

To solve these tasks in the agricultural production, Biotechnovit innovation scientific industrial center has developed and manufactured a range of biotechnological biologics.

- **AGROFLORIN BIOTECHNOLOGICAL BIOCOMPLEX FOR SOIL REHABILITATION AND PROTECTION**

Agroflorin biological product restores the natural soil virginity; it forms and protects the fertile (humus) (mulch) soil cover against degradation, purifies and rehabilitates the soil and restores the natural soil microflora balance after its treatment with chemicals, pesticides and herbicides.

Agroflorin biological product contains a unique natural mix of biologically active compounds, phytohormones, macro and microelements.

The product contains:

- All no replaceable amino acids;
- Large quantities of organic acids (10.9 g/l): licheric (0.3 g/l), succinate (0.5 g/l), oxaloacetic (0.3 g/l), acetic acids (0.5 g/l) and natural nitrogen-based compounds;
- All B group vitamins, folic and nicotinic acids;
- 26 macro and microelements essential for plants.

Agroflorin biological product action:

- It restores the fertile (mulch) soil cover;
- It restores and maintains the natural soil biocoenosis system, and improves the soil structure;
- It restores the natural soil microflora;
- It protects and activates the soil microflora after chemical treatment;
- It accelerates plant residue decay processes in the surface soil layer;
- It purifies the soil from toxic substances: chemicals, herbicides, pesticides, heavy metal salts, etc.;
- It suppresses growth and development of soil phytopathogens and spot blight;
- It protects soils against sun and wind, and protects against appearance of soil crusts;
- It improves the soil resistance to salinization.

Agroflorin biological product is recommended for:

- Rehabilitation and protection of the soil fertile layer and soil microflora.
- Soil microflora protection after treatment with chemicals, herbicides, and pesticides.
- Soil purification from toxic substances, heavy metal salts, etc.
- Suppression of soil phytopathogens and spot blight growth and development.

- Improvement of soil structure and its resistance to salinization.

Dosage and method of application:

- Soil treatment in greenhouses to restore and maintain the soil biological balance – diluted at 1/500;
- Soil treatment to restore the soil biocoenosis system – diluted at 1/1000;
- Soil treatment to restore the natural soil microflora after chemical treatment – diluted at 1/500;
- Soil treatment to purify from toxic substances – diluted at 1/500;
- Soil treatment to suppress phytopathogen growth and development – diluted at 1/1000;
- Soil treatment to accelerate plant residue decay processes in the surface layer – diluted at 1/1000.

Recommended for greenhouses, ECO farms and organic farming enterprises.

It is non-hazardous for plants, people and animals.

Shelf life: 3 years from manufacturing date when kept at temperatures between 0°C and 35°C.

- **AUXINOLEN INNOVATIVE BIOTECHNOLOGICAL BIOPRODUCT FOR IMMUNOSTIMULATION, PLANT GROWTH AND COMPLEX PROTECTION AGAINST NUMEROUS PHYTOPATHOGENS AND ROOT BLIGHT**

Auxinolen biological product suppresses phytopathogen and root blight growth, induces (builds up) complex non-specific resistance (immunity) in plants to numerous crop diseases of fungal, virus and bacterial origin. It stimulates production of protective substances – phytoalexins – in plants.

Auxinolen biological product action:

- It suppresses growth and development of major part of phytopathogens and fungi;
- It builds up resistance (immunity) in seeds and plants to phytopathogens;
- It stimulates production of protective substances – phytoalexins – in plants;
- It decreases the toxic burden of pesticides, herbicides, mineral fertilizers and other chemicals on plants;
- It provides increased plant adaptation to pesticide toxicosis and mineral overdosing;
- It stimulates plant root and vegetative system growth and development;
- It improves seed sprouting and germination by up to 70%;
- It improves plant survival during relocation by 85%;
- It stimulates chlorophyll, phytohormone and phytoalexins synthesis in plants;
- It improves plant resistance to stress factors (relocation, draughts, hypothermia);
- It prevents ovary dropping, accelerates fruit ripening and fructification;
- It increases nutrient and soil fertilizer uptake by 50%;
- It improves productivity.

Auxinolen Biological Product Dosage and Method of Application:

To protect plants against a wide range of diseases caused by phytopathogens and fungi, both in greenhouses and on the field, and to build up resistance (immunity) against phytopathogens in seeds and:

- Seed material treatment – diluted at 1/300;
- Treatment during a tillering period in autumn – diluted at 1/1000;
- Treatment during the full germination stage (or 7-10 days after sowing seedlings), preflowering and set formation stage – diluted at 1/1000;
- Graft and seedling treatment – diluted at 1/1000;
- Juvenile bush and vineyard treatment 2-3 times during the increased shoot growth stage – diluted at 1/1000;
- Fruiting bush treatment before flowering, after flowering and during the berry growth stage – diluted at 1/1000.

Recommended for ECO farms and organic farming enterprises.

It is non-hazardous for plants, people and animals.

Shelf life: 3 years from manufacturing date when kept at temperatures between 0°C and 35°C.

Registration certificates:

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Please, contact HEY-RUS-SA in South Africa for price list, details and additional info.

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