Bio-protection: experience of Ukraine and Moldova

Main stereotypes concerning the biological plant protection

- ✓It is more expensive than chemical plant protection
- ✓It is less efficient
- ✓Yield under biological plant protection is lower
- ✓Product shelf life is worse

All this stereotypes are not correct

Application of Biopesticides is more efficient than chemical

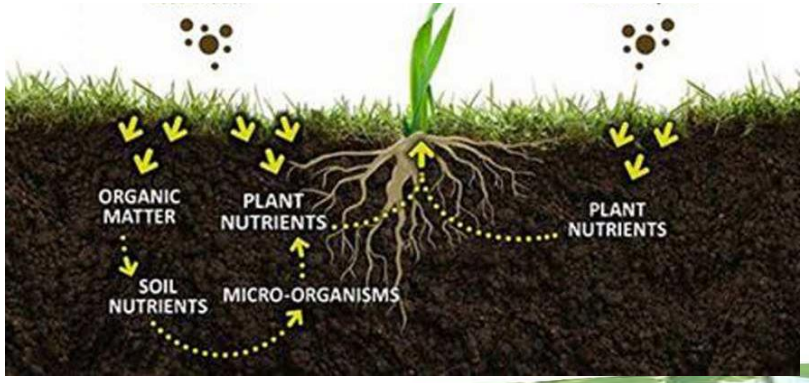
- ✓ Protection of onion on combined bio\chemical spraying program costs 1100 EUR in comparison to 1700 EUR on fully chemical treatment (Bavasco company, Moldova)
- ✓ Yield was 20% higher
- ✓ Only 30% of chemical pesticides were used
- ✓ Product storability was better

Application of Biopesticides is more efficient than chemical

- ✓ Bio protection spraying program on table grapes costs 500 EUR instead of 800 EUR for chemical protection.
- ✓ Botrytis was controlled much better
- ✓ 0% of chemical pesticides were used
- ✓ Product storability was better

Starting from the soil health

- ✓Recovery of soil microbiota affected by the pesticide use
- ✓Pathogen control
- ✓Saturation with organic matter
- ✓Recovery of the soil structure



Recovery of soil microbiota affected by the pesticide use

- ✓ Long crop rotations - growing catch crops without turning the bed
- ✓ Use of green crops and cover crops
- ✓ The introduction of beneficial microflora
- ✓ The introduction of feed for beneficial microflora

Vellhumus

Pathogen control

EKO seed

- Micorrize (Gtomus spp.) - 0,5%
- Baciillus amyloliquefaciens - 5 x 10^8 CFU/g
- Streptomyces spp. - 5 x 10^8 CFU/g
- Pseudomonas proradix - 6,6 x 10^{11} CFU/g
- Pseudomonas trivialis - 3 x 10^{11} CFU/g
- Trichoderma harzianum - 5 x 10^8 CFU/g

EKO seed / EKOprop

- ***Micorrize (Gtomus spp.) - 0,5%***
- Improves the assimilation of nutrients
- Increases disease resistance
- ***Baciillus amyloliquefaciens - 5 x 10^8 CFU/g***
- Control of root diseases like: Ralstonia solanacearum, Pythium, Rhizoctonia solani, Alternaria, Fusarium.
- Increases resistance to salinity stress.
- Stimulates the development of rhizobacteria, quickly colonize the root.
- ***Streptomyces spp. - 5 x 10^8 CFU/g***
- From natural microflora
- They produce substances that inhibit the development of pathogenic bacteria and pests (nematodes).

EKO seed / EKOprop

- **Pseudomonas proradix - 6,6 x 10^{11} *CFU/g***
- **Pseudomonas trivialis - 3 x 10^{11} *CFU/g.***

- A class of bacteria that stimulate the development of plants - typical representatives of the rhizosphere
- Actively colonizes plant roots.
- Exudates make nutrients more accessible
- Reduces the reproduction of pathogens
- Positively interacts with other representatives of the rhizosphere
- Reduces the concentration of nitrates in the plant

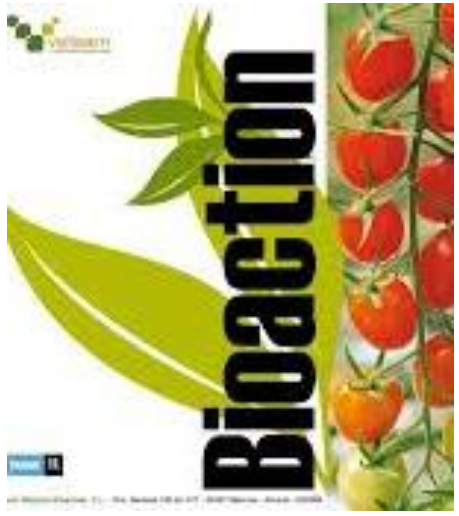
EKO seed / EKOprop

- **Trichoderma harzianum - 5 x 10^8 *CFU/g*.**

- It is applied both into the soil, as a seed treatment and by spraying
- Inhibits the development of such pathogens as:Botrytis, Fusarium, Penicillium
- Improves root development

Pest control

- ✓ **Based on pheromone disorientations, lures, traps (mating disruption)**
- ✓ **Based on plant extracts (Utica dioica, Sephora, neem, orange, thyme, pepper...)**
- ✓ **Repellents**
- ✓ **Natural predators (entomophagy)**
- ✓ **Bacteria and fungi**
- ✓ **Natural barrier (fats, paraffins, oils, lecytin)**
- ✓ **The polymeric silicone net structure**



Based on pheromone disorientations (mating disruption), lures , traps

Based on plant extracts

Approved by ECOCERT INPUTS

Systemic insecticide specifically against thrips.

- Specific alkaloids
- Quick shock effect with long lasting effect.
- It is necessary to lower the pH to 4.5-5.5

Based on plant extracts

Systemic insecticide on the basis of Sephora.

Controls flies, aphids, mites.

- Works through digestion. Two applications are required for the accumulative effect.
- Better to work proactively.
- Effect lasts for 5-7 days.
- It is necessary to lower the pH to 4.5-5.5

Natural predators (entomophagy)

Orius insidiosus, Amblyseius andersoni | swirskii – trips control.

Adalia bipunctata,
Aphidoletes aphidimyza,
Aphelinus abdominalis – aphides control.

Macrolophus pygmaeus – whitefly and tuta absoluta control.

Bacteria and fungi

Systemic insecticide.
Fights with Gryllotalpa, a wireworm, scoop larvae, diabrotics, larvae of May beetle and Colorado beetle...

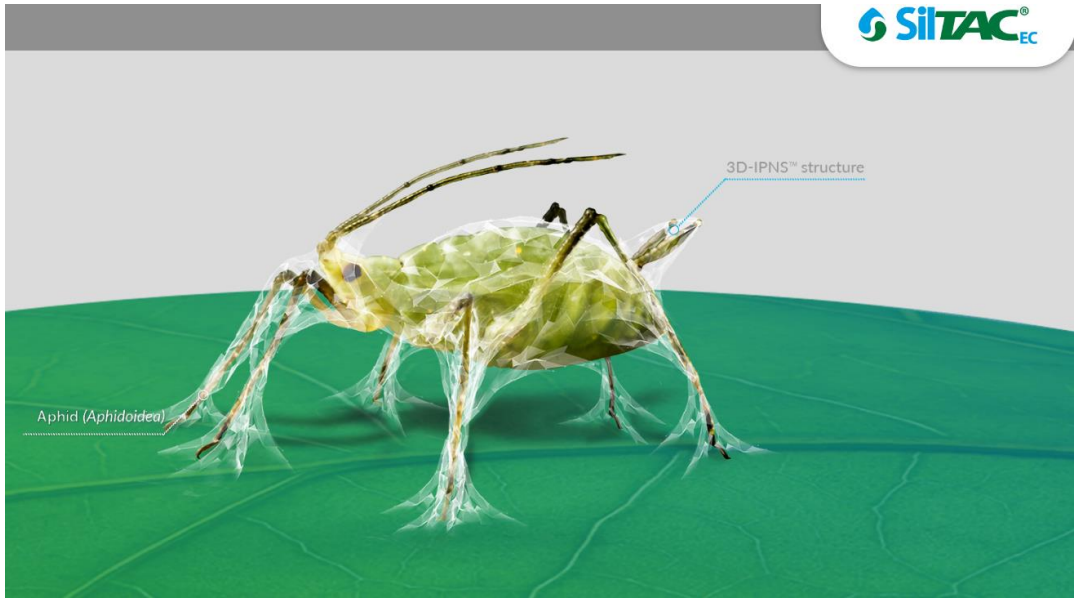
mycelium and spores of fungi Metarhizium spp., Beauveria spp., Lecanicillium spp., Paecilomyces spp.. Total titer is not less than 200 million CFU/g
The active substance of the preparation is certified by Organic Standard according to the standard for the production of excipients that can be used in organic agriculture and processing (taking into account the requirements of the standard, equivalent to EU Regulations 834/2007 and 889/2008)
889/2008)

Bacteria and fungi

Bio Rodenticide Rutter has clear selective pathogenicity.

The complex of specific bacteria Salmonella enteritidis var. Issatschenko with a titer of at least 2x109 CFU/ml.

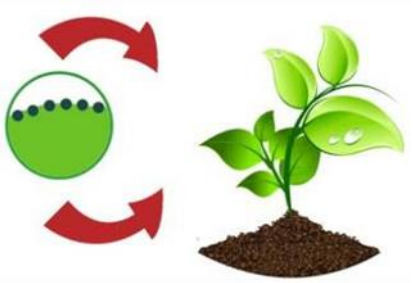
The polymeric silicone net structure



A breakthrough technology for the physical elimination of crop plant pests
Siltac EC was manufactured on the basis of 3D-IPNS™ technology, developed in ICB Pharma laboratories and placed under patent protection in many countries. Both this technology and Siltac EC represent a breakthrough and a considerable advance in plant pest control strategy

Disease control

- ✓ By natural origin substances
- ✓ Bacteria and fungi
- ✓ Promoters of ERSR, ISR – natural elicitors
- ✓ Creating mechanical barriers for pathogens
- ✓ Waste products of microorganisms
- ✓ Vaccines



EXPERT AGROTEH

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Natural origin substances

- High quality.
- Promotes the synthesis of phytoalexins, thus improving plant immunity.
- Penetrates through the stomata, which gives immediate assimilation

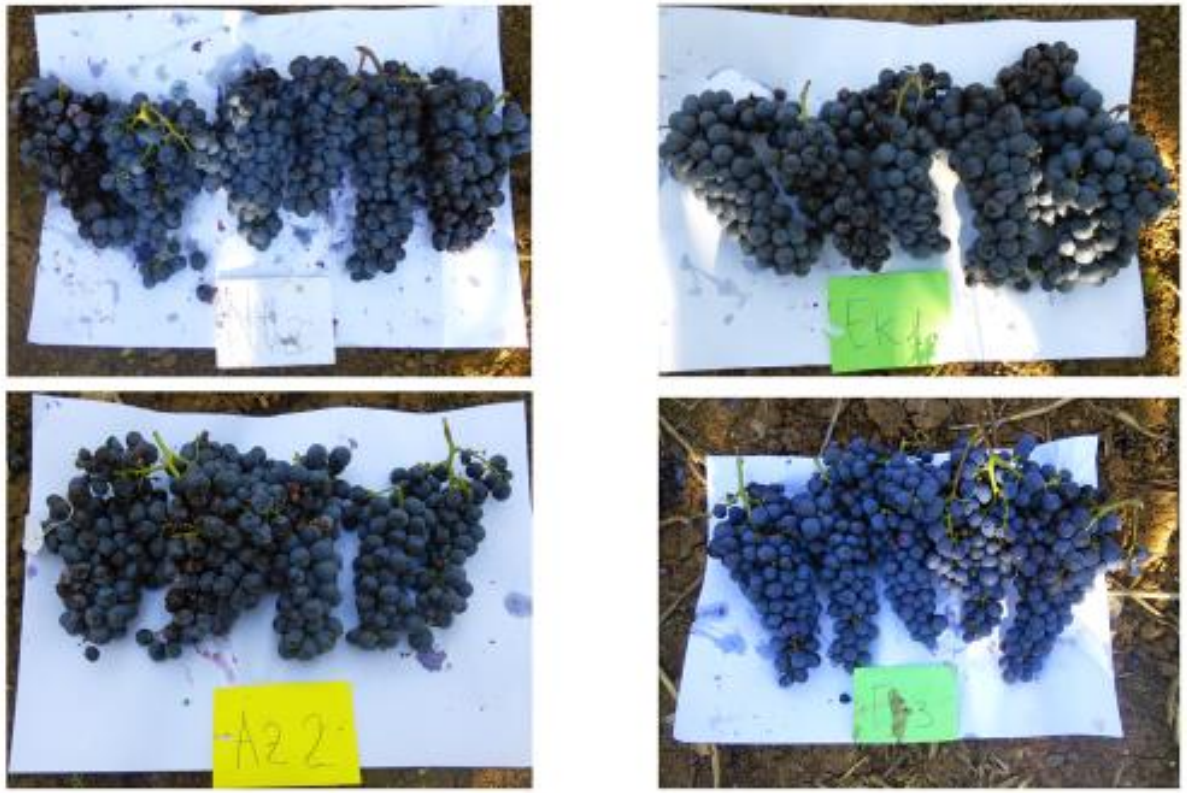
Natural origin substances

Bactericide-Fungicide
Based on natural extracts and copper

- It works both on bacterioses and on such fungal diseases as septoria, stemphylium, curl, rot.

Bacteria and fungi

FOTO



EKOprop® 3S

EXPERT AGROTEH

Thank you for attention!!

- ***Chișinău, str. A. Pușkin 60/3***
- ***www.expert-agroteh.md***