

BEST PRACTICES

Trial 1

+0,45 t/ha

Vinnitsya region,
Khmilnytsky districts,
Klitenka

Soil: **degraded chernozem**
pH **6,8**
Crop: **sunflower**
Predecessor crop: **corn**

Trial scheme

Way of application	Product	Application rate
Pre-sowing tillage	ECOSTERN® + SCLEROCID®	1,5 + 2,0 l/ha
	Technology of the farm (control)	—

Trial result

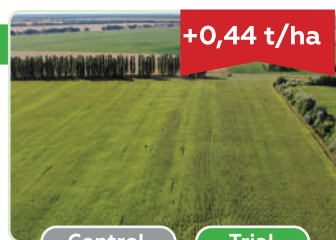
Crop	Yield, t/ha		Increment over control
	Trial	Control	
Sunflower	4,19	3,74	+0,45

Trial 2

+0,44 t/ha

Kyiv region, Zgurevsky district, Zgurevka

Soil: **chernozem**
Crop: **corn**
Predecessor crop: **sunflower**



Trial scheme

Way of application	Product	Application rate
At primary tillage	ECOSTERN®	1,5 l/ha
	Technology of the farm (control)	—

Trial result

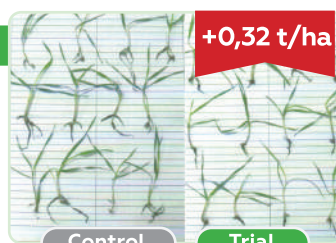
Crop	Yield, t/ha		Increment over control
	Trial	Control	
Corn	10,24	9,80	+0,44

Trial 3

+0,32 t/ha

Cherkassy region,
Chigirinsky district, Tinky

Soil: **typical chernozem**
Crop: **winter wheat**
Predecessor crop: **sunflower**



Trial scheme

Way of application	Product	Application rate
At primary tillage	ECOSTERN®	1,5 l/ha
	Technology of the farm (control)	—

Trial result

Crop	Yield, t/ha		Increment over control
	Trial	Control	
Winter wheat	4,72	4,40	+0,32

Manage the decomposition of plant residues!



ECOSTERN

Favorable microflora in soil

Increased availability of nutrients

Improvement of soil structure

Decreased soil toxic level

Increased yield of crops



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WHAT DOES IT MEAN – TO MANAGE THE DECOMPOSITION OF PLANT RESIDUES?

Just removing the stubble from the field is not enough! Disease agents store up on the plant residues and threaten to contaminate the next crop. Soil biodiversity decreases because of inadequate crop rotation, chemical and biological balance of soils is upset.

This is why it is important to manage the decomposition of stubble and to recover soil fertility: to colonize the soil with beneficial microorganisms, increase soil biological activity and improve its structure.

How do ECOSTERN® microorganisms work?

Bacillus subtilis bacteria can fix molecular nitrogen, mobilize phosphorus, produce enzymes for the degradation of chemical compounds of the soil and transforming them to forms, available to plants (humus, etc)

Azotobacter is a free living bacteria that is able to fix nitrogen soil in the soil in the form, that is accessible to plants. Azotobacter is the indicator of the soil fertility

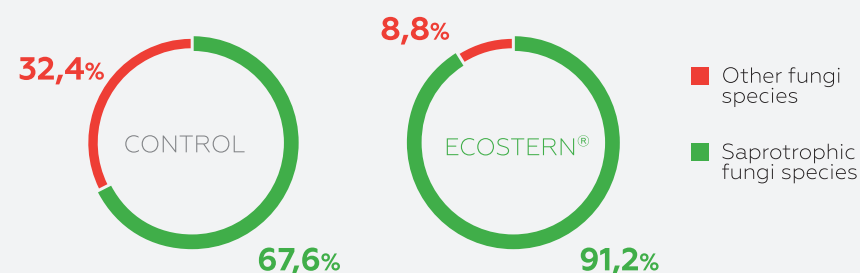
Enterobacter are bacteria than can fix atmospheric nitrogen, improve phosphorus nutrition, produce phytohormones and biopolimeres

Enterococcus are lactobacteria that work in anaerobic conditions, encouraging the degradation of residues and the growth of the next generation of plants. In the soil, they produce a large number of biologically active substances: aminoacids, vitamins, growth hormones, enzymes

Trichoderma lignorum, Trichoderma viride fungi actively colonize plant residues and help them to decompose quickly. They also produce biologically active substances

Laboratory research of soil

The influence of ECOSTERN® over soil mycoflora



ECOSTERN®

A concentrated preparation for accelerated decomposition of the stubble of corn, sunflower and other crops, for the recovery of soil



Packing: 1l, 5l, 10l.

Composition: fungi and bacteria that accelerate the decomposition of crop residues, live cells of the bacteria *Bacillus subtilis*, *Azotobacter*, *Enterobacter*, *Enterococcus* and fungi *Trichoderma lignorum*, *Trichoderma viride*, the total number of viable cells 2.5×10^9 CFU/cm³.

Registration in Austria: BAES-DMT-202-0445-06

FiBL certificate of compliance with Demeter International and Reg. (EC) 834/2007
Organic Standard certificate of compliance for use in organic farming and processing.

Competitive advantages of the biopreparation ECOSTERN®:

- ✓ Has high concentration of beneficial microorganisms
- ✓ Helps soil recovery
- ✓ Contains microorganisms that are stable in moisture deficient conditions
- ✓ Demonstrates high stability in a broad temperature range
- ✓ Shows visible results within a month after application
- ✓ Has positive aftereffect

Purpose:

- Cultivation of soil and plant residues after harvesting cereal and industrial crops to accelerate their decomposition
- Neutralization of phytotoxins, improvement of the soil biological activity
- Improvement of physical and agrochemical indicators of the soil
- Increase of crops yield

EFFECT Average yield increments



SPECIFICS AND APPLICATION

- ✓ In integrated agricultural technology we recommend to add water-soluble nitrogen-containing fertilizers, 5-15 kg per hectare of active ingredient in a tank mix.
- ✓ In organic agriculture we recommend to add HUMIFRIEND® fertilizer at the rate of 0,5-1l/ha, to the tank mixture.
- ✓ It is preferable to work the soil in the morning or in the evening, in calm weather.
- ✓ It is necessary to till or disk the product into the soil within 3 days after the application.
- ✓ Thoroughly shake the product before use, then dissolve the specified amount of product in the corresponding amount of water.
- ✓ Prepare the working solution of the product directly before application and use it in 4 hours after preparation.

RECOMMENDED RATES FOR APPLICATION IN INTEGRATED AND ORGANIC AGRICULTURAL TECHNOLOGY

Agricultural crop, object	ECOSTERN®, l/ha	Working solution, l/ha
Corn	1,5-2,0	150-300
Sunflower		
Cereal and technical crops	1,0-1,5	
Legumes	1,0-1,2	
Green manure crops	0,8-1,2	
Vegetables	1,0-2,0	
Fallen leaves of fruit trees in the garden during defoliation period	1,5-2,0	500-800

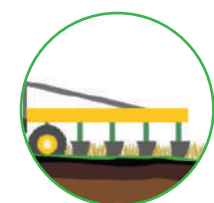
THE ORDER OF PLANT RESIDUES PROCESSING



Cut if necessary



Spray
Application rate, depending on the type and amount of plant residues, is 0,8-2 l/ha.



Incorporate (till or disk) into the soil
Disking to <10cm depth or tillage