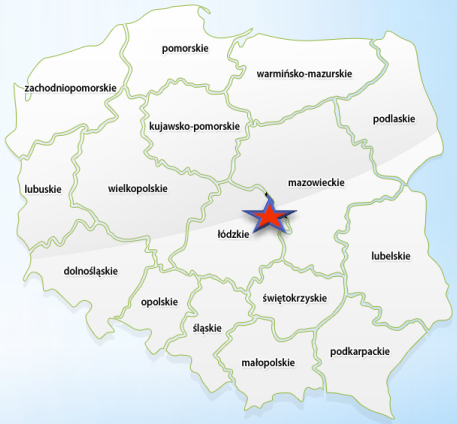
Project title and/or acronym: « New soil improvement products for reducing the pollution of soils and waters and revitalizing the soil system „Biorewit”»



PROJECT LOCATION: Skierniewice, Poland

BUDGET INFO:

Total amount: 1 853 195,00 EUR

% EU Co-funding: 50%

DURATION: Start: 01/01/2012 - End: 31/12/2014

PROJECT'S IMPLEMENTORS:

Coordinating Beneficiary: Research Institute of Horticulture

Associated Beneficiar: Institute for Sustainable Technologies

BACKGROUND and AIMS:

Agriculture is one of the main sources of environmental pollution. The aim of the project is to reduce soil and water pollution and revitalizing soil ecosystem by:

1. Utilization of natural fibrous waste for producing biodegradable soilless substrates to reduce cultivation of greenhouse crops on non biodegradable rockwool.
2. Reduction of mineral nutrient emission from drain water of greenhouse soilless culture by utilizing drain water
3. Reduction of the pollution of soil and water through replacement of mineral fertilizers and enrichment of soil in the organic matter.

MAIN ACTIVITIES:

1. Implementation of new biodegradable soilless substrates based on natural fibrous waste for greenhouse cultivation

1. wool+cotton+coconut+sawdust – (WCCS)
2. wool+cotton+coconut+flax shives (WCCFS

2. Implementation of new eco-activators received trough impregnation of natural waste with drainage water from greenhouse soilless cultivation

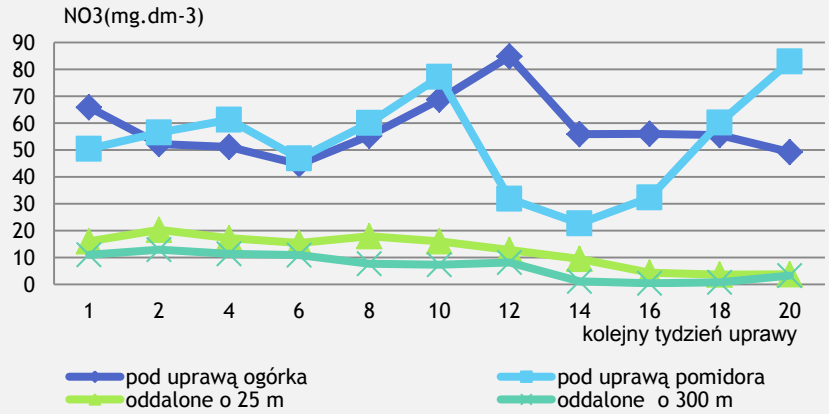
Nutrient and drain water use

	Amount of n.sol. M 3/ha	Amount of nutrient t/ha
Nutrient sol.	10220,8	9,49
Drain water	3082,5	4,65

Content of nutrients in drain water (mg/l)

$N\text{-}NO_3$	P	K	Ca	Mg	Na
439	76	522	402	121	36
Cl	SO_4	Fe	Mn	Cu	Zn
17	583	3,51	0,61	0,38	2,60

Nitrogen concentration in ground water



Stanisław Kaniszewski

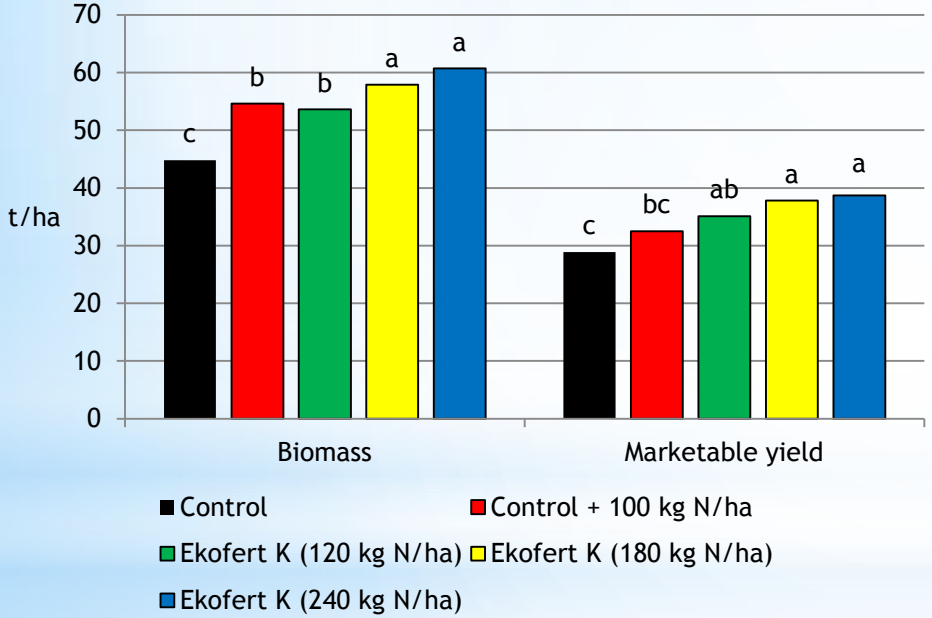
3. Implementation of new eco-activators made from processed legume plants

Ekofert K – pelleted red clover fertilizer.
Volume weight– 604 g/1 L

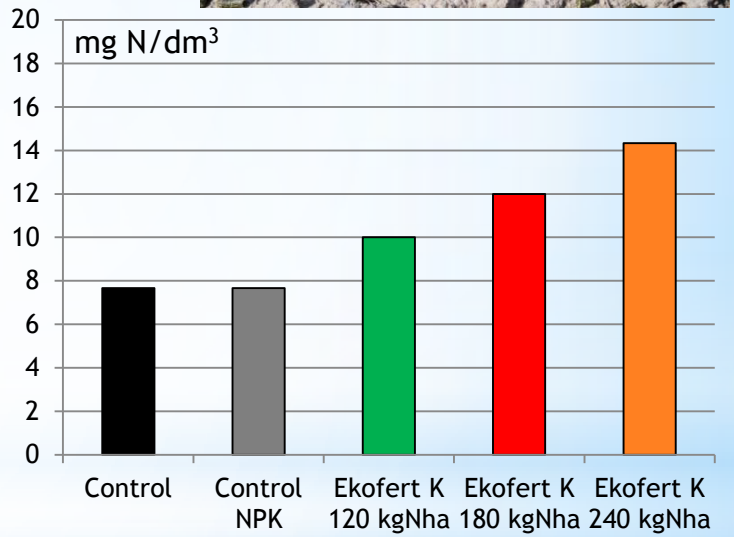
Ekofert L – pelleted Lucerne fertilizer.
Volume weight – 703 g/L

The experimental treatments with celeriac:

1. Control treatment
2. Mineral fertilization of 100 kg N/hectare
3. Organic fertilizer (Ekofert K) - 120 kg N/hectare
4. Organic fertilizer (Ekofert K) - 180 kg N/hectare
5. Organic fertilizer (Ekofert K) - 240 kg N/hectare



Effect of Ecofert on biomass and yield of celeriac



Nitrogen content in soil horizon 60-90 cm after harvest

EXPECTED RESULTS:

1. Reduction of the pollution of water and soil trough replacement of mineral fertilizers by new soil eco-activators
2. Elimination of nutrient emission from drain water of greenhouse open soilless culture to the ground and surface water
3. Enrichment of soil in organic matter trough application of eco-activators and organic fertilizers made from organic waste
4. Reduction of non biodegradable waste from soilless greenhouse production
5. Improvement of quality of horticultural products.

*Thank you for attention