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Sustainable Food Security

DEVELOPMENT OF INNOVATIVE MICROBIAL INOCULA FOR SUSTAINABLE FOOD PRODUCTION SYSTEMS IN EUROPE

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www.ncp-biohorizon.net

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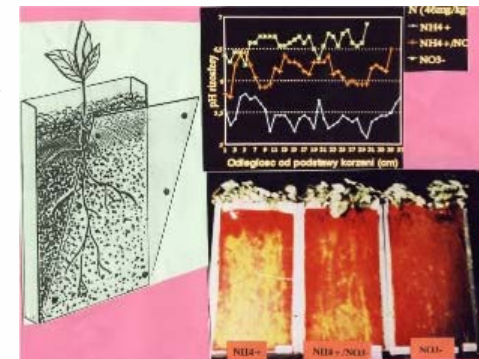
The **Rhizosphere Laboratory** conducts research on the role of roots and the rhizosphere in the growth and yield performance of plants (both rhizoboxes under greenhouse conditions [greenhouse complex] and in the open field [experimental orchards]).

The work includes:

- development of eco-innovative and sustainable methods of cultivation and fertilization of horticultural plants
- environment-smart production of high quality fruit and vegetable crops
- increasing the natural fertility of the soil and the activity in the rhizosphere of plants

Main research objectives:

- selection and identification of fungi and bacteria producing siderophores and dissolving phosphorus compounds
- molecular analyses by distinguishing isolates of rhizosphere bacteria
- detection and distinguishing of species of mycorrhizal fungi
- carriers for microorganisms



TOPICS OF INTEREST:

- SFS-01A-2018: Biodiversity in action: across farmland and the value chain / Small organisms, big effects for plants - Belowground biodiversity interaction with plants
- LC-SFS-03-2018: Microbiome applications for sustainable food systems
- SFS-05-2018: New and emerging risks to plant health

INNOVATIVE MICROBIAL BIOPRODUCTS FOR SUSTAINABLE FOOD SYSTEMS

The aim of the project is to **develop innovative microbial inocula** based on organic matter and humic acids derived from brown coal, and to **implement them in sustainable crop production**. The **basis for the bioproducts are microorganisms collected in the SYMBIOBANK** of the Research Institute of Horticulture. Development of the following microbial inocula is planned:

- INOCULUM STIMULATING PLANT GROWTH AND YIELD
- INOCULUM MOBILIZING PHOSPHORUS COMPOUNDS IN SOIL
- INOCULUM AGAINST SOIL PATHOGENS thereby IMPROVING PLANT HEALTH
- BACTERIAL-MYCORRHIZAL INOCULA
- PGPR INOCULUM TO INCREASE AVAILABILITY OF MINERAL IONS

Ultimate goal: The bioproducts and technologies developed will increase yield and biodiversity. This will raise the competitiveness of European farmers and entrepreneurs, and strengthen their market position.

improve
the quality
of soils

increase the growth
and yield of crop plants
in Europe

experimental
batches of the
products (SMEs)

performance
assessment
(effectiveness of
precision agricultural
technology)





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