



Press Release

EU-funded research collaboration on use of bio-effectors in agriculture launched

An international consortium of scientists, led by the University of Hohenheim, Germany, has launched a large, EU-funded, integrated project for the development of alternative fertilization strategies by the use of so-called "bio-effectors". *"Resource Preservation by Application of BIOeffECTORs in European Crop Production"* (BIOFECTOR) is a unique project in European Union's 7th Framework Programme, bringing together top scientists from academic institutions and small and medium enterprises with a wide range of topic expertise.

Meeting the increasing food demand of a growing world population in face of limited available area of productive agricultural land is one of the big challenges during the next decades. Resource-saving strategies and land use intensification require the development of more viable plant nutrition strategies in crop production as alternatives to the prevailing use of mineral fertilisers, mainly produced by exploitation of non-renewable natural resources. BIOFECTOR is an integrated project with the aim to develop novel approaches for the use of so-called bio-effectors based on living microorganisms and active natural compounds. The final goal is the development of bio-effector products with capability to increase the productivity of organic and low-input farming systems and boosting the efficiency of recycling fertilisers and of nutrient placement strategies close to the roots of crop plants. The strategic combination of the various alternative fertilisation approaches with specifically adapted bio-effector products under diverse European geo-climatic conditions provides a promising tool to overcome limitations in nutrient availability. In

this context, the project will contribute to a more sustainable and environmentally friendly agricultural production in Europe with reduced input of agrochemicals.

Microbial bio-effectors addressed by the project comprise various fungal and bacterial isolates with well-characterized root growth-promoting and nutrient-solubilising potential. Natural extraction products of seaweed, compost and plant extracts, as well as their purified active compounds, are also tested in various combinations and formulations. The products are developed for major crops, such as maize, wheat and tomato. After the assessment on laboratory scale, a "European Field Testing Network" assures product evaluation under representative European geo-climatic conditions over a total testing period of five years.

The international consortium includes the following academic institutions: Julius-Kühn Institute (Germany), Czech University of Life Sciences (Czech Republic), Banat's University of Agricultural Sciences and Veterinary Medicine Timisoara (Romania), Corvinus University of Budapest (Hungary), Plant Research International, Wageningen University and Research Centre(the Netherlands), University of Naples (Italy), University of Copenhagen (Denmark), Agri-Food and Biosciences Institute (United Kingdom), Anhalt University of Life Sciences (Germany), Research Institute of Organic Agriculture (Switzerland), and Agricultural Research Organization (Israel). These academic institutions cooperate with a number of specialized companies, providing outstanding expertise in the production of bio-effectors and fertilisers, as well as with representatives of farmers associations: BioAtlantis Ltd (Ireland), Madora GmbH (Germany), ABiTEP GmbH (Germany), Prophyta Biologischer Pflanzenschutz GmbH (Germany), Sourcon Padena GmbH (Germany), AGRIGES s.r.l. (Italy), KomTek Miljø (Denmark), Arbeitsgemeinschaft Hüttenkalk e.V. (Germany) and FiBL-Projekte GmbH (Germany). The GABO:milliarium mbH & Co KG will manage the administrative tasks of the project.

Prof. Günter Neumann, group leader "*Rhizosphere Research*" at the Institute of Crop Science, University of Hohenheim, and scientific coordinator of the BIOFECTOR project comments: *"Interactions of plants with soil microorganisms and their metabolites are well-known as important determinants of plant growth, nutrient acquisition, and stress resistance. However, attempts to implement these processes into strategies for sustainable soil fertility and crop management are frequently biased by limited reproducibility in agricultural practice, due to an incomplete*

knowledge of the conditions necessary for a successful application. The combined multidisciplinary expertise of the consortium in the fields of bio-effector production, plant nutrition, fertilizer production, management of soil chemistry and soil microbiology, provides a sound scientific and application-oriented basis to overcome these limitations by selection and development of bio-effector products specially adapted to the requirements of alternative fertilization strategies."

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Contact Persons:

Scientific Coordinator	Email: guenter.neumann@uni-hohenheim.de
Prof. Dr. Günter Neumann	Phone: +49 (0) 711 459-24273

Project Manager	Email: Kathrin.Stoller@gabo-mi.com
Kathrin Stoller	Phone: +49 (0) 89 288 104 15

www.biofector.eu