

BIO-EFFECTORS QUO VADIS

Marketing aspects of bio-effectors

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BIOFECTOR PROJECT



In the framework of the 7th
EU-promoted research
programme, number 312117, with
22 partners from 10 countries

Under the scientific leadership of
Hohenheim University

Prof. Dr. G. Neumann

Project Management

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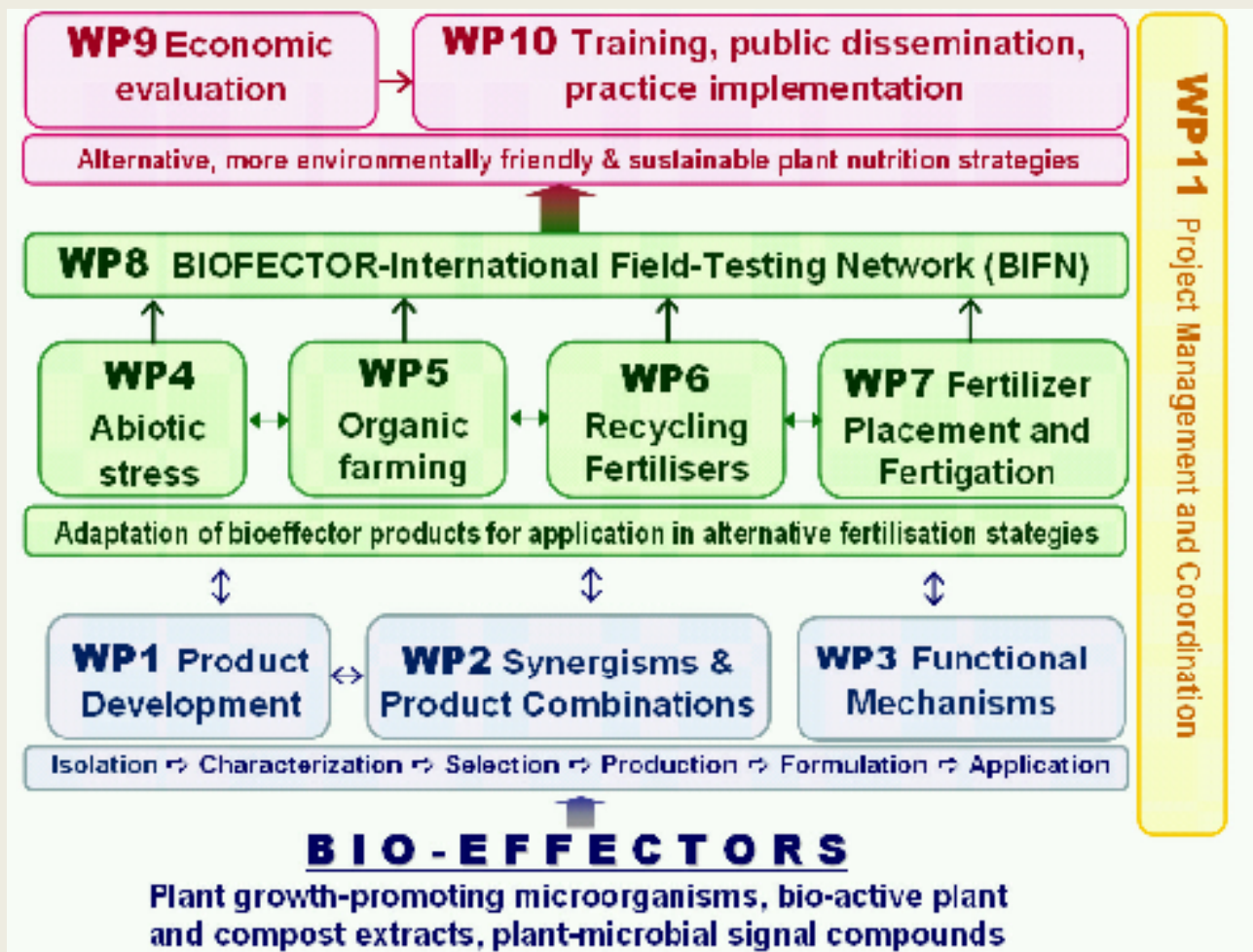
Training and Information

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www.biofactor.info

PROJECT STRUCTURE

WWW.BIOFECTOR.ORG



BIO-EFFECTORS

- The designation Bioeffector applies to
 - living **Microorganisms** & Agents
 - derived from **Plants, Plant Residues and waste**, that foster
 - Growth
 - Affinity for Nutrients
 - Disease resistance of crops towards

PRODUCT ORIGIN

- ◉ Plant Extracts
- ◉ Crustacean Extracts
- ◉ Compost and Fermented Waste
- ◉ Bacteria, Fungi and other Soil Organisms

BIO-EFFECTOR CLASSIFICATION

- ◉ Bio-Control Agents (Plant Protection)
- ◉ Bio-Fertilisers
- ◉ Bio-Stimulants

THE MARKET FOR BIOEFFECTORS

- ◎ Worldwide ca. 6 Million EURO (2011)
 - Bio-Fertilisers 68%
 - Bio-Plant Protection 18 %
 - Bio-Stimulants 14%
- ◎ Europe ca. 1,2 Million EURO (2011)
 - Bio-Fertilisers 47 %
 - Bio-Plant Protection 22 %
 - Bio-Stimulants 31%

BIO-PLANT PROTECTION EUROPE

- ◎ Europe 265 Million EURO (2011)
 - Of which 54.5 million microbe-based media
 - *Bacillus thuringensis*
Market Share 2000 - 90 % / 2008 - 50 %
 - *Bacillus subtilis* - increasing
 - Trichoderma based - increasing
- ◎ Estimates are for 150 million EURO for microbial Plant Protection Agents in 2020

BIO-PLANT PROTECTION-SUPPLIERS

- ◉ AgraQuest (US)
- ◉ Andermatt Biocontrol (CH)
- ◉ BASF (DE)
- ◉ Bayer (DE)
- ◉ Certis (US)
- ◉ Marrone (US)
- ◉ Naturell (US)
- ◉ Novozymes (DK)

BIO-FERTILISERS

- ◎ Total Market 3.8 billion EURO (2011)
 - Asia-Pacific 35 %
 - Europe 15 %
 - North America 5%
 - Other Countries 45 %

IMPORTANT BIO-FERTILISER PRODUCERS

- ◉ China Biofertilizer (DE)
- ◉ Growing Power Hill (CAN)
- ◉ Mapleton Agribiotec (AUS)
- ◉ Novozyme (DK)
- ◉ Nutramix (US)
- ◉ Rizibacter Argentina (AG)

BIOLOGICAL PLANT PROTECTION

- ⦿ Products with **action on single organisms** are subject to plant protection laws
- ⦿ Cost of research for tox data >100 Mio EURO
- ⦿ Cost of documentation and registration >1 Million EURO

BIO FERTILISERS

- ◉ Are generally applied as substrate to the seeds, the plant surface or to the soil
- ◉ Are active in the Rhizosphere or actually enter the plant; improved nutrient uptake
- ◉ Biological fertilisers based on compost and recycling waste are already in use
 - Organisms include Rhizobien, Azotobacter, Azospirillum und Green-Blue Algae
- ◉ Current registration under EU-fertiliser laws

BIO STIMULANTS

- ◉ Substances exclusively designed to increase the **Resistance of Plants** to harmful organisms
- ◉ There is **no proven specific activity** towards improved nutrient uptake or against specific single harmful organisms

ORIGIN OF BIO STIMULANTS

- ◉ Inorganic Tonics
- ◉ Organic Tonics
- ◉ Homeopathic Tonics
- ◉ **Microbial-based preparations**

BIO-EFFECTOREN BUSINESS ENVIROMENT

Criteria	Bio control	Bio fertiliser	Bio stimulants
Market trend	> 10 % p.a.	1-3 %	- 20 bis + 20 %
Market maturity	High	High	Low
R & D	High	Medium	Medium - High
Type Producers	O Large Comp	MI Larg Comp	Mainl. SMEs
Number Players	Very low	Low	High (>200)
Business Perimeter	International	National	Regional

MARKETING STRATEGIES

Criteria	Bio control	Bio fertiliser	Bio stimulans
Patents/Data	High	Medium	Low
Research cost	High	Medium	Low-high
Agricultural use	Easy	Medium knowledge	Complicated
Producer margin	> 50%	ca. 50 %	< 50 %
Consumer Immage	bad-good	medium-good	Tonic:very good MicroOrganisms good-bad

OPEN QUESTIONS:

- ◉ How are/will be the boundaries between Bio Plant Protection, Bio Fertilisation & Bio Stimulation defined in the EU
- ◉ Antifungal Action *vs.* Resistance Induction
- ◉ Symbiotic *vs.* Non-Symbiotic Microorganisms
- ◉ Under which Circumstances can the German Bio-Stimulants Rules be transferred to EU Rules

CRITICAL ISSUES - BIO-EFFECTORS

- ◉ Users will only purchase **economically worthwhile Bio-Effectors** - the present price situation is favourable for their use
- ◉ Most Producers are small firms with fewer than 100 employees and are not in a position to finance elaborate toxicity studies
- ◉ If prices rise the **Bio-Effector Market will be dramatically reduced**
- ◉ The Providers' Associations should work and propose Recommendations for Future Registration esp. for Bio-Stimulants

THANKS

◎ Sources and Further Information

- BIOFECTOR - Application Documents and reports
- Björn Assmus: Innovative Plant Nutrition Strategies; Master's Thesis Hohenheim 2013

- ABIM Basel (<http://www.abim.ch>)
- EBIC (<http://www.biostimulants.eu>)
- EU - Fertiliser Group
(http://ec.europa.eu/enterprise/sectors/chemicals/documents/specific-chemicals/fertilisers/index_en.htm)
- IBMA (www.ibma-global.org)
- Further Bio-Effector- & Plant Tonic Content
 - www.bio-effector.eu
 - www.BLV.Bund.de
 - www.JKI.Bund.de
 - www.Oekolandbau.de