

## Micro-organisms between fertilization and plant protection

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Microorganisms are used as agents in plant production to guarantee the growth of healthy plants by direct or indirect interactions with harmful organisms and by avoiding malnutrition. Recently, most of these micro-organisms are regulated under the legal framework of the plant protection legislation (EC Reg. 1107/2009) or are placed on the market following national rules, e. g. national Fertilizers Acts.



The recent fertilizer regulation (Regulation (EC) No 2003/2003) does not regulate micro-organisms. Because of the intention of the European Commission to revise this regulation in order to harmonize the legislation of all fertilizer materials (organic substances are yet not regulated in Regulation (EC) No 2003/2003), the question arises, whether micro-organisms should be regulated under the fertilizer regulation at the same time and should be included into a group called »biostimulants«.

### Importance for the market

The delegates widely agreed that the importance of micro-organisms (MO) for plant production will increase.

*Advantages of MO can be:* often specific interactions with target organism, biodegradability, harmful residues unknown so far, compared to chemical pesticides sometimes cheaper when locally produced, more effective than chemical pesticides in the long-term is expected

*Disadvantages of MO can be:* often slow speed of action (thus making them unsuitable if a pest outbreak is an immediate threat to a crop), often variable efficacy due to the influences of various biotic and abiotic factors (since biopesticides are usually living organisms), the use of MO may demand special skills.

The usefulness of MOs as fertilizer agents was critically discussed. The efficacy would severely depend on the actual growing conditions. The experts highlighted that stability of efficacy would play a major role for the future placement of products on the market (plant protection or fertilizer agents). Much more research should be financed by the

stakeholders of product development. It was pointed out that MO as plant protection products are no longer niche products for small enterprises, while MOs as fertilizer agents still are produced and introduced by small companies. All delegates agreed that a registration of products is a kind of quality certification for the products.

### Classification of micro-organisms as plant protection or fertilizer agents

The discussion on the definition of biostimulants and the wish of some parties to include MOs as fertilizer agents in the Fertilizers Regulation, rises conflicts with the Regulation (EC) No 1107/2009. Regulators pointed out that the recent definitions of biostimulants is mainly based on the stimulation of »natural processes« in the plant. However, in the Regulation (EC) No 1107/2009, this mode of action is addressed as well (please see Article 2, 1, b). There, the definition of plant protection products applies to products, »influencing the life processes of plants, such as substances influencing their growth, other than as a nutrient;«. Can MO really act »as a nutrient«? Isn't their mode of action the reason why all of them should be regulated under the plant protection legislation? At this point the discussion focused on the mode of action of MO. All experts agreed that the Regulation (EC) No 1107/2009 in the most cases addresses to direct control of pathogens. This is specified in the Regulation (EU) No 283/2013 (Part A, Section 3, 3.2) where only functions can be selected with direct mode of action against pathogens. But the category »others« opens the regulation for all other modes of action. This could reason a regulation of MO with indirect effects to plant health under the plant protection legislation as well.

Scientists recommended that the demand of Regulation (EC) No 283/2013 Part B 2.2.2 »The principal mode of action shall be indicated« should therefore be discussed from a biological point of view in more detail on further meetings. It could be, the delegates said, that the mode of action of MO can be manifold and may lead to enhanced stress tolerance or even to induced resistance as what could result in e. g. plant growth promoting MO covered by the plant

protection legislation (as it is true in Germany already) in spite of indirect mode of action. The conclusion drawn from the discussion was: Neither the definition of biostimulants recently under discussion seems to justify the general inclusion of MO as fertilizer agents, nor their predominantly indirect modes of action would justify the inclusion under the fertilizer legislation. It might be advantageous to create a group of products clearly defined by their indirect mode of action - whether under plant protection or fertilizer legislation or as a third group would have to be discussed.

### Data requirements for registration

The delegates deemed registration and approval of MO products necessary. Nevertheless, they recognized the recent data requirements for plant protection products as too extensive for »small« products, often already traditionally used in plant production. In a dossier it should be made clear that the product is harmless to health and environment and reveal that the product is effective. A label should clearly show the species or strains contained in the product and which effects could be achieved. A detailed description of use should be provided.

### Organizational demands

During the symposium it became clear that the authorities responsible for both, plant protection products and fertilizer registration, should decide at the beginning of an application how the product should be classified. By this procedure the official classification dependent on the principal mode of action could clearly define the data requirements for registration. For MOs to be imported into the EU the applicants should get the opportunity to inform themselves about the regulations for the import (phytosanitary aspects, nature conservation and others) in a joined bureau.

A joined database of MO products (PPP and biostimulants) should be set up and supported. Very recently the EU-project »Biofactor« together with the German JKI is starting such an approach. Finally, as an outcome of the symposium, an interest group of »small« companies placing biostimulants on the market, decided to form an association to express their wills more precisely.