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BRESOV survey on the use of alternative fertilizers and microorganisms

A BRESOV survey shows that 93% of respondents recommend the use of alternative fertilisers and 59% the use of microorganisms. Alternative fertilizers are mainly used for residue reduction, and on open field vegetables. Microorganisms are used for insect control, soil improvement and root stimulation, mostly on Solanaceae and orchard crops

In the frame of the [H2020 project BRESOV](#), partners [FiBL \(CH\)](#) and [ITAKA \(IT\)](#) developed a survey on the use of alternative fertilizers and microorganism formulations in crop production. Previous BRESOV trials in production conditions and in the lab tested a commercial formulation of microorganisms under normal and water stress conditions. The trials did not show a significant effect on crop performance. In order to broaden the experience, a literature review on microorganisms' application in agriculture was subsequently [published](#) ([Malgioglio et al., 2022](#)) and a farmer survey was distributed. The aim of the survey was to collect information on the use and the experience of practitioners with such formulations as well as with alternative fertilizers. The farmer survey, which was available in English, French, German, Italian and Spanish, received a total of 42 complete answers. The respondents originated from all Europe with a majority coming from Mediterranean and central Europe (79%), mainly Switzerland and Italy. Sixty nine percent of the survey participants were farmers, 81% working in organic

agriculture (including Demeter and in conversion) and mostly (49%) producing vegetable. The survey covered areas such as information of the farm (farming system, crops/livestock), the use of natural, alternative or recycled fertilisers, as well as microorganism formulations, their type, the crops they were used on, and the main reason behind their use. Participants were also asked whether they were satisfied with their use, if they recommended them and whether they had additional needs that were not currently covered.

Compost (40%) and manure (40%) are the main alternative fertilisers used by the farmers responding to our survey. Other fertilizers used included in ascending order: sheep wool pellets (2%), shrimp meal (4%), digestate (5%), and horn meal (9%). Sixty one percent of the participants confirmed using alternative fertilisers as the only source of nutrition, mainly to cover Nitrogen needs (51% of uses). Recycled fertilizers are mostly used in open field production and motivated by residue reduction. Sixty nine percent of the respondents were either satisfied or very satisfied with the use of alternative



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fertilizers and 93% of all participants recommend their use.

The majority of survey participants are aware of the use of microorganisms in crop production. From those, 76% have already tested or used such products. In ascending order, the main microorganisms used are *Bacillus thuringiensis*, *Trichoderma* sp., *Bacillus* sp. and Mycorrhizae (*Glomus intraradices*, moseae). The major use for microorganisms is insect control using *Bacillus thuringiensis* (20%). Other uses by order of importance include soil applications (soil health improvement, plant root stimulation, soil suppressiveness), foliar diseases (using *Bacillus*), against nematodes or as part of an antagonism strategy. Sixty percent of soil applications use Mycorrhizae and *Trichoderma*. According to our survey, farmers use microorganisms on all crops, in open field and greenhouses. Solanaceae in greenhouse and open field represent the major use (37%), namely tomato, green pepper and aubergine, followed by orchard crops, salads and potato. Fifty nine percent of respondents recommend the use of microorganisms.

Despite this survey not covering the whole range of farming systems in terms of the number of answers and the representation of each type of farming, it provides testimonials on the successful use of

alternative fertilizers and microorganism formulations. It shows that farmers are aware of a necessary evolution of production systems and that it is possible to reduce the dependence on chemicals. It also confirms that alternative solutions require farmers and technicians to acquire a good understanding of the mechanisms involved, and therefore the necessity of suitable advisory services to support the transition to responsible farming.

Detailed results of this task will be available on the project's website and [CORDIS page](#).

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