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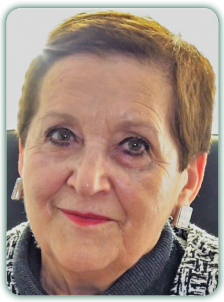

Ewa Solarska

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The role of consortia of microorganisms with plant extracts in protection and nutrition of plants

Microorganisms play an important role in plant health protection. Some of them are known as producers of bioactive substances such as vitamins, hormones, enzymes, antioxidants and antibiotics that can directly or indirectly enhance the growth and protection of plants. The use of microorganisms in consortia allows their better survival in any environment compared to single-species preparations, due to their synergism and the creation of a biofilm that is more effective for consortia with more efficient metabolism and more resistant to oxidative stress, as well as for toxic factors. Beneficial microorganisms that increase growth and protect plants can be added to the soil to improve the health of plants. The reason for this phenomenon is the close dependence of plants on their microbiome. By gaining better control over these relationships, pest growth can be reduced and the ecosystem can be more stable. Also fermented plant extracts that enhance plant defense mechanisms or directly toxic effects are used to increase the effectiveness of microorganisms in plant protection. In the University of Life Sciences in Lublin in 2012-2017 good practices were tested in the cultivation of hops, berries and vegetables in the organic system using Microorganism Consortia (MC) with fermented plant extracts. The biopreparations were used to spraying of plants to reduce the development of diseases and pests. Protection of hops and berries with the use of MC with fermented plant extracts has proved to be very effective, also in the case of dangerous pests such as aphids and spider mites. There was a higher content of micronutrients in vegetables that were sprayed with MC with fermented plant extracts. The use of MC with fermented plant extracts for the protection and nutrition of plants is an effective way to reduce diseases and pests and brings the expected results in the process of improving plant and soil quality and increasing the health value of food. This activity also has a very positive impact on the environment.

Biography

Ewa Solarska is a Professor of University of Life Sciences in Lublin, Head of Laboratory of Organic Food and has experience in research R&D projects. Her research interests include evaluation of the quality of organic products, with particular emphasis on the content of mycotoxins in cereals and their products, development of technologies in organic production of selected agricultural and horticultural crops with using plant extracts fermented with microorganisms as protection agent. She has achievements in the field of processing of organic food with extended shelf life.

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