

New biotechnological solutions for diagnostics, control and monitoring of key fungal pathogens in organic cultivation of soft fruits

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The overall goal of EcoFruits is to support effective increase of fruits quality in organic farming including control of key fungal pathogens, protection and maintenance of soil biodiversity, by developing new biotechnological solutions for diagnostics, control and monitoring of the quality of soils and plants. To achieve this aim the following specific objectives for organic farming of soft fruits are distinguished: (i) to develop rapid, sensitive and specific methods based on molecular biology techniques for detection of key fungal and fungal-like pathogens: *Botrytis cinerea*, *Verticillium* sp., *Phytophthora* sp., *Colletotrichum acutatum*; (ii) to develop new bioproducts to control these fungal pathogens; (iii) to develop new bioproducts for preservation and maintenance of soil biodiversity; (iv) to determine the effectiveness of new bioproducts in laboratory, fitotron and field conditions taking into account the quality of fruit plants and soil, including biological indicators of soil status; (v) to characterize the microbial activity and diversity of soils after application of developed bioproducts; (vi) to select the relevant indicator(s) for monitoring of soils microbial diversity as ecosystem health marker(s) in the soft fruits organic cultivation; (vii) to propose the microbial diversity indicator(s) as the most significant in determination of soil status for the new plantations.

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