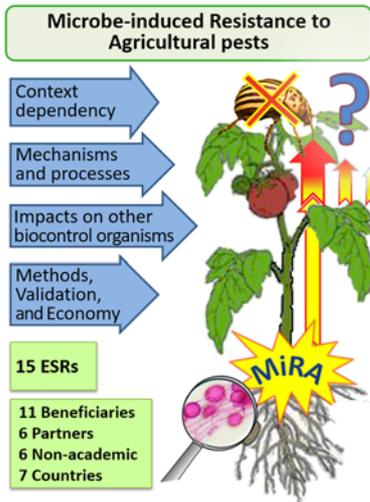


MiRA ITN

Microbe induced Resistance to Agricultural pests



Plants are intimately associated with a diversity of beneficial microorganisms in their root zone, some of which can enhance the plant's resistance to insect pests. Thus, the use of Microbe-induced Resistance (MiR) to reduce pest losses in agriculture has emerged as a highly promising possibility to improve crop resilience and reduce use of harmful pesticides. European companies have therefore started to develop and market beneficial microbes. However, MiR appears to be strongly context dependent, with reduced benefits under certain biotic and abiotic conditions and in some crop varieties. Further, it is a challenge to deliver and ensure stable associations of beneficial microbes and plants, and avoid undesired effects on beneficial insects. Thus we absolutely must improve our understanding of MiR mechanisms and context-dependency, in order to improve context stability of MiR and promote the use of MiR for crop protection.

Our MiRA project will train 15 ESRs in basic and applied research on context-dependency of MiR, mechanisms, and impacts on plant performance and other biocontrol organisms. We will use this understanding to improve our ability to predict the effectiveness of MiR under different conditions, to select plant and microbial strains with improved context-stability, and to develop better methods for the formulation of microbial inoculants and their application in agriculture. Finally, we will analyse economic prospects and constraints for MiR development and use.

To achieve these goals, we have assembled a consortium of 12 academic institutions and 6 companies, including microbial inoculant producers and agricultural advisors, with complementary skills in basic and applied research and innovation. Our ESRs will be trained within this multi-sectoral interdisciplinary network for a future career in research, product and service development in European horticulture and agriculture, pushing boundaries in European research and innovation.

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