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Abstract - Poster presentation

Isolation and identification of bacterial strains from apple flowers in Trentino and their evaluation as biocontrol agents of Erwinia amylovora

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Fire blight caused by *Erwinia amylovora* (Ea) represents a great threat to apple and pear production worldwide. For instance, the outbreak of fire blight occurred in Trentino caused a relevant reduction of crop yield in 2020. Since Ea can spread rapidly in the environment, it is difficult to manage this devastating phytopathogenic bacterium. It is now widely accepted that apple flowers may harbor bacterial taxa that might hinder the ability of Ea to colonize apple flower. Based on this body of knowledge, we aimed at investigating the microbiota of apple flowers to select new potential biocontrol agents active against Ea. Flowers of *Malus domestica* cv. Golden Delicious from Trentino apple orchards were sampled at the 'Baloon stage' and surface sterilised to isolate only bacteria residing within the flowers. Bacterial isolates were initially selected on R2A dishes according to their colony morphology and subsequently identified through 16S rRNA gene sequencing. The phylogenetic analysis showed the bacterial isolates mainly belonged to the *Enterobacteriaceae*, *Pseudomonadaceae*, and *Microbacteriaceae* families. One member of each bacterial family was selected and tested against Ea both on newly open apple flowers and on pear slices. Preliminary results showed some of these strains might have a significant effect on the control of Ea. In particular, *Pantoea agglomerans* and *Curtobacterium flaccumfaciens* strains showed the highest efficacy. In the future, we will carry out further experiments to investigate and understand the modes of action of these bacterial strains.