

# IOBC - WPRS Meeting of the Working Group



Integrated  
Protection  
in Viticulture

3 – 5 October 2023

LOGROÑO - LA RIOJA - SPAIN

ABSTRACTS BOOK



Instituto de  
Ciencias de la  
Vid y del Vino



IOBC-WPRS

## Control of *Botryosphaeria dieback* and black-foot pathogens in grapevine propagation material using *Bacillus subtilis* PTA-271 and *Trichoderma atroviride* SC1

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### Abstract

Grapevine trunk diseases (GTDs) are a complex group of diseases that lead to major economic losses in all wine-producing countries. The investigation of biocontrol agents (BCAs) capable of forestalling or at least minimizing the development of GTDs has, recently become a priority. Nursery experiments were set up to: (i) assess the biocontrol effect of *Trichoderma atroviride* (Ta) SC1 and *Bacillus subtilis* (Bs) PTA-271, alone and in simultaneous application, against *Botryosphaeria dieback* (BOT)- and black-foot (BF)- associated pathogens during the grapevine propagation process, and (ii) evaluate the success of the BCA inoculation during the grapevine propagation process, using quantitative reverse transcription polymerase chain reaction (qPCR) techniques. The results demonstrated a significant reduction in the percentage of potentially infected plants and the percentage of fungal isolation from wood fragments of BOT and BF pathogens in nursery material treated with Ta SC1 and Bs PTA-271, respectively. In one of the experiments, simultaneous treatments with Bs PTA-271 and Ta SC1 caused a reduction in percentages of potentially infected plants and fungal isolation, from wood fragments containing BOT and BF pathogens. These biological treatments may be relevant components of an integrated approach, using complementary management strategies to limit infection by GTD pathogens, but further research is still needed to elucidate the effectiveness of Bs PTA-271 and the benefits of simultaneous application with Ta SC1 for the control of GTD pathogens in nurseries.

**Key words:** *Botryosphaeria dieback*; black foot; biocontrol agents; grapevine trunk diseases; grapevine propagation process.