1 Publishable Summary

The objective of BIOVEXO is to develop an environmentally sustainable and economically viable plant protection solution combining Xylella-targeting biopesticides (X-biopesticides) with biopesticides combatting the insect vectors transmitting the disease (V-biopesticides) and to make them for ready use in integrated pest management.

V-biopesticides can kill the insect vector of *Xylella fastidiosa*, e.g. *Philaenus spumarius*. In this deliverable, we focus on the possibility that not only V- biopesticides as microorganisms but also X-biopesticides, that trigger *Xylella fastidiosa*, can colonise the insect vector and form populations on and inside it, following application. In parallel, we follow up the survival and colonisation of the V-biopesticide entomopathogenic fungus on the insect.

Our results show the dynamics of populations of the X- and V- biopesticides across time, as well as which organs of the insect could be colonised. This was assessed with assay in the field with insects in cages, quantitative PCR and advanced microscopic techniques, such as confocal laser scanning microscopy, general staining and fluorescence *in situ* hybridisation.

We confirm that all the tested X- and V- biopesticides are able to colonise and survive on various parts of the insects. Furthermore, these results are promising as they also show that the biopesticides are able to survive the spraying process.

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