

Presentación Póster.

Biological control and spider predation for managing *Xylella fastidiosa* vectors in Andalusian agroecosystems

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This study evaluated the effectiveness of two biological control agents, *Chrysoperla carnea* (Stephens) and the entomopathogenic fungus *Beauveria bassiana*, against nymphs and adults of *Neophilaenus campestris* Fallén, under laboratory conditions. Additionally, metabarcoding analysis was used to identify the spider species and guilds that prey on potential vectors in agroecosystems in southwestern Spain.

Green lacewing larvae (2nd and 3rd instar) demonstrated the ability to capture and kill 3rd and 5th-instar nymphs of *N. campestris*. Third-instar lacewing larvae were more effective than 2nd-instar larvae. Second-instar larvae killed more 3rd-instar nymphs than 5th-instar nymphs. Spittlebug foam reduced predation but did not prevent it.

The entomopathogenic fungus *B. bassiana* (strain BbGEP1) was tested against *N. campestris* adults. An LC₅₀ value of 1.61×10^6 conidia/mL and an LT₅₀ of 3.63 days at 1×10^7 conidia/mL were obtained, indicating its lethality against the vector.

Analysis of spider gut content revealed that *N. campestris* was the most common and the second most abundant prey (25.9% of the identified ASVs and 20.1% of the reads). This vector was found in two spider species: *Enoplognata caricis* Fickert and *Tanatus vulgaris* Simon. Additionally, *Haplodrassus macellinus* Thorell preyed on *Lepyronia coleoptrata* (L.), accounting for 12.9% of the detected preys. Predation on *Philaenus spumarius* (L.) was not observed. Aphrophorids constituted 48.5%, 11.5%, and 0.9% of the total reads for "other hunters," "ground hunters," and "space-web" spiders, respectively.

The study provides valuable information for the development of alternative control strategies, to the application of synthetic chemical insecticides against the vectors of *Xylella fastidiosa* in European agroecosystems. In addition, some species of spiders found in vineyards consume *N. campestris* as a major component of their diet. However, further research is required to validate the efficacy of these control agents under field conditions.

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