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Integrated Protection of Olive Crops



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Abstract book

THE USE OF COMPLEMENTARY APPROACHES FOR CONSERVATION BIOLOGICAL CONTROL: CARABID AND STAPHYLINID BEETLES AS NATURAL ENEMIES OF THE OLIVE FRUIT FLY

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The pupae of the olive fruit fly *Bactrocera oleae* that complete their development in the ground are exposed to a guild of soil arthropods whose species identity, traits, activity and predatory patterns are mostly unknown. We used complementary approaches to fill these knowledge gaps and help advances in conservation biological control strategies. Firstly, carabids dwelling in olive orchards and woody semi-natural habitats SNHs were sampled in low-input systems, and we found that the well-structured assemblage of the olive orchard can potentially play a stronger role in *B. oleae* control, rather than the less diversified SNH assemblage. Secondly, the soil carabid *Pseudoophonus rufipes* was used as a model species for laboratory feeding tests. *B. oleae* pupae consumption was detected by means of DNA-based gut content analysis up to 20 hours post ingestion, in both female and male predators. Finally, live staphylinids were collected in low-input olive orchards and DNA-based gut content analysis were carried out on *Ocypus olens*, the species resulting to be influential in controlling the pest pupae during autumn. Carabids and staphylinids can be considered as good candidate taxa for biological control programs in olive orchards. Further agroecological studies are needed to investigate how habitat management can affect their survival in the agroecosystem and how to conserve and enhance their presence within the cropped field.