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## BOOK OF ABSTRACTS

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## Effect of soil tillage on natural occurrence of fungal entomopathogens associated to *Prays oleae*

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In sustainable agricultural systems, the substitution of chemical products to control pests is of major importance, as they are sources of environmental pollution, presence of residues in food commodities, as well as the emergence of resistance by the pests to be controlled. The use of entomopathogenic fungi is one of the possible approaches to pest control in several agro-ecosystems. This kind of fungi is able to infect and kill a great number of insect pests, and should be explored as biocontrol agents. An effective way to enhance the efficiency of entomopathogenic fungi is the use of isolates adapted either to the climatic conditions, as well as to the pest to control. In olive orchards, one of the major pests is *Prays oleae* Bern. This lepidopteran, when conditions are adequate to its development, is capable of inflict severe damage in olive production. Taking all this in account, this work was conducted in order to evaluate the natural occurrence of entomopathogenic fungi directly associated to *P. oleae* in each of the three generation of this insect. Furthermore, the influence of the tillage regime in which the orchards are conducted on the diversity and abundance of entomopathogenic fungi was also studied. In order to achieve this, six olive orchards (three tilled and three non-tilled) were sampled for larvae and pupae of *P. oleae*, in the three generations that the moth presents annually. Larvae and pupae were placed in sterile tubes, and when a fungal agent was associated with their mortality, it was isolated to potato dextrose agar medium. Pure cultures of each fungus were obtained and further identified by sequencing the amplified internal transcribed spacer region of rDNA, using the universal primers *ITS1* and *ITS4*. The results indicated a high natural abundance of entomopathogens in olive orchards, with special relevance to *Beauveria bassiana* (60% of the total isolates). This species was found mainly associated to the phyllophagous generation of the moth (88% of the total isolates). Additionally, the tilled orchards presented a slightly higher amount of entomopathogens (65 isolates) than the no-tillage orchards (55 isolates). These results indicate that entomopathogenic fungi are present in high abundance in olive orchards, and should be exploited in biocontrol measures. Moreover, *P. oleae* seems to be especially susceptible to *B. bassiana*, and in its first generation, features to be taken into account when developing biocontrol programs against this particular pest.

**Keywords:** olive tree, *Prays oleae*, entomopathogenic fungi, tillage, diversity