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Biological Control of Plant, Medical and Veterinary Pests

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PROSPECTS FOR SUSTAINABLE CONTROL OF LEPIDOPTEROUS OLIVE PESTS BY PHEROMONES AND EGG PARASITOIDS

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The olive moth (*Prays oleae,* Lepidoptera: Plutellidae) is known as one of the key pests in olive cultivation. In particular areas, also the jasmine moth (*Palpita unionalis,* Lepidoptera: Pyralidae) can cause serious damage to both leaves and fruits of the olive tree. Since November 2001, an international research project was started to promote biological and biotechnical methods for the control of these pests. The project is funded by the European Commission within the specific programme "Confirming the International Role of Community Research" (Contract ICA4-CT-2001-10004) and is coordinated by the Institute for Biological Control, Federal Biological Research Centre for Agriculture and Forestry, Darmstadt, Germany. Partner institutions are located in Portugal, Greece, Tunisia and Egypt. The project work comprises three complementary approaches:

- Evaluating the available mating disruption technique for efficacy in different geographical regions and commodities of olive cultivation.
- Strategies for maintenance and enhancement of natural enemies in the olive grove habitat, especially by creating vegetation islands.
- Developing and evaluating inundative releases of mass reared egg parasitoids of the genus *Trichogramma* (Hym., Chalcidoidea) as suitable method in the control of Lepidopterous olive pests.

Beyond that, a conceivable synergism of these methods and their possible integration into an effective management system of major olive pests are essential topics of the research. Therefore, reasonable application schedules of the developed control measures are worked out taking into account different infestation levels and unavoidable pesticide treatments to control other olive pests, e. g. *Bactrocera oleae*. Monitoring methods using pheromone traps were improved, especially in the case of

P. unionalis, where this technique was not well developed before. Promising effects were found in current field trials of mating disruption as well as of enhancing vegetational diversity in the olive grove ecosystem. Concerning *Trichogramma*-releases, further improvement of their efficacy is needed by the use of local, environmentally well adapted *Trichogramma*-species, most probably in early season inoculative releases.