

has not been detected. In eastern Spain, the main natural enemies of citrus aphids, *Aphis spiraecola* Patch and *A. gossypii* Glover (Hemiptera: Aphidae), are Cecidomyiidae and Coccinellidae.

## STUDY OF THE PARASITOIDS OF *LIRIOMYZA TRIFOLII* (DIPTERA: AGROMYZIDAE) IN SHIRAZ, IRAN

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A survey was conducted to identify parasitoids of vegetable leafminer *Liriomyza trifolii* (Burgess, 1880) (Diptera: Agromyzidae) in Shiraz region during April 2004 – September 2005. A total of 13 eulophid species (Hymenoptera: Eulophidae) were recognized. Four species which are marked with a (\*), are new records from Iran.

1. *Baryscapus impeditus* Nees\*
2. *Baryscapus* sp.
3. *Closterocerus formosus* Westwood
4. *Closterocerus* sp.
5. *Diaulinopsis arenaria* Erdos\*
6. *Chrysocharis* sp.
7. *Diglyphus crassinervis* Erdos
8. *Diglyphus isaea* Walker
9. *Diglyphus pulchripes* Crawford\*
10. *Hemiptarsenus zilahisebessi* Erdos
11. *Ratzeburgiola cristatus* Ratzeburg\*
12. *Pnigalio* sp.
13. *Pediobius* sp.

The Bulgarian specialist, Dr. Boyadzhiv, confirmed the parasitoids identifications. All of the specimens were deposited in the insect collection of the Jahrom Azad University.

## AN APPROACH TO BIOLOGICAL CONTROL OF *ZOPHIUMA LOBULATA* GHAURI (HOMOPTERA: LOPHOPIDAE) USING MYMARID AND ENCYRTID EGG PARASITOIDS

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The plant hopper *Zophiuma lobulata* Ghauri (Hemiptera: Lophopidae) has been implicated to Finschhafen disorder of coconut and oil palms in Papua New Guinea. The biology and the pest status of *Z. lobulata* are largely unknown. Previous reports suggest that the disorder is prevalent when and where the plant hopper is present and is continuously feeding on the palms. The control of the disorder is therefore dependent on the management of *Z. lobulata* populations. Egg masses of *Z. lobulata* collected from coconut and oil palms in two seasons during 2007 and 2008 yielded parasitoids belonging to the families Mymaridae and Encyrtidae. This poster will draw attention to the importance of these egg parasitoids in the control of *Z. lobulata* in Papua New Guinea.

## BIOPESTICIDES: AN IDEAL COMPONENT OF IPM IN CHILI UNDER IRRIGATED ECOSYSTEM

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Chili, *Capsicum annuum* L. (Solanaceae), commonly known as red pepper is an important and indispensable condiment as well as vegetable grown in many parts of the world. To combat the insect and mite pest outbreaks, farmers are solely dependent on pesticides. In Northern Karnataka, farmers apply nearly 18-26 rounds of chemical sprays of different combinations of pesticides under irrigated ecosystems (Anon. 2006). Three modules *viz.*, Biointensive module, Adoptable module and Farmers practice were tested during 2004-2005 and 2005-2006 kharif season. The Biointensive module included neem-based insecticides and biopesticides like HaNPV and SINPV as major components, the Adoptable module used the combination of effective new molecules with biopesticides, and the Farmers practice was based solely on chemical insecticides. The pooled data indicated that the Adoptable module recorded fewest thrips, *Scirtothrips dorsalis* Hood (Thysanoptera: Thripidae), mites, *Polyphagotarsonemus latus* Banks (Acari: Tarsonemidae), and fruit borer, *Helicoverpa armigera* Hub. (Lepidoptera: Noctuidae), populations, followed by the Farmers practice and the Biointensive module. Use of HaNPV and SINPV was found to be an effective component in the Adoptable and Biointensive modules which recorded the minimum larval populations. The Adoptable module recorded maximum dry chili yield of 16.08q/ha which was superior to the Farmers practice (15.00q/ha) and the Biointensive module (11.12q/ha). The Biointensive module recorded maximum predator populations and it was on par with the Adoptable module while the Farmers practice recorded very low predator populations.

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New Zealand

Proceedings of the  
Third International Symposium on Biological Control of Arthropods  
Christchurch, New Zealand

**February 8-13, 2009**

Edited by  
**Peter G. Mason, David R. Gillespie & Charles Vincent**  
Agriculture and Agri-Food Canada

FHTET-2008-06  
December 2008



Forest Health Technology Enterprise Team  
Morgantown, West Virginia



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