

Globe-trotting researchers find natural enemies of the olive fruit fly

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(PhysOrg.com) -- UC scientists and cooperators traveled the world looking for natural enemies of the olive fruit fly — the most important pest of olive trees — and found several parasites of the fruit fly that may help control efforts.

First detected here in the late 1990s, the invasive (nonnative) olive fruit fly is now found in more than 40 California counties, and presents significant challenges for the state's olive industry.

Insecticide-based control programs are costly and can not fully eradicate the olive fruit fly, in part, because olive trees along roadsides and in residential areas serve as reservoirs, allowing the flies to reinvade treated commercial orchards.

“Classical biological control — the importation of novel natural enemies from the pest's home range — offers the best opportunity to economically suppress olive fruit fly in these situations,” UC Berkeley specialist Kent Daane and colleagues wrote in the January-March 2011 issue of *California Agriculture* journal.

With a team of international, federal and state cooperators, the UC scientists visited olive trees in the Canary Islands, Pakistan, Africa, China and India in search of parasitoids, which lay their eggs in olive fruit fly larvae and inhibit their ability to reproduce. Most parasitoids are “host specific,” meaning that they will only lay their eggs in one particular other insect, so they pose little danger to unintended, nontarget

species.

The parasitoids collected during the global explorations were studied in a secure quarantine facility at UC Berkeley.

To date, the U.S. Department of Agriculture has granted approval for the release of two parasitoids in California, *Pysttalia lounsburyi* (collected from Kenya, Namibia and South Africa) and *P. humilis* (collected from Namibia and South Africa). Permits are pending for *P. ponerophaga* (collected from Pakistan) and *Fopius arisanus* (supplied by scientists in Hawaii). While there have been recoveries of *P. humilis* and *P. lounsburyi*, Daane reports that to date there has not been any significant decline in fruit fly densities from these natural enemies.

“Over the coming years, researchers will better understand the level of controls expected from imported natural enemies, and will improve integrated pest management (IPM) programs to integrate biological controls with the insecticides currently used in olive management,” Daane wrote in California Agriculture.

More information: [ucanr.org/repository/CAO/landi ...
5n01p21&fulltext=yes](https://ucanr.org/repository/CAO/landi...5n01p21&fulltext=yes)

Provided by University of California - Berkeley

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