

SUCCESS STORY

Biological controls reduce agrochemical use, production costs for Ethiopian strawberry exporter

The Ethiopian horticulture industry is mounting several initiatives on Integrated Pest Management (IPM) with support from USAID-ATEP. The Code of Practice developed by the Ethiopian Horticulture Producers and Exporters Association (EHPEA) provides comprehensive standards related to production, the environment, and worker safety, including the safe use of agrochemicals. The registration of biocontrol organisms in Ethiopia is also in early stages of development, with EHPEA and the Ambo Research Center coordinating trials of biocontrols on roses that were sponsored by Koppert and Bio-Bee.

USAID-ATEP is also supporting the application of biocontrols to crop production. One of the project's lead horticulture clients, Ilan Tot Farm, based in Koka, Oromia Region, was established in 2005 by Ilan Eliyahu to produce strawberries for export to Europe and the Middle East. The company's 2006 season was plagued with spider mites, dramatically reducing productivity and quality. The main reasons for the severity of the outbreak were the dusty conditions and the limited availability of expensive miticides.

An IPM trial with the predatory mite *Phytoseiulus persimilis* was started at the farm in October 2007 with support from USAID-ATEP. This predator feeds exclusively on the red spider mite that attacks strawberry leaves. With support from the Ambo Research Center, the bio-control material was imported by RSL, Ethiopian distributors of products from Bio-Bee Ltd., an Israeli company specializing in biocontrol agents.

Zewdinesh Tadessie, Ilan Tot's plant protection supervisor, is responsible for monitoring the trial on a weekly basis. The farm integrates the use of the *Phytoseiulus* biocontrol with miticide spot treatment only when the ratio of spider mite to predators surpasses 10:1.

"The unavailability of predators in the country was one worry for us. Also, we were worried about altitude and humidity, but so far we have seen encouraging results," Zewdinesh said.

The trials showed that *P. persimilis* maintained a steady presence throughout the growing period, keeping spider mite populations under control. Bio-Bee concludes in its report that satisfactory control of spider mite was achieved mainly through the biological control agents, and with very little chemical use.

Ilan notes that, compared to his previous season, pesticide use for spider mite control was reduced by almost 50 percent, translating into savings of around \$2,500 per hectare.

"It is cheaper to use predators than to apply pesticides," he said.

Thanks to the success of the trial, Ilan will expand his use of *P. persimilis* to the rest of the farm and evaluate other biocontrol applications for aphids and thrips.

"There are opportunities for Ethiopian strawberries in the European market, as we can produce quality fruit with good shelf-life, and now with fewer pesticides," Ilan said.



Photos by Fintrac Inc.

Premium Ethiopian Strawberries packed for European supermarkets.



Ilan Tot Farm owner Ilan Eliyahu monitors the trial with Fintrac's entomologist, Dr. Richard Pluke.

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— Ilan Eliyahu, owner of Ilan Tot Farm