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IPM IL Awarded 100,000 Birr from Haramaya University for Parthenium Research



In December, the IPM Innovation Lab hosted a two-day workshop on the biological control of *Parthenium* in East Africa. On the last day of the trip, while our team was at Haramaya Agricultural University, one of Ethiopia's oldest universities, for a tour of the biocontrol agents rearing facility, President Chemedha Fininsa surprised the group with the announcement that he was giving a grant from the university for 100,000 Birr (roughly \$5,000) to our project to study the biocontrol of *Parthenium*.

The project employs a multi-pronged approach using three host-specific agents to control the invasive species: *Zygogramma*, a leaf-eating beetle; *Listronotus*, a stem-boring weevil; and *Smicronyx*, a seed-eating weevil. This grant from Haramaya represented a vote of support for the work that we are doing, and was a fitting way to end the trip.

In addition, two Israeli weed scientists, Baruch Rubin and Tuvia (Toby) Yaacoby, attended the workshop. They are interested in our work on *Parthenium* as they too struggle with this weed in Israel. *Parthenium* invaded the Mediterranean country from the contamination of imported grains used in a fishpond during the late 1970s. Although the fishpond is in the upper Galilee region, *Parthenium* has now spread to many other areas of the country.

“We are the closest country to Europe that is infested with *Parthenium*,” Yaacoby said.

It is this collaboration among scientists around the world that will be key in stopping damaging, invasive pests, such as *Parthenium*.



Zygotogramma beetles on a Parthenium plant. They are host-specific biocontrol agents to the invasive weed Parthenium.



Muni Muniappan, left, director of the IPM Innovation Lab, with Chemedha Fininsa, president of Haramaya University.



Parthenium plants at Haramaya University research facility.

Our *Parthenium* Project

One of the world’s most invasive weeds, *Parthenium hysterophorus* came to East Africa from the Americas in the 1970s. The weed destroys native crops, causes rashes on human’s skin, and taints milk and meat when ingested by animals. In Ethiopia, farmers call it “Faramsissa,” meaning “sign your land away”.

Our Phase V *Parthenium* project scales up the rearing and release of the two approved bio-control agents, the leaf-feeding beetle *Zygotogramma bicolorata* and the stem-boring weevil *Listronotus setosipennis* in *Parthenium*-infested areas of Ethiopia. We can then evaluate the establishment and impact of these related agents on *Parthenium*, crops, and biodiversity.

This project is evaluating new *Parthenium* bio-control agent, *Smicronyx*, for their safety to non-target plant species under quarantine and, if specific to the weed, will seek a permit for their release.

Parthenium Achievements to Date

- Established the first official quarantine facility and weed biological control program and research facility in Ethiopia, the Ambo Quarantine Facility.
- Created a network of scientists from Australia, India, the United States, and Eastern and Southern Africa to combat *Parthenium*.
- Compiled and mapped data from parthenium surveys in Botswana, Ethiopia, Kenya, South Africa, Swaziland, Tanzania, and Uganda, showing the weed to be much more widespread than previously recorded.
- Tested host ranges of two biocontrol agents for parthenium at Ambo.
- Supported seven M.S.-seeking graduate students, three of them female. All of them have graduated with thesis projects on *Parthenium*.
- Trained five Ethiopians in South Africa in rearing and testing of biological control agents and quarantine procedures.

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General

The IPM Innovation Lab is housed in the Office of International Research, Education, and Development, a university-wide office at Virginia Tech that supports the university’s international efforts in learning, discovery, and engagement. With a portfolio of close to \$100 million, the office manages projects in 30 countries and partners with 80 NGOs, research organizations, private sector concerns, and governmental organizations. The office comprises a staff of 30 people who are well-versed in handling complex, multimillion dollar projects.

Funding

Project funding comes from the U.S. Agency for International Development (USAID).