

IPM IL Trip Report

Country Visited: Ethiopia

Dates of Travel: May 10 to 19, 2017

Travelers' Names and Affiliations: Dr. Wondi Mersie, Virginia State University (VSU)

Purpose of Trip: to assess activities at bioagent rearing sites located at Guder (Ambo University) and Wollenchiti.

Specific objectives of the trip were to:

- (i) To visit the bioagent mass rearing sites at Guder and Wollenchiti and assess the status of each biological agent.
- (ii) To discuss with staff about the challenges and opportunities at each rearing site.
- (iii) To confer with partners about the progress of bioagent rearing and the coming year work.
- (iv) To review the progress of the rearing activities at each site and if necessary make changes on the procedures followed to raise parthenium stock and rear *Zygogramma* as well as *Listronotus*.
- (v) Visit sites where *Zygogramma* was released and see the conditions of the bioagent.
- (vi) To identify potential field sites for bioagent release during the coming season.
- (vii) Release *Zygogramma* and *Listronotus* at parthenium infested fields.

Sites Visited: Addis Ababa (Ethiopian Institute of Agricultural Research), Wollenchiti, Ambo University (Guder Campus), Koka parthenium infested fields.

Description of Activities/Observations:

Itinerary:

May 10: Traveled to northern Virginia to spend the night for the morning flight.

May 11: Fly from U.S.A. to Addis Ababa, Ethiopia

May 12: Arrived in Addis Ababa, Ethiopia.

May 13: Met Ms. Sintu (Lidya) Alemayhu, VSU's Parthenium Project Coordinator in Ethiopia. Travelled to Wollenchiti to meet the workers at the rearing facility and examine the statuses of the *Zygogramma* and *Listronotus* cultures. Visited the sites where *Zygogramma* was released in July 2016. Suggestion were made on how to grow

quality parthenium stock to rear the bioagents and improve the handling of the agents. Delivered supplies brought from U.S. for rearing the bioagents. Traveled to Koka (60 miles southeast of Addis Ababa on the road to the city of Hawassa) to see potential release sites for the bioagents.

May 14: Returned to Wollenchiti rearing facility. Met staff who came from Haramaya University, Birhanu Mengistu and Dagim Aregaye for training on rearing *Zygogramma* and *Listronotus*. They were also given hands-on training on growing parthenium for bioagent rearing.

May 15: Travelled to Guder to visit the rearing facility and confer with staff who work there. The rearing facility is located on a satellite campus of Ambo University (AU) at Guder. Met AU faculty who are collaborating on the parthenium project and held discussion with Dr Mulugeta Negari, Dean of the College of Agriculture and Veterinary Science. Met Tinsae Eshetu, an M.S. student supported by the Parthenium Project and discussed the progress of her thesis research. Visited the cages installed outside to monitor the effect of *Zygogramma* on parthenium. Met with staff at the rearing site and discussed the challenges they face. Delivered supplies brought from U.S. for the rearing site. Visited the sites around Ambo where *Zygogramma* was released in 2016. Checked parthenium plants at the site for any adult, larva or egg of *Zygogramma*. Returned to Addis Ababa late in the afternoon.

May 16: Traveled to Koka and released 1000 adults of each of *Zygogramma* and *Listronotus* on the borders of an irrigated vegetable field. The site has a heavy infestation of parthenium with most of the plants at the flowering stage. The soil was moist and parthenium was actively growing. The agents were released about 50 ft apart and all the necessary parameters at the site were recorded. Mersie was joined by Sintu Alemayehu, Birhanu Mengistu and Dagim Aregaye at the release site.

May 17: Met Sintu Alemayehu, Parthenium Project Coordinator to further discuss the implementation of objectives. Extensive discussion was held on choosing release sites and securing them to allow the bioagents complete at least one cycle before the surrounding environment is disturbed by livestock or humans. The discussion also covered staff training and the challenges faced in rearing both bioagents during the dry season.

May 18: Met Dr. Kassahun Zewide, Parthenium Project Coordinator at EIAR. The discussion covered topics that included the possibility of using Ambo Research Center

greenhouses to increase *Listronotus* during the cold months. Mersie also met Tesfay Amare, a weed scientist at Ambo University. The two discussed about the involvement of Ambo University in the upcoming July Parthenium Project meeting. The discussion also covered ways to expand the on-going rearing of the two bioagents at Guder.

Traveled back from Addis Ababa to U.S.

Training Activities Conducted: no formal training session was organized on this trip.

Suggestions, Recommendations, and/or Follow-up Items:

Suggestions and recommendations were provided on how to produce quality parthenium stock for rearing the bioagents on a regular basis. Staff have been instructed to seed and transplant parthenium every week. They are also asked to fertilize and water the potted parthenium seedling on regular bases to produce quality stock for rearing. Recommendations were also made on how to increase the number of adult *Zygogramma* and *Listronotus* reared at each site.

List of Contacts Made:

Name	Title/Organization	Contact Info (address, phone, email)
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