

IPM IL Trip Report

Country Visited: Ethiopia

Dates of Travel: June 29 to July 15, 2017

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

Purpose of Trip: to conduct a planning meeting for the parthenium project and participate in the IPM IL Project PI committee meeting.

Specific objectives of the trip were to:

- (i) To confer with partners and plan the activities of the Parthenium Project for FY2018;
- (ii) To participate in the IPM IL Program Coordinating Committee meeting;
- (iii) To discuss with partners about the progress in implementing the objectives of the Parthenium Project;
- (iv) To review the progress of the rearing activities in Ethiopia and if necessary make changes on the procedures followed to raise parthenium stock and rear the bioagents, *Zygothrips* as well as *Listronotus*.

Sites Visited: Addis Ababa, Hawassa, Haramaya, Wollenchiti, Ambo University (Guder Campus), Koka.

Description of Activities/Observations:

Itinerary:

June 29: Traveled to northern Virginia to spend the night for the morning flight.

June 30: Fly from U.S.A. to Addis Ababa, Ethiopia

July 1: Arrived in Addis Ababa, Ethiopia

In the afternoon of July 1, I visited the Wollenchiti rearing facility and conferred with Ms. Sintu (Lidya) Alemayhu, VSU's Parthenium Project Coordinator in Ethiopia. Met the

workers at the rearing facility and examined the statuses of the *Zygogramma* and *Listronotus* cultures.

July 2: Fly from Addis Ababa to Dire Dawa

Drove from Dire Dawa to the Haramaya University campus to visit the bioagent facility and see the conditions of the *Zygogramma* and *Listronotus* cultures. Discussions were held with the workers about the future planned activities. The sites where *Zygogramma* was released in 2016 were also visited and additional locations for future release were identified. At the time of the visit, parthenium was emerging and it was at seedling stage. Held discussion with staff who at the rearing site on challenges faced in rearing and about potential solutions. Drove back to Dire Dawa in the afternoon to spend the night for next day flight.

July 3: Fly back to Addis Ababa

July 4: Traveled to Ambo University campus at Guder with Ms. Lorraine Strathie from South Africa to visit the bioagent rearing facility and confer with the workers there. The rearing facility is located on a satellite campus of Ambo University (AU) at Guder. The *Zygogramma* rearing at Guder has progressed well. Large numbers of *Zygogramma* adults were produced at Guder that will be released in different parts of Ethiopia. *Listronotus* is also reared at Guder in large number. The quality of the parthenium stock has also improved considerably. This improvement in the production of parthenium stock has enabled staff to produce large numbers of both bioagents. During the visit, recommendations were made to staff on how to further improve the rearing of both bioagents.

July 5: Parthenium Project Planning Meeting at Nexus Hotel Addis Ababa, Ethiopia

The meeting started at 8:30 am. There were sixteen participants and thirteen oral presentations. The presentations focused on the biological control of parthenium in eastern and southern Africa. There were also presentations on the impact of controlling parthenium on the life of rural women as well as its distribution in Ethiopia. Drs. Rubin and Yaacoby also made presentations on the distribution and impact of parthenium in

Israel. At the end of the presentations, there was a discussion on next year's project activities as well as lessons learned. It was agreed to intensify the rearing and release of *Zygogramma* and *Listronotus* in Ethiopia and Tanzania. The group also pledged to help Ugandan colleagues in securing the necessary permits to introduce the two bioagents to their country. The meeting ended at 5:30 pm.

July 6: Traveled to Ambo to visit bioagent rearing facility located at a satellite campus of Ambo University (AU) at Guder. Most of the parthenium project planning meeting participants traveled to Guder to see the facility. The group was welcomed at Guder by Dr Mulugeta Negari, Dean of the College of Agriculture and Veterinary Science. He reiterated the commitment of Ambo University to the successful implementation of the Parthenium Project. Dr. Mulugeta indicated that the establishment of the rearing facility at Guder spurred the initiation of a course on biological control of pests in the College. The visitors were briefed on the procedures followed to rear each agent and saw first-hand how the insects are cultured. After the visit to the rearing facility the group traveled to the compound of a nearby hospital where *Zygogramma* and *Listronotus* were released in June 2017. The visitors saw adults, larvae as well as eggs of *Zygogramma* on parthenium plants. The group then traveled to the main campus of Ambo University to visit with the President, Dr. Tadesse Amente. Dr. Tadesse discussed the importance of the collaboration between Ambo University and the Parthenium Project and expressed his continued support for the on-going work at Guder. The group returned to Addis Ababa after lunch.

July 7: Traveled to Wollenchiti to visit bioagent rearing facility located in the compound of a Farmers Cooperative office and warehouse.

The group traveled early in the morning to Wollenchiti and was greeted by Wondi Mersie who gave a briefing about the facility. The group met the staff members who rear *Zygogramma* and *Listronotus* at the site. Staff demonstrated how each bioagent is reared and how the cultures are maintained. The visitors asked questions about the daily operation of the facility and were given answers by staff.

In the afternoon, the visitors traveled from Wollenchiti to Koka to visit a farm where both *Zygogramma* and *Listronotus* were released on May 16, 2017. The group observed adult,

larvae and eggs of *Zygogramma* on the leaves of parthenium. The visitors also saw parthenium plants defoliated by the adult and larva of *Zygogramma*. The group returned to Addis Ababa late in the afternoon.

July 8: The day was spent in Addis Ababa catching up with emails and making preparation for Monday meeting.

July 9: Travel to Koka

Wondi Mersie along with Parthenium Project staff, Sintu Alemayehu and Tesfay Amare traveled to Koka to visit the farm where *Zygogramma* was released in May 2017. At the site, a discussion was held with the farmer who owns the farm about the security of the released bioagents. The farmer agreed to leave the site of the release undisturbed so that the bioagents can reproduce without intrusion. In return, the Parthenium Project will compensate the farmer for losing the use of the land for a year.

July 10: Attended and participated in the IPM Innovation Lab Joint Meeting of the Technical Advisory Committee and Project PIs. The meeting started at 9:00 am with presentations by Dr. R. Muniappan from IPM IL, Dr. John Bowman from USAID, Ms. Faith Bartz Tarr from USAID Mission in Ethiopia, and Dr. Guru Ghosh from Virginia Tech. These presentations covered the accomplishments of the IPM IL, the expectations of USAID, collaboration with the USAID Mission in Ethiopia and the future outlook for USAID-funded projects.

At 1:00 pm I made an oral presentation on Biological Control of the Invasive Weed *Parthenium hysterophorus* in East Africa. The presentation covered the accomplishments and challenges faced by staff in implementing the Parthenium Project in East Africa. Pursuant to the presentations, there was a question and answer session regarding the rearing and release of the bioagents in the coming fiscal year. The role of CABI in the implementation of the project was also discussed.

All the IPM IL project PIs made presentations and the meeting lasted the whole day.

July 11: In the morning I attended the Program Coordinating Committee meeting. The project PIs met in the morning to discuss issues that affect the implementation of project

objectives. There was also a discussion on the budget allocated to each project. Possible solutions to the challenges faced by the PIs were discussed at the meeting. Later in the morning, the Project PIs and members of Technical Advisory Committee (TCA) met and exchanged ideas on how to effectively advance the goals of the IMP IL. The chair of the TCA made comments about the progress of each IPM IL project. The comments included ways to improve the implementation of objectives and actions that needed to be taken by each PI in the coming year.

In the afternoon of July 11, members of the TCA and Project PIs traveled to Wollenchiti to visit the parthenium bioagent rearing facility. The members were welcomed by Wondi Mersie, Parthenium Project PI at facility. The group was also welcomed by area farmers, a development agent and the region's crop protection coordinator. Dr. Mersie introduced the Parthenium Project staff that work at the rearing facility and explained the work that goes on at the site. He also answered questions from the visitors about the impact of parthenium on Ethiopia's agriculture and the management of the facility. Project staff demonstrated the procedures followed in rearing *Zygogramma* and *Listronotus* at the site. The visitors were briefed on the challenges faced in rearing the bioagents year-round.

The group traveled from Wollenchiti to Debre Zeith late in the afternoon to spend the night there.

July 12: Travel to Hawassa

In the morning of July 12, members of TCA and Project PIs traveled from Debre Zeith to Hawassa to visit field trials conducted by Rice, Maize, and Chickpea IPM and Vegetable Crops IPM in East Africa Projects.

In the afternoon of July 12, the group visited a farm where an IPM management practice to reduce the infestation of corn stock borer was implemented. This management practice known as "Pull and Push" is demonstrated in corn field outside the city of Hawassa. A ceremony was held to recognize farmers who implemented this practice in the field. These farmers received certificates to acknowledge their participation in the program. The group returned to Haile Resort and Hotel at Hawassa to spend the night there.

July 13: Travel to Hawassa University (HU) campus and Addis Ababa.

The group left in the morning for the HU campus. Dr. Ferdu Azerefegne, an entomologist at HU and a partner on the Vegetable Crops IPM in East Africa Project briefed the group on the on-going research. The goal of the research and the demonstration is to reduce the number of insecticide applications on vegetable crops especially on onion and cabbage. After the briefing at the HU campus, the group headed towards Addis Ababa and had lunch at Langano Hotel. After lunch, the group proceeded towards Addis Ababa with a stop at a farm where IPM practices are implemented. The farm is located outside of the town of Ziway and Dr. Ferdu explained the practices implemented at the farm to reduce the use of insecticides on cabbage and onion.

On their way to Addis Ababa, Drs. Muniappan and Mersie stopped at farm in Koka where *Zygogramma* and *Listronotus* were released in May 2017. Adults, larvae and eggs of *Zygogramma* were seen on parthenium plants. Parthenium plants defoliated by *Zygogramma* were also observed in this farm. After the farm visit, the two returned to Addis Ababa.

July 14: Dr. Mersie met Mr. Daniel Sumner, a gender specialist at IPM IL over breakfast. The two discussed how the Parthenium Project can help in conducting a survey on the effect this invasive weed on the lives women living around Wollenchiti. Mersie offered the assistance of Parthenium Project in conducting the research.

Later in the morning, Mersie went to the Ethiopian Institute of Agricultural Research (EIAR) Headquarter to meet Dr. Adugna Wakjera, Deputy Director General of EIAR and Dr. Kassahun Zewide, a weed scientist to discuss the implementation of the Parthenium Project. The discussion covered the current status of the Parthenium Project and the scaling-up of the bioagent releases in different parts of Ethiopia. Dr. Adugna indicated that EIAR will do whatever it can to support the rearing and release of the bioagents in Ethiopia.

On the evening of July 14 Mersie flew 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 by the attendees of the meeting on July 5 on how to advance the goal of the Parthenium Project. Recommendations and suggestions included on how to produce quality parthenium stock for rearing the bioagents on a regular basis, rearing of the bioagents and how to select release sites. It was agreed that *Zygogramma* should be released in areas that receive rainfall above 800 mm per year and a relatively long wet season. Furthermore, it was agreed to release *Zygogramma* at sites with heavy soil that remain moist for a relatively long time during the dry season. *Listronotus* will be released both in wet and dry areas in the coming year. The importance of monitoring the establishment and spread of the released agents was also emphasized at the meeting.

Attendees of the Parthenium Project Planning meeting on July 5, 2017 at Nexus Hotel, Addis Ababa, Ethiopia

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