



"Sensitizing workshop on *Tuta absoluta*: An impending threat to tomato production"

Workshop Report



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EXECUTIVE SUMMARY:

The Integrated Pest Management Innovation Lab (IPM IL) conducted a workshop entitled '**Sensitizing workshop on *Tuta absoluta*: An impending threat to tomato**', held at the Entrance Café, Lalipur, Nepal on March 13, 2015. The workshop was attended by 47 participants including major scientists and experts from different organizations e.g. DoA, NARC, university professors, private companies, USAID representative and other related stakeholders. It was convened with a goal to educate stakeholders regarding the impending threat of *Tuta absoluta* and the importance of monitoring to prevent its invasion and spread.

As a result of the workshop, participants learned the insect profile of *T. absoluta* — its biology, plants affected by it, its geographical distribution, and its economic impact; monitoring and control methods; and heard about the detection, and management of recent outbreaks. The workshop was also successful in developing a broad-based agenda including topics related to applied research needed introducing new technologies, field applications, and public awareness. Additionally, the workshop outlined recommendations to prevent the invasion into Nepal and to check its spread once reported.

INTRODUCTION AND BACKGROUND:

This report presents the conclusions and recommendations from the 'Sensitizing workshop on *Tuta absoluta*: An impending threat to tomato production', held in Lalitpur on March 13. Purpose of this workshop was to educate stakeholders regarding the impending threat of *Tuta absoluta* and the importance of monitoring to prevent its invasion and spread.

Tomato is the most important vegetable crop in Nepal. The tomato leafminer, a native of South America, was accidentally introduced in to Spain in 2006. Since then it has invaded to other European, North African, and Mediterranean countries. Now that it has just been reported in India, there are no natural barriers to its spread into Nepal. It is a devastating pest of tomato, and if no control measures are taken, it will likely cause up to 80-100% yield losses. The exceptional speed and extent to which it has invaded several countries in Europe, Asia and North Africa leads us to believe that it will soon invade Nepal. Tomato is the preferred host even though it can develop on other solanaceous host plants such as eggplant, potato, pepper, tobacco, nightshade, and Jimson weed.



As expected, Tuta absoluta reported in India recently.

The workshop was hosted by the International Development Enterprises (iDE Nepal) funded through the Feed the Future Integrated Pest Management Innovation Lab. The program was chaired by Dr. Min Nath Poudyal, Planning Director, Nepal Agriculture Research Council (NARC). Forty seven participants attended, including major scientists and experts from different organizations e.g. DoA, NARC, University professors, private companies, USAID representative and other related stakeholders. The list of workshop participants is attached in the Annex. Dr. Muni Muniappan gave a key note speech on *Tuta absoluta*- its biology, plants affected by it, its geographical distribution, and its economic impact; monitoring and control methods; and the detection, and management of recent outbreaks.

WORKSHOP METHODOLOGY

Workshop Process:

The overall approach to the workshop was participatory and consultative in nature. The workshop process ensured that the participants were fully involved through presentations, group discussions and 'question and answer' sessions. The workshop started with an opening session which was



Participants from the workshop

followed by key note address, and a presentations from IPM IL Asia Program Coordinator. Finally the participants were split into four (4) parallel working groups. This was followed by group presentations and, question and answer sessions and an official closing ceremony by program chair.

Workshop Proceedings:

The workshop opened with introductory and welcome remarks by Dr. Luke Colavito, iDE Nepal country director. Meanwhile, he also presented the workshop objectives and clarified the focus of the workshop to the delegates. Following the introductory remarks, Dr. Muni Muniappan gave a key note speech on *Tuta absoluta*. The workshop was chaired by Dr. Min Nath Paudyal, whereas Dr. Yubak Dhoj G.C, Director General, Department of Agriculture was the chief guest.

The key note address was given by Dr. Muni Mu niappan, Director, IPM IL, Virginia Tech/USA, highlighting why the threat of '*Tuta absoluta*' is so urgent and why it's important for Nepal to react soon. He mentioned the fact that "*Tuta absoluta* or Tomato Leaf Miner (TLM)" has been prominent in the news since 2006 as it emerged in Europe where it caused serious damage to host crops. The pest originates from South America and has successfully invaded parts of the EU, North Africa and some west and east African countries and very recently reported from India. Dr. Muni also raised concerns as it can cause serious yield losses of 50 to 100% and it can rapidly develop resistance to pesticides. He specially mentioned that considering its rate of spread around the world, this pest may be detected in Nepal in less than a year's time. He emphasized the prevention, early detection and rapid response which entails a coordinated approach between DoA, NARC, private industries and other related stakeholders to ensure that growers are protected as much as possible from this pest.



Dr. Muniappan presenting key note address

Dr. G.C, in his remarks, speaking on behalf of DoA, applauded iDE and IPM Innovation Lab for convening the workshop on the serious threat of '*Tuta absoluta*', which is supposed to result in havoc once it enters into Nepal. Noting '*Tuta absoluta*' as a serious trans-boundary problem, he emphasized and suggested related stakeholders to be vigilant to stop the invasion or check its spread once



Dr. Y.D G.C, DG, DoA giving his remarks

it invades. Meanwhile, he mentioned that to tackle this problem there needs to be a holistic approach, involving wider stakeholder participation, a sector-wide approach and, indeed regional and international collaboration. He extended appreciation to iDE on this initiatives and expressed his commitment on behalf of DoA in addressing the challenge in the country.

Group Work: A brief guideline was mentioned to guide the groups' discussions and presentations. The participants were divided in four (4) groups and were requested to come up with recommendations and strategies to a) stop the invasion of the insect and, b) to check its spread once it invades. Later, one member from each group presented their discussion points and recommendations, which are summarized in the next section.



Group work

Dr. Min Nath Paudyal, in his closing remarks commended the organizers and participants for the excellent deliberation which produced an action plan against *Tuta absoluta* emanating from the four working groups. He noted that the identified recommendations and suggestions if implemented well are well aligned to combat the insect invasion. Commenting on the shared experiences he noted that participants have learned a great deal from Dr. Muni's presentation. He urged scientists, and other stakeholders, to utilize the outcome of the workshop to deal effectively with the impending threat of '*Tuta absoluta*'.

RECOMMENDATIONS/SUGGESTIONS ON THE WORKSHOP:

This section summarizes the recommendations made by the four working groups. These recommendations were discussed and revised in plenary sessions attended by all workshop participants.

- Public awareness should be raised through multimedia, such as TV, newspaper, and radio in order to mobilize the actions of government and non-government stakeholders.
- There were some concerns on that the *Tuta absoluta* might have already invaded Nepal and we weren't able to trace or it. Therefore, an extensive and thorough monitoring was suggested. Field monitoring can be done using pheromone traps.
- An Awareness campaign should be initiated from different sectors: a) Plant Quarantine division should sensitize the problem at plant quarantine check posts, b) Department of agriculture through Regional and District officers, c) Leveraging Farmers field Schools to make farmers aware and, d) NGOs taking lead in their respective areas.
- As Nepal imports a lot of vegetables from India including Tomato, it should be important to start monitoring around marketing centers (whole sellers, retailers, and collection centers). They should thoroughly check for any presence of larvae and pupae.

- Cross country information sharing is important between India and Nepal. Therefore, establishing such a network to trace the insect should play an important role.
- Government should build a Capacity building programs for proper detection and identification of pest at different levels, for scientists, technicians and the farmers.
- Field kits should be developed and disseminated for proper identification and leveling of pests and its natural enemies.
- Through proper training, scientists and other quarantine officers should have a clear understanding on the characters to distinguish the various leaf miner species that are also pests of tomato to prevent any confusion.
- Preparation of a visual guide for identification of the pest and creating awareness among staff working in Departments and farmers.

Researchable issues

- Studies on biology, distribution, host range, extent of damage
- Survey and testing the effectiveness of various natural enemies
- Studies on biology and host range
- Studies on host plant resistance
- Studies on combination of several management practices
- Developing effective monitoring systems of parasites, parasitoids and predators in collaboration with DoA, NARC and other stakeholders.
- Studies on cultural control practices like soil solarization and destruction of crop debris before and after the crop season

CONCLUSIONS

The workshop met its objectives in that a very positive response was received from the participants on the usefulness of the workshop. It addressed *Tuta absoluta* across regional disciplines in different agricultural, horticulture, market place and local environment issues. This symposium greatly increased awareness concerning the area-wide approach for *Tuta absoluta* history, biology, ecology and control programs. Meanwhile, besides creating awareness, outcomes include clarifying the current state of knowledge of *T. absoluta* and identifying critical issues where future emphasis should be directed to. The workshop was also successful in developing a broad-based agenda including topics related to applied research introducing new technologies, field applications, and public awareness.

APPENDIXES

Workshop Agenda

Sensitizing workshop on "*Tuta absoluta*": An impending threat to tomato production.

March 13, Friday, 2015

Organized by: Integrated Pest Management Innovation Lab, Nepal/iDE Nepal

Venue: Entrance Café, Bakhundole, Lalitpur

KEY NOTE SPEAKER

Dr. Muni Muniappan, Director, IPM Innovation lab, Virginia Tech University, USA

Program Agenda

	Event
	Chair: TBD
10:00-10:30	Participants registration with tea/coffee
10:30 - 10:35	Chair of the program
10:35- 10:45	Welcome remarks and overview of IPM IL Nepal– Dr. Luke Colavito, Country Director, iDE Nepal
10:45 -11:45	An overview on <i>Tuta absoluta</i> , its origin and distribution, economic impact, monitoring and management strategies, and detection and management of recent outbreaks- Dr. Muni Muniappan, Director, IPM IL, Virginia Tech
11:45- 12:10	Working groups to develop strategies to monitor and check the spread of <i>T. absoluta</i> into Nepal
12: 10- 12:30	Group Presentation
12:30-12:40	Future of IPM IL activities in Nepal and other South Asian countries incorporating <i>T. absoluta</i> management- Dr. E.A. “Short” Heinrichs, Asia Coordinator, IPM IL
12:40-12:50	Remarks (Entomology Division/NARC, PPD, USAID)
12:50- 1: 00	Closing Remarks from Chairperson
1:00-2:00	Lunch Break

Workshop Flyer

Sensitizing workshop on *Tuta absoluta* : An impending threat to tomato production

Entrance Cafe, Bakhundole, Lalitpur
10:00AM- 1:00 PM, March 13, 2015

OBJECTIVE

The purpose of this half-day workshop is to educate stakeholders regarding the impending threat of *Tuta absoluta* and the importance of monitoring to prevent its invasion and spread.



KEY NOTE SPEAKER:

Dr. Muni Muniappan, Director,
IPM Innovation Lab, Virginia Tech University

BACKGROUND

Tomato is the most important vegetable crop in Nepal. The tomato leafminer, a native of South America, was accidentally introduced to Spain in 2006. Since then it has invaded to other European, North African, and Mediterranean countries. Now that it has just been reported in India, there are no natural barriers to its spread into Nepal. It is a devastating pest of tomato, and if no control measures are taken, it will likely cause up to 80-100% yield losses. The exceptional speed and extent to which it has invaded several countries in Europe, Asia and North Africa leads us to believe that it will invade Nepal soon. Tomato is the preferred host even though it can develop on other solanaceous host plants such as eggplant, potato, pepper, tobacco, nightshade, and Jimson weed.

OUTCOME

Participants will: learn the insect profile of *T. absoluta* — its biology, plants affected by it, its geographical distribution, and its economic impact; learn monitoring and control methods; and hear about the detection, and management of recent outbreaks

CONTACT

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FROM THE AMERICAN PEOPLE



VirginiaTech
Invent the Future

iDE नेपाल
Nepal



NARC

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