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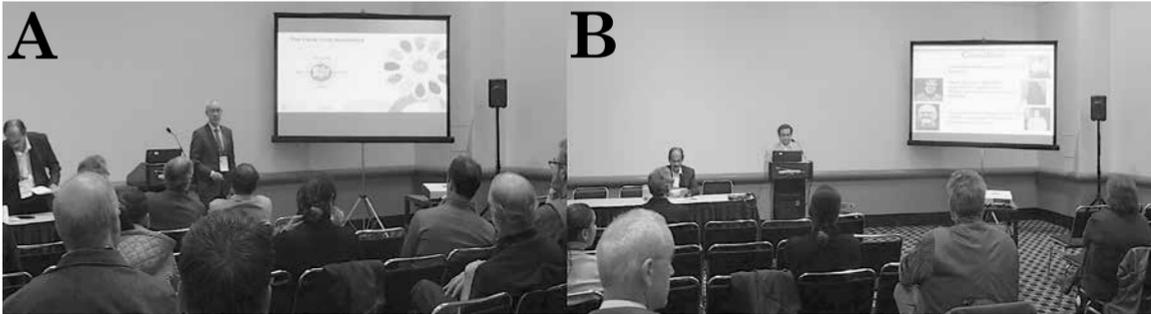
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## Pulse entomology experts exchange ideas

By Gadi V.P. Reddy, Govinda Shrestha, Anamika Sharma, Ramadevi Gadi and Deb Miller, MSU Western Triangle Agricultural Research Center, Conrad, Montana



Dr. Jeff Rumney (A), Director of Research, USA Dry Pea Lentil Council speaking about “USDADPLC - Importance of pulse crops and management tools and resources”. Dr. Hector Carcamo (B) from Agriculture and Agri-Food Canada, Lethbridge, AB, Canada giving plenary lecture on “Towards a comprehensive decision support system and management package of pulse crop pests — The pea leaf weevil case study”.

Pulse crops usually refer to those leguminous plant species that are harvested primarily for dry seed, and used for both human food and animal feed. The most commonly grown pulse crops in US and Canada are pea, dry bean, lentil, and chickpea. In North America, pulse production acres have increased enormously within the last two decades, and at present it is an integral part in most of the cropping systems. The pulse crops not only provide number of nutritional benefits (for example, high fiber, low fat, high protein, and low glycemic index) that positively affect human health, but also promote biodiversity, improve soil health, and generate income from local and global markets.

As per Montana pulse production annals, there was virtually no pulse production until the late 1990s, but now nearly 50% Montana cropland is cultivated annually with pulse crops. According to data for 2016 from the Montana Department of Agriculture pulse crops totaled above 1.2 million acres in Montana. Presently, Montana is one of the leading pulse producers in the United States and ranks #1 in the production of pea, producing 48% of US field pea. The similar trends also exist in other neighboring states such as North Dakota, Washington, and Idaho. However, with the increase in pulse crop acres, the incidence of insect pests of these crops is also increasing in this region. In general, insect pests that are known to inflict serious damage to pulse crops include: pea aphids, leaf hoppers, army worms, cut worms, grass hoppers, lygus bugs, pea leaf weevils, pea weevils, seed corn maggots, and wireworms. The yield losses due to insect pests are usually considerable higher in pulse crops than in the cereal and other field crops.

To combat these insect pest problems, several researchers representing US, Canada, India, Australia and various countries are working in developing pulse insect pest management strategies. The most notable research advancement in recent years include chemical control, bio-based insecticides, cultural control and biological control on pulse insect pests’ management. However, there is no specific or compiled information currently available on research based pulse insect pest management practices for pulse producers, pest control advisors, extension agents, and other relevant stakeholders.

Dr. Gadi VP Reddy took a first initiative to organize a Member Symposium on “Pulse Crop Insect Pests and Their Management” during the 68th Annual Meeting of the Entomological Society of America

(ESA) that was held in Denver, Colorado from November 05–08, 2017. The symposium was on November 07, 2017 from 09–11:45 am. This symposium attracted 10 speakers and about 50 attendees from pulse growing areas and researchers. Information regarding various aspects including biology, ecology and management practices for pulse insect pests were discussed. An exclusive discussion session at the end of talks at the symposium provided the opportunity for the researchers to exchange ideas and develop collaborative research projects. The information on the various speakers and details are available at the society link, <https://esa.confex.com/esa/2017/meetingapp.cgi/Session/29804>

To start with, Dr. Héctor Cárcamo from Agriculture and Agri-Food Canada, Lethbridge, AB, Canada gave a plenary lecture on “Towards a comprehensive decision support system and management package of pulse crop pests – The pea leaf weevil case study”. This was followed by Dr. Janet Knodel, North Dakota State University on “Insect pests of pulse crops in North Dakota”, Dr. Sanford Eigenbrode, University of Idaho on “Insect-transmitted viruses in pulse crops”, Dr. Maya Evenden from University of Alberta, Edmonton, Canada on “Semiochemical-based trapping of pea leaf weevil in the Canadian Prairie Provinces”, Dr. Govinda Shrestha, Montana State University on “Role of biopesticides in pea leaf weevil management”, Dr. Anamika Sharma, Montana State University on “Pea weevil: A new pest in Montana”, Dr. Heikki Hokkanen, University of Helsinki, Finland on “Buffering pulse cropping systems against outbreaks of *Sitona* weevils”, Dr. John Gavloski from Manitoba Agriculture, Carman, MB, Canada on “Integrated pest management in pulse crops: How far have we come and what is still needed”, Dr. Stefan Jaronski, USDA-ARS, Sidney, MT on “Microbial agents in pulse crops – Do they have a role? Where? How?”. The final speaker, Dr. Jeff Rumney, Director of Research, USA Dry Pea and Lentil Council, Moscow, ID spoke on “USDADPLC - Importance of pulse crops and management tools and resources”.

As well, all the speakers were invited to contribute review articles on the topic they have presented. These submitted reviews are being edited by Dr. Reddy and will be published in the ESA flagship journal *Annals of the Entomological Society* as a Special Issue on Pulse Entomology that will include various aspects of biology, ecology and management of insect pests on pulse crops.



Drs Govinda Shrestha (C) and Anamika Sharma (D) from WTARC speaking about the “Possible Role of Biopesticides in Managing the Pulse Insect Pests” and “New Montana Pulse Insect Pest-Pea Weevil”, respectively.