SDSU researchers investigate rootworm resistance

“Both corn rootworm resistance to Bt corn and unexpected damage to Bt corn are primary concerns for corn producers and will have significant impact on corn production in the coming years,” says Ada Szczepaniec, an assistant professor and South Dakota State University Extension entomologist with the Plant Science Department.

To address those concerns, one of Szczepaniec’s current research projects includes monitoring the incidence of resistance of corn rootworms to Bt corn hybrids and unexpected performance issues of Bt corn. She has established several on-farm experiments testing effectiveness of different Bt corn hybrids in sites that have had high corn rootworm populations in previous years. Additionally, Szczepaniec is involved in a recently funded project that will evaluate the use of cover crops to manage corn rootworms.

“These research and extension projects will help illustrate the extent of this issue in South Dakota, involve producers and crop consultants in disseminating the findings, and facilitate flow of information between SDSU, other institutions and governmental organizations working on this problem. We want to ensure producers in the state have access to the latest recommendations and updates,” Szczepaniec says.

Another research project she is involved with is focused on assessing the non-target — or unintended — effects insecticide seed treatments may have on unsusceptible pests and beneficial insects.

“Insecticide seed treatments are widely used in soybean, corn and wheat production in South Dakota, and we are studying how these insecticides affect non-target organisms, and directly and indirectly impact environmental and economic costs of raising crops. This is a collaborative research project funded by the U.S. Department of Agriculture and South Dakota Soybean Council, and includes faculty in the Plant Science Department working in the areas of entomology, plant breeding, plant pathology, as well as faculty from other institutions,” she explains.

See more at: Ag Week article

Announcements

Good News!

Congratulations to David Clay, who was chosen to receive the 2014 Outstanding Researcher award at the Celebration of Faculty Excellence.

New Graduate Students

Jesse Cameron (MS) - Peter Sexton
Krishna Acharya (MS) - Emmanuel Byamukama
Wirat Pipatpongpinyo (PhD) - Xingyou Gu
Deepak Joshi (MS) - David Clay
Meng Ge (MS) - Arvid Boe
Alex Bich (PhD) - Sharon Clay
Juan Perilla (MS) - Paul Johnson
Graig Reicks (PhD) - David & Sharon Clay
Brett Owens (MS) - Buyung Hadi
Nick Schiltz (MS) - Gregg Carlson
Ben Parsley (MS) - Arvid Boe
Ahmad Charif (MS) - Xingyou Gu

In Feb, 1964, the Beatles arrived in America
Recap of 2013

Good News!
Gregg Carlson receives F.O. Butler Award for Excellence in Service.
Dwayne Beck is awarded the SD Corn Growers Association MVP for 2012.
Janet Moriles, Stephanie Hansen, David Horvath, Graig Reicks, David Clay and Sharon Clay are awarded Outstanding Paper by the Weed Science Society of America.
Kimberly James opens the SDSU Student Farm at the N.E. Hansen Farm.
Karl Glover is promoted to the rank of Professor.
Leon Wrange is awarded the Malo Teaching Excellence Award.
Doug Malo is selected as Outstanding Teacher by the Agronomy and Conservation Club.
Dr. Sharon Clasen is selected as the July Career Service Employee-of-the-Month.
David Graper is awarded the Fellow of Pi Alpha Xi by the ASHS.
Matthew James and his LA team received a merit award from ASLA.
Michelle Schaefer is selected as the Sept Employee-of-the-Month.
Darrell Deneke is awarded the Distinguished Service Award by the National Association of County Agricultural Agents.
Connie Strunk received two communications awards from the National Association of County Agricultural Agents.
David Graper is presented with the John Robertson Memorial Award by the SD Horticulture Society.

Events
- Southeast Farm Annual Meeting—Jan 29
- Plant Science Chili Cookoff—Feb 8
- High Tunnel Production Workshop—Feb 26
- Plant Science Scholarship Banquet—Apr 28
- Dakota Lakes Research Station Tour—June 27
- Dakota Lakes Field School—June 27-29
- SE Research Station Tour—July 9
- NE Research Station Tour—July 10
- Student Farm Open House—Aug 2
- Golf Outing—Aug 9
- Volga Research Farm Field Day—Aug 13
- “Trick or Trees” Event—Oct 31
- Plant Science Food Drive—Nov 21
- Wreath Making Workshop—Nov 23
- Sioux Falls Organic Agriculture Conference—Dec 2-3
- Music & Mistletoe Holiday Fundraiser Dance—Dec 13

New Employees
Sara Berg—Soil Fertility Product Testing Research Assistant, Dec 2012
Amanda Bachmann—Extension Consumer Horticulture Field Specialist, Pierre, Jan 1
Emmanuel Byamukama—Extension Plant Pathologist, March 22
Karla Hernandez—Forages Extension Field Specialist, Watertown, June 3
Pamela Bartlett—Research Assistant, June 10
David Wright—Plant Science Department Head, July 22
Christopher Graham—West River Agronomist, August 22
Rutendo Nyamusamba—Agronomy Crops Field Specialist, Rapid City, Oct 15
Anthony Bly—Soils Field Specialist, Sioux Falls, Sept 3
Anitha Chirumamilla—Entomology Field Specialist, Rapid City, Sept 16

SDSU Agronomy Short Course Feb. 24-28

SDSU Extension faculty and staff will offer a five-day agronomy short course at the SDSU Extension Regional Center in Sioux Falls (2001 E. 8th St, Sioux Falls), Feb. 24 to Feb. 28.

Morning sessions will include lectures, and afternoon sessions will consist of labs or interactive meetings with Faculty and Extension Staff.

Short Course Topics:
- Dynamics of Environmental Stressors on Yield Components
  - SDSU Extension Agronomy Specialists Nathan Mueller and Christopher Graham; and SDSU Extension Agronomy Field Specialists Ruth Beck and Paul Johnson
- Forage Utilization and Forage Quality
  - Karla Hernandez, SDSU Extension Forages Field Specialist
- The Business of Crops: Risk and Reward
  - Jack Davis, SDSU Extension Crops Business Management Field Specialist
- Agricultural Weed Identification, Control Basics, and Modern Weed Control Issues in South Dakota
  - Darrell Deneke, SDSU Extension IPM Coordinator, and Mark Rosenberg, SDSU Extension Weeds Field Specialist
- Common Diseases of Field Crops and Their Management
  - SDSU Extension Plant Pathology Specialist Emmanuel Byamukama, and SDSU Plant Pathology Field Specialists Connie Strunk and Robert Fanning
- The Devil is in the Detail: Sprayer Calibration and Pesticide Measurement
  - Buyung Hadi, SDSU Extension Pesticide Education Coordinator
- Sustainable Management of Arthropod Pests of Field Crops
  - Ada Szczepaniec, SDSU Extension Entomology Specialist, and Anitha Chirumamilla, SDSU Extension Entomology Field Specialist
- Identifying Soil Health Parameters
  - Anthony Bly, SDSU Extension Soils Field Specialist and Ron Gelderman, SDSU Extension Soils Specialist
- Water Management for Crop Production
  - Chris Hay, SDSU Extension Water Management Engineer
- Weather and Climate Resources for Ag Decision-Making
  - Dennis Toddy, SDSU Extension Climate Specialist and Laura Edwards, SDSU Extension Climate Field Specialist
PSGSA News

The Plant Science Graduate Student Association is celebrating our recent revival with enthusiasm! PSGSA has existed for several years as an unofficial student group. The group gained some momentum last semester by hosting an incredibly well attended writing workshop for graduate students across departments. Then, early this semester, we began the process of forming a constitution and becoming officially recognized by the SDSU Students’ Association. As of February 3, we are an official student organization! Since spring classes started, we’ve had our first open meeting, held official elections, and launched our new seminar series, called “We Talk Science.”

The objective of “We Talk Science” is to expose attendees to advanced laboratory techniques and new technology pertinent to plant science, and promote intra- and inter-departmental collaboration. The semester long theme for this spring is gene silencing. Speakers include faculty and PhD students from SDSU and other universities, as well as individuals from private industry. The two events in February had more than 30 attendees each, all enthused to learn about and discuss the interesting topics of RNAi and zinc finger nuclease technology. The seminars take place every other Tuesday of the month from noon until one o’clock in Northern Plains Biostress, room 067. We welcome students, faculty, and laboratory personnel from all departments, and provide lunch. We hope to see you at our next event on March 4. Mr. Jason Kerkvliet from the SDSU Department of Chemistry and Biochemistry will lead a discussion about CRISPR gene editing.

The Plant Science Graduate Student Association aims to facilitate networking within SDSU and between SDSU and other universities, and be a springboard for innovation and collaboration in the exciting field of plant science. PSGSA is open to any student interested in learning about the diverse aspects of plant science, including agronomy, entomology, horticulture, plant breeding, plant microbiology, plant pathology, soil science, and more. Please be sure to check out our website: http://plantscigsa.wordpress.com/ and Facebook page for upcoming events!

Meet our officers:
President: Rachel Owen, M.S. Student in Soil Science
Vice President: Suresh Damodaran, PhD Student in Plant Microbiology
Secretary: Heidi Myer, M.S. Student in Range Management and Weed Science
Treasurer: Cody Oswald, M.S. Student in Plant Breeding
Public Relations Co-Chairs: Website Management: Karly Henry, M.S. Student in Entomology
Facebook/Social Media Outreach: Rebecca Slatt, M.S. Student in Agronomy and Plant Nutrition
Social Events Chair: Deepak Joshi, M.S. Student in Soil Science
Advisor: Dr. Howard Woodard, Professor of Soil Science

Computational Biology Research Symposium

The second annual ‘Computational Biology Research Symposium’ will be held on March 11th & 12th, 2014 at South Dakota State University (SDSU) with the aim of bringing together researchers developing and utilizing computational biology tools. This year’s keynote speaker is Dr. Blake Meyers, University of Delaware, one of the world leaders in functional genomics and bioinformatics (http://deedee.dbi.udel.edu/meyers_lab/). There will be sessions on bioinformatics, statistics and genomics (March 11th) and multiple hands-on workshops on associated topics (March 12th).

The symposium will greatly benefit everyone who is utilizing / wants to utilize computational tools in biological research or is interested in enhancing their knowledge on such tools. Examples include processing of large scale genomics datasets, extracting quantitative and qualitative information from images including micrographs and modeling of biological data.

Please contact Sen Subramanian (605-688-5623) or Senthil.Subramanian@sdstate.edu if you need additional information about the symposium. We strongly encourage you to participate in the symposium.

The organizers would also like to appreciate and acknowledge the support provided by Bio-SNTR, a South Dakota Research & Innovation Center, Department of Plant Science, Department of Mathematics & Statistics, Department of Chemistry & Biochemistry, Department of Animal Science, and Department of Pharmaceutical Sciences at South Dakota State University, and our external sponsors Fisher Scientific, Regent Instruments and Cisco.
**Plant Science Department**

SAG 244, Box 2207A
Brookings, SD  57007-1096

Phone: 605-688-4600
Fax: 605-688-4602
E-mail: SDSU.Plant.Science@sdstate.edu

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**Plant Science Food Drive**

For the month of March, we will be collecting food items for the Brookings Food Pantry.  
(http://www.brookingscountyfoodpantry.org/)

Please drop off your non-perishable items in the Ag Hall main office room 244, the Plant Science Building main office room 117, or the Biostress building main office room 247. Thank you!

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**Interesting Links**

Looking at soybean ‘nutrient sufficiency range’

Ag Conference Coming To Sioux Falls

New Technology Featured at 2014 Precision Ag Conferences

SE Research Farm—Jesse Hall (Youtube video)

Producers discuss importance of improving soil health

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**Kudos**

**Outstanding Paper Awards.** The Weed Science Society of America honored the following individuals for published papers:

Sam E. Wortman, Adam S. Davis, Brian J. Schutte, John L. Lindquist, John Cardina, Joel Felix, Christy L. Sprague, J. Anita Dille, Analiza H.M. Ramirez, Craig Reicks and Sharon A. Clay for their paper in *Weed Science*: “Local Conditions, Not Regional Gradients, Drive Demographic Variation of Giant Ragweed (*Ambrosia trifida*) and Common Sunflower (*Helianthus annuus*) Across Northern U.S. Maize Belt.” Wortman teaches at the University of Illinois. Davis is with the USDA’s Agricultural Research Service in Urbana, Ill. Schutte teaches at New Mexico State University. Lindquist teaches at the University of Nebraska-Lincoln. Cardina teaches at Ohio State University. Felix teaches at Oregon State University. Sprague teaches and serves as extension specialist at Michigan State University. Dille teaches at Kansas State University. Ramirez works at the Monsanto Scott Learning Center. Reicks is a research associate and Clay is a professor, both at South Dakota State University.

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**Upcoming Events**

Feb 24-28—Agronomy Short Course, Sioux Falls Extension Regional Center

Mar 10-14—Spring Break

Mar 11-12—Computational Biology Research Symposium

Mar 17—Midterm & St. Pat’s Day

Mar 18-19—Western Corn Belt Precision Farming Conference, Sioux Falls Convention Center

Mar 24-Apr 11—Early Registration

Apr 18—Easter Recess