



Bradford Research & Extension Center
University of Missouri-Columbia
 4968 Rangeline Road South
 Columbia, MO 65201
<http://aes.missouri.edu/bradford/>

2008 Crop Injury Diagnostic Clinic



MU photo by Tim Reinbott

July 22-23 & July 24-25

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**University of Missouri-Columbia
 Bradford Research & Extension Center**

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This program is sponsored by University of Missouri College of Agriculture, Food and Natural Resources and University Outreach and Extension

General Information

Purpose of Clinic

This clinic is designed to train or update agricultural professionals in the management of crop health and field crop diagnostics. Participants will have the opportunity to fine tune their skills in diagnosing crop production and pest problems. In addition, the Crop Injury Diagnostic Clinic will focus on hands-on training in the following areas:

- Soil, water and nutrient management
- Precision Agriculture
- Biotechnology and variety development
- Soil Conservation
- Identification of insects and herbicide injury
- Effect of environmental conditions on disease incidents

Program Fee

Cost of each of the two-day clinics is \$150 per person. This registration fee includes instruction, reference materials, noon lunches, refreshment breaks and a dinner on the evening of the first day of the clinic.

Certified Crop Adviser (CCA) Continuing Education Units (CEU)

CEU credit has been applied for under the CCA Program.

Registration

Early registration is encouraged because attendance is limited to 70 people for each clinic. On the attached registration form, mark the preferred date of the clinic you wish to attend and indicate whether you are able to attend the alternate clinic if your first choice is filled. Please rank your preference for all eleven sessions with (1) as your first choice and (11) as your least desired choice. To ensure your first choice of dates, please register early:

- by phone: (573) 884-7945
- by mail
- by fax: (573) 884-5554

Assignment of clinic sessions will be made on July 11, 2008. Registrations postmarked after July 11, 2008, will be charged a \$20 late-registration fee. On-site registrations can only be accommodated if space permits.

Housing

A block of rooms has been reserved at the Quality Inn, 1612 N. Providence Road, for participants of the clinics. Call the hotel directly at (573) 449-2491 and identify yourself with the MU Crop Injury Diagnostic Clinic to receive the special \$53.00 flat rate. Call soon to reserve your room as the block will be released on July 10, 2008. The Quality Inn is located just north of I-70 (exit 126).

Cancellations

All registration fees will be refunded if the Crop Injury Diagnostic Clinic is canceled by the University of Missouri. Written cancellation requests postmarked before July 11, 2008, will be refunded minus a \$20 processing fee. If you fail to attend the program and do not notify Thresa Chism at the Bradford Research & Extension Center at (573) 884-7945, you are liable for the entire fee.

More Information

For additional registration information, please contact Thresa Chism at the Bradford Research & Extension Center, (573) 884-7945 or by e-mail at ChismT@missouri.edu.

For information on the content of the clinic sessions — not registration — please contact Tim Reinbott, Superintendent of the Bradford Research & Extension Center, at (573) 884-7945 or by e-mail at ReinbottT@missouri.edu.

Program Outline for Each Two-Day Clinic

Day One:	7:30 a.m.	Check-in (coffee, juice, donuts, bagels, fruit)
	8:15 a.m.	Introductions and directions
	8:30 a.m. to 5:45 p.m.	Four two-hour sessions and lunch
	5:45 p.m.	Social dinner (free)
Day Two:	7:00 a.m.	Coffee, juice, donuts, bagels, fruit
	7:30 a.m. to 2:30 p.m.	Three two-hour sessions and lunch

Seven two-hour sessions will be held for groups of 15-20 people for sessions selected by the participants. Participants will receive a three-ring binder containing reference material. Enrollment for each clinic will be limited to 70 people.

Directions to the Bradford Research & Extension Center
 From Highway 63 south of I-70, take the Broadway and Route WW exit. Go east on Route WW for 6.5 miles. Turn right on Rangeline Road (look for the sign), and go south for 2 miles. The Bradford Research & Extension Center is on the right at 4968 Rangeline Road South. Look for the Crop Injury Diagnostic Clinic sign at the entrance. For alternative routes check our web site: <http://aes.missouri.edu/Bradford/bdir.stm>

Program Sessions of the Crop Injury Diagnostic Clinic

A. Water Deficit Stress and Drought Tolerance – 2.0 CEU in Crop Production
Felix Fritschi, University of Missouri

After a discussion of basic plant water relations, we will explore plant traits that influence the sensitivity of plants to water deficit stress. Ongoing efforts to improve drought tolerance will be discussed with particular attention to mechanism-based approaches. In addition, participants will learn about methods utilized to assess plant water relations.

B. Nutrient Deficiencies and Soil Properties Related to Organic Matter – 2.0 CEU in Nutrient Management
Will McClain and Randy Miles, University of Missouri

Participants will learn how to identify key nutrient deficiency and toxicity symptoms and the physiological responses associated. Soil organic matter and its importance to soil structure, soil water availability and other soil properties will be discussed.

C. Land Use Management for Conservation and Wildlife – 2.0 CEU in Crop Management
Bill White and Ray Wright, Missouri Department of Conservation and University of Missouri

A wagon tour that stresses conservation and wildlife management practices that can be incorporated into modern agriculture will be highlighted. Practices will include field border management, edge feathering, native grass management, alternatives for water ways, and invasive control.

D. Stored Grain Insects – 2.0 CEU in Pest Management
Wayne Bailey, University of Missouri

Insect and mold problems of stored grain and mycotoxins associated with stored grain will be discussed. Live specimens of major stored grain will be available for identification.

E. Herbicide Injury and Symptomology – 2.0 CEU in Pest Management
Kevin Bradley, University of Missouri

Participants will have the opportunity to gain a better understanding of the symptoms associated with various classes of herbicides through a hands-on training session. An inside lecture with electronic media will be followed by a hands-on demonstration outside where participants will be able to see and discuss some of the most common herbicide injury symptoms that occur on crop plants. A final component of this session will be a brief tour of selected weed management trials that evaluate new and experimental herbicides and common weed management programs utilized in today's agronomic production systems.

F. Invasive Plant ID – 2.0 CEU in Pest Management
Reid Smeda, University of Missouri

Participants will have a hands-on session in invasive weed identification. The use and demonstration of a weed identification keys will be discussed and practiced with live samples showing key features such as ligules, auricles, pubescence, and stem shapes. Participants will also have the opportunity to review and identify broadleaf weeds based on characteristics such as cotyledon shape and size, position and shape of leaves, and more. Tips on the identification of weed seedlings will be emphasized. Identification guides and informational

sources will be provided. An established weed garden and live weed samples will be available for viewing seedling, advanced, or mature stages of weeds.

G. Biofuels- Potential and Reality – 2.0 CEU in Crop Management
Bill Wiebold, University of Missouri

Ethanol and biodiesel energy crops will be described and demonstrated. The advantages and disadvantages of starch-based and cellulose based ethanol will be discussed. Energy input/output characteristics and other issues impacting plant-based fuels documented.

H. Selecting the Right Nozzle....Calibrating for Optimum Crop Protection Performance - 2.0 CEU in Pest Management
Robert Wolf, Kansas State University

This session will review the latest in nozzle/application technology with a special focus on calibrating for the correct droplet size. Nozzle type demonstrations will be conducted comparing droplet spectra and coverage for different application scenarios.....including herbicides, fungicides, and insecticides.

I. Use of Grass Buffers to Reduce Herbicide Transport – 2.0 CEU Soil and Water Management
Robert Lerch and Chung-Ho Lin, University of Missouri

Multiple species vegetative buffer strips (VBS) have been recommended as a cost-effective approach to mitigate herbicide transport in surface runoff derived from agronomic operations. However, the effect of buffer designs and species composition on reducing herbicide transport has not been well documented. Furthermore, the herbicide degradation potential of grass rhizospheres has not been well characterized. In this research, we sought to answer two fundamental questions: 1) can grass buffers reduce herbicide transport in surface runoff?; and 2) once deposited in the soil, what effect do different grass species have on the fate of the herbicide? This presentation will discuss the two studies we designed to answer these questions, and we will tour our plot scale study located at the Bradford Research Center.

J. Field Crop Insects – 2.0 CEU in Pest Management
Wayne Bailey and Ben Puttler, University of Missouri

The entomology session will focus on current and emerging insect problems, management methods, and field demonstrations. The effects of weather and cultural practices on specific insects along with the precision of predictive pest models and thresholds will be discussed.

K. Field Crop Diseases and Missouri Weather Patterns and Resources – 2.0 CEU in Pest Management
Laura Sweets, University of Missouri

This session will focus on the identification of common corn, soybean and wheat diseases that have been problematic in 2008. Also, this session will provide an overview of historical, recent and forecasted weather patterns for Missouri. Additionally, numerous online weather products and tools have emerged over the past few years. These Internet resources can be used by the agricultural community and provide stakeholders with information to enhance management decisions, encourage documentation and promote stewardship.

Registration Form 2008 Crop Injury Diagnostic Clinic

Preferred Clinic Date

July 22-23 July 24–25

Attendance will be limited to 70 people at each clinic. If your preferred date is filled, can you attend the alternate date if notified? Yes No

Name: _____

Daytime Phone: (____) _____

Organization: _____

Address: _____

City, State, Zip: _____

E-mail Address: _____

Session Choices

In the boxes below, please **rank** the 11 session choices in your order of preference by placing the alphabetical letter of each session in the box below the session choices. For example, if your first choice is Session C, write C in box #1.

- A. Water Deficit Stress and Drought Tolerance
- B. Nutrient Deficiencies and Soil Properties Related to Organic Matter
- C. Land Use Management for Conservation and Wildlife
- D. Stored Grain Insects
- E. Herbicide Injury and Symptomology
- F. Invasive Plant ID
- G. Biofuels- Potential and Reality
- H. Selecting the Right Nozzle....Calibrating for Optimum Crop Protection Performance
- I. Use of Grass Buffers to Reduce Herbicide Transport
- J. Field Crop Insects
- K. Field Crop Diseases and Missouri Weather Patterns and Resources

Top Priority.....Low Priority										
1	2	3	4	5	6	7	8	9	10	11

All attempts will be made to honor the wishes of each person, but in order to balance concurrent sessions, some alternates may need to be scheduled.

Social Dinner

Please indicate whether you plan to attend the free dinner on the first night of the program.

Yes No

Fees

Registration fee postmarked on or before July 11, 2008 \$150
Registration fee postmarked after July 11, 2008 \$170

Please make check payable to University of Missouri

Credit card payment: MasterCard VISA Discover

Card Number _____

Expiration Date _____

Cardholder's Name _____

Cardholder's Signature _____

Registration Options



By Phone

Call (573) 884-7945 and ask for Thresa Chism. If registering by phone, please have your 11 session choices completed and available.



By Mail

Crop Injury Diagnostic Clinic
Bradford Research & Extension Center
4968 Rangeline Road South
Columbia, MO 65201



By Fax

Fax the completed registration form with your MasterCard, VISA or Discover number to: (573) 884-5554.

For needs addressed by the American Disability Act, please contact Thresa Chism at (573) 884-7945.