

IOWA STATE UNIVERSITY

Extension and Outreach

23rd Annual

Integrated Crop Management Conference



November 30 – December 1, 2011

Scheman Continuing Education Building
Iowa State University
Ames, Iowa

Wednesday, November 30

Morning Sessions

- 7:30 AM Conference registration and refreshments - 1st floor lobby, Scheman Building
- 9:00 Session A
- 10:00 Session B
- 11:00 Session C
- 12:00 PM Lunch

Afternoon Sessions

- 1:00 Session D
- 2:00 Session E
- 2:50 Break
- 3:10 Session F
- 4:10 Session G
- 5:00 Conference adjourns for the day

Thursday, December 1

Morning Sessions

- 7:00 AM Morning refreshments
- 8:00 Session H
- 9:00 Session I
- 9:50 Break
- 10:10 Session J
- 11:10 Session K
- 12:00 PM Lunch

Afternoon Sessions

- 1:00 Session L
- 2:00 Session M
- 3:00 Session N
- 4:00 Conference closes



Follow us on Twitter
ISUcrops

The Integrated Crop Management Conference offers 34 different seminars and workshops focusing on the latest in crop production technology. Experts from Iowa and surrounding states will provide research updates and results in soil fertility, soil and water management, crop production and pest management. All in a format that allows attendees to select the topics they are most interested in, developing a custom program for each individual. Join Iowa State University Extension at ICM Conference 2011.

Guest presenters

A popular feature of the ICM Conference is the opportunity to interact with invited speakers from other states and outside of the University. Iowa State University specialists invite individuals in their field who bring different viewpoints and the latest research results to the producers and agribusiness professionals of Iowa.

David Asbridge

president, NPK Fertilizer Advisory Service,
Chesterfield, MO.

R. L. (Bob) Nielsen

professor, Department of Agronomy,
Purdue University.

Bill Northey

Secretary of Agriculture, Iowa Department of
Agriculture and Land Stewardship, State of
Iowa.

Ken Ostlie

professor, Department of Entomology,
University of Minnesota.

Patrick J. Tranel

professor, Department of Crop Sciences,
University of Illinois at Champaign-Urbana.

The Integrated Crop Management Conference is presented by Iowa State University Crops Extension and Outreach representing the Departments of Agricultural and Biosystems Engineering, Agronomy, Economics, Entomology and Plant Pathology.

.... and justice for all

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2011 Integrated Crop Management Conference

Certified Crop Advisers

Iowa Certified Crop Advisers (CCA) can obtain 14 hours of continuing education credit. Workshops are listed by the CCA credit category in which they have been applied for. We reserve the right to adjust credit offerings due to unavoidable agenda or speaker changes.

Commercial Pesticide Applicator Recertification

This Conference is approved by the Iowa Department of Agriculture and Land Stewardship for recertification credit in categories 1A, 1B, 1C, 4 and 10 for calendar year 2011. Applicators must attend the required workshop and one additional workshop for each category in which you wish to receive recertification. Specific attendance requirements are included in the descriptions for workshops 33 and 34. Additional fees apply as indicated on the registration form.

Registration specifics

Please register early as space is limited for this event. Registrations are accepted on a first-come, fees-paid basis. If the Conference reaches capacity registration will be closed. Space availability will be posted at www.aep.iastate.edu.

- Please use a separate registration form for each individual.
- Advance registration is required.
- Registrations must be received by noon, November 28.
- Cancellations received prior to 5:00 PM, November 18 will receive a refund less a \$20 processing fee.
- Single-day registration is not available.
- After acceptance of your registration a receipt will be provided by e-mail. If an e-mail address is not provided your registration receipt will be available at the conference.

Location

All events are held at the Iowa State Center on the Iowa State University campus. Registration and meals are in the Scheman Building. Workshops are held in Scheman and adjoining Fisher Theater. Free parking is available in designated areas around the Scheman Building, Hilton Coliseum and in Iowa State Center parking lots south of the conference complex.



Arriving from north or south Exit Interstate 35 at exit 111B and take Highway 30 west to exit 146, University Boulevard. Proceed north on University Blvd. to the Iowa State Center. Turn left onto Center Drive.

Arriving from east or west Highway 30 to exit 146, University Boulevard. Proceed north on University Blvd. to the Iowa State Center. Turn left onto Center Drive.

Lodging

Make reservations for lodging directly with Ames-area hotels. A complete listing of area hotels and a map of the Ames/ISU area is available from the Ames Convention and Visitors Bureau at www.visitames.com.

Crop management

- 1. Growin' good corn: Rocket science or common sense?**
R.L. (Bob) Nielsen, Agronomy, Purdue University. World population continues to increase. Global demand for food continues to increase. Grain yields of major agronomic crops need to increase to meet this demand. Does history offer any guidance on the likelihood of achieving this? What does it require to significantly "raise the bar" for corn yields?
- 2. Long silks, short pollen... a long year?**
Roger Elmore, Agronomy, Iowa State University. Pollination issues are just part of the problem Iowa corn experienced in 2011. Kernel weight reductions likely occurred because of the high night temperatures during pollination which resulted in rapid crop development. This sounds like a replay of 2010, at least for Iowa corn. Was it?
- 3. Making silage from Iowa's forage crops**
Stephen K. Barnhart, Agronomy, Iowa State University. Ensiling corn and forage crops is an efficient method for preservation of their nutrient content. Successful silage making requires management attention from before harvest through feeding. This session will address management when ensiling several commonly used forage crops.
- 4. Corn stover production 101 – Basics of corn stover supply chains for a biorefinery**
Matt Darr, Agricultural and Biosystems Engineering, Iowa State University. Cellulosic feedstocks, such as corn stover, are emerging as a viable resource for production of ethanol. This presentation will discuss what it takes to supply a biorefinery.
- 5. Midwest crop weather 2011-2012: What follows a strong La Niña?**
Elwynn Taylor, Agronomy, Iowa State University. The abnormal 2011 weather for much of the Earth turned out very much as it had been during the previous La Niña events of like strength (1952-5/1974). The winter was wet in Montana and dry in Texas. Melting snow brought floods (mainly to the Missouri river basin). Heat exacerbated the Texas drought. Early spring tornadoes brought death and destruction on a scale not known since the previously strong La Niña events. Wet conditions at planting threatened crop establishment and hot/dry spells in the summer reduced yield potentials. There are hints that 2012 may be influenced by much the same conditions.
- 6. Crop and biofuel outlook for 2012**
Chad Hart, Economics, Iowa State University. 2012 is shaping up to be an exciting market year for crop agriculture. Prices are at record levels and crop demands are shifting in reaction to those prices. Biofuels have been the leading source of crop demand and new production platforms are being explored. This presentation will examine the factors influencing crop and biofuel markets and provide an outlook for those markets over the coming year.

7. **Sustainable production and distribution of bioenergy for the Central US**
Chad Hart, Economics, Iowa State University. In 2010, USDA called for proposals to investigate the development of sustainable bioenergy platforms. Iowa State University and collaborators from 5 Midwest states have been awarded funds for a project that will: 1) explore the feasibility of producing advanced transportation fuels derived from perennial grasses grown on land that is unsuitable or marginal for row crop production and 2) improve the sustainability of existing corn/soybean systems by reducing agricultural runoff of nutrients and soil and increasing carbon sequestration.
8. **Energy management for crop production**
Mark Hanna, Agricultural and Biosystems Engineering, Iowa State University. Almost a billion dollars is spent annually on energy by Iowa agriculture. Several techniques will be shown to better manage energy use in crop production. Included will be tractor use and selection and energy tips for high- and low-temperature grain drying.
9. **Integrated Pest Management 101**
Bob Hartzler, Agronomy, Iowa State University; Laura Jesse, Plant Pathology, Iowa State University; Erika Saalau, Plant Pathology, Iowa State University. How well do you know integrated management of diseases, insects, and weeds? Have fun while you learn. Take part in an electronically administered quiz and discussion covering basic principles of IPM in agronomic crops. (Enrollment limited to 65 for each session.)
10. **Herbicide resistance in waterhemp: Past, present, and future**
Patrick J. Tranel, Crop Sciences, University of Illinois at Urbana-Champaign. Over the last couple of decades, waterhemp has transitioned from being a relatively unknown weed to one of the worst weeds in the Midwest. Contributing to its success as a weed has been its ability to rapidly evolve herbicide resistance. This presentation will describe the history of herbicide-resistance evolution in waterhemp – including a discussion of the underlying resistance mechanisms – and conclude with implications of the increasing occurrence of multiple herbicide resistance within waterhemp populations.
11. **Weed management for 2012**
Micheal D. K. Owen, Agronomy, Iowa State University. The session will provide a review of new herbicides, herbicide-resistant crops, management considerations and current issues for weeds in 2012. Discussion will address the importance of tactic diversity, knowledge of herbicide tank mixture components and alternative strategies. The impact of current tactics on weed communities and crop yield potential will be considered.
12. **Herbicide-resistant weeds: An evolving problem of importance in Iowa crop production**
Micheal D. K. Owen, Agronomy, Iowa State University. The continued evolution of herbicide-resistant weeds will be discussed and updated information describing the magnitude of the problem will be provided. Factors impacting the herbicide-resistant weeds will be identified. The implications of herbicide-resistant weeds on current herbicide labels will be addressed and perspectives on possible regulations discussed.
13. **A reintroduction to soil-applied herbicides**
Bob Hartzler, Agronomy, Iowa State University. Our heavy reliance on glyphosate diminished the importance of soil-applied herbicides. However, the development of herbicide resistance will result in these products again being our first line of defense in weed management. Factors influence availability, efficacy and persistence will be reviewed.
14. **Diversified weed management tactics in diversified cropping systems: Foundations for durable crop production and protection**
Matt Liebman, Agronomy, Iowa State University. Diversifying the standard corn-soybean rotation system by adding small grains and forage legumes can provide important opportunities for increasing yields, reducing input costs, maintaining or increasing profits, and managing soil-borne pest problems, such as Sudden Death Syndrome of soybean. Diversified systems also offer outstanding opportunities for managing weeds effectively with diverse tactics, thereby reducing risks of developing herbicide resistance in weeds. This session will review 10 years of results from a 22-acre experiment in Boone Co., IA.
15. **The challenge of unexpected corn rootworm injury to rootworm-resistant corn**
Ken Ostlie, Entomology, University of Minnesota. Unexpected performance problems with Bt-Corn create a management challenge for growers, advisors, seed companies and EPA. This presentation will present what is known about performance problems, the debate over whether or not resistance has developed, the management challenge, and the dilemma posed by this situation.
16. **Update on the soybean aphid efficacy evaluation program**
Erin Hodgson, Entomology, Iowa State University. The soybean aphid efficacy evaluation program has been at ISU since 2005. This year, we expanded to three locations and had over 35 treatments. This presentation will focus on the results of our product comparisons, including seed and foliar treatments and host plant resistance.
17. **Japanese beetle biology and management in corn and soybeans**
Erin Hodgson, Entomology, Iowa State University. Japanese beetles were an economic pest for Iowa corn and soybean in 2011. This presentation will focus on learning about the biology of this pest and general management recommendations to protect yield. An efficacy evaluation for Japanese beetles started in 2011 will also be discussed.
18. **Assessing the benefits of pyramids and seed treatments for soybean aphid host plant resistance**
M. T. McCarville, Entomology, Iowa State University. The results of a multi-state study investigating the performance of soybean aphid resistant lines will be discussed. Soybean lines containing *Rag1* alone, *Rag2* alone, and *Rag1* and 2 together were grown at six locations across five states. In Iowa, at two locations the lines were grown with and without a seed treatment. The benefit of single gene lines, multiple gene lines, and seed treatments for both soybean aphid control and yield protection will be discussed.
19. **Nematode-protectant seed treatments: Protection you want? Insurance you need?**
Gregory L. Tylka, Plant Pathology, Iowa State University. There are several different seed treatments for corn and soybeans that offer early season protection against plant-parasitic nematodes. A common question being asked these days is “Do I need to use one of these products?” The nature and performance of these seed treatments will be discussed in relation to the biology of the nematode pests.
20. **Goss's wilt: Get the facts**
Alison Robertson, Plant Pathology, Iowa State University. Goss's wilt was widespread in Iowa in 2011. Why? This session will review what we know about the epidemiology of this disease. Furthermore, we will present data regarding the impact of Goss's on grain quality.
21. **Coping with Sudden Death Syndrome (SDS) in Iowa soybeans – integrated research approach and solutions to protect yield**
Silvia Cianzio, Agronomy, Iowa State University; Leonor Leandro, Plant Pathology, Iowa State University; Madan Bhattacharyya, Agronomy, Iowa State University. Sudden death syndrome (SDS) is a fungal disease in soybean first identified in Iowa in 1994. By 2000, it was evident SDS would become another yield deterrent for soybeans and research was needed. At ISU, we have applied breeding, fungal knowledge, cultural practices and biotechnology to cope and control this emerging disease. We will discuss the research approach and where we are today in finding solutions to assist producers.

Pest management

Nutrient management

22. **Iowa's nutrient reduction strategy to address Gulf Hypoxia: Progress report**
Bill Northey, Secretary of Agriculture, Iowa Department of Agriculture and Land Stewardship. Iowa is required to develop a strategy to reduce the amount of nitrogen and phosphorous from the state reaching the Gulf of Mexico. IDALS and IDNR are collaborating on a strategy to address all sources of N and P in the state. Agriculture is an important contributor of N and P and will be asked to implement strategies that reduce nutrient losses to surface water. This session will provide an update on the process and elements of the strategy.
23. **Fertilizer situation and outlook**
David Asbridge, President, NPK Fertilizer Advisory Service, Chesterfield, MO. The fertilizer market has been and continues to be undergoing an unprecedented period of volatility. This session will discuss what is causing the volatility and what the fertilizer market is expected to do over the next few months.
24. **Corn and soybean response to soil pH level and liming**
Antonio P. Mallarino, Agronomy, Iowa State University. Iowa State University guidelines concerning desirable soil pH levels for crop production were established almost four decades ago. This presentation shares results of ongoing on-farm research to assess within-field variation in soil pH and lime requirement and to reevaluate the soil pH levels at which lime application benefits corn and soybean production.
25. **Nutrient uptake by corn and soybean, removal, and recycling with crop residue**
Antonio P. Mallarino, Agronomy, Iowa State University. Increasing crop yields, high within-field yield variability, and bioenergy production from corn residue have generated questions about P, K, and micronutrient removal with corn and soybean grain harvest and with corn residue harvest. Increased nutrient removal and the timing of the removal affect nutrient recycling, soil-test levels, the temporal variation of soil-test levels, and nutrient application rates for profitable and sustained crop production. This presentation shares results of research to study nutrient uptake by corn and soybean, removal, and recycling to the soil from physiological maturity until the following spring.
26. **Effect of a rye cover crop and crop residue removal on corn nitrogen fertilization**
John Sawyer, Agronomy, Iowa State University. Reducing nitrate in surface water and removal of corn residue for livestock needs and energy production are two on-going issues in Iowa corn production. This presentation will discuss results of two studies focused on corn nitrogen fertilization; no-till corn-soybean with a rye cover crop and continuous corn with different tillage and levels of crop residue removal.

27. **Nitrate loss in subsurface drainage as affected by nitrogen application rate and timing under a corn-soybean rotation system**
Matthew Helmers, Agricultural and Biosystems Engineering, Iowa State University. Nitrogen loss from production agriculture systems through subsurface drainage networks is a growing concern in the Midwestern United States. The effect of nitrogen application rate and timing on nitrate concentration, nitrate losses, and crop yields in a corn-soybean rotation system on tile-drained Mollisols has been investigated by a five-year (2005-2009) study in north central Iowa. The results show that the fertilizer application timing (spring vs. fall) has little impact on nitrate loss but higher nitrogen application rate could result in greater nitrate loss in subsurface drainage.

Soil and water management

28. **Soil Erosion: What will the future bring?**
Rick Cruse, Agronomy and the Iowa Water Center, Iowa State University. High commodity and land prices and resulting changes in land management, coupled with increasing frequency of strong storm events have a large impact on soil erosion rates. Soil loss in many Iowa locations is multiple times that of soil renewal rates. The resulting soil degradation is reducing crop yield potential. Can we change the future?
29. **Can conservation complement agriculture?**
John Doudna, Ecology, Evolution, and Organismal Biology, Iowa State University. Conservation is often considered separate from the needs of agriculture. Recent research at ISU suggests that targeted conservation practices can positively impact management of farm land, especially for preventing soil erosion and nutrient run-off. We will discuss how these types of beneficial functions can be improved within the farm landscape.
30. **Corn residue removal effects on grain production and soil quality**
Mahdi Al-Kaisi, Agronomy, Iowa State University. This presentation will cover different levels of corn residue removal along with different tillage systems and N rates effect on continuous corn yield and selected soil quality indicators such as aggregate stability, soil C, bulk density, and infiltration rate.
31. **Water quality benefits of perennial filter strips in row-cropped watersheds**
Matthew Helmers, Agricultural and Biosystems Engineering, Iowa State University. Vegetative filter strips have been used as a practical strategy in reducing soil loss and nutrient transport from agricultural landscapes. Their environmental benefits are being tested in a long-term field experiment involving twelve catchments in Central Iowa. Field monitored data suggest that incorporation of small amounts of prairie filter strips within annual rowcrop systems could provide an effective approach to reduce sediment and nutrient loss from agricultural land.

32. **Biochar impacts on soil quality, carbon sequestration, and sustainable bioenergy production**
David A. Laird, Agronomy, Iowa State University. Applying the biochar co-product of pyrolysis to soils increases the capacity of soils to retain both nutrients and water, decreases nutrient leaching, increases soil pH, and reduces soil bulk density. Biochar applications are also very effective for increasing soil organic carbon, and hence may merit significant carbon credits. Improvements in soil quality due to biochar applications have the potential to help make the harvesting crop residues for bioenergy production sustainable.

Commercial pesticide applicator recertification

33. **Seed treatment (Category 4) continuing instructional course.**
Betsy Buffington, Pest Management and the Environment, Iowa State University. This interactive, scenario-based session covers the required topics for recertification for seed treatment applicators in categories 4 and 10. This session also qualifies for one pest management credit for CCA.

Additionally, seed treatment applicators must attend **one** of the following workshops: 16, 18 or 19
34. **Categories 1A (Weeds), 1B (Insects), 1C (Crop Diseases) and 10 (Research and demonstration).**
Kristine Schaefer, Pest Management and the Environment, Iowa State University. The Commercial Ag Weed, Insect and Disease Management CIC will provide continuing instructional credit for commercial pesticide applicators certified in categories 1A, 1B, 1C and 10. Topics to be covered include the new EPA Container/Containment Rule, water quality, phytotoxicity, and pesticide stewardship. This session also qualifies for one pest management credit for CCA.

To receive recertification, applicators must also attend **one** pest management workshop in **each** of the subcategories they are certified (1A, 1B and/or 1C) in addition to this session.
 - Category 1A - Weeds – Workshops 10-14
 - Category 1B - Insects – Workshops 15-18
 - Category 1C - Crop Diseases – Workshops 19-21

All workshops are one hour and one CCA credit.

2011 Integrated Crop Management Conference Registration

Name _____

Organization _____

Address _____

City _____ State _____ Zip _____

County _____ Certified Crop Adviser number _____

Daytime phone _____

Email - registration confirmation and receipts are provided by email

Workshop selection

Circle your first preference in each row. Workshop numbers refer to the descriptions in this brochure. Authors may present multiple workshop topics - select the correct session!

CCA color coding: crop, nutrient, soil and water and pest.

Wednesday, November 30						
Session A 9:00 am	6 Hart	22 Northey		20 Robertson	14 Liebman	17 Hodgson
Session B 10:00 am	6 Hart	22 Northey	32 Laird	10 Tranel	14 Liebman	
Session C 11:00 am			32 Laird	10 Tranel	20 Robertson	17 Hodgson
Session D 1:00 pm	3 Barnhart	24 Mallarino	29 Doudna	15 Ostlie	13 Hartzler	
Session E 2:00 pm	3 Barnhart	24 Mallarino	29 Doudna	15 Ostlie	13 Hartzler	
Session F 3:10 pm	1 Nielsen	27 Helmers	28 Cruse	12 Owen	18 McCarville	
Session G 4:10 pm	1 Nielsen	27 Helmers	28 Cruse	12 Owen	18 McCarville	

Thursday, December 1						
Session H 8:00 am	2 Elmore	26 Sawyer		8 Hanna	7 Hart	21 Cianzio
Session I 9:00 am	2 Elmore	23 Asbridge		8 Hanna	7 Hart	21 Cianzio
Session J 10:10 am	4 Darr	26 Sawyer	30 Al-Kaisi	9 IPM 101	19 Tylka	
Session K 11:10 am	4 Darr	23 Asbridge	30 Al-Kaisi	9 IPM 101	19 Tylka	
Session L 1:00 pm		25 Mallarino	31 Helmers	16 Hodgson	11 Owen	34 Pest. Applicator Cat 1A, 1B, 1C
Session M 2:00 pm	5 Taylor		31 Helmers		11 Owen	33 Seed Treatment Cat. 4
Session N 3:00 pm	5 Taylor	25 Mallarino		16 Hodgson		34 Pest. Applicator Cat 1A, 1B, 1C

Online

www.aep.iastate.edu/icm
(credit card only)

Fax

(515) 294-1311
(credit card only)

Mail

Integrated Crop Management
2101 Agronomy Hall
Iowa State University
Ames, IA 50011-1010

Payment Information

Registration

Early \$185
Prior to midnight, Nov 18.

Late \$235
Accepted through noon, Nov 28 if space remains. On-site registration is not available.

Registration includes meals and breaks listed on the program and one copy of the conference proceedings.

Commercial pesticide applicator recertification

Commercial Ag \$35

Seed treatment \$35

Total 

- Check payable to Iowa State Univ.
- MasterCard
- VISA

Credit card number

- -
 -

Expiration date /

Cardholder name _____

Registration and program questions should be directed to the conference office at (515) 294-6429 or e-mail aep@iastate.edu.

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Oct 2011 | AEP 0302