21st Annual Integrated Crop Management Conference

December 2 – 3, 2009

Iowa State University

Ames, Iowa

IOWA STATE UNIVERSITY
University Extension
Agribusiness Education Program

Schedule of events

Wednesday, December 2

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 - Scheman Building

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 3

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 - Scheman Building

Afternoon Sessions

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

Education - Attend 34 different seminars and workshops focusing on the latest in crop production technology. University specialists from Iowa and surrounding states will provide updates on research results in soil fertility, soil and water management, crop production, and pest management.

Certification - Receive up to 14 Certified Crop Adviser (CCA) credits by attending various workshops. You have the flexibility to choose the sessions you attend to receive the credits you need. In addition, Iowa commercial pesticide applicator recertification will be available for categories 1A (weeds), 1B (insects), 1C (crop diseases), 4 (seed treatment) and 10 (research and demonstration).

Social – The event attracts nearly 1,000 of the top crop production professionals each year. You will have the opportunity to visit and socialize with old colleagues, make new contacts, and expand your network.

The Agribusiness Education Program

The Iowa State University Extension Agribusiness Education Program (AEP) was established in 1990 to serve the continuing education needs of agribusiness professionals in Iowa and surrounding states. The ICM Conference is just one part of AEP's year-around programming. The Field Extension Education Laboratory, Ag Chemical Dealer Updates, Winter Crop Schools and IPM Field Crop Scout Schools are some of AEP's other educational programs.

AEP can provide custom educational programs for any group wishing to sponsor an event for employees or customers. Classes may be held during the summer at FEEL or any time of the year for indoor, classroom training. Contact Brent Pringnitz at (515) 294-6429 or aep@iastate.edu for more information.

The Integrated Crop Management Conference is sponsored by Iowa State University Extension, Iowa State University College of Agriculture and Life Sciences, and the Departments of Agronomy, Entomology, Plant Pathology, and Agricultural and Biosystems Engineering.

PRINTED WITH SOY INK

AEP 0302 | Oct 2009

Invited presentations

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.

Chris Boerboom
professor and extension weed scientist, Department of Agronomy, University of Wisconsin-Madison

Tamra Jackson
assistant professor and extension plant pathologist, Department of Plant Pathology, University of Nebraska-Lincoln

Emerson Nafziger
professor and extension agronomist, Department of Crop Sciences, University of Illinois at Urbana-Champaign

Seth Naeve
associate professor and extension soybean specialist, Department of Agronomy and Plant Genetics, University of Minnesota

Continuing education

2009 Continuing Instructional Courses for Commercial Pesticide Applicators

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 2009. Attend the required sessions and one additional workshop for each category in which you wish to receive credit. Specific attendance requirements are included in the workshop listings on page 11. There is a $35 fee for recertification.

Certified Crop Adviser Continuing Education

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

Location

All events are held at the Iowa State Center on the Iowa State University campus. Buildings are connected by walkways for easy access to sessions and the Expo. Registration and meals are in the Scheman Building. Workshops are held in Scheman and adjoining Fisher Theater.

Arriving from north or south

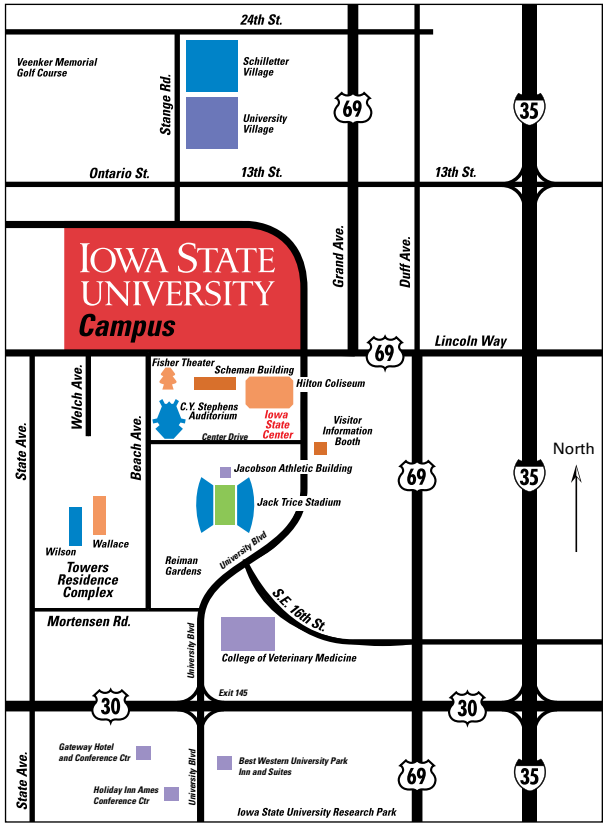
Exit Interstate 35 at exit 111B and take Highway 30 west to exit 146, University Boulevard. Proceed north on University Blvd. to the Iowa State Center. Turn left onto Center Drive.

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.

Registration information

- 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**.
- Early registration is $185 until midnight, November 20. After November 20 registration increases to $235.
- Registrations are accepted through noon, November 30 if space is still available.
- Advance registration is required. Walk-in registrations will **not** be accepted.
- Registration includes a copy of the printed proceedings, noon meals, and refreshment breaks.
- Cancellations requesting a refund must be received by 5:00 PM, November 23.
- Single-day registration is not available.
- Registration is available by Internet, mail or fax. Phone registrations are **not** accepted.
- 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.
- Registration questions should be directed to the Agribusiness Education Program office at (515) 294-6429 or e-mail to aep@iastate.edu.
- For mail or fax registrations, please detach the center page from this brochure and include the completed sheet. Please use a separate registration form for each individual.



Lodging and parking

- Make reservations for lodging directly with Ames-area hotels. A complete listing of lodging options and a map of the Ames/ISU area is available at **www.visitames.com**.
- Plenty of free parking is available in designated areas around the Scheman Building, Hilton Coliseum and in other Iowa State Center parking lots.

Crop management

1. **Crop weather risk for 2010.** Elwynn Taylor, Agronomy, Iowa State University. Weather related risk associated with crop production is based on historical trends and extremes. The soils of the Midwest provide a substantial buffer against the volatility of weather, but how often can we expect to start a season with ideal soil moisture? How often with a summer of scant rain be compensated by cool temperatures? The trend toward mild summers and moderate winter temperatures is real but the risk of extremes is also very real.
2. **The outlook for 2010: Big crops, big demands.** Chad Hart, Economics, Iowa State University. The past three years have been marked by large crops, large demands, and large concerns. Over that period, the U.S. has produced the three largest corn crops on record, but yet prices remain above historical averages. U.S. soybeans have also seen high production and high prices. This presentation will examine the reasons why that has occurred and whether that pattern will continue to hold for 2010 and beyond.
3. **Agronomics of high-yield corn.** Emerson D. Nafziger, Crop Sciences, University of Illinois. After a decade or more of good weather, improved hybrids (and traits), and steadily increasing yields, many believe that corn yields will continue to rise or even accelerate, and that 300-bushel yields will eventually become routine. We will use recent data to discuss high corn yields and to consider what management practices might or might not help to reach such yields.
4. **Corn planting date: Understanding plant growth and yield response.** Lori Abendroth, Agronomy, Iowa State University; Roger Elmore, Agronomy, Iowa State University. Corn planting dates continue to trend earlier due to larger equipment, reduced tillage, stress tolerant hybrids, and better seed treatments. Statewide planting date research (2006-2009) will be discussed. Attendees will learn optimum planting windows for specific regions as well as understand why yield differs across planting dates from a physiological standpoint.
5. **Soybean production: Little things that can make a difference.** Seth Naeve, Agronomy, University of Minnesota. While some are working on hitting home runs, many of our research projects are focused around getting on base. This presentation will focus on strategies to minimize harvest losses through managing the height of the lowest pod, maximizing harvest efficiency with rock rollers, and understanding the risks and rewards of planting long season varieties.
6. **Hay harvest decisions and management.** Stephen K. Barnhart, Agronomy, Iowa State University. Hay quality losses begin in the field. Planning ahead for quality forage is the first step. This session will cover forage harvest decisions and management practices that can help avoid losses and improve hay quality.
7. **(Mis)managing data: How to get the results you want!** Jim Rouse, Agronomy, Iowa State University and Iowa Crop Improvement Association. Understanding the various ways in which yield trial data can be collected and analyzed can help growers decide which results are most useful. Knowing some of the pitfalls surrounding data analysis can help agronomists and producers improve strip trials. This session will cover examples, both intentional and unintentional, that can result in inadvertent manipulation of the results and greatly reduce or eliminate the usefulness of the data. Topics will include cherry picking, unbalanced data, replication, and alpha-levels to use when calculating a least significant difference.
8. **The Northwest Iowa On-Farm Research Project.** Joel DeJong, Extension field agronomist, Iowa State University. ISU Extension, the Iowa Corn/Soybean Initiative, ISU Research and Demonstration farms and the NW Iowa Experimental Association formed a partnership to form the Northwest Iowa On-farm Research project which is now in its 5th year in Lyon, Sioux and Osceola Counties in the NW corner of Iowa. The goals of this project are to implement on-farm research projects that are beneficial to the cooperator and other NW Iowa farmers; to cooperate with producers to provide up-to-date research that affects their operation; and to provide unbiased, statistically analyzed data for farmers on compared production practices. Over 20 different producers have worked cooperatively with us the past five years, and have conducted more than 150 replicated trials over that time.

All sessions are one hour and 1 CCA credit.

2009 Integrated Crop Management Conference Registration

1. Select the workshops you wish to attend

Circle your first preference in each row. The number above presenter's name refers to the workshop descriptions in this brochure. Some authors present multiple workshop topics so be sure to select the correct session. **CCA credit color coding: crop management, pest management, nutrient management, soil and water management.**

Wednesday, December 2

Session A 9:00 am	5 Naeve	16 Owen	9 Darr	18 Ritson	28 Mallarino
Session B 10:00 am	5 Naeve	25 Hodgson	9 Darr	10 Robertson	28 Mallarino
Session C 11:00 am	16 Owen	25 Hodgson	18 Ritson	10 Robertson	
Session D 1:00 pm	23 Gassmann	19 Jackson	30 Ingels	6 Barnhart	17 Hartzler
Session E 2:00 pm	23 Gassmann	19 Jackson	30 Ingels	6 Barnhart	17 Hartzler
Session F 3:10 pm	20 Robertson	15 Owen	32 Al-Kaisi	24 O'Neal	4 Abendroth/ Elmore
Session G 4:10 pm	20 Robertson	15 Owen	32 Al-Kaisi	24 O'Neal	4 Abendroth/ Elmore

Thursday, December 3

Session H 8:00 am	2 Hart	27 Sawyer	14 Boerboom	8 DeJong	11 Hurburgh
Session I 9:00 am	2 Hart	27 Sawyer	14 Boerboom	8 DeJong	11 Hurburgh
Session J 10:10 am	3 Nafziger	29 Helmers	12 IPM 101	22 Tylka	13 Hanna
Session K 11:10 am	3 Nafziger	29 Helmers	12 IPM 101	22 Tylka	13 Hanna
Session L 1:00 pm	31 Helmers	26 Hodgson	21 Yang	7 Rouse	34 Seed Treatment Cat. 4
Session M 2:00 pm	31 Helmers	1 Taylor	21 Yang		33 Pest. Applicator Cat 1A, 1B, 1C
Session N 3:00 pm	26 Hodgson	1 Taylor		7 Rouse	33 Pest. Applicator Cat 1A, 1B, 1C

2. Complete requested information

Name

Organization

Address

City *State* *Zip*

County *Certified Crop Adviser number*

Daytime phone

Email - registration confirmation and receipts are provided by email

3. Circle choices and enter payment information

Early registration – prior to midnight, November 20 **$185**

Late registration – accepted through noon, Nov 30 if space is still available. On-site registrations are NOT accepted. **$235**

Commercial pesticide applicator recertification

Categories 1A, 1B, 1C and 10 **$35**

Categories 4 and 10 **$35**

Total Payment _____

❑ Check payable to Iowa State University ❑ MasterCard ❑ VISA

Card # ___ ___ ___ ___ – ___ ___ ___ ___ – ___ ___ ___ ___ – ___ ___ ___ ___

Exp. Date _____ / _____

Name on card _____

4. Submit your registration

- **Online at www.aep.iastate.edu** (credit card only)
- **Fax to (515) 294-1311** (credit card only)
- **Mail to:** Agribusiness Education Program, 2104B Agronomy Hall Iowa State University, Ames, IA 50011-1010

9. **Using the Iowa DOT CORS network for RTK service in agriculture.** Matt Darr, Agricultural and Biosystems Engineering, Iowa State University. The Iowa Department of Transportation has recently constructed a statewide RTK network known as CORS. This free RTK correction service has been open for use in agriculture since February of 2009. This presentation will cover performance and equipment options for use of this service within agriculture. Specific equipment options will be discussed as well as economics of Iowa CORS service.

10. **Impact of hail damage on grain quality.** Alison Robertson, Plant Pathology, Iowa State University. In 2009, over a half million acres of corn were damaged by severe hail storms that occurred during grain fill. This presentation will discuss results of a survey that was conducted to assess the impact of hail damage on ear rot severity, mycotoxin contamination, and grain quality characteristics.

11. **Current status of grain-based biofuels in Iowa and characteristics of grains that increase biofuel production.** Charles Hurburgh, Agricultural and Biosystems Engineering, Iowa State University. The current situation of biofuel plant operation and raw material consumption in Iowa will be presented. The potential of new processing methods (fractionation, blended oils) for ethanol and biodiesel will be explained in the context of developing new policies. The current science in the feed versus fuel discussion will be summarized. Agronomic traits that increase biofuel production from corn and soybeans will be presented.

Pest management

12. **Integrated Pest Management 101.** Bob Hartzler, Agronomy, Iowa State University; Laura Jesse, 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.)

13. **Nozzle and droplet size effects on pesticide performance and drift.** Mark Hanna, Agricultural and Biosystems Engineering, Iowa State University. Efficient application requires balancing effects of droplet size on both pesticide efficacy and spray drift. Appropriate droplet size for herbicide, insecticide, and fungicide applications will be reviewed. Nozzle style impacts on droplet size and potential for off-target drift to sensitive areas will be explored.

14. **Controversial combo: Dicamba and soybeans.** Chris Boerboom, Agronomy, University of Wisconsin-Madison. While every soybean grower and agronomist should know that soybeans are highly sensitive to dicamba, injury still seems to be a surprise each year. This presentation will examine our current knowledge and research related to dicamba injury (rates, sources, and effect on soybean yields). The implications of dicamba use with dicamba-resistant soybeans will also be considered.

15. **Weed management update 2010.** Micheal D. K. Owen, Agronomy, Iowa State University. An overview of weed management issues in 2009 will be discussed and changes in herbicides will be described. The implications of current weed management tactics with regard to weed communities and profitability will be presented.

16. **The evolution of herbicide-resistant weeds in Iowa: Description, implication and solutions.** Micheal D. K. Owen, Agronomy, Iowa State University. Research conducted in 2009 has demonstrated that there are a number of new herbicide resistant weed populations in Iowa. Furthermore, anecdotal information suggests that the evolution of herbicide resistant weeds in Iowa is increasing more rapidly than previously thought. The current research and the implications of the results on current crop production will be discussed.

17. **The cost of convenience: The impact of weeds on crop yields.** Bob Hartzler, Agronomy, Iowa State University. The complexity of the interactions between crops and weeds prevents the development of simple tools to guide management decisions. This may explain why a significant percentage of fields in Iowa are managed in a way that sacrifices yield potential. Persons attending this session will gain an improved understanding of weed:crop interactions and the cost of poor weed management.

All sessions are one hour and 1 CCA credit.

18. **Impact of fungicide-insecticide tank mixes in Iowa.** Rebekah Ritson, Entomology, Iowa State University; Nathan Bestor, Plant Pathology, Iowa State University. Insect pests and foliar disease are two of the major challenges faced by soybean producers today. In recent years, growing concern about invasive pests such as soybean aphid and soybean rust has led to dramatic increases in pesticide use on soybean. Many agribusinesses are now offering growers a pest management program emphasizing a calendar-based, co-application of a fungicide-insecticide tank mix. We will discuss the results of a study examining the impact of fungicide-insecticide tank mixes on foliar diseases, soybean aphid populations, and yield.

19. **Reemergence of Goss's Bacterial Wilt and blight of corn in the Midwest states.** Tamra Jackson, Plant Pathology, University of Nebraska-Lincoln. In this presentation we will discuss the biology and history of the disease Goss's bacterial wilt and blight of corn and its recent reemergence in the Corn Belt. A summary of some ongoing research will be shared, as well as results and observations from the field.

20. **Review of the 2009 growing season for a plant pathologist's perspective.** Alison Robertson, Plant Pathology, Iowa State University. Several diseases impacted corn and soybean production in Iowa in 2009, including eyespot, gray leaf spot, northern corn leaf blight, stalk rots, sudden death syndrome, and white mold. This presentation will discuss disease cycles, management practices and recent research results.

21. **Recent developments in management of soybean sudden death syndrome and white mold.** X. B. Yang, Plant Pathology, Iowa State University. Soybean sudden death syndrome and soybean white mold were wide-spread this year and the first incidence of severe outbreaks of the two soybean diseases in the same season. This presentation will review the latest developments in management of these two diseases and discuss management options when faced with both diseases simultaneously.

22. **Corn nematodes and soybean cyst nematode: Basic facts and prospects for the 2010 growing season.** Greg Tylka, Plant Pathology, Iowa State University. Interest in nematodes as yield-limiting pests of corn in the Midwest continues to grow. And soybean cyst nematode (SCN) persists as a serious pest of soybean in the region as well. In this session, the basic facts about corn nematodes and SCN will be reviewed, and we will discuss how these pests may affect the 2010 corn and soybean crops in Iowa and the Midwest. The session also will include discussions of current and new strategies and products to manage corn nematodes and SCN.

23. **Integrated pest management of corn rootworm in Iowa.** Aaron Gassmann, Entomology, Iowa State University. A variety of pest management options are available to producers for control of corn rootworm. These include crop rotation, soil insecticides, and transgenic corn. This session will review ISU research from 2008 and 2009 on these corn rootworm management tactics.

24. **Do aphid-resistant soybeans need insecticides for maximum yields?** Matt O'Neal, Entomology, Iowa State University. Agribusiness has licensed the Rag1 gene for use in soybeans as a source of resistance to prevent soybean aphid outbreaks. A team of researchers from around the Midwest have tested this gene in the field. This session will report the results from this experiment and discuss outreach efforts by ISU Extension to inform growers about the utility of this technology in their fields.

25. **A new chemistry for managing soybean aphid.** Erin Hodgson, Entomology, Iowa State University. Since 2001, soybean aphid has been managed by traditional classes of insecticides. Recently, new chemistries have been developed that are most targeted to fluid-feeding insects. 2009 efficacy results on spirotetramat, neonicotinoids and traditional products will be discussed.

26. **Landscape summary of aphid suction trapping network since 2005.** Erin Hodgson, Entomology, Iowa State University. Since 2005, a regional aphid suction trapping network has included four locations in Iowa. Captures throughout the summer and fall provide descriptions of aphid migration at a landscape level. Aphids in corn and soybean aphid are the most numerous catches in Iowa. Results from five years of the trapping network will be discussed.

All sessions are one hour and 1 CCA credit.

Nutrient management

27. **Dealing with sulfur deficiency in Iowa corn production.** John Sawyer, Agronomy, Iowa State University. Sulfur deficiency in Iowa cropping systems is a new production challenge. Past research in Iowa had not shown sulfur fertilization need until recent research documented large yield increase to sulfur application in northeast Iowa alfalfa fields. This session will cover current sulfur research results, and fertilization suggestions, for Iowa corn production.

28. **Do new corn hybrids, yield level and soil sampling time influence potassium fertilizer recommendations?** Antonio Mallarino, Agronomy, Iowa State University. This presentation will focus on results of new potassium management research. We will share results of two projects that looked into possible effects of new corn hybrids, higher yield levels, and different soil sampling timing on soil-test interpretations and fertilizer recommendations for potassium.

29. **Impact of application rate and timing on nitrate-nitrogen loss through subsurface drainage systems.** Matthew Helmers, Agricultural and Biosystems Engineering, Iowa State University. Research has shown a good correlation between nitrogen application rate and annual subsurface drain nitrate-nitrogen concentrations under conventional cropping systems. The impact of timing, however, is not as clear. Some studies show increased subsurface nitrate levels when fertilizer is applied in the fall and some show no difference between fall application and spring application. A project outlined here will discuss possible reasons for the differences.

Soil and water management

30. **Providing service and support to watershed improvement projects across Iowa.** Chad Ingels, Agronomy, Iowa State University; Jamie Benning, Sociology, Iowa State University. A number of farmer-led watershed improvement projects are utilizing agronomic performance tools to achieve watershed and farm-level water quality improvement goals. The groups often work with local agronomists and independent consultants to provide soil testing, stalk nitrate testing, grid sampling, and other services. This session will provide information on the specific performance tools and background on the watershed improvement programs available to Iowa producers.

31. **Effectiveness of variable-width buffer design for sediment reduction.** Matthew Helmers, Agricultural and Biosystems Engineering, Iowa State University. Vegetative filter strips and riparian buffers are widely used for reducing pollutants and soil loss from agricultural fields to streams. Good design and placement of buffers in the right place is critical for an effective buffer practice. A variable-width buffer design proportional to the estimated soil loss of each area could further improve the effectiveness of buffers than the typical uniform-width buffers based on the WEPP simulation results.

32. **Tillage and cover crop effects on productivity, soil properties and nitrate leaching.** Mahdi Al-Kaisi, Agronomy, Iowa State University. Cover crop plays significant role in reducing soil erosion and nitrate leaching to ground and surface water. The current emphasis on cover crop through the state led to efforts by Iowa State University to investigate the role of cover crop under different tillage and crop rotations. This presentation will cover the interaction effect of tillage and cover crop on yield, soil, and water quality parameters.

All sessions are one hour and 1 CCA credit.

Commercial pesticide applicator recertification

33. **Categories 1A (Weeds), 1B (Insects), 1C (Crop Diseases) and 10 (Research and demonstration).** Kristine Schaefer, Pest Management and Environment, Iowa State University; Mark Hanna, Agricultural and Biosystems Engineering, 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 equipment calibration and safe application techniques, pesticide label updates and pesticide stewardship. To receive recertification, applicators must also attend pest management sessions in each of the subcategories they are certified (1A, 1B and/or 1C) in addition to this session.

    - **Catetory 1A - Weeds** – Sessions 14-17
    - **Category 1B - Insects** – Sessions 18, 23-26
    - **Category 1C - Crop Diseases** – Sessions 18-22

34. **Category 4 (Seed Treatment) and 10 (Research and demonstration).** Betsy Buffington, Pest Management and Environment, Iowa State University; Alan Gaul, Seed Science Center, Iowa State University. The Seed Treatment CIC will provide continuing instructional credit for commercial pesticide applicators certified in categories 4 and 10. Topics to be covered include equipment calibration and safe application techniques, pesticide label updates and pesticide stewardship. To receive recertification, applicators must also attend session 22 in addition to this session.

You've got mail!

Want to receive early notice of conferences, courses and credits?

Sign up for e-mail delivery of *e*-brochures and updates on programs offered by the Agribusiness Education Program.

Visit **www.aep.iastate.edu/mail** to register.

IOWA STATE UNIVERSITY
University Extension
Agribusiness Education Program
2104B AGRONOMY HALL • AMES, IA 50011-1010
(515) 294-6429 • www.aep.iastate.edu