Workshops are organized by Certified Crop Adviser category and numbered sequentially. Workshops are referenced by number in the schedule grid, registration form and online registration process. Presentation times are listed below each workshop description as well as in the schedule grid included in this program to assist with developing your customized program. Some authors present more than one workshop. Please be sure to select the correct workshop during registration. Registration may be completed online or by mailing the 2-page form at the back of this program.

**Crop Management**

1. **2019 Ag weather outlook: Dealing with an increasingly volatile climate** (1.0 CM)
   *Elwynn Taylor, professor and Extension climatologist, Agronomy, Iowa State University, Ames, IA*
   
   Weather shifts during the past sixty years have influenced the geographical borders of the Corn Belt. The shifting nature of the weather is likely to bring increased volatility of annual yield to crop production on a multinational scale. Weather is not under our direct control, but the weather-related risk endured by the crop producer is manageable. The extremes of seasonal precipitation and temperature are not expected to diminish during the coming eight years. Accordingly, the farmer must understand production and financial methods of managing weather-related risks in agriculture.
   
   **Session M - Thursday, 2:00 PM - 2:50 PM**
   **Session N - Thursday, 3:00 PM - 3:50 PM**

2. **Quality of the 2018 crop** (1.0 CM)
   *Erin Bowers, associate scientist, Iowa Grain Quality Initiative, Iowa State University, Ames, Iowa; Charles Hurburgh, professor, Agricultural and Biosystems Engineering, Iowa State University, Ames, Iowa*
   
   Weather conditions after mid August were very challenging for corn and soybean quality at harvest. Repeated heavy rains and wind events combined with poor stalk health to create wet grain with field mold and mycotoxin potential. This condition affected both the quality from the field and the future storability in years where large carryovers are virtually assured. This presentation will summarize the quality of the 2018 crop and the major factors determining quality this year.
   
   **Session B - Wednesday, 10:00 AM - 10:50 AM**
   **Session C - Wednesday, 11:00 AM - 11:50 AM**

3. **2018 cropping year in review: Crop yields and soil nitrogen** (1.0 CM)
   *Sotirios Archontoulis, assistant professor, Agronomy, Iowa State University, Ames, IA*
   
   This session highlights research results on crop yields, soil water, and nitrogen requirements from ten experiment locations across Iowa with corn and soybean. A systems approach coupled with modeling will be used to explain 2018 yield levels and soil nitrate patterns. Implications for the next year will be discussed.
   
   **Session J - Thursday, 10:10 AM - 11:00 AM**
   **Session K - Thursday, 11:10 AM - 12:00 PM**

4. **The evolving use of digital technology in U.S. crop production** (1.0 CM)
   *John Fulton, associate professor, Food, Agricultural and Biological Engineering, The Ohio State University, Columbus, OH*
   
   Precision agriculture is rapidly evolving here in the US including the development of digital technologies to support crop production. This presentation will review the current state of digital technologies and future trends for how data and these technologies will be used in corn and soybean production.
   
   **Session F - Wednesday, 3:10 PM - 4:00 PM**
   **Session G - Wednesday, 4:10 PM - 5:00 PM**
5. Drivers of within-field spatial and temporal variability of crop yield (1.0 CM)
Bruno Basso, University Foundation Professor, Earth and Environmental Sciences, Michigan State University, East Lansing, MI
Not all areas of a farmer’s field are equal; some always produce more relative to the rest of the field, others always less, while still other areas fluctuate in their production capacity from one year to the next, depending on the interaction between climate, soil, topography and management. Understanding why the yield in certain portions of a field has a high variability over time is of paramount importance both from an economic and an environmental point of view, as it is through the better management of these areas that we can improve yields or reduce input costs and environmental impact. This talk presents new findings on mechanisms underlying temporal variability of yield and can help guide management solutions to increase profit and improve environmental quality.
Session D - Wednesday, 1:00 PM - 1:50 PM
Session E - Wednesday, 2:00 PM - 2:50 PM

6. Sensing technologies for precision plant stress phenotyping (1.0 CM)
Arti Singh, adjunct assistant professor, Agronomy, Iowa State University, Ames, Iowa
Automated phenotyping using machine learning is opening new avenues for high-throughput plant stress phenotyping. Examples of machine learning driven plant stress phenotyping from soybean will be used to show the importance of automation and precise stress measurement.
Session C - Wednesday, 11:00 AM - 11:50 AM
Session B - Wednesday, 10:00 AM - 10:50 AM

7. Crop rotation reduces environmental stresses that limit corn and soybean productivity (1.0 CM)
Dave Hooker, assistant professor and Field Crop Agronomist, University of Guelph, Ridgetown, ON
Weather is the overwhelming factor that causes variability in crop performance from year to year. A systems approach will be presented to build for resilience, reducing year-to-year variability caused by environmental stresses.
Session B - Wednesday, 10:00 AM - 10:50 AM
Session C - Wednesday, 11:00 AM - 11:50 AM

8. Using hybrid performance trials to win the game. (1.0 CM)
Mark Licht, assistant professor and Extension cropping systems specialist, Agronomy, Iowa State University, Ames, IA
Iowa’s corn performance trials will reach the 100 year mark in 2019. This session will reflect on how hybrid performance tests can be used to select high yielding hybrids while managing costs and risks.
Session F - Wednesday, 3:10 PM - 4:00 PM
Session G - Wednesday, 4:10 PM - 5:00 PM

9. The ins and outs of selling cover crop seed. (1.0 CM)
Robin Pruisner, State Entomologist, Iowa Department of Agriculture & Land Stewardship, Ankeny, IA; Neal Foster, Executive Director, South Dakota Crop Improvement Association
Selling cover crop seed - all the cool kids are doing it - but do you know about seed permits, required labeling, and the Plant Variety Protection (PVP) Act? Selling seed as "Variety Not Stated" is not the 'easy button' for raising and selling all types of cover crop seed. This session will cover the basics for producers looking to break into the cover crop market.
Session H - Thursday, 8:00 AM - 8:50 AM
Session I - Thursday, 9:00 AM - 9:50 AM

10. Industrial hemp in Iowa: The past, the present and the future? (1.0 CM)
Angela Rieck-Hinz, Extension field agronomist, Iowa State University Extension and Outreach, Clarion, IA
This talk will review the history of growing industrial hemp in Iowa, the current status of hemp production and briefly look at the potential future for hemp. A review of terminology will be presented along with a review of the current regulatory status from the perspective of the state of Iowa and the Farm Bill. This talk will also briefly discuss industrial hemp programs in neighboring states including production and economics.
Session J - Thursday, 10:10 AM - 11:00 AM
Session K - Thursday, 11:10 AM - 12:00 PM
11. 2019 Ag market outlook: Dealing with multiple sources of stress (1.0 CM)
Chad Hart, associate professor and Extension economist, Economics, Iowa State University, Ames, IA; David Brown, Human Sciences Extension Field Specialist, Iowa State University, Ames, IA; Anthony Santiago, Human Sciences Extension Extension Program Specialist, Iowa State University, Ames, IA
Farming is a high stress occupation, due to many conditions not under the farmer’s control, such as weather, commodity prices, machinery breakdowns or tariffs. This program will outline the agricultural economic outlook for the coming year and assist participants to learn how to identify the physical, emotional, and behavioral signs of stress. Strategies for marketing, financing, and stress management will be reviewed and helpful resources will be provided.
Session A - Wednesday, 9:00 AM - 9:50 AM
Session B - Wednesday, 10:00 AM - 10:50 AM

12. Land values and interest rates: Will Iowa farms sink or swim? (1.0 CM)
Alejandro Plastina, assistant professor and Extension economist, Economics, Iowa State University, Ames, IA
This session will focus on the critical role of land values and interest rates in the stabilization of the agricultural sector. Dr. Plastina will discuss the impact of land values, interest rates, crop prices and input costs on the liquidity, solvency, and repayment capacity of Iowa farms.
Session F - Wednesday, 3:10 PM - 4:00 PM
Session G - Wednesday, 4:10 PM - 5:00 PM

Pest Management

13. IPM 101: The pest management skills game show (1.0 PM)
Erin Hodgson, associate professor and Extension entomologist, Entomology, Iowa State University, Ames, IA; Laura Jesse Iles, director, and Ed Zaworski, diagnostician, Plant and Insect Diagnostic Clinic, Iowa State University, Ames, IA.
Join the presenters for a fun, fast-paced quiz session on important weed, insect, and disease topics from 2018 and coming up for 2019! This session will move quickly, so be prepared to test your skills and win a prize for the most pest knowledge!
Session U - Wednesday, 1:00 PM - 1:50 PM
Session E - Wednesday, 2:00 PM - 2:50 PM

14. Agricultural sustainability and Integrated Pest Management (1.0 PM)
Marty Adkins, assistant state conservationist, USDA-NRCS, Des Moines, IA
A rapidly growing world population and changing consumer expectations will place ever-increasing demands on Agriculture in this century and beyond. Protecting and improving soil, water and other resources (including crop protection tools) is imperative. IPM has a vital role in protecting crops, natural resources, and crop protection technologies.
Session J - Thursday, 10:10 AM - 11:00 AM
Session K - Thursday, 11:10 AM - 12:00 PM

15. Fly in the ointment: Soybean gall midge (1.0 PM)
Erin Hodgson, associate professor and Extension entomologist, Entomology, Iowa State University, Ames, IA
A widespread outbreak of a new soybean pest emerged in 2018. Soybean gall midge is a stem-boring insect that causes injured plants to break off near the soil line. I will summarize what we know so far and expectations for 2019.
Session L - Thursday, 1:00 PM - 1:50 PM
Session N - Thursday, 3:00 PM - 3:50 PM
16. Insect resistance to Bt crops (1.0 PM)
Brad Coates, Research Geneticist, USDA-ARS Corn Insects and Crop Genetics Research Unit, Ames, IA
An increasing number of pest insects have been causing significant levels of damage to corn hybrids that express Bacillus thuringiensis (Bt) toxins across the United States, including Iowa. Could this be an indication of what is in store for the future of pest insect management? Come learn more about mechanisms of Bt resistance, insect resistance management strategies, and potential challenges in store for pest control.
Session H - Thursday, 8:00 AM - 8:50 AM
Session I - Thursday, 9:00 AM - 9:50 AM

17. An overview of tar spot in corn: From Latin America to the Midwest (1.0 PM)
Nathan Kleczewski, research assistant professor and Extension field crops plant pathology specialist, Crop Sciences, University of Illinois, Urbana, IL
This talk will go over general information about tar spot in corn and it's history and impact in Latin America. This information will be extended to examine the current status of tar spot in the Midwest and our current understanding of the disease, as well as knowledge gaps and ongoing research projects.
Session H - Thursday, 8:00 AM - 8:50 AM
Session I - Thursday, 9:00 AM - 9:50 AM

18. The battle against Pythium seedling diseases in corn (1.0 PM)
Rebecca Vittetoe, Extension Field Agronomist, Iowa State University Extension and Outreach, Washington, IA; Alison Roberston, Extension Plant Pathologist, Iowa State University
Pythium spp. are one of the major pathogens known to cause seedling diseases in corn in Iowa. Efforts are being made to gain a greater understanding of Pythium spp. and what management options are most effective against them, including different fungicide seed treatments. This session will provide a brief background on corn seedling diseases and an overview of research being conducted looking at fungicide seed treatments and their efficacy against Pythium spp.
Session J - Thursday, 10:10 AM - 11:00 AM
Session K - Thursday, 11:10 AM - 12:00 PM

19. What's new with corn disease? (1.0 PM)
Alison Robertson, professor and Extension crop plant pathologist, Plant Pathology and Microbiology, Iowa State University, Ames, IA
This presentation will review recently published research in corn pathology pertinent to Iowa and the surrounding states. New products, and efficacy data will also be shared.
Session A - Wednesday, 9:00 AM - 9:50 AM
Session C - Wednesday, 11:00 AM - 11:50 AM

20. Update on soybean diseases - 2018 (1.0 PM)
Daren Mueller, associate professor and Extension crop plant pathologist, Plant Pathology and Microbiology, Iowa State University, Ames, IA
The 2018 season was a moderately quiet year for soybean diseases, but with the late season's rains a few diseases did pop up. This presentation will highlight the diseases seen in 2018 and cover updates in soybean disease biology and management.
Session L - Thursday, 1:00 PM - 1:50 PM
Session M - Thursday, 2:00 PM - 2:50 PM

21. Weed science potpourri (1.0 PM)
Bob Hartzler, professor and Extension weed scientist, Agronomy, Iowa State University, Ames, IA
Weed management continually evolves as new products are introduced, labels change, new weed species move into an area, or current species adapt. This session will provide an overview of significant happenings in the weed world during 2018.
Session U - Wednesday, 1:00 PM - 1:50 PM
Session T - Wednesday, 2:00 PM - 2:50 PM
22. Herbicide-resistant weeds and community-based management approaches: Likelihood of success in Iowa (1.0 PM)
Mike Owen, University Professor Emeritus, Agronomy, Iowa State University, Ames, IA

The results of a national research program investigating community-based herbicide-resistant weed management will be reported. How farmers are likely to respond to managing herbicide-resistant weeds through collaborative community effort and the potential for success will be addressed. The importance of considering weed management over landscapes will be reported.

Session F - Wednesday, 3:10 PM - 4:00 PM
Session G - Wednesday, 4:10 PM - 5:00 PM

23. Harvest weed seed control and other new tactics (1.0 PM)
Bob Hartzler, professor and Extension weed scientist, Agronomy, Iowa State University, Ames, IA

As herbicide resistant weeds continue to increase, new control tactics are essential. Harvest weed seed control (HWSC) is designed to reduce the return of weed seed to the field during harvest. This session will review the different approaches to HWSC and their effectiveness in our cropping systems. Other new approaches to relieve the pressure on herbicides will also be reviewed.

Session J - Thursday, 10:10 AM - 11:00 AM
Session K - Thursday, 11:10 AM - 12:00 PM

24. Effects of seed treatments on SCN in laboratory and field experiments (1.0 PM)
Gregory Tylka, professor, Plant Pathology and Microbiology, Iowa State University, Ames, IA

Nematode-protectant seed treatments are a new option for managing the soybean cyst nematode (SCN). Laboratory research has been conducted at Iowa State University to understand how the seed treatments affect specific aspects of the biology of SCN. Also, many experiments have been conducted over the past few years throughout Iowa to assess effects of the seed treatments in the field. Results of both laboratory and field experiments will be presented and discussed in this session.

Session A - Wednesday, 9:00 AM - 9:50 AM
Session C - Wednesday, 11:00 AM - 11:50 AM

Nutrient Management

25. In nitrogen management one size does NOT fit all! (1.0 NM)
Fabián Fernández, associate professor, Soil, Water and Climate, University of Minnesota, St Paul, MN

It would sure be nice to have a single nitrogen management recipe to give consistent results in every acre every year. The reality is that many variables impact nitrogen availability and crop development. We often talk about using the right time, source, rate, and placement, but what does that look like in real life? This presentation will focus on recent research findings to help us better understand some of the variables to watch for that can “make it or break it” when it comes to nitrogen management.

Session A - Wednesday, 9:00 AM - 9:50 AM
Session B - Wednesday, 10:00 AM - 10:50 AM

26. Corn nitrogen fertilization: Production and environment aspects (1.0 NM)
John Sawyer, professor and Extension soil fertility specialist, Agronomy, Iowa State University, Ames, IA

Corn most often requires nitrogen application for optimal production. However, crop management, hybrid development, and weather can significantly affect crop response, fertilization requirement, and production outcome. In addition, there needs to be consideration for potential environmental impact. Therefore, how should multiple management aspects be considered in overall nitrogen fertilization decisions.

Session L - Thursday, 1:00 PM - 1:50 PM
Session M - Thursday, 2:00 PM - 2:50 PM
27. **Corn and soybean grain yield, phosphorus and potassium removal, and soil-test trend responses to long-term fertilization strategies** (1.0 NM)

*Antonio Mallarino, professor, Agronomy, Iowa State University, Ames, IA*

Maintaining desirable soil-test P and K values based on amounts removed with harvest is an essential part of profitable and environmentally sound management for these nutrients. Many Iowa fields have higher than optimum soil-test phosphorus and potassium levels because many farmers have applied higher fertilizer rates higher than needed. Given the prevailing low prices for grain, farmers need to watch closely soil-test level changes over time and prevailing yield levels of their fields in order to maximize the profitability of both fertilizer use and crop production. The presentation will provide and discuss results of long-term experiments in which grain yield, nutrient removal with harvest, and soil-test values have been measured during many years.

*Session J - Thursday, 10:10 AM - 11:00 AM*

*Session K - Thursday, 11:10 AM - 12:00 PM*

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28. **Liming research update and application strategies with low crop prices** (1.0 NM)

*Antonio Mallarino, professor, Agronomy, Iowa State University, Ames, IA*

Strong soil acidity seriously limits crop yield and the profitability of crop production. When crop prices are low, however, liming is one of the first inputs for which farmers reduce application rates or postpone applying until prices improve. This presentation will review useful concepts about pH and lime management, share results of recent research on liming for corn and soybean, and will discuss options for lime management especially when crop prices are unfavorable.

*Session U - Wednesday, 1:00 PM - 1:50 PM*

*Session E - Wednesday, 2:00 PM - 2:50 PM*

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29. **The impact of manure management and cover crops on drainage water quality and yields** (1.0 NM)

*Brian Dougherty, graduate research assistant, Agricultural and Biosystems Engineering, Iowa State University, Ames, IA*

This presentation will summarize ten years of drainage water quality and yield data from the Northeast Research and Demonstration Farm in Nashua, IA. The effects of cereal rye cover crops, timing of swine manure application, and a nitrification inhibitor will be discussed. Cover crop N uptake data will also be presented.

*Session H - Thursday, 8:00 AM - 8:50 AM*

*Session I - Thursday, 9:00 AM - 9:50 AM*

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**Soil and Water Management**

30. **CSR2 - A refresher about Iowa’s soil productivity rating** (1.0 SW)

*C. Lee Burras, professor, Agronomy, Iowa State University, Ames, IA*

CSR and now CSR2 have been part of Iowa since 1971. Their official purpose is for equitable rural land assessment although pragmatically they have been used to set yield goals, cash rent rates, land sale prices, etc. This presentation will explain how CSR2 is determined, followed by describing why productivity ratings sometimes work great and sometimes do not.

*Session F - Wednesday, 3:10 PM - 4:00 PM*

*Session G - Wednesday, 4:10 PM - 5:00 PM*

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31. **The daily erosion project: Informing conservation decisions** (1.0 SW)

*Brian Gelder, adjunct assistant professor, Agronomy, Iowa State University, Ames, IA*

Soil management decisions affect each farm’s bottom line every year but these decisions also impact long term soil productivity and yield potential. The Daily Erosion Project, a near real time erosion estimator, can help inform and guide conservation decisions at the field and watershed level.

*Session F - Wednesday, 3:10 PM - 4:00 PM*

*Session G - Wednesday, 4:10 PM - 5:00 PM*
Conference Program

32. Impact of cover crop mixtures on water quality and cash crop yield (1.0 SW)
Emily Waring, graduate research assistant, Agricultural and Biosystems Engineering, Iowa State University, Ames, IA; Mark Licht, assistant professor and Extension cropping systems specialist, Agronomy, Iowa State University, Ames, IA

This study evaluated the impact of different cover crop species on water quality and cash crop yield at six ISU Research farms. There were three treatments: single species, a mixture of species, and no cover crop before both corn and soybean. The single species is cereal rye before soybean and oats before corn. The mixture species treatment is hairy vetch, oats, and radish before corn and cereal rye, rapeseed, and radish before soybean.

Session B - Wednesday, 10:00 AM - 10:50 AM
Session A - Wednesday, 9:00 AM - 9:50 AM

33. Meeting the Iowa Nutrient Reduction Strategy goals: Scaling up practice adoption (1.0 SW)
Jamie Benning, Extension water quality program manager, Iowa State University, Ames, IA; Matt Helmers, professor, Agricultural and Biosystems Engineering, Iowa State University; Mark Licht, assistant professor, Agronomy, Iowa State University.

In this highly interactive workshop, participants will respond to questions about water quality in Iowa on their smartphones. Responses will be instantly and anonymously displayed for all participants to review. The presenters will lead discussions on each question and as a result, participants will: identify the primary sources of nitrate-N and phosphorus (P) in Iowa surface water bodies, compare effective nitrate-N and P loss practices, evaluate the costs, benefits and barriers to adoption of the practices, and determine strategies for scaling up practice adoption to meet the Iowa Nutrient Reduction Strategy goals.

Session M - Thursday, 2:00 PM - 2:50 PM
Session N - Thursday, 3:00 PM - 3:50 PM

34. Impacts of 4R Nitrogen Management on nitrate-N loss in subsurface drainage (1.0 SW)
Matthew Helmers, professor and Extension agricultural engineer, Agricultural and Biosystems Engineering, Iowa State University, Ames, IA

This presentation will summarize subsurface drainage data from three sites with various 4R nitrogen management treatments. Crop yield and nitrate-N loss responses will be discussed.

Session D - Wednesday, 1:00 PM - 1:50 PM
Session E - Wednesday, 2:00 PM - 2:50 PM

35. Potential of 'do-it-yourself' soil health measurements (1.0 SW)
Marshall McDaniel, assistant professor, soil-plant interactions, Agronomy, Iowa State University, Ames, IA

Laboratories around the United States offer comprehensive soil health tests, but these are very expensive (ranging from $50-$100 per sample). We discuss alternative, inexpensive, and scientifically-robust ways farmers can measure their own soil health. One method we will highlight is decomposing tea as a comprehensive biological indicator of soil health.

Session H - Thursday, 8:00 AM - 8:50 AM
Session I - Thursday, 9:00 AM - 9:50 AM

36. Long-term tillage and crop rotation effects on yield, economic returns, and soil carbon (1.0 SW)
Mahdi Al-Kaisi, professor and Extension soil and water management specialist, Agronomy, Iowa State University, Ames, IA

This presentation will cover yield, economic returns, and soil carbon changes at 7 locations in Iowa for the past 14 years. This study includes five tillage systems (no-till, strip-tillage, chisel-plow, deep-rip, and moldboard-plow) with three crop rotations of Corn-Soybean, Corn-Corn-Soybean, and Continuous Corn.

Session L - Thursday, 1:00 PM - 1:50 PM
Session N - Thursday, 3:00 PM - 3:50 PM

Pesticide Applicator Training
37. **Seed Treatment Continuing Instruction Course** (1.0 PM)
*Betsy Buffington, Extension program specialist, Pesticide Safety Education Program, Iowa State University, Ames, IA*

The Seed Treatment CIC program will provide continuing instruction credit for commercial pesticide applicators certified in categories 4 and 10. Topics covered will include equipment calibration, safe application techniques, and issues concerning treated seed.

*To receive recertification, applicators must also attend a seed-treatment related pest management workshop in addition to this workshop. Options are workshops 18, 19, 20 or 24.*

**Session L - Thursday, 1:00 PM - 1:50 PM**

38. **Commercial Ag Weed, Insect, and Disease Management Continuing Instruction Course** (1.0 PM)
*Betsy Buffington, Extension program specialist, Pesticide Safety Education Program, Iowa State University, Ames, IA*

The Commercial Ag Weed, Insect, and Disease Management Continuing Instruction Course program will provide recertification credit for commercial pesticide applicators certified in categories 1A, 1B, 1C, and 10. Some of the topics covered include equipment calibration and safe application techniques, pesticide drift reduction, phytotoxicity, and pesticide stewardship. To receive recertification applicators must also attend one pest management session in each of the subcategories they are certified (1A, 1B, and/or 1C) in addition to this session.

*To receive recertification applicators must also attend one pest management session in each of the subcategories they are certified (1A, 1B, and/or 1C) in addition to this session.*

**Category 1A-Weeds - Workshops 13, 21, 22 or 23**
**Category 1B-Insects - Workshops 13, 15 or 16**
**Category 1C-Crop Diseases - Workshops 13, 17, 18, 19, 20 or 24**

**Session M - Thursday, 2:00 PM - 2:50 PM**
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| Lunch | 11:50 AM | 1st and 2nd floor, Scheman Building. Staff will direct you to buffet lines and seating areas. |

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| Break | 2:50 PM | 1st floor lobby and 2nd floor lobby areas, Scheman Building |

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<tr>
<th>Session G</th>
<th>4:10 PM</th>
<th>22 Owen</th>
<th>Herbicide-resistant weeds and community-based management approaches:</th>
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<tr>
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<p>| Adjourn | 5:00 PM | Conference adjourns for the day. |</p>
<table>
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<th>Session H</th>
<th>8:00 AM</th>
<th>16 Coates</th>
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Break
9:50 AM
1st floor lobby, Scheman Building

<table>
<thead>
<tr>
<th>Session J</th>
<th>10:10 AM</th>
<th>18 Vitteto</th>
<th>The battle against Pythium seedling diseases in corn</th>
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<td></td>
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<td>Corn and soybean grain yield, phosphorus and potassium removal, and</td>
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<td>14 Adkins</td>
<td>Agricultural sustainability and Integrated Pest Management</td>
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<td>Industrial hemp in Iowa: The past, the present and the future?</td>
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<td>2018 cropping year in review: Crop yields and soil nitrogen</td>
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</table>

Lunch
12:00 PM
1st and 2nd floor, Scheman Building. Staff will direct you to buffet lines and seating areas.

<table>
<thead>
<tr>
<th>Session L</th>
<th>1:00 PM</th>
<th>20 Mueller</th>
<th>Update on soybean diseases - 2018</th>
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<tr>
<td></td>
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<td>Fly in the ointment: Soybean gall midge</td>
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<td>26 Sawyer</td>
<td>Corn nitrogen fertilization: Production and environment aspects</td>
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<td>36 Al-Kaisi</td>
<td>Long-term tillage and crop rotation effects on yield, economic returns, and soil</td>
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<td>37 Buffington</td>
<td>Seed Treatment Continuing Instruction Course</td>
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<td>33 Benning</td>
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<td>38 Buffington</td>
<td>Commercial Ag Weed, Insect, and Disease Management Continuing</td>
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Adjourn
4:00 PM
Conference closes. Have a safe drive home.
Integrated Crop Management Conference
November 28 – 29, 2018 | Ames, Iowa

Pre-registration is required to attend this conference. No registrations will be accepted at the conference. Deadline for registration is noon, November 26, 2018. Space is limited for this event and registration will be closed if capacity is reached. Updates on workshop availability and conference status will be posted online.

After acceptance of your registration a receipt will be provided by e-mail.

Registration includes morning and afternoon refreshments, lunch each day, and one copy of the conference proceedings book.

Registration is for both days. Single-day registration is not offered.

Cancellations requesting a refund must be received by midnight, November 16, 2018. Call (515) 294-6429 or anr@iastate.edu to cancel a registration.

Registrations are not accepted by telephone. Submit this form (2 pages) with check payment to:
ANR Program Services
1151 NSRIC
1029 N University Blvd
Ames, IA 50011-3611

For assistance with registration, receipts, billing, cancellation or questions on the status of your registration please contact ANR Program Services at anr@iastate.edu or (515) 294-6429.

Commercial Pesticide Applicator Recertification – Recertification is for calendar year 2018. There is a separate recertification fee for each session offered - Commercial Ag (1A, 1B, 1C) and Seed Treatment (4). In addition to the required recertification session applicators must attend one pest management workshop for each category. See program listings for details and qualifying workshops.

**THIS REGISTRATION FORM HAS TWO PAGES.**
Both pages are required to complete registration.

Register online at www.aep.iastate.edu/icm

<table>
<thead>
<tr>
<th>Conference Registration</th>
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<tbody>
<tr>
<td>Early registration - $225 (before midnight, November 19)</td>
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<tr>
<td>Late registration - $275 (before noon, November 26)</td>
</tr>
<tr>
<td>Women in Ag breakfast (Thurs, Nov 29 – no additional charge)</td>
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<tr>
<td>Commercial Ag - Categories 1A, 1B, 1C - $35</td>
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<tr>
<td>Seed Treatment - Category 4 - $35</td>
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</tbody>
</table>

check number (payable to Iowa State University)  
TOTAL $  

**Don't forget page 2 - workshop selections**

To register by mail, please complete **both pages** of this registration form, attach a check payable to Iowa State University and mail to:

ANR Program Services
1151 NSRIC
1029 N University Blvd
Ames, IA 50011-3611

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Iowa State University Extension and Outreach does not discriminate on the basis of age, disability, ethnicity, gender identity, genetic information, marital status, national origin, pregnancy, race, religion, sex, sexual orientation, socioeconomic status, or status as a U.S. veteran. (Not all prohibited bases apply to all programs.) Inquiries regarding non-discrimination policies may be directed to Ross Wilburn, Diversity Officer, 2150 Beardshear Hall, 515 Morrill Road, Ames, Iowa 50011, 515-294-1852, wilburn@iastate.edu.
2018 Integrated Crop Management Conference | Registration, page 2

Select one workshop for each session you are attending. Workshop numbers listed below refer to presentation descriptions found on the website and in the program booklet. If a workshop has reached capacity every effort will be made to adjust your selections to accommodate your request.

Name: [ ]

THERE ARE TWO PAGES TO THIS FORM.

Wednesday, November 28, 2018

Session A - Wednesday, 9:00 AM - 9:50 AM
- 11 – 2019 Ag market outlook: Dealing with multiple sources of s...
- 19 – What’s new with corn disease?
- 24 – Effects of seed treatments on SCN in laboratory and field ...
- 25 – In nitrogen management one size does NOT fit all!
- 32 – Impact of cover crop mixtures on water quality and cash cr...

Session B - Wednesday, 10:00 AM - 10:50 AM
- 2 – Quality of the 2018 crop
- 6 – Sensing technologies for precision plant stress phenotypin...
- 7 – Crop rotation reduces environmental stresses that limit co...
- 11 – 2019 Ag market outlook: Dealing with multiple sources of s...
- 25 – In nitrogen management one size does NOT fit all!
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Session C - Wednesday, 11:00 AM - 11:50 AM
- 2 – Quality of the 2018 crop
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Session D - Wednesday, 1:00 PM - 1:50 PM
- 5 – Drivers of within-field spatial and temporal variability o...
- 13 – IPM 101: The pest management skills game show
- 21 – Weed science potpourri
- 28 – Liming research update and application strategies with low...
- 34 – Impacts of 4R Nitrogen Management on nitrate-N loss in sub...

Session E - Wednesday, 2:00 PM - 2:50 PM
- 5 – Drivers of within-field spatial and temporal variability o...
- 13 – IPM 101: The pest management skills game show
- 21 – Weed science potpourri
- 28 – Liming research update and application strategies with low...
- 34 – Impacts of 4R Nitrogen Management on nitrate-N loss in sub...

Session F - Wednesday, 3:10 PM - 4:00 PM
- 4 – The evolving use of digital technology in U.S. crop produc...
- 8 – Using hybrid performance trials to win the game.
- 12 – Land values and interest rates: Will Iowa farms sink or sw...
- 22 – Herbicide-resistant weeds and community-based management a...
- 30 – CSR2 - A refresher about Iowa's soil productivity rating
- 31 – The daily erosion project: Informing conservation decision...

Session G - Wednesday, 4:10 PM - 5:00 PM
- 4 – The evolving use of digital technology in U.S. crop produc...
- 8 – Using hybrid performance trials to win the game.
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Thursday, November 29, 2018

Session H - Thursday, 8:00 AM - 8:50 AM
- 9 – The ins and outs of selling cover crop seed.
- 16 – Insect resistance to Bt crops
- 17 – An overview of tar spot in corn: From Latin America to the...
- 29 – The impact of manure management and cover crops on drainage...
- 35 – Potential of 'do-it-yourself' soil health measurements

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Session J - Thursday, 10:10 AM - 11:00 AM
- 3 – 2018 cropping year in review: Crop yields and soil nitroge...
- 10 – Industrial hemp in Iowa: The past, the present and the fut...
- 14 – Agricultural sustainability and Integrated Pest Management
- 18 – The battle against Pythium seedling diseases in corn
- 23 – Harvest weed seed control and other new tactics
- 27 – Corn and soybean grain yield, phosphorus and potassium rem...

Session K - Thursday, 11:10 AM - 12:00 PM
- 3 – 2018 cropping year in review: Crop yields and soil nitroge...
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- 14 – Agricultural sustainability and Integrated Pest Management
- 18 – The battle against Pythium seedling diseases in corn
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Session L - Thursday, 1:00 PM - 1:50 PM
- 15 – Fly in the ointment: Soybean gall midge
- 20 – Update on soybean diseases - 2018
- 26 – Corn nitrogen fertilization: Production and environment as...
- 36 – Long-term tillage and crop rotation effects on yield, econ...
- 37 – Seed Treatment Continuing Instruction Course

Session M - Thursday, 2:00 PM - 2:50 PM
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- 26 – Corn nitrogen fertilization: Production and environment as...
- 33 – Meeting the Iowa Nutrient Reduction Strategy goals: Scalini...
- 38 – Commercial Ag Weed, Insect, and Disease Management Continu...

Session N - Thursday, 3:00 PM - 3:50 PM
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