



2011

66th Annual Meeting

North Central Weed Science Society

www.ncwss.org

December 12 – 15, 2011

Hyatt Regency Milwaukee

Milwaukee, WI

Please bring this program to the conference

President's Welcome

2011 North Central Weed Science Society Meeting

Welcome to Milwaukee and the 66th annual meeting of the North Central Weed Science Society.

This event is significantly important in the mission of the NCWSS to deliver research, education and training to persons responsible for weeds and their management. It provides a great opportunity to learn new techniques, share information and experiences and catch up with old or new friends. I hope this annual meeting is able to meet your expectations.

Mick Holm and the local arrangements committee have done an excellent job of preparing the hotel for our meeting. The Hyatt Regency Milwaukee is newly remodeled and will provide a high quality site and services. Milwaukee is a great city for our meeting with diverse restaurants, exciting nightlife and many local attractions.

Program Chair, Bryan Young, has been challenged with putting together a program that includes all the NCWSS sessions as well as allows for a joint meeting with the Midwest Invasive Plant Network and the Invasive Plants Association of Wisconsin. In addition, we will have the opportunity to attend a full day symposium on Giant Ragweed Biology and Management, a short symposium on What's New in Industry, and two full day sessions on Invasive Species Management. All this together with a full slate of papers and posters. Plan your schedule carefully so as to be able to attend as many of these sessions as possible.

The success of the NCWSS depends on your active participation through attendance and presentations as well as through your service on committees or as an office holder. Every committee of the society will meet during the conference. Please feel free to attend any committee meetings that interest you and please volunteer to serve. Committee assignments will be made shortly after this meeting, so please indicate your willingness to serve to the committee chair or to Bryan Young. Both you and the society will benefit from your involvement.

It has been a great privilege to serve you as President of NCWSS. I look forward to seeing you at the meeting and thank you for your continued active service and support of the NCWSS.

Mark Wrucke
President

General Information

Conference Headquarters

All sessions of the conference and the banquet will be held at the Hyatt Regency Milwaukee, 333 W Kilbourn Avenue, Milwaukee, WI 53203; Phone 414-276-1234.

Registration

Registration is required to attend the conference. Pre-registration is \$240 (includes banquet). Registration at the conference is \$290. Honorary members and Fellows pre-registration is \$170; registration at the conference is \$220.

Student pre-registration is \$120; student registration at the conference is \$170.

Registration for the Invasive Plant Symposium on Dec. 14 and 15 is \$150 (NCWSS members are automatically registered for this symposium). Non-member one-day registration fee is \$100.

Industry breakfast tickets are available to everyone for \$30.

Registration Hours

The registration desk (Regency Prefunction) will be open Monday 4 to 6:30 pm, Tuesday 7:30 am to 4 pm, Wednesday 8 to 11 am and 2 to 4 pm, and Thursday 8 to 10 am.

Local Arrangements Headquarters

Pere Marquette

Meeting Rooms

Additional meetings may be arranged any time during the conference by contacting the Local Arrangements Chair.

Proceedings

2011 NCWSS Proceedings will be available following the meeting online at the NCWSS website. Hard copies of the Proceedings may be ordered from Curran Associates (<http://www.proceedings.com/>).

Sustaining Members

Sustaining members that have made prior arrangements with the Industry Chair may put up a display in the Regency Prefunction area. No other displays are allowed.

No Smoking

Smoking is not permitted in the sessions.

Program Symbols

- * Presenting Author
- † Paper or poster in the graduate student contest
- †† Poster in the undergraduate student poster contest

Meetings of the Society 2011

Board of Directors

Monday, 1:00 pm Managers Suite (3rd floor)
Wednesday, 7:00 pm Managers Suite (3rd floor)

Local Arrangements

Monday, 11:00 am Pere Marquette
Thursday, 11:30 am (with 2012 committee) Pere Marquette

Contest Judges for Paper and Poster Contests

Judges breakfast, Tuesday, 7:00 am Gilpatrick A
Paper Judges, Tuesday, 7:15 am Gilpatrick B
Poster Judges, Tuesday, 7:15 am Gilpatrick C
Paper Judges, Tuesday, 6:00 pm Gilpatrick B
Poster Judges, Tuesday, 6:00 pm Gilpatrick C

Meal Functions

Breaks

Tuesday, 7:30 - 9:30 am Regency Prefunction
Tuesday, 3:00 - 4:00 pm Regency Prefunction
Wednesday, 9:45 - 10:30 am Regency Prefunction
Wednesday, 2:45 - 3:30 pm Regency Prefunction
Thursday, 9:45 - 10:30 am Regency Prefunction
Thursday, 3:00 - 3:30 pm Regency Prefunction

Student Mixer

Sponsored by BASF Corporation
Monday, 6:30 pm Regency AB

Student Luncheon/Business Meeting

Sponsored by Dow AgroSciences
Tuesday, 12:00 - 1:15 pm Milwaukee AB

Society Awards Luncheon

MC: Jed Colquhoun
Wednesday, 11:30 am Regency AB

Society Social

Sponsored by Industry - Open to all attendees
Wednesday, 5:30 - 7:00 pm Atrium

Industry Breakfast (Cost \$30)

Thursday, 7:00 am Lakeshore AB

Meetings of the Society 2011

The following meetings will take place for the purpose of conducting the business of each respective committee and to elect a new Vice Chair to serve as Chair in 2012. Most meetings are open to members. Please see the committee chair or attend the committee meeting if you are interested in serving the society by being a committee member.

NCWSS Committee Meetings

Program

Monday, 12:00 pm Pere Marquette

Distinguished Achievement Award

Tuesday, 12:00 pm Gilpatrick C

Strategic Planning

Tuesday, 4:30 pm Lakeshore A

Finance, Steering, & Policy

Tuesday, 5:30 pm Gilpatrick A

Future Site Selection

Tuesday, 5:30 pm Gilpatrick B

Nominating

Tuesday, 5:30 pm Gilpatrick C

Resident Education, Summer Contest, and Contest Rules Joint meeting

Wednesday, 7:00 am Crystal Room

NCWSS Fellow

Wednesday, 5:00 pm Gilpatrick B

Extension (Committee and Business Meeting)

Wednesday, 9:45 am Regency A

Resolutions & Necrology

Wednesday, 5:00 pm Gilpatrick C

Invasive Plants (Committee and Business Meeting)

Wednesday, 5:15 pm Lakeshore ABC

MIPN Board Meeting

Tuesday, 3:30 to 5:30 pm Managers Suite (3rd floor)

Meetings of the Society 2011

Program Section Business Meetings

Agronomic Crops I (Cereals, Sugar Beets, Dry Beans)

Thursday, 11:00 am Regency C

Agronomic Crops II (Corn, Sorghum)

Wednesday, 2:45 pm Regency D

Agronomic Crops III (Soybeans, Legumes)

Wednesday, 11:15 am Regency D

Extension

Wednesday, 9:45 am Regency A

Herbicide Physiology

Tuesday, 3:15 pm Regency A

Horticulture & Ornamentals

Wednesday, 4:30 pm Regency D

Equipment and Application Methods

Thursday, 11:45 am Regency B

Forestry/Industrial/Turf/Aquatics/Forage/Range

Tuesday, 2:45 pm Regency B

Poster Session

Monday, 6:00 pm Solomon Juneau

Weed Biology, Ecology & Management

Tuesday, 4:45 pm Regency C

Invasive Plants

Wednesday, 5:15 pm Lakeshore ABC

Giant Ragweed Biology and Management Symposium

Tuesday, 12:00 pm (Organizing Committee) Gilpatrick A

Wednesday, 5:00 pm (Business Meeting) Regency C

Special Interest Groups

Graduate Students (at luncheon)

Tuesday, 12:00 pm Milwaukee AB

Industry (at breakfast)

Thursday, 7:00 am Lakeshore AB

Symposia (NCWSS)

Giant Ragweed Biology and Management

Wednesday, 8:00 – 11:30 am Regency C

Wednesday, 1:30 – 5:00 pm Regency C

What's New in Industry?

Wednesday, 3:45 – 5:00 pm Regency AB

Invasive Plants Symposia (IPAW-MIPN-NCWSS)

Plenary Session	
Wednesday, 8:30 – 12:15 pm	Lakeshore ABC
Contributed Papers	
Wednesday, 1:30 – 5:15 pm	Lakeshore ABC
Cooperative Weed Management Areas	
Wednesday, 1:30 – 5:00 pm	Executive ABC
Early Detection and Rapid Response Initiatives	
Thursday, 8:30 – 12:00 pm	Regency A
Control of Woody Invasive Plants	
Thursday, 8:00 – 10:00 am	Regency D
Planning and Prioritization of Invasive Plant Management	
Thursday, 10:15 – 12:00 pm	Regency D
Control of Invasive Aquatic Plants	
Thursday, 1:30 – 3:15 pm	Regency A
Innovative Approaches for Managing Invasive Plants across Land Ownership Boundaries	
Thursday, 1:30 – 3:15 pm	Regency D
Assessing Invasion Potential of Species in Trade	
Thursday, 3:30 – 5:00 pm	Regency A
Control of Herbaceous Invasive Plants	
Thursday, 3:30 – 5:00 pm	Regency D
Invasive Plants Posters	
Wednesday 8:00 am – Thursday 5:00 pm	Executive D
Invasive Plants Exhibits	
Thursday, 8:00 am – 5:00 pm	Atrium

Condensed Program – NCWSS 2011

Monday, December 12

1:00 pm	Board of Directors Meeting	Managers Suite
1:00 – 9:30 pm	Poster Setup	Atrium
6:30 pm	Student Mixer	Regency AB

Tuesday, December 13

8:00 – 9:45	Poster Session I	Atrium
10:00 – 12:00	NCWSS General Session	Regency AB
12:00 – 1:15	Graduate Luncheon	Milwaukee AB
1:30 – 4:45	Soybeans/Legumes	Regency D
1:30 – 5:00	Weed Biology & Ecology	Regency C
1:30 – 3:30	Herbicide Physiology	Regency A
1:30 – 3:00	Forestry/Industrial/Turf/ Aquatics/Forage/Range	Regency B
3:15 – 5:00	Mixed Student Contest Papers	Regency B
3:45 – 5:00	Corn/Sorghum Contest Papers	Regency A
5:00 – 6:00	Poster Session II	Atrium

Wednesday, December 14

8:00 – 10:00	Corn/Sorghum	Regency B
8:00 – 11:30	Soybeans/Legumes	Regency D
8:00 – 10:00	Extension	Regency A
8:00 – 11:30	Giant Ragweed Biology and Mgt- <i>Spread, Biology, and Ecology</i>	Regency C
1:30 – 5:00	Giant Ragweed Biology and Mgt- <i>Management and Education</i>	Regency C
1:30 – 3:00	Corn/Sorghum	Regency D
3:15 – 4:45	Horticulture and Ornamentals	Regency D
3:45 – 5:00	What's New in Industry	Regency AB

Invasive Plants Symposium

8:00 – 5:00	Posters on display	Executive D
8:30 – 12:15	<i>Plenary Session</i>	Lakeshore ABC
1:30 – 5:15	<i>Contributed Papers</i>	Lakeshore ABC
1:30 – 5:00	<i>Cooperative Weed Management Areas</i>	Executive ABC

5:30 – 7:00	Society Social- <i>Open to all attendees</i>	Atrium
7:00 – 9:00	Board of Directors Meeting	Managers Suite

Condensed Program – NCWSS 2011 (cont.)

Thursday, December 15

7:00 – 8:30	Industry Breakfast	Lakeshore AB
8:00 – 12:00	Equipment and Application Methods	Regency B
8:30 – 11:00	Cereals/Sugar Beet/Dry Bean	Regency C
Invasive Plants Symposium		
8:00 – 5:00	Posters on display	Executive D
8:00 – 5:00	Invasive Plants Exhibits	Atrium
8:30 – 12:00	<i>Early Detection and Rapid Response Initiatives</i>	Regency A
8:00 – 10:00	<i>Control of Woody Invasive Plants</i>	Regency D
10:15 – 12:00	<i>Planning and Prioritization of Invasive Plant Management</i>	Regency D
1:30 – 3:15	<i>Control of Invasive Aquatic Plants</i>	Regency A
1:30 – 3:15	<i>Innovative Approaches for Managing Invasive Plants across Land Ownership Boundaries</i>	Regency D
3:30 – 5:00	<i>Assessing Invasion Potential of Species in Trade</i>	Regency A
3:30 – 5:00	<i>Control of Herbaceous Invasive Plants</i>	Regency D

Posters 2011

Poster Sessions

Room: Atrium

Chairperson and Moderator: Jerry Hora

Poster Setup

Posters can be set up between 1:00 and 9:30 pm on Monday, December 12. All posters will be on display from 8:00 am Tuesday, December 13 through 4:00 pm Wednesday December 14.

Students in the Poster Contest must be with their posters during both Poster Sessions on Tuesday for judging. Students in the poster contest are required to bring letter-sized copies of your posters to hand out.

Tuesday, December 13

8:00 – 9:45 am Poster Session I (non-contest authors present at odd numbered posters)

5:00 – 6:00 pm Poster Session II (non-contest authors present at even numbered posters)

Poster Removal

All posters not included in the Invasive Plants section must be removed between 4:00 and 5:00 pm on Wednesday.

Program Symbols

- * Presenting Author
- † Paper or poster in the graduate student contest
- †† Poster in the undergraduate student poster contest

Cereal/Sugar Beet/Dry Bean Posters

††Control of the Parasitic Weed Field Dodder in Glyphosate-Resistant Sugar Beets. David G. Reif*, Christy L. Sprague, Erin C. Taylor; Michigan State University, East Lansing, MI (1)

Organic Farmers' Weed Control Strategies in Dry Beans. Karen A. Renner*, Erin C. Taylor, Christy L. Sprague; Michigan State University, East Lansing, MI (2)

†Effect of Flaming and Cultivation on Weed Control and Yield in Sunflower. Brian D. Neilson*¹, Strahinja V. Stepanovic², Avishek Datta³, Chris A. Bruening⁴, George Gogos¹, Stevan Z. Knezevic³; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Belgrade, Belgrade, Serbia, ³University of Nebraska-Lincoln, Concord, NE, ⁴University of Nebraska, Lincoln, NE (3)

Dry Bean Tolerance to Halosulfuron Applied Postemergence. Nader Soltani*, Christy Shropshire, Peter H. Sikkema; University of Guelph, Ridgetown, ON (4)

Weed Control and Sensitivity of Oats (*Avena sativa*) with Various Doses of Saflufenacil. Nader Soltani*, Christy Shropshire, Peter H. Sikkema; University of Guelph, Ridgetown, ON (5)

Corn/Sorghum Posters

The Fecundity of Volunteer Corn in a Corn Production System. Tim J. Johnson*¹, Keri Carstens¹, Ray Layton²; ¹Pioneer Hi-Bred International, Ankeny, IA, ²DuPont, Ankeny, IA (6)

†Impact of Row Spacing on Weed Management Strategies in Corn. Grant A. Mackey*¹, Jonathan D. Green¹, Chad D. Lee¹, James R. Martin²; ¹University of Kentucky, Lexington, KY, ²University of Kentucky, Princeton, KY (7)

Effect of ACCase Tank Contamination in Corn. Evan B. Sonderegger*¹, Lowell D. Sandell¹, Stevan Z. Knezevic², Mark L. Bernards¹, Bradford K. Ramsdale³, Stephen L. Young⁴, Greg R. Kruger⁴; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Nebraska-Lincoln, Concord, NE, ³University of Nebraska-Lincoln, Curtis, NE, ⁴University of Nebraska-Lincoln, North Platte, NE (8)

Corn/Sorghum Posters (cont.)

†Evaluation of Application Program and Timing in Herbicide-Resistant Corn. Laura E. Bast*, Andrew J. Chomas, James J. Kells, Wesley J. Everman; Michigan State University, East Lansing, MI (9)

Economic Analysis of Various Weed Control Treatments in Corn, Soybean, and Sunflower. Ana Obradovic¹, Avishek Datta², Roger Wilson*³, Stevan Z. Knezevic²; ¹University of Belgrade, Belgrade, Serbia, ²University of Nebraska-Lincoln, Concord, NE, ³University of Nebraska-Lincoln, Lincoln, NE (10)

Corn Tolerance to Multiple Flaming. Dejan Nedeljkovic¹, Strahinja V. Stepanovic¹, Brian D. Neilson², Avishek Datta³, Chris A. Bruening⁴, George Gogos², Stevan Z. Knezevic*³; ¹University of Belgrade, Belgrade, Serbia, ²University of Nebraska-Lincoln, Lincoln, NE, ³University of Nebraska-Lincoln, Concord, NE, ⁴University of Nebraska, Lincoln, NE (11)

Effect of Flaming and Cultivation on Weed Control and Yield in Organic Corn. Strahinja V. Stepanovic*¹, Brian D. Neilson², Avishek Datta³, Chris A. Bruening⁴, George Gogos², Stevan Z. Knezevic³; ¹University of Belgrade, Belgrade, Serbia, ²University of Nebraska-Lincoln, Lincoln, NE, ³University of Nebraska-Lincoln, Concord, NE, ⁴University of Nebraska, Lincoln, NE (12)

Postemergence Horseweed Control in Corn with Realm Q Herbicide. Susan K. Rick*¹, Helen A. Flanigan²; ¹DuPont, Waterloo, IL, ²DuPont, Greenwood, IN (13)

Increasing Concerns Over Palmer Amaranth and Waterhemp in Kentucky. James R. Martin*¹, Jonathan D. Green², William W. Witt², Blake P. Patton³; ¹University of Kentucky, Princeton, KY, ²University of Kentucky, Lexington, KY, ³Graduate Student/Research Assistant, Lexington, KY (14)

Characterization of Protein Expression and Agronomics of Enlist Corn. David M. Simpson*¹, Eric F. Scherder², James W. Bing¹, Cory C. Cui¹; ¹Dow AgroSciences, Indianapolis, IN, ²Dow AgroSciences, Huxley, IA (15)

Soybean/Legume Posters

Soybean Tolerance to Multiple Flaming. Nihat Tursun¹, Avishek Datta², Brian D. Neilson³, Strahinja V. Stepanovic⁴, Chris A. Bruening⁵, George Gogos³, Stevan Z. Knezevic^{*2}; ¹Kahramanmaras Sutcu Imam University, Wayne, NE, ²University of Nebraska-Lincoln, Concord, NE, ³University of Nebraska-Lincoln, Lincoln, NE, ⁴University of Belgrade, Belgrade, Serbia, ⁵University of Nebraska, Lincoln, NE (16)

†Effect of Flaming and Cultivation on Weed Control and Yield in Organic Soybean. Strahinja V. Stepanovic¹, Brian D. Neilson², Avishek Datta³, Chris A. Bruening^{*4}, George Gogos², Stevan Z. Knezevic³; ¹University of Belgrade, Belgrade, Serbia, ²University of Nebraska-Lincoln, Lincoln, NE, ³University of Nebraska-Lincoln, Concord, NE, ⁴University of Nebraska, Lincoln, NE (17)

Influence of Clethodim Application Timing on Control of Volunteer Corn in Soybean. Paul Marquardt*, William G. Johnson; Purdue University, West Lafayette, IN (18)

†Fall and Spring Control of Field Pansy Prior to Soybean. Craig B. Langemeier^{*1}, Lowell D. Sandell¹, Greg R. Kruger²; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Nebraska-Lincoln, North Platte, NE (19)

Effect of Fall-Applied Soybean Herbicides on Spring Horseweed Populations. Bryan Reeb^{*1}, Mark M. Loux¹, Anthony F. Dobbels²; ¹The Ohio State University, Columbus, OH, ²The Ohio State University, South Charleston, OH (20)

†Comparing University and Grower Practices for Management of Giant Ragweed in Soybeans. JD Bethel*, Mark M. Loux; The Ohio State University, Columbus, OH (21)

†Influence of Application Height and Dicamba Rate on Glyphosate-Resistant Waterhemp and Giant Ragweed Control. Doug J. Spaunhorst^{*1}, Eric B. Riley², Kevin W. Bradley²; ¹University of Missouri-Columbia, Columbia, MO, ²University of Missouri, Columbia, MO (22)

†Variability in Response of Nebraska Palmer Amaranth (*Amaranthus palmeri*) Populations to 2,4-D and Dicamba. Roberto J. Crespo^{*1}, Bruno Canella Vieira¹, Gustavo Mastria¹, Lowell D. Sandell¹, Greg R. Kruger², Mark L. Bernards¹; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Nebraska-Lincoln, North Platte, NE (23)

Soybean/Legume Posters (cont.)

Enlist Soybean Crop Tolerance to PRE and VE Applications of 2,4-D Choline plus Residual Herbicides. Jonathan A. Huff^{*1}, Jeff M. Ellis², Brian D. Olson³, Kevin D. Johnson⁴, Andrew T. Ellis⁵; ¹Dow AgroSciences, Herrin, IL, ²Dow AgroSciences, Smithville, MO, ³Dow AgroSciences, Geneva, NY, ⁴Dow AgroSciences, Barnesville, MN, ⁵Dow AgroSciences, Greenville, MS (24)

Weed Management Systems with Dicamba-Tolerant Soybean in Illinois. Douglas Maxwell^{*1}, Lisa Gonzini¹, Simone Seifert-Higgins², Christopher D. Kamienski², Michael J. Regan³; ¹University of Illinois, Urbana, IL, ²Monsanto Company, St. Louis, MO, ³Monsanto Company, Washington, IL (25)

Weed Control in Dicamba-Tolerant Soybeans in Kansas. Dallas Peterson^{*1}, Christopher Mayo², Simone Seifert-Higgins³; ¹Kansas State University, Manhattan, KS, ²Monsanto, Gardner, KS, ³Monsanto Company, St. Louis, MO (26)

Dicamba Tolerant Soybeans in the Midwest. Simone Seifert-Higgins*; Monsanto Company, St. Louis, MO (27)

†Soil Persistence of Dicamba. Ashley A. Schlichenmayer*, Tye C. Shauck, Spencer A. Riley, Carey F. Page, Reid J. Smeda; University of Missouri, Columbia, MO (28)

†Influence of Sub-Lethal Rates and Application Timings of Growth Regulator Herbicides on Soybeans. Craig B. Solomon*, Jim D. Wait, Travis Legleiter, Eric B. Riley, Kevin W. Bradley; University of Missouri, Columbia, MO (29)

New Fierce Herbicide Use for Control of Problematic Weeds in North Central US Soybean Production. Eric J. Ott^{*1}, Dawn Refsell², Trevor M. Dale³, Gary W. Kirfman⁴, John A. Pawlak⁵; ¹Valent USA Corporation, Greenfield, IN, ²Valent USA Corporation, Lathrop, MO, ³Valent USA Corporation, Sioux Falls, SD, ⁴Valent USA Corporation, Ada, MI, ⁵Valent USA Corporation, Lansing, MI (30)

Equipment and Application Posters

†**Comparison of Herbicide Efficacy Using a Conventional Sprayer and an Ultra-Low Volume Sprayer.** J. Connor Ferguson^{*1}, Roch E. Gaussoin¹, John A. Eastin², Greg R. Kruger³; ¹University of Nebraska-Lincoln, Lincoln, NE, ²Kamterter LLC, Lincoln, NE, ³University of Nebraska-Lincoln, North Platte, NE (31)

Weed Control and Crop Response to Nonselective Herbicides Applied with Spray Hood Technology in Corn. Damian D. Franzenburg^{*}, Micheal D. Owen, James Lux, Dean Grossnickle; Iowa State University, Ames, IA (32)

Effect of Nozzle Type, Spray Droplet Size and Spray Volume on Crop Tolerance and Weed Control with Enlist Duo. David C. Ruen^{*1}, David E. Hillger², Eric F. Scherder³; ¹Dow AgroSciences, Lanesboro, MN, ²Dow AgroSciences, Indianapolis, IN, ³Dow AgroSciences, Huxley, IA (33)

Tank-Mix Compatibility of Various 2,4-D Herbicides. Laura J. Hennemann^{*1}, Gregory K. Dahl², Joe V. Gednalske², Eric Spandl², Lillian C. Magidow³; ¹Winfield Solutions, LLC, River Falls, WI, ²Winfield Solutions LLC, St. Paul, MN, ³Winfield Solutions, River Falls, WI (34)

Methodology for Utilizing Low Tunnel Structures to Evaluate Differences in Herbicide Volatility. David M. Simpson^{*1}, David E. Hillger¹, Eric F. Scherder²; ¹Dow AgroSciences, Indianapolis, IN, ²Dow AgroSciences, Huxley, IA (35)

Method to Develop Rankings Based on Droplet Size Spectra for Venturi Nozzles. Ryan S. Henry^{*1}, Greg R. Kruger¹, Jeffrey A. Golus², Clint Hoffman³, Bradley K. Fritz³, Robert N. Klein², William E. Bagley⁴; ¹University of Nebraska-Lincoln, North Platte, NE, ²University of Nebraska, North Platte, NE, ³USDA-ARS, College Station, TX, ⁴Wilbur Ellis Co., San Antonio, TX (36)

Forestry/Industrial/Turf/Aquatics/

Forage/Range Posters

†**Palmer Amaranth Control in Established Alfalfa with Dormant and Between Cutting Herbicide Treatments.** Josh A. Putman^{*}, Dallas Peterson; Kansas State University, Manhattan, KS (37)

Summer and Fall Herbicide Application for Saltcedar Control. Walter H. Fick^{*}, Wayne A. Geyer; Kansas State University, Manhattan, KS (38)

Herbicide Physiology Posters

†**Investigation of Resistance Mechanisms to Mesotrione and Atrazine in a Waterhemp (*Amaranthus tuberculatus*) Population from Illinois.** Rong Ma^{*1}, Dan McGinness¹, Nicholas Hausman², Aaron G. Hager³, Patrick J. Tranel³, Tim Hawkes⁴, Deepak Kaundun⁴, Gordon D. Vail⁵, Dean E. Riechers³; ¹UIUC, Urbana, IL, ²University of Illinois Champaign-Urbana, Champaign-Urbana, IL, ³University of Illinois, Urbana, IL, ⁴Syngenta, Bracknell, England, ⁵Syngenta Crop Protection, Greensboro, NC (39)

Aryloxyalkanoate Dioxygenase-12 Expression in 2,4-D Tolerant Soybean Treated with 2,4-D. Andrew P. Robinson^{*1}, David M. Simpson², Kerrm Yau², William G. Johnson¹; ¹Purdue University, West Lafayette, IN, ²Dow AgroSciences, Indianapolis, IN (40)

†**The Impact of Corn Nitrogen Concentration on Clethodim and Glufosinate Activity.** Ryan M. Terry^{*}, Paul Marquardt, James J. Camberato, William G. Johnson; Purdue University, West Lafayette, IN (41)

The Influence of Soil Microbes on the Efficacy of Glyphosate. Steven G. Hallett, William G. Johnson, Jessica R. Schafer^{*}; Purdue University, West Lafayette, IN (42)

†**The Influence of Water Carrier pH on Saflufenacil Solubility.** Jared M. Roskamp^{*}, William G. Johnson; Purdue University, West Lafayette, IN (43)

Horticulture and Ornamentals Posters

Use of Diquat plus Pyraflufen-ethyl Combinations as a Desiccant in Red Potato (*Solanum tuberosum*). Collin Auwarter*, Harlene M. Hatterman-Valenti; North Dakota State University, Fargo, ND (44)

Effect of Strip-Tillage, Cover Crops and Weed Management Intensity on Weeds in Snap-Beans. Dan C. Brainard, Corey Noyes*, Erin Haramoto; Michigan State University, East Lansing, MI (45)

Weed Biology/Ecology/Management Posters

Historical Distribution of Giant Ragweed in the Midwest Based on Herbaria Records. Ramarao Venkatesh*, Robert A. Ford, Emilie E. Regnier, Steven K. Harrison, Robin A. Taylor, Christopher H. Holloman, Mesfin Tadesse, Jason Witkop, John R. Moser, Nicholas A. Read; The Ohio State University, Columbus, OH (46)

Ecosystem Based Weed Management: Giant Ragweed in the Corn Belt. Emilie E. Regnier*¹, Ramarao Venkatesh², Steven K. Harrison¹, Florian Diekmann¹, Christopher H. Holloman¹, Robin A. Taylor¹, Mark M. Loux¹, John Cardina³, Joe E. Heimlich¹, Adam S. Davis⁴, Brian J. Schutte⁵, David E. Stoltenberg⁶, Kris J. Mahoney⁷, Bob G. Hartzler⁸, William G. Johnson⁹; ¹The Ohio State University, Columbus, OH, ²The Ohio State University, Columbus, OH, ³The Ohio State University, Wooster, OH, ⁴USDA-ARS, Urbana, IL, ⁵University of Illinois, Urbana, IL, ⁶University of Wisconsin-Madison, Madison, WI, ⁷University of Wisconsin-Platteville, Platteville, WI, ⁸Iowa State University, Ames, IA, ⁹Purdue University, West Lafayette, IN (47)

Management of Giant Ragweed (*Ambrosia trifida*): A Systematic Review. Florian Diekmann*¹, Emilie E. Regnier¹, Ramarao Venkatesh², Steven K. Harrison¹; ¹The Ohio State University, Columbus, OH, ²The Ohio State University, COLUMBUS, OH (48)

Weed Biology/Ecology/Management Posters (cont.)

Regional-Scale Variation in Giant Ragweed and Common Sunflower Demography. Sam E. Wortman¹, Adam S. Davis², Brian J. Schutte³, John Lindquist*⁴, John Cardina⁵, Joel Felix⁶, Christy L. Sprague⁷, Anita Dille⁸, Analiza Henedina M. Ramirez⁹, Sharon Clay¹⁰; ¹University of Nebraska-Lincoln, Lincoln, NE, ²USDA-ARS, Urbana, IL, ³University of Illinois, Urbana, IL, ⁴University of Nebraska, Lincoln, NE, ⁵The Ohio State University, Wooster, OH, ⁶Oregon State University, Ontario, OR, ⁷Michigan State University, East Lansing, MI, ⁸Kansas State University, Manhattan, KS, ⁹University of Florida, Lake Alfred, FL, ¹⁰South Dakota State University, Brookings, SD (49)

†Maximizing Cover Crop Productivity for Weed Suppression. Sam E. Wortman*¹, John Lindquist²; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Nebraska, Lincoln, NE (50)

†Effects of Increasing Weed Competition on Aboveground Switchgrass Biomass Allocation. Cassidy N. Yatso*, Catherine S. Tarasoff; Michigan Technological University, Houghton, MI (51)

†Using Predicted Emergence for More Efficient Weed Management in Organic Processing Tomato. Andrew M. Glaser*, Doug Doohan; The Ohio State University, Wooster, OH (52)

†Pollen Mediated Transfer of Fluazifop-P Resistance in Johnsongrass (*Sorghum halepense*). Tye C. Shauck*, Ashley A. Schlichenmayer, Reid J. Smeda; University of Missouri, Columbia, MO (53)

†Investigations into Glyphosate-Resistant Common Ragweed. Jason T. Parrish*, Mark M. Loux; The Ohio State University, Columbus, OH (54)

Response of Ohio Horseweed Populations to Glyphosate, Cloransulam, and 2,4-D. Jason T. Parrish*, Mark M. Loux, Bruce Ackley; The Ohio State University, Columbus, OH (55)

Weed Biology/Ecology/Management

Posters (cont.)

Management of Glyphosate-Resistant Marehail in Dicamba-Tolerant Soybeans. Jenny A. Stebbing*¹, Mark L. Bernards², Mayank S. Malik³, Simone Seifert-Higgins⁴, Lowell D. Sandell²; ¹University of Nebraska, Lincoln, NE, ²University of Nebraska-Lincoln, Lincoln, NE, ³Monsanto Company, Lincoln, NE, ⁴Monsanto Company, St. Louis, MO (56)

Extension Posters

The WeedOlympics: A National Weed Science Contest. Gregory R. Armel*¹, James Brosnan¹, Gregory K. Breeden¹, Jose J. Vargas¹, Mark A. Wrucke²; ¹University of Tennessee, Knoxville, TN, ²Bayer CropScience, Farmington, MN (57)

Community Engagement in Undergraduate Weed Science. Kris J. Mahoney*; University of Wisconsin-Platteville, Platteville, WI (58)

Dynamic Web-Based Platform for Display of Weed Management Information. Lowell D. Sandell*¹, Mark L. Bernards¹, Roch E. Gaussoin¹, Robert N. Klein², Stevan Z. Knezevic³, Greg R. Kruger⁴, Drew J. Lyon⁵, Zac J. Reicher¹, Stephen L. Young⁴, Robert G. Wilson⁵, Clyde L. Ogg¹; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Nebraska, North Platte, NE, ³University of Nebraska-Lincoln, Concord, NE, ⁴University of Nebraska-Lincoln, North Platte, NE, ⁵University of Nebraska-Lincoln, Scottsbluff, NE (59)

Summary of OSU Extension Educator End-of-Season Weed Surveys: 2007-2011. Mark M. Loux*¹, Bruce Ackley¹, Harold Watters², Greg Labarge³; ¹The Ohio State University, Columbus, OH, ²The Ohio State University, Urbana, OH, ³The Ohio State University, Wauseon, OH (60)

Invasive Plants Posters

†Response of Amur Honeysuckle (*Lonicera maackii* (Rupr.)) to Herbicides. Spencer A. Riley*, Reid J. Smeda; University of Missouri, Columbia, MO (61)

Invasive Plants Posters (cont.)

Canada Thistle Control with Imazapic and Saflufenacil. Avishek Datta¹, Jon E. Scott*², Leo D. Charvat³, Chad L. Brommer⁴, Stevan Z. Knezevic¹; ¹University of Nebraska-Lincoln, Concord, NE, ²University of Nebraska, Concord, NE, ³BASF Corporation, Lincoln, NE, ⁴BASF Corporation, Research Triangle Park, NC (62)

Control of Spotted Knapweed with Imazapic and Saflufenacil. Avishek Datta¹, Jon E. Scott², Leo D. Charvat*³, Chad L. Brommer⁴, Stevan Z. Knezevic¹; ¹University of Nebraska-Lincoln, Concord, NE, ²University of Nebraska, Concord, NE, ³BASF Corporation, Lincoln, NE, ⁴BASF Corporation, Research Triangle Park, NC (63)

Common Ragweed Dry Matter Allocation and Partitioning under Different Nitrogen and Density Levels. Avishek Datta*¹, Robert Leskovsek², Stevan Z. Knezevic¹; ¹University of Nebraska-Lincoln, Concord, NE, ²Agricultural Institute of Slovenia, Ljubljana, Slovenia (64)

Cattail Hybridization in the Midwest. Steven Travis*¹, Joy E. Marburger², Rachel Tamulonis¹; ¹University of New England, Biddeford, ME, ²National Park Service, Porter, IN (65)

Species Diversity After Chemical Control of Common Buckthorn Seedling Monocultures. Dean S. Volenberg¹, Marne L. Kaeske*²; ¹University of Wisconsin-Extension, Sturgeon Bay, WI, ²The Ridges Sanctuary, Baileys Harbor, WI (66)

Developing Biological Control for Common and Glossy Buckthorn. Andre Gassmann¹, Laura Van Riper*², Luke Skinner², Roger Becker³; ¹CABI Europe - Switzerland, Delemont, Switzerland, ²Minnesota Department of Natural Resources, St. Paul, MN, ³Univ. of Minnesota, St. Paul, MN (67)

Biological Control of Garlic Mustard (*Alliaria petiolata*) with the Root- and Crown-Boring Weevil, *Ceutorhynchus scrobicollis*. Elizabeth J. Katovich*¹, Roger Becker², Esther Gerber³, Harriet Hinz³, Luke Skinner⁴, David Ragsdale⁵; ¹University of Minnesota, St. Paul, MN, ²Univ. of Minnesota, St. Paul, MN, ³CABI-Europe, Delemont, Switzerland, ⁴Minnesota Department of Natural Resources, St. Paul, MN, ⁵Texas A&M University, College Station, TX (68)

Invasive Plants Posters (cont.)

European Insects as Potential Biological Control Agents for Common Tansy (*Tanacetum vulgare*) in Canada and the United States. Andre Gassmann¹, Alec McClay², Monika A. Chandler*³, John Gaskin⁴, Vera Wolf⁵, Ben Clasen⁶; ¹CABI Europe - Switzerland, Delemont, Switzerland, ²McClay Ecoscience, Sherwood Park, AB, ³Minnesota Department of Agriculture, St. Paul, MN, ⁴USDA-ARS Northern Plains Agricultural Research Laboratory, Sidney, MT, ⁵University of Bielefeld, Bielefeld, Germany, ⁶University of Minnesota, St. Paul, MN (69)

Biological Control of Invasive Plants in Minnesota. Monika A. Chandler*¹, Luke Skinner², Laura Van Riper²; ¹Minnesota Department of Agriculture, St. Paul, MN, ²Minnesota Department of Natural Resources, St. Paul, MN (70)

Wisconsin's Invasive Species Rule - NR40. Mindy Wilkinson*, Chrystal Schreck; WI DNR, Madison, WI (71)

Implementing Wisconsin's Invasive Species Rule. Kelly Kearns*¹, Courtney A. LeClair², Thomas M. Boos II³, Chrystal Schreck¹, Mindy Wilkinson¹; ¹WI DNR, Madison, WI, ²Invasive Plants Association of Wisconsin, Madison, WI, ³Wisconsin DNR, Madison, WI (72)

Slow the Spread by Sole and Tread: Don't Let Invasive Species Hitch a Ride. Bernadette Williams*¹, Thomas M. Boos II², Courtney A. LeClair³, Kelly Kearns⁴; ¹Wisconsin Department of Natural Resources, Madison, WI, ²Wisconsin DNR, Madison, WI, ³Invasive Plants Association of Wisconsin, Madison, WI, ⁴WI DNR, Madison, WI (73)

Contain Your Crawlers - Invasive Earthworms. Bernadette Williams*; Wisconsin Department of Natural Resources, Madison, WI (74)

CWMAs of Southern Ohio Work across Boundaries to Have Regional Impacts. Eric Boyda*¹, Cheryl R. Coon²; ¹Iron Furnace CWMA, Ironton, OH, ²U.S. Forest Service, Nelsonville, OH (75)

General Session

66th NCWSS Annual Meeting

Room: Regency AB

Chairperson and Moderator: Bryan Young

10:00 Milwaukee, Baseball, and a Weed-Free Miller Park! Rick Schlesinger*; Milwaukee Brewers, Milwaukee, WI.

10:15 Washington Report. Lee Van Wyche*; WSSA, Washington, DC (76)

10:30 Role of the WSSA Liaison to the U.S. EPA. Jill Schroeder*; New Mexico State University, Las Cruces, NM (77)

11:00 Herbicide-Resistant Weeds: U.S. EPA Perspective and Activity. Bill Chism*; U.S. EPA, Office of Pesticide Programs, Washington, DC (78)

11:30 NCWSS Presidential Address. Mark Wrucke*; Bayer CropScience, Farmington, MN (79)

11:45 Necrology Report. Aaron Hager; University of Illinois, Urbana, IL.

11:50 Announcements. Bryan Young, Program Chair, Southern Illinois University, Carbondale, IL.

Soybean/Legume Papers

Room: Regency D

Moderator: Ronald Krausz

- 1:30 †A Survey of Weed Incidence and Severity in Response to Management Practices in Missouri Soybean Production Fields.** Brock S. Waggoner*, Kevin W. Bradley; University of Missouri, Columbia, MO (80)
- 1:45 †Effect of Flaming and Cultivation on Weed Control and Yield in Conventional Soybean.** Strahinja V. Stepanovic*¹, Brian D. Neilson², Avishek Datta³, Chris A. Bruening⁴, George Gogos², Stevan Z. Knezevic³; ¹University of Belgrade, Belgrade, Serbia, ²University of Nebraska-Lincoln, Lincoln, NE, ³University of Nebraska-Lincoln, Concord, NE, ⁴University of Nebraska, Lincoln, NE (81)
- 2:00 †Effects of Lactofen on Branching and Yield in Soybean.** Evan B. Sonderegger*¹, Timothy M. Shaver², Charles S. Wortmann¹, James E. Specht¹, Greg R. Kruger²; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Nebraska-Lincoln, North Platte, NE (82)
- 2:15 Relationship Between Soybean Yield Loss and Crop Injury from 2,4-D and Dicamba Drift.** Andrew P. Robinson*¹, David M. Simpson², William G. Johnson¹; ¹Purdue University, West Lafayette, IN, ²Dow AgroSciences, Indianapolis, IN (83)
- 2:30 †Season Long Control of Waterhemp (*Amaranthus tuberculatus*) in No-till Soybeans.** Blake P. Patton*, William W. Witt; University of Kentucky, Lexington, KY (84)
- 2:45 †Economic Considerations of Soil Residual Herbicides Versus Postemergence Glyphosate Tank Mixtures in Soybeans.** R. Joseph Wuerffel*¹, Bryan G. Young¹, Julie M. Young¹, Joseph L. Matthews¹, Douglas Maxwell²; ¹Southern Illinois University, Carbondale, IL, ²University of Illinois, Urbana, IL (85)

3:00 Break**Soybean/Legume Papers (cont.)**

- 3:15 †Influence of Application Timings and Glyphosate Tank-Mix Partners on the Control of Glyphosate-Resistant Giant Ragweed (*Ambrosia trifida*).** Eric B. Riley*¹, Doug J. Spaunhorst², Brett D. Craigmyle¹, Travis Legleiter¹, Jim D. Wait¹, Kevin W. Bradley¹; ¹University of Missouri, Columbia, MO, ²University of Missouri-Columbia, Columbia, MO (86)
- 3:30 †Glyphosate-Resistant Giant Ragweed in Ontario: Survey and Control.** Joe P. Vink*¹, Peter H. Sikkema², Francois Tardif³, Darren E. Robinson², Mark B. Lawton⁴; ¹University of Guelph - Ridgetown Campus, Ridgetown, ON, ²University of Guelph, Ridgetown, ON, ³University of Guelph, Guelph, ON, ⁴Monsanto Canada, Guelph, ON (87)
- 3:45 †Control of Glyphosate-Resistant Palmer Amaranth in Michigan.** David K. Powell*, Christy L. Sprague; Michigan State University, East Lansing, MI (88)
- 4:00 †Response of Nebraska Waterhemp (*Amaranthus rudis*) Populations to 2,4-D and Dicamba.** Roberto J. Crespo*¹, Christopher J. Borman¹, Greg R. Kruger², Mark L. Bernards¹; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Nebraska-Lincoln, North Platte, NE (89)
- 4:15 Management of Glyphosate-Resistant Common Waterhemp (*Amaranthus rudis*) and Common Ragweed (*Ambrosia artemisiifolia*) in Dicamba-Resistant Soybean.** Carey F. Page*, Reid J. Smeda; University of Missouri, Columbia, MO (90)
- 4:30 †Investigations of Weed Management Programs for Use in Soybeans Resistant to 2,4-D and Glufosinate.** Brett D. Craigmyle*¹, Jeff M. Ellis², Kevin W. Bradley¹; ¹University of Missouri, Columbia, MO, ²Dow AgroSciences, Smithville, MO (91)

Weed Biology/Ecology/Management Papers

Room: Regency C

Moderator: George Kegode

- 1:30 †Modeling the Emergence Pattern of Winter Annual Weed Species in Nebraska.** Rodrigo Werle*¹, Mark L. Bernards², John Lindquist¹; ¹University of Nebraska, Lincoln, NE, ²University of Nebraska-Lincoln, Lincoln, NE (92)
- 1:45 Nitrogen Mineralization from Weed Residues.** Laura E. Bast*, Kurt Steinke, Darryl D. Warncke, Wesley J. Everman; Michigan State University, East Lansing, MI (93)
- 2:00 Smother Crop Mixtures for Canada Thistle Suppression during Organic Transition.** Stephanie Wedryk*¹, John Cardina²; ¹The Ohio State University, Columbus, OH, ²The Ohio State University, Wooster, OH (94)
- 2:15 †Mulch Effects on Pumpkin and Pollinator (*Peponapis pruinosa*) Performance.** Caitlin Splawski*, Emilie E. Regnier, Steven K. Harrison, Mark A. Bennett, James D. Metzger; The Ohio State University, Columbus, OH (95)
- 2:30 †Effects of Annual Grass Competition on Establishment of Switchgrass.** Ariel Larson*¹, Mark J. Renz², David E. Stoltenberg¹; ¹University of Wisconsin-Madison, Madison, WI, ²University of Wisconsin-Madison, Madison, WI (96)
- 2:45 †Dairy Compost Influence on Weed Competition and Potato Yield.** Alexander J. Lindsey*, Karen A. Renner, Wesley J. Everman; Michigan State University, East Lansing, MI (97)
- 3:00 Break**

Weed Biology/Ecology/Management Papers (cont.)

- 3:15 †Synchrony of Flowering in Grain Sorghum and Shattercane.** Jared J. Schmidt*¹, Jeff F. Pedersen², Mark L. Bernards¹, John Lindquist³, Aaron J. Lorenz¹; ¹University of Nebraska-Lincoln, Lincoln, NE, ²USDA-ARS, Lincoln, NE, ³University of Nebraska, Lincoln, NE (98)
- 3:30 †Influence of Sterilized and Non-Sterilized Missouri Soil Collections on Glyphosate Resistance in Waterhemp.** Kristin K. Rosenbaum*, Travis Legleiter, Jim D. Wait, Kevin W. Bradley; University of Missouri, Columbia, MO (99)
- 3:45 †Phenotypic Expression of Glyphosate Resistance in *Amaranthus* as Influenced by Application Time of Day.** Jonathon R. Kohrt*, Joseph L. Matthews, Julie M. Young, Bryan G. Young; Southern Illinois University, Carbondale, IL (100)
- 4:00 A Waterhemp (*Amaranthus tuberculatus*) Population Resistant to 2,4-D.** Mark L. Bernards*¹, Roberto J. Crespo¹, Greg R. Kruger², Roch E. Gaussoin¹, Patrick J. Tranel³; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Nebraska-Lincoln, North Platte, NE, ³University of Illinois, Urbana, IL (101)
- 4:15 Glyphosate Resistant Canada Fleabane in Ontario.** Peter H. Sikkema*¹, Nader Soltani¹, Francois Tardif²; ¹University of Guelph, Ridgetown, ON, ²University of Guelph, Guelph, ON (102)
- 4:30 Confirmation and Management of Glyphosate-Resistant Goosegrass in Tennessee.** Lawrence E. Steckel*¹, Kelly A. Barnett¹, James Brosnan²; ¹University of Tennessee, Jackson, TN, ²University of Tennessee, Knoxville, TN (103)
- 4:45 Weed Biology, Ecology and Management Business Meeting**

Herbicide Physiology Papers

Room: Regency A

Moderator: Paul Marquardt

- 1:30 Exploring the Roles of Individual *EPSP* Genes with Respect to Plant Growth and Glyphosate Interactions.** Ryan M. Lee*, Samal Zhussupbekova, Kevin Bruce, Scott Bauer, Dustin Houghton, Brian Watson; Indiana University, Bloomington, IN (104)
- 1:45 †Effect of Late Applications on Corn Ear Development and Yield.** Craig B. Langemeier*¹, Greg R. Kruger², Tamra A. Jackson¹, Lowell D. Sandell¹; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Nebraska-Lincoln, North Platte, NE (105)
- 2:00 Molecular Insights Into Glyphosate Resistance in Palmer Amaranth, Tall Waterhemp, Kochia, Common Lambsquarters, and Giant Ragweed.** Philip Westra*; Colorado State University, Ft. Collins, CO (106)
- 2:15 The Waterhemp Resistance Mechanism for PPO-Inhibiting Herbicides: Will it Occur in Other *Amaranthus* species?** Chance W. Riggins, Patrick J. Tranel*; University of Illinois, Urbana, IL (107)
- 2:30 The Response of Giant Ragweed (*Ambrosia trifida*), Horseweed (*Conyza canadensis*), and Common Lambsquarters (*Chenopodium album*) Biotypes to Glyphosate in the Presence and Absence of Soil Microorganisms.** Jessica R. Schafer*, William G. Johnson, Steven G. Hallett; Purdue University, West Lafayette, IN (108)
- 2:45 †The Effects of Carrier Water pH and Hardness on the Efficacy of Saflufenacil.** Jared M. Roskamp*, William G. Johnson; Purdue University, West Lafayette, IN (109)
- 3:00 †Response of Grapes to Simulated 2,4-D, Dicamba, and Glyphosate Drift.** Scott J. Wolfe*, Linjian Jiang, David Scurlock, Imed Dami, Doug Doohan; The Ohio State University, Wooster, OH (110)

3:15 Herbicide Physiology Business Meeting**3:30 Break****Forestry/Industrial/Turf/
Aquatics/Forage/Range Papers**

Room: Regency B

Moderator: Bob Masters

- 1:30 Effect of PRE and POST Herbicides on the Establishment and Productivity of Switchgrass in Wisconsin.** Mark J. Renz*; University of Wisconsin Madison, Madison, WI (111)
- 1:45 Rangeland Use of Aminocyclopyrachlor in Kansas.** Walter H. Fick*; Kansas State University, Manhattan, KS (112)
- 2:00 Rejuvra and DPX-Q2K06: New Herbicides for Range and Pasture Weed Control.** Susan K. Rick*¹, Jim D. Harbour², Jeff H. Meredith³, Craig Alford⁴; ¹DuPont, Waterloo, IL, ²DuPont Crop Protection, Lincoln, NE, ³DuPont, Memphis, TN, ⁴DuPont, Denver, CO (113)
- 2:15 F9007: A New Herbicide For Weed Control In Pastures and Wheat.** Joseph Reed*¹, Terry W. Mize², Gail G. Stratman³, Sam J. Lockhart⁴, Brent A. Neuberger⁵; ¹FMC, North Little Rock, AR, ²FMC Corp, Olathe, KS, ³FMC Corporation, Stromsburg, NE, ⁴FMC Corporation, Grandin, ND, ⁵FMC Corporation, West Des Moines, IA (114)
- 2:30 †Evaluation of Cattle Grazing Distribution in Response to Weed and Legume Removal in Tall Fescue Pastures.** Bryan C. Sather*, Travis Legleiter, Eric B. Riley, Jim D. Wait, Kevin W. Bradley; University of Missouri, Columbia, MO (115)
- 2:45 Forestry, Industrial, Turf, Aquatics, Forage and Range Business Meeting**
- 3:00 Break**

Mixed Student Contest Papers

Room: Regency B

Moderator: Vince Davis

- 3:15 †Injury and Yield Response of Transplanted *Solanaceae* and *Curcubitaceae* Vegetables to Low-Dose Applications of 2,4-D or Dicamba.** David P. Hynes*, William G. Johnson, Stephen C. Weller; Purdue University, West Lafayette, IN (116)
- 3:30 †Row Width and Population Effects on Weed and Crop Development in Black and Small Red Beans.** Ryan C. Holmes*, Christy L. Sprague; Michigan State University, East Lansing, MI (117)
- 3:45 †Differential Response of Common Lambsquarters, Powell Amaranth and Sugarbeet to Nitrogen.** Alicia J. Spangler*, Christy L. Sprague; Michigan State University, East Lansing, MI (118)
- 4:00 †Plant Residues and Newspaper Mulch Effects on Weed Emergence and Crop Performance.** Emilie E. Regnier, Steven K. Harrison, James D. Metzger, Mark A. Bennett, Nicholas A. Read*; The Ohio State University, Columbus, OH (119)
- 4:15 †Propane Dose-Response in Conventional Corn as Influenced by Flaming Equipment with and without Hoods.** Chris A. Bruening*¹, Brian D. Neilson², Strahinja V. Stepanovic³, Avishek Datta⁴, Stevan Z. Knezevic⁴, George Gogos²; ¹University of Nebraska, Lincoln, NE, ²University of Nebraska-Lincoln, Lincoln, NE, ³University of Belgrade, Belgrade, Serbia, ⁴University of Nebraska-Lincoln, Concord, NE (120)
- 4:30 †Design of a Combination Flaming and Cultivation Implement.** Brian D. Neilson*¹, Chris A. Bruening², Strahinja V. Stepanovic³, Avishek Datta⁴, George Gogos¹, Stevan Z. Knezevic⁴; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Nebraska, Lincoln, NE, ³University of Belgrade, Belgrade, Serbia, ⁴University of Nebraska-Lincoln, Concord, NE (121)

Mixed Student Contest Papers (cont.)

- 4:45 †Effect of Application Carrier Rate on a Conventional Sprayer System and an Ultra-Low Volume Sprayer.** J. Connor Ferguson*¹, Roch E. Gaussoin¹, John A. Eastin², Greg R. Kruger³; ¹University of Nebraska-Lincoln, Lincoln, NE, ²Kamterter LLC, Lincoln, NE, ³University of Nebraska-Lincoln, North Platte, NE (122)

Corn/Sorghum Student Contest Papers

Room: Regency A

Moderator: Eric Scherder

- 3:45 †Effect of Flaming and Cultivation on Weed Control and Yield in Conventional Corn.** Strahinja V. Stepanovic*¹, Brian D. Neilson², Avishek Datta³, Chris A. Bruening⁴, George Gogos², Stevan Z. Knezevic³; ¹University of Belgrade, Belgrade, Serbia, ²University of Nebraska-Lincoln, Lincoln, NE, ³University of Nebraska-Lincoln, Concord, NE, ⁴University of Nebraska, Lincoln, NE (123)
- 4:00 †Management of Burcucumber (*Sicyos angulatus*) in Corn.** Nathan D. Miller*, Mark M. Loux; The Ohio State University, Columbus, OH (124)
- 4:15 †Responses of an Illinois HPPD-Resistant Waterhemp (*Amaranthus tuberculatus*) Population to Soil-Applied Herbicides.** Nicholas Hausman*¹, Dean E. Riechers², Patrick J. Tranel², Douglas Maxwell², Lisa Gonzini², Aaron G. Hager²; ¹University of Illinois Champaign-Urbana, Champaign-Urbana, IL, ²University of Illinois, Urbana, IL (125)
- 4:30 †The Effect of Nitrogen Timing on Volunteer Corn Interference in Corn.** Ryan M. Terry*, James J. Camberato, William G. Johnson; Purdue University, West Lafayette, IN (126)
- 4:45 †Reduced Clethodim Efficacy on Volunteer Glyphosate-Resistant Corn from Tank Mixtures with Glyphosate, Dicamba, or 2,4-D.** Lucas A. Harre*, Julie M. Young, Joseph L. Matthews, Bryan G. Young; Southern Illinois University, Carbondale, IL (127)

Corn/Sorghum Papers

Room: Regency B

Moderators: Eric Scherder and Walter Thomas

- 8:00 Kochia Control in Corn.** Phillip W. Stahlman*, Patrick W. Geier, Seshadri S. Reddy; Kansas State University, Hays, KS (128)
- 8:15 The Effect of Nitrogen Rate on Volunteer Corn Bt Protein Expression.** Paul Marquardt*, Christian H. Krupke, James J. Camberato, William G. Johnson; Purdue University, West Lafayette, IN (129)
- 8:30 Response of a Tall Waterhemp (*Amaranthus tuberculatus*) Biotype to Soil-applied HPPD-Inhibiting and PS II Herbicides.** Patrick M. McMullan*¹, Michael DeFelice¹, Jerry M. Green²; ¹Pioneer Hi-Bred International, Johnston, IA, ²Pioneer Hi-Bred International, Newark, DE (130)
- 8:45 Update on HPPD-Resistant Waterhemp and Control Options in Corn and Soybean.** Aaron S. Franssen*¹, Vinod K. Shivrain², Gordon D. Vail²; ¹Syngenta Crop Protection, Seward, NE, ²Syngenta Crop Protection, Greensboro, NC (131)
- 9:00 Impact of Corn Drought Stress on Weed Control with Increasing Levels of Deficit Irrigation.** Randall S. Currie*, Jennifer Jester; Kansas State University, Garden City, KS (132)
- 9:15 Performance of Rimsulfuron + Dry Mesotrione + Isoxadifen in Midwest Corn Trials.** Larry H. Hageman*¹, Michael T. Edwards², Helen A. Flanigan³; ¹DuPont, Rochelle, IL, ²DuPont Crop Protection, Pierre Part, LA, ³DuPont, Greenwood, IN (133)
- 9:30 Evaluation of Weed Control and Crop Injury with Isoxaflutole + Thiencarbazone-methyl + Cyprosulfamide Alone or Tankmixes EPOST in Corn.** Mike Weber*¹, James R. Bloomberg², Mark A. Wrucke³; ¹Bayer CropScience, Indianola, IA, ²Bayer CropScience, RTP, NC, ³Bayer CropScience, Farmington, MN (134)

Corn/Sorghum Papers (cont.)

- 9:45 Enlist Corn Tolerance to 2,4-D Choline and Glyphosate Applications.** David C. Ruen*¹, Eric F. Scherder², Scott C. Ditmarsen³, Bradley W. Hopkins⁴, Jonathan A. Huff⁵; ¹Dow AgroSciences, Lanesboro, MN, ²Dow AgroSciences, Huxley, IA, ³Dow AgroSciences, Madison, WI, ⁴Dow AgroSciences, Westerville, OH, ⁵Dow AgroSciences, Herrin, IL (135)

10:00 Break**Soybean/Legume Papers**

Room: Regency D

Moderator: Ronald Krausz

- 8:00 Cultural Weed Control Value from Extra Soybean Plants, Can Growers Still Afford This?** Vince M. Davis*; University of Wisconsin, Madison, WI (136)
- 8:15 Interplant Soybean Competition: Do Small Soybean Plants become Weeds?** Vince M. Davis*¹, Nathan E. Mellendorf²; ¹University of Wisconsin, Madison, WI, ²University of Illinois, Champaign, IL (137)
- 8:30 Evaluating Residual Weed Control from Fall Applications of Iodosulfuron plus Thiencarbazone-Methyl.** Mark A. Waddington*¹, David J. Lamore², James R. Bloomberg³, Mark A. Wrucke⁴; ¹Bayer CropScience, Owensboro, KY, ²Bayer CropScience, Bryan, OH, ³Bayer CropScience, RTP, NC, ⁴Bayer CropScience, Farmington, MN (138)
- 8:45 Pyroxasulfone as a Component of Weed Management Programs in Soybean and Corn.** Andrew J. Woodyard*¹, Dennis Belcher², Dan Beran³, Caren Schmidt⁴, Brady Kappler⁵, Duane Rathman⁶, Mark Storr⁷, Paul Vassalotti⁸, Gery Welker⁹; ¹BASF, Champaign, IL, ²BASF, Columbia, MO, ³BASF, Sioux Falls, SD, ⁴BASF, DeWitt, MI, ⁵BASF, Eagle, NE, ⁶BASF, Waseca, MN, ⁷BASF, Nevada, IA, ⁸BASF, Cross Plains, WI, ⁹BASF, Winamac, IN (139)

Soybean/Legume Papers (cont.)

- 9:00 Update on Fierce Herbicide.** Dawn Refsell*¹, Eric J. Ott², Trevor M. Dale³, John A. Pawlak⁴; ¹Valent USA Corporation, Lathrop, MO, ²Valent USA Corporation, Greenfield, IN, ³Valent USA Corporation, Sioux Falls, SD, ⁴Valent USA Corporation, Lansing, MI (140)
- 9:15 Efficacy of F9310 and Sulfentrazone Premixes in Soybean Weed Management Programs in 2011.** Brent A. Neuberger*¹, Gail G. Stratman², Sam J. Lockhart³, Joseph Reed⁴, Sam J. Wilson⁵, Terry W. Mize⁶; ¹FMC Corporation, West Des Moines, IA, ²FMC Corporation, Stromsburg, NE, ³FMC Corporation, Grandin, ND, ⁴FMC, North Little Rock, AR, ⁵FMC Corporation, Cary, NC, ⁶FMC Corp, Olathe, KS (141)
- 9:30 Dicamba: A Highly Effective Weed Management Tool.** John Frihauf*¹, Steven J. Bower², Walter E. Thomas², Troy Klingaman³, Leo D. Charvat⁴; ¹BASF Corporation, RTP, NC, ²BASF Corporation, Research Triangle Park, NC, ³BASF Corporation, Seymour, IL, ⁴BASF Corporation, Lincoln, NE (142)
- 9:45 Stewardship of Dicamba in Dicamba-Tolerant Cropping Systems.** Walter E. Thomas*¹, Steven J. Bower¹, Luke L. Bozeman², Maarten Staal³, Terrance M. Cannan⁴; ¹BASF Corporation, Research Triangle Park, NC, ²BASF, Raleigh, NC, ³BASF Corporation, RTP, NC, ⁴BASF Corporation, Durham, NC (143)
- 10:00 Break**
- 10:15 Introducing a New Soybean Event with Glyphosate and HPPD Tolerance.** Jayla Allen*¹, John Hinz², Russ Essner¹, Jon Fischer³, Sally Van Wert⁴; ¹Bayer CropScience, Research Triangle Park, NC, ²Bayer CropScience, Story City, IA, ³Bayer CropScience, Middleton, WI, ⁴Bayer CropScience, Monheim, Germany (144)

Soybean/Legume Papers (cont.)

- 10:30 Selectivity of Glyphosate and HPPD-Inhibiting Herbicides in a New Herbicide-Tolerant Soybean Event.** John Hinz*¹, Jayla Allen², Fred Arnold³, Jerry Hora⁴, Dave Doran⁵, William W. DeWeese⁶; ¹Bayer CropScience, Story City, IA, ²Bayer CropScience, Research Triangle Park, NC, ³Bayer CropScience, Champaign, IL, ⁴Bayer CropScience, Maquoketa, IA, ⁵Bayer CropScience, Brownsburg, IN, ⁶Bayer CropScience, Marshall, MI (145)
- 10:45 Enlist Soybean Crop Tolerance and Yield in Elite Soybean Germplasm.** Eric F. Scherder*¹, Neil A. Spomer², John S. Richburg³, Ralph B. Lassiter⁴, Kevin D. Johnson⁵; ¹Dow AgroSciences, Huxley, IA, ²Dow AgroSciences, Brookings, SD, ³Dow AgroSciences, Headland, AL, ⁴Dow AgroSciences, Little Rock, AR, ⁵Dow AgroSciences, Barnesville, MN (146)
- 11:00 Enlist Soybean Weed Control.** Jeff M. Ellis*¹, Bradley W. Hopkins², Jonathan A. Huff³, Ralph B. Lassiter⁴, Larry L. Walton⁵; ¹Dow AgroSciences, Smithville, MO, ²Dow AgroSciences, Westerville, OH, ³Dow AgroSciences, Herrin, IL, ⁴Dow AgroSciences, Little Rock, AR, ⁵Dow AgroSciences, Tupelo, MS (147)
- 11:15 Agronomic Crops III (Soybeans, Legumes) Business Meeting**
- 11:30 NCWSS Awards Luncheon**

Extension Papers

Room: Regency A

Moderator: Jeff Stachler

- 8:00 Field Bindweed Control for Homeowners.** Rene Scoresby*; Green Light, Wausau, WI (148)
- 8:15 Pigweed Control in Cowpea/Sunn Hemp Cover Crop.** David Regehr*; Regehr Research LLC, Riley, KS (149)
- 8:30 A National Assessment of the Economic Benefits of Triazine Herbicides to U.S. Crop Producers.** Paul D. Mitchell*; University of Wisconsin, Madison, WI (150)
- 8:45 The Utility of Preemergence Herbicides in Glufosinate-Resistant Soybean in a Sugarbeet Rotation in Minnesota and North Dakota.** Jeff M. Stachler*, John L. Luecke; NDSU and U. of MN, Fargo, ND (151)
- 9:00 Herbicide Resistances in Waterhemp – and Now HPPD.** Micheal D. Owen*; Iowa State University, Ames, IA (152)
- 9:15 Herbicide Resistance Education- A Critical Step in Proactive Management.** Jeff M. Stachler*¹, Wesley J. Everman², Les Glasgow³, Lynn Ingegneri⁴, Jill Schroeder⁵, David R. Shaw⁶, John Soteres⁷, Francois Tardif⁸; ¹NDSU and U. of MN, Fargo, ND, ²Michigan State University, East Lansing, MI, ³Syngenta Crop Protection, Greensboro, NC, ⁴WSSA, Longmont, CO, ⁵New Mexico State University, Las Cruces, NM, ⁶Mississippi State University, Mississippi State, MS, ⁷Monsanto Company, St. Louis, MO, ⁸University of Guelph, Guelph, ON (153)
- 9:30 Discussion**
- 9:45 Extension Business and Committee Meeting**
- 10:00 Break**

Giant Ragweed Biology and Management Symposium

Room: Regency C

Moderators: Emilie Regnier/George Kegode/Joe Heimlich

Spread, Biology, and Ecology

- 8:00 Welcome and Introduction.** Emilie E. Regnier*¹, George O. Kegode²; ¹The Ohio State University, Columbus, OH, ²Northwest Missouri State University, Maryville, MO (154)
- 8:10 Ecology and Ethnobotany of Giant Ragweed in the Prehistoric Midwest.** Kristen J. Gremillion*; The Ohio State University, Columbus, OH (155)
- 8:30 Breeding System and Ecological Genetics of Common and Giant Ragweed.** Dean S. Volenberg*; University of Wisconsin-Extension, Sturgeon Bay, WI (156)
- 8:50 Giant Ragweed Seed Biology and Germination Ecology.** Brian J. Schutte*; University of Illinois, Urbana, IL (157)
- 9:10 Trophic Interactions and Their Potential Impacts on Giant Ragweed.** Steven K. Harrison*, Emilie E. Regnier; The Ohio State University, Columbus, OH (158)
- 9:30 Regional-Scale Variation in Giant Ragweed and Common Sunflower Demography in the Midwest.** John Lindquist*; University of Nebraska, Lincoln, NE (159)
- 9:45 Discussion**
- 10:00 Break**
- 10:15 Common Ragweed Growth and Seed Production as Influenced by Nitrogen and Plant Density.** Avishek Datta*¹, Robert Leskovsek², Stevan Z. Knezevic¹; ¹University of Nebraska-Lincoln, Concord, NE, ²Agricultural Institute of Slovenia, Ljubljana, Slovenia (160)

Giant Ragweed Biology and Management Symposium (cont.)

- 10:30 Contributions of Plant-Soil Feedback in Giant Ragweed Invasion.** Analiza Henedina M. Ramirez*¹, Anita Dille², Sharon Clay³, Adam S. Davis⁴, Joel Felix⁵, Fabian Menalled⁶, Richard Smith⁷, Christy L. Sprague⁸; ¹University of Florida, Lake Alfred, FL, ²Kansas State University, Manhattan, KS, ³South Dakota State University, Brookings, SD, ⁴USDA-ARS, Urbana, IL, ⁵Oregon State University, Ontario, OR, ⁶Montana State University, Bozeman, MT, ⁷University of New Hampshire, Durham, NH, ⁸Michigan State University, East Lansing, MI (161)
- 10:50 Cropping System Effects on Giant Ragweed.** David E. Stoltenberg*, Evan C. Sivesind, Mark R. Jeschke; University of Wisconsin-Madison, Madison, WI (162)

11:10 Discussion

11:30 NCWSS Awards Luncheon

Invasive Plants Symposium

Room: Lakeshore ABC

Moderator: Mark Renz

Plenary Session

- 8:30 Welcome & North Central Weed Science Society Update.** Mark A. Wrucke*; Bayer CropScience, Farmington, MN (163)
- 8:40 Midwest Invasive Plant Network Update.** Mark J. Renz*¹, Katherine M. Howe²; ¹University of Wisconsin Madison, Madison, WI, ²Purdue University, Indianapolis, IN (164)
- 8:50 Invasive Plants Association of Wisconsin Update.** Jerry D. Doll*; University of Wisconsin, Waunakee, WI (165)

Invasive Plants Symposium (cont.)

- 9:00 Invasive Plants; a Little Here, a Lot There: Can We Stop Them from Going Everywhere? – SEWISC Roadside Survey.** James Reinartz*; University of Wisconsin Milwaukee, Saukville, WI (166)
- 9:30 Building a National Early Detection and Rapid Response Network Using Cooperative Weed Management Areas (CWMAs) and Exotic Pest Plant Councils (EPPCs).** Charles T. Barger*¹; The University of Georgia, Tifton, GA (167)
- 10:00 Break**
- 10:15 Current and Future Trends in National Policies Involving Invasive Plants.** Lee Van Wychen*; WSSA, Washington, DC (168)
- 11:00 What's New at USDA-APHIS: Weed Screening with Uncertainty Analysis, and the Proposed NAPPRA List.** Barney P. Caton*; United States Department of Agriculture, Washington, DC (169)
- 11:30 Warmer and Weedier? The Fate of Invasive Plants in a Changing World.** Jeffrey S. Dukes*; Purdue University, West Lafayette, IN (170)
- 12:15 Lunch On Your Own**

Invasive Plants Symposium

Room: Lakeshore ABC

Moderator: Reid Smeda

Contributed Papers

- 1:30 Variable Success of Biological Control Agents for *Lythrum salicaria* in Minnesota Wetlands: Understanding Landscape Patterns in Plant Evolution and Management Efficacy.** Gina L. Quiram*; University of Minnesota, St. Paul, MN (171)
- 1:45 Spread Rate of *Phragmites australis* under Different Disturbance Events.** Stephen L. Young*; University of Nebraska-Lincoln, North Platte, NE (172)

Invasive Plants Symposium (cont.)

- 2:00 Building Weed Risk Assessments.** Mindy Wilkinson*; WI DNR, Madison, WI (173)
- 2:15 Native Grass Establishment after Invasive Weed Control with Aminopyralid.** Mary B. Halstvedt*¹, Vanelle Peterson², Rodney G. Lym³, Mike J. Moechnig⁴, Roger Becker⁵; ¹Dow AgroSciences, Billings, MT, ²Dow AgroSciences, Mulino, OR, ³North Dakota State University, Fargo, ND, ⁴South Dakota State University, Brookings, SD, ⁵Univ. of Minnesota, St. Paul, MN (174)
- 2:30 An Overview of Wisconsin's Best Management Practices for Invasive Species.** Thomas M. Boos II*; Wisconsin DNR, Madison, WI (175)
- 2:45 Urban Invasive Species Management- Engaging a Community.** Brian Russart*; Milwaukee CNTY Parks & University of Wisconsin Extension, Milwaukee, WI (176)
- 3:00 Break**
- 3:15 Eradication of *Phragmites australis* with Grazing and Herbicides.** Stephen L. Young*¹, Jerry Volesky¹, Karla Jenkins²; ¹University of Nebraska-Lincoln, North Platte, NE, ²University of Nebraska-Lincoln, Scottsbluff, NE (177)
- 3:30 Working with Highway Departments to Minimize the Spread of Invasive Plants.** Kelly Kearns*; WI DNR, Madison, WI (178)
- 3:45 Invasive Species Best Management Practice Implementation on Utility Right-of-Ways.** Crystal J. Koles*; American Transmission Company, De Pere, WI (179)

Invasive Plants Symposium (cont.)

- 4:00 Native Forb and Shrub Tolerance to Aminopyralid Applications for Invasive Weed Control.** Mary B. Halstvedt*¹, Vanelle Peterson², Geoge Beck³, Roger Becker⁴, Celestine Duncan⁵, Rodney G. Lym⁶, Mike J. Moechnig⁷, Peter M. Rice⁸; ¹Dow AgroSciences, Billings, MT, ²Dow AgroSciences, Mulino, OR, ³Colorado State University, Ft Collins, CO, ⁴Univ. of Minnesota, St. Paul, MN, ⁵Weed Management Services, Helena, MT, ⁶North Dakota State University, Fargo, ND, ⁷South Dakota State University, Brookings, SD, ⁸University of Montana, Missoula, MT (180)
- 4:15 Establishment of Native Forbs after Herbicide Applications.** Mark J. Renz*¹, Mary B. Halstvedt², Mike J. Moechnig³; ¹University of Wisconsin Madison, Madison, WI, ²Dow AgroSciences, Billings, MT, ³South Dakota State University, Brookings, SD (181)
- 4:30 Native and Invasive Plant Responses to EAB-Induced Ash Mortality.** Wendy S. Klooster*¹, Catherine P. Herms¹, Kathleen S. Knight², Deborah G. McCullough³, Daniel A. Herms¹, John Cardina⁴; ¹Ohio State University, Wooster, OH, ²USDA Forest Service, Wooster, OH, ³Michigan State University, East Lansing, MI, ⁴The Ohio State University, Wooster, OH (182)
- 4:45 Genetic and Age Patterns of Distribution to Reconstruct the Invasion History of Privet (*Ligustrum vulgare*).** Wanying Zhao*¹, John Cardina¹, Andrew Michel², Charles Goebel¹; ¹The Ohio State University, Wooster, OH, ²Ohio State University, Wooster, OH (183)
- 5:00 Invasive Earthworms and Their Relationship with the Spread of Terrestrial Invasives.** Bernadette Williams*; Wisconsin Department of Natural Resources, Madison, WI (184)

Invasive Plants Symposium

Room: Executive ABC

Moderator: Katherine Howe

Cooperative Weed Management Areas

- 1:30 Cooperative Weed Management Areas in the Midwest: An Overview.** Katherine M. Howe*; Purdue University, Indianapolis, IN (185)
- 1:45 Northwoods CWMA: Doing a Lot with a Little.** Darienne M. McNamara*; Northwoods Cooperative Weed Management Area, Washburn, WI (186)
- 2:00 The River to River CWMA's Invasive Plant Intern Program.** Chris W. Evans*; River to River CWMA, Marion, IL (187)
- 2:15 Beyond Boundaries: Various Techniques for Mapping Invasives in Southern Ohio.** Cheryl R. Coon^{*1}, Eric Boyda²; ¹U.S. Forest Service, Nelsonville, OH, ²Iron Furnace CWMA, Ironton, OH (188)
- 2:30 Partnerships for Invasive Species Management, Examples from Minnesota's Twenty Cooperative Weed Management Areas (CWMAs).** Daniel B. Shaw*; Minnesota Board of Water and Soil Resources, St. Paul, MN (189)
- 2:45 Getting Ahead of the Invasion: Establishing a Cooperative Weed Management Group on Lake Superior's North Shore to Manage Invasive Plants in an Area with Relatively Few Invasive Species.** Michael P. Lynch*; Cook County Invasive Team, Grand Marais, MN (190)
- 3:00 Break**
- 3:15 Door County Invasive Species Team (DCIST): Educating Land Stewards.** Marne L. Kaeske*; The Ridges Sanctuary, Baileys Harbor, WI (191)
- 3:30 Lake Erie CWMA: 1,700 Acres of Invasives Controlled in the First Year.** Michael Libben*; Lake Erie CWMA, Oak Harbor, OH (192)

Invasive Plants Symposium (cont.)

- 3:45 Taking It to the Streets, the Trails, the Nurseries, and the Boat Launches: Education and Outreach in a Regional CWMA.** Cathy A. McGlynn*; Northeast Illinois Invasive Plant Partnership, Glencoe, IL (193)
- 4:00 The Indiana Coastal Cooperative Weed Management Area: Planning and Prioritizing Invasive Plant Control Projects.** Maggie Byrne*; The Nature Conservancy, Merrillville, IN (194)
- 4:15 Panel Discussion**

Giant Ragweed Biology and Management Symposium

Room: Regency C

Moderator: Emilie Regnier/George Kegode/Joe Heimlich

Management and Education

- 1:30 Common Ragweed Spread and Management in Europe.** Boris Fumanal^{*1}, Beryl Laitung²; ¹University of Blaise Pascal, Clermont Ferrand, France, ²University of Burgundy, Dijon, France (195)
- 1:50 Climate Change and Ragweed Pollen: A Double Whammy for Public Health.** Kim Knowlton*; Natural Resources Defense Council, New York, NY (196)
- 2:10 Characteristics and Management of Herbicide Resistance in Giant Ragweed.** Mark M. Loux^{*1}, William G. Johnson²; ¹The Ohio State University, Columbus, OH, ²Purdue University, West Lafayette, IN (197)
- 2:30 Glyphosate-Resistant Giant Ragweed in the Western Cornbelt.** Lowell D. Sandell^{*1}, Avishek Datta², Stevan Z. Knezevic², Greg R. Kruger³; ¹University of Nebraska-Lincoln, Lincoln, NE, ²University of Nebraska-Lincoln, Concord, NE, ³University of Nebraska-Lincoln, North Platte, NE (198)
- 2:45 Discussion**
- 3:00 Break**

Giant Ragweed Biology and Management Symposium (cont.)

- 3:15 Biology and Management of Giant Ragweed in the Mid-South.** Kelly A. Barnett*, Lawrence E. Steckel; University of Tennessee, Jackson, TN (199)
- 3:30 Population Modeling as Decision Support Tool for Giant Ragweed Management.** Adam S. Davis*¹, Dan Tekiel², Brian J. Schutte³; ¹USDA-ARS, Urbana, IL, ²Virginia Tech, Blacksburg, VA, ³University of Illinois, Urbana, IL (200)
- 3:50 Decision-Making Theory in Assessing Organic Grower Perceptions of Weeds: Insights for Giant Ragweed Management.** Sarah Zwickle¹, Doug Doohan*², Robyn Wilson¹; ¹The Ohio State University, Columbus, OH, ²The Ohio State University, Wooster, OH (201)
- 4:10 Role of Regional Networking Groups in Ragweed Research and Education.** Kris J. Mahoney*¹, Joe E. Heimlich²; ¹University of Wisconsin-Platteville, Platteville, WI, ²The Ohio State University, Columbus, OH (202)
- 4:30 Discussion**
- 5:00 Giant Ragweed Symposium Business Meeting**

Corn/Sorghum Papers

Room: Regency D

Moderator: Eric Scherder

- 1:30 Enlist Corn Tolerance and Weed Control with PRE Followed by POST Herbicide Programs.** Scott C. Ditmarsen*¹, Courtney A. Gallup², Michael W. Melichar³, Patricia L. Prasifka³; ¹Dow AgroSciences, Madison, WI, ²Dow AgroSciences, Davenport, IA, ³Dow AgroSciences, Zionsville, IN (203)
- 1:45 Zemax: A New Mesotrione plus s-Metolachlor Formulation in Corn.** Ryan D. Lins*¹, Michael J. Urwiler², Gordon D. Vail³; ¹Syngenta, Byron, MN, ²Syngenta, Lubbock, TX, ³Syngenta Crop Protection, Greensboro, NC (204)

Corn/Sorghum Papers (cont.)

- 2:00 Performance of F9310 and F9316 in Midwestern PRE & Post Corn Trials in 2010 and 2011.** Gail G. Stratman*¹, Brent A. Neuberger², Sam J. Lockhart³, Joseph Reed⁴, Sam J. Wilson⁵, Terry W. Mize⁶; ¹FMC Corporation, Stromsburg, NE, ²FMC Corporation, West Des Moines, IA, ³FMC Corporation, Grandin, ND, ⁴FMC, North Little Rock, AR, ⁵FMC Corporation, Cary, NC, ⁶FMC Corp, Olathe, KS (205)
- 2:15 Anthemtm and Anthem ATZtm - Two New Herbicides for Preemergence and Postemergence Control of Key Broadleaf and Grass Weed Pests Affecting U.S. Corn and Soybean Production.** Terry W. Mize*¹, Sam J. Wilson², Timothy Martin³, Gail G. Stratman⁴, Brent A. Neuberger⁵; ¹FMC Corp, Olathe, KS, ²FMC Corporation, Cary, NC, ³FMC Corporation, Ewing, NJ, ⁴FMC Corporation, Stromsburg, NE, ⁵FMC Corporation, West Des Moines, IA (206)
- 2:30 Herbicide plus Fungicide Tank Mixtures Applied to V5 Corn.** Daren Bohannan*¹, David J. Lamore², James R. Bloomberg³; ¹Bayer CropScience, Athens, IL, ²Bayer CropScience, Bryan, OH, ³Bayer CropScience, RTP, NC (207)
- 2:45 Agronomic Crops II (Corn, Sorghum) Business Meeting**
- 3:00 Break**

Horticulture and Ornamental Papers

Room: Regency D

Moderator: Rodney Tocco Jr.

- 3:15 Use of Micro-Rates for Weed Control in Onion.** Harlene M. Hatterman-Valenti*, James R. Loken, Collin Auwarter; North Dakota State University, Fargo, ND (208)
- 3:30 Effect of Simulated Synthetic Auxin Herbicide Drift on Potatoes and Snap Beans.** Jed Colquhoun*, Daniel Heider, Richard Rittmeyer; University of Wisconsin, Madison, WI (209)

Horticulture and Ornamental Papers (cont.)

- 3:45 Herbicide Programs for Perennial Everbearing and Spring Bearing Strawberries Grown on Bare Soil.** Rodney V. Tocco Jr.*, Bernard H. Zandstra; Michigan State University, East Lansing, MI (210)
- 4:00 Preemergence and Postemergence Herbicides for Primocane-Bearing Raspberries.** Bernard H. Zandstra*, Rodney V. Tocco Jr.; Michigan State University, East Lansing, MI (211)
- 4:15 Residual Control of Grass and Broadleaf Weeds in Tree Fruit With Indaziflam.** William W. DeWeese*¹, Darren Unland², Matt Mahoney³; ¹Bayer CropScience, Marshall, MI, ²Bayer CropScience, Research Triangle Park, NC, ³Bayer CropScience, Oxford, MD (212)
- 4:30 Horticulture and Ornamentals Business Meeting**

What's New in Industry?

Room: Regency AB
 Moderator: Adrian Moses
 3:45-5:00pm

TKI NovaSource	Kurt Volker
Winfield Solutions	Lilian Magidow
DuPont	Helen Flanigan
Valent	Trevor Dale
Syngenta	Don Porter
FMC	Joseph Reed
Bayer	Mike Weber
BASF	Brady Kappler
Dow AgroSciences	Bruce Maddy
Monsanto	Chris Kamienski

Equipment and Application Methods Papers

Room: Regency B
 Moderator: Bertel Schou

- 8:00 Greenhouse Evaluation of a New Surfactant.** Angela J. Kazmierczak*¹, Rich Zollinger¹, John W. Mitchell²; ¹North Dakota State University, Fargo, ND, ²Taminco, Allentown, PA (213)
- 8:15 An Evaluation System for the Efficacy of Foliar Mn Fertilizers Tank-Mixed with Glyphosate.** Donald Penner*, Jan Michael, Tim Boring; Michigan State University, East Lansing, MI (214)
- 8:30 Acidic AMS Replacement Adjuvants: Part II.** Rich Zollinger*; North Dakota State University, Fargo, ND (215)
- 8:45 Use of Microemulsified High-Surfactant Oil (HS-MSO) in Ammonium Sulfate (AMS) Adjuvants for Tank Mixtures of Selective Herbicides with Glyphosate.** Gregory J. Lindner*; Croda Inc, New Castle, DE (216)
- 9:00 Performance of a Novel 2,4-D Formulation.** Gregory K. Dahl*¹, Joe V. Gednalske¹, Eric Spandl¹, Lillian C. Magidow², Laura J. Hennemann³; ¹Winfield Solutions LLC, St. Paul, MN, ²Winfield Solutions, River Falls, WI, ³Winfield Solutions, LLC, River Falls, WI (217)
- 9:15 Modeling Volatility of 2,4-D Formulations.** David E. Hillger*, Patrick L. Havens, Steve A. Cryer; Dow AgroSciences, Indianapolis, IN (218)
- 9:30 Avoid Drift and Off-Target Spray and Reduce Waste with a New Foam Herbicide Application Method.** John K. Lampe*; Green Shoots, LLC, Saint Paul, MN (219)

Equipment and Application Methods Papers (cont.)

9:45 Herbicide Performance is Improved by Drift Reduction and Deposition Adjuvants. Lillian C. Magidow*¹, Greg R. Kruger², Joe V. Gednalske³, Gregory K. Dahl³, Eric Spandl³, Laura J. Hennemann⁴; ¹Winfield Solutions, River Falls, WI, ²University of Nebraska-Lincoln, North Platte, NE, ³Winfield Solutions LLC, St. Paul, MN, ⁴Winfield Solutions, LLC, River Falls, WI (220)

10:00 Break

10:15 Herbicide Formulation and Adjuvant Effect on Spray Droplet Size with Various Spray Nozzles. William E. Bagley*¹, Clint Hoffman², Bradley K. Fritz², Greg R. Kruger³, Lowell D. Sandell⁴, Joe V. Gednalske⁵, Eric Spandl⁵, Gregory K. Dahl⁵, Laura J. Hennemann⁶, Lillian C. Magidow⁷, Ryan S. Henry³; ¹Wilbur Ellis Co., San Antonio, TX, ²USDA-ARS, College Station, TX, ³University of Nebraska-Lincoln, North Platte, NE, ⁴University of Nebraska-Lincoln, Lincoln, NE, ⁵Winfield Solutions LLC, St. Paul, MN, ⁶Winfield Solutions, LLC, River Falls, WI, ⁷Winfield Solutions, River Falls, WI (221)

10:30 Evaluation of Drift Reduction Nozzles and Adjuvants for Glyphosate-Dicamba Applications. Scott M. Bretthauer*¹, Robert E. Wolf², Aaron G. Hager¹; ¹University of Illinois, Urbana, IL, ²Wolf Consulting & Research LLC, Mahomet, IL (222)

10:45 Effect of Droplet Size on Performance of Glyphosate and Growth Regulator Herbicides. Greg R. Kruger*¹, Lowell D. Sandell², William E. Bagley³, Joe V. Gednalske⁴, Eric Spandl⁴, Gregory K. Dahl⁴, Laura J. Hennemann⁵, Lillian C. Magidow⁶, Clint Hoffman⁷, Bradley K. Fritz⁷, Ryan S. Henry¹; ¹University of Nebraska-Lincoln, North Platte, NE, ²University of Nebraska-Lincoln, Lincoln, NE, ³Wilbur Ellis Co., San Antonio, TX, ⁴Winfield Solutions LLC, St. Paul, MN, ⁵Winfield Solutions, LLC, River Falls, WI, ⁶Winfield Solutions, River Falls, WI, ⁷USDA-ARS, College Station, TX (223)

Equipment and Application Methods Papers (cont.)

11:00 Comparison of Nozzle Types for Postemergence Weed Control Using Glufosinate. Robert E. Wolf*¹, Scott M. Bretthauer², Loyd Wax³; ¹Wolf Consulting & Research LLC, Mahomet, IL, ²University of Illinois, Urbana, IL, ³Wax Ag Consulting, White Heath, IL (224)

11:15 DRT: Effect of Droplet Size on Performance of Various Herbicides. Joe V. Gednalske*¹, Eric Spandl¹, Gregory K. Dahl¹, Greg R. Kruger², Lillian C. Magidow³, Laura J. Hennemann⁴, Clint Hoffman⁵, Bradley K. Fritz⁵; ¹Winfield Solutions LLC, St. Paul, MN, ²University of Nebraska-Lincoln, North Platte, NE, ³Winfield Solutions, River Falls, WI, ⁴Winfield Solutions, LLC, River Falls, WI, ⁵USDA-ARS, College Station, TX (225)

11:30 Teaching Spray Nozzle Tip Selection. Robert N. Klein*; University of Nebraska, North Platte, NE (226)

11:45 Equipment and Application Methods Business Meeting

Cereals/Sugar Beet/Dry Bean Papers

Room: Regency C

Moderator: Ryan Lins

8:30 Incorporating Cover Crops into Organic Dry Bean Production Systems. Erin C. Taylor*, Karen A. Renner, Christy L. Sprague; Michigan State University, East Lansing, MI (227)

8:45 Preemergence Performance of F7583 in Sunflower Trials in 2010 and 2011. Sam J. Lockhart*¹, Gail G. Stratman²; ¹FMC Corporation, Grandin, ND, ²FMC Corporation, Stromsburg, NE (228)

9:00 Timing of Weed Removal and Herbicide Application Influenced Yield and Its Components in Imidazolinone-Resistant Sunflower. Avishek Datta*¹, Igor Elezovic², Stevan Z. Knezevic¹; ¹University of Nebraska-Lincoln, Concord, NE, ²University of Belgrade, Belgrade, Serbia (229)

9:15 Control of Waterhemp in Glyphosate-Resistant Sugarbeet. Jeff M. Stachler*, John L. Luecke; NDSU and U. of MN, Fargo, ND (230)

9:30 The Use of Flufenacet + Metribuzin and Mesosulfuron for Grass Control in Winter Wheat. Mark A. Waddington*¹, Mary D. Paulsgrove², Michael R. Schwarz³, Mark A. Wrucke⁴; ¹Bayer CropScience, Owensboro, KY, ²Bayer CropScience, Research Triangle Park, NC, ³Bayer CropScience, RTP, NC, ⁴Bayer CropScience, Farmington, MN (231)

9:45 OLYMPUS Herbicide- A New Pre-Emergence Use Pattern for Weed Control in Northern Plains Cereals. Bradley E. Ruden*¹, Steven R. King², Kevin B. Thorsness³, Dean W. Maruska⁴, Michael C. Smith⁵, Mary D. Paulsgrove⁶, Mark A. Wrucke⁷; ¹Bayer CropScience, Bruce, SD, ²Bayer CropScience, Huntley, MT, ³Bayer CropScience, Fargo, ND, ⁴Bayer CropScience, Warren, MN, ⁵Bayer CropScience, Sabin, MN, ⁶Bayer CropScience, Research Triangle Park, NC, ⁷Bayer CropScience, Farmington, MN (232)

10:00 Break

Cereals/Sugar Beet/Dry Bean Papers (cont.)

10:15 Introduction to Huskie Complete - A New Herbicide for Grass and Broadleaf Weed Control in Northern Plains Cereals. Kevin B. Thorsness*¹, Dean W. Maruska², Steven R. King³, Michael C. Smith⁴, Bradley E. Ruden⁵, Mary D. Paulsgrove⁶, Mark A. Wrucke⁷; ¹Bayer CropScience, Fargo, ND, ²Bayer CropScience, Warren, MN, ³Bayer CropScience, Huntley, MT, ⁴Bayer CropScience, Sabin, MN, ⁵Bayer CropScience, Bruce, SD, ⁶Bayer CropScience, Research Triangle Park, NC, ⁷Bayer CropScience, Farmington, MN (233)

10:30 Novel Small Grain Herbicide Performance. Gregory K. Dahl*¹, Joe V. Gednalske¹, Eric Spandl¹, Lillian C. Magidow², Laura J. Hennemann³; ¹Winfield Solutions LLC, St. Paul, MN, ²Winfield Solutions, River Falls, WI, ³Winfield Solutions, LLC, River Falls, WI (234)

10:45 Lessons Learned on Wheat Response to Certain ALS-inhibitor Herbicides When Topdressing Nitrogen Fertilizer. James R. Martin*, Dorothy L. Call, Edwin L. Ritchey, Jesse L. Gray; University of Kentucky, Princeton, KY (235)

11:00 Agronomic Crops I (Cereals, Sugar Beets, Dry Beans) Business Meeting

Invasive Plants Symposium

Room: Regency A
Moderator: Alycia Crall

Early Detection and Rapid Response Initiatives

8:30 Developing Cost Effective Early Detection Networks for Invasions. Alycia W. Crall*¹, Mark J. Renz², Brendon J. Panke², Gregory J. Newman³, Carmen Chapin⁴, Jim Graham³, Charles T. Barger⁵; ¹University of Wisconsin, Charlottesville, VA, ²University of Wisconsin Madison, Madison, WI, ³Colorado State University, Fort Collins, CO, ⁴National Park Service, Ashland, WI, ⁵The University of Georgia, Tifton, GA (236)

8:45 New Invaders Watch Program; Implementing EDRR at a Local Scale. Debbie Maurer*; Lake County Forest Preserve District, Libertyville, IL (237)

9:00 Proof of Concept for Using Habitat Suitability Models to Prioritize Invasive Species Monitoring. Alycia W. Crall¹, Catherine S. Jarnevich², Brendon J. Panke*³, Mark J. Renz³; ¹University of Wisconsin, Charlottesville, VA, ²U.S. Geological Survey, Fort Collins, CO, ³University of Wisconsin-Madison, Madison, WI (238)

9:15 State-Wide to Regional ED/RR: Updating the Efforts of Michigan and the Midwest Invasive Species Information Network. Amos Ziegler*¹, Phyllis Higman²; ¹Michigan State University, East Lansing, MI, ²Michigan Natural Features Inventory, Lansing, MI (239)

9:30 Developing the Great Lakes Early Detection Network: Integrating Local, State, and Regional Systems. Gregory J. Newman*¹, Alycia W. Crall², Brendon J. Panke³, Mark J. Renz³, Carmen Chapin⁴; ¹Colorado State University, Fort Collins, CO, ²University of Wisconsin, Charlottesville, VA, ³University of Wisconsin-Madison, Madison, WI, ⁴National Park Service, Ashland, WI (240)

9:45 Question and Answer

10:00 Break

Invasive Plants Symposium (cont.)

10:15 Invasive Species... There is an App and a Map for That. Charles T. Barger*¹; The University of Georgia, Tifton, GA (241)

10:30 The Journey from Early Detection to Rapid Response. Monika A. Chandler*¹, Laura Van Riper²; ¹Minnesota Department of Agriculture, St. Paul, MN, ²Minnesota Department of Natural Resources, St. Paul, MN (242)

10:45 Strategic Management of Priority Invasive Plants: Coordinated Control through the Southern Illinois Invasive Species Strike Team. Kevin Rohling*, Bruce Henry; The Nature Conservancy, Jonesboro, IL (243)

11:00 Early Detection and Rapid Response Efforts for Aquatic and Riparian Invasive Plants along the Lower Ohio River Valley. Chris W. Evans*; River to River CWMA, Marion, IL (244)

11:15 Panel Discussion

Invasive Plants Symposium

Room: Regency D
Moderator: Jerry Doll

Control of Woody Invasive Plants

8:00 Prescribed Grazing: Are Herbivores the "Natural" Choice? Jesse Bennett*; Driftless Land Stewardship LLC, Bagley, WI (245)

8:30 Buckthorn Ecology and Eradication. Thomas D. Brock*; Savanna Oak Foundation, Inc., Madison, WI (246)

9:00 The Silent Strangler – Oriental Bittersweet Identification, Biology, and Risk Assessment. Monika A. Chandler*; Minnesota Department of Agriculture, St. Paul, MN (247)

9:15 History and Management of Oriental Bittersweet at Giant City State Park, Illinois. Chris W. Evans*; River to River CWMA, Marion, IL (248)

Invasive Plants Symposium (cont.)

9:30 What Oriental Bittersweet Can Teach Us About Pest Species Management. Stephen B. Glass*; UW-Madison Arboretum, Madison, WI (249)

9:45 Panel Discussion

10:00 Break

Invasive Plants Symposium

Room: Regency D

Moderator: Roger Becker

Planning and Prioritization of Invasive Plant Management

10:15 Planning for Invasive Control Success. Ellen M. Jacquart*; The Nature Conservancy, Indianapolis, IN (250)

10:45 Connecting the Dots: Creating a Network for Communication, Collaboration, and Control. Cathy A. McGlynn*; Northeast Illinois Invasive Plant Partnership, Glencoe, IL (251)

11:15 A Comparison of Invasive Plant Prioritization Methods. Jennifer Hillmer*; Cleveland Metroparks, Fairview Park, OH (252)

11:30 Adaptive Management of Invasive Forest Plants. Sean M. Blomquist*; US Fish and Wildlife Service, Oak Harbor, OH (253)

11:45 Panel Discussion

12:00 Lunch On Your Own

Invasive Plants Symposium

Room: Regency A

Moderator: Kelly Kearns

Control of Invasive Aquatic Plants

1:30 Short and Long-Term Strategies for Exotic, Invasive Aquatic Macrophyte Control on Lulu Lake, Walworth Co., WI. Tim Gerber*¹, Jerry Ziegler²; ¹University of Wisconsin - La Crosse, Onalaska, WI, ²The Nature Conservancy, East Troy, WI (254)

2:00 Creative Responses to New Invasive Aquatic Plant Infestations. Susan Graham*; WI DNR, Fitchburg, WI (255)

2:30 Combining State and Private Efforts to Control an Unknown, but Very Aggressive Aquatic Invasive Plant. Susan Lehnhardt*, Aaron Kubichka; Applied Ecological Services, Inc, Brodhead, WI (256)

3:00 Panel Discussion

3:15 Break

Invasive Plants Symposium

Room: Regency D

Moderator: Debbie Maurer

Innovative Approaches for Managing Invasive Plants across Landownership Boundaries

1:30 Mapping and Management of Invasive Plants in Transportation Corridors; Using Natural Preserves to Help Prioritize Control Actions. Tim Pollowy*, Kevin Kleinjan; Hey and Associates, Volo, IL (257)

2:00 Strategies for Invasive Plant Management in the Chiwaukee Illinois Beach Lake Plain. Debbie Maurer*; Lake County Forest Preserve District, Libertyville, IL (258)

Invasive Plants Symposium (cont.)

2:30 Managing Invasive Plants on Private Lands; A Multi-Partner, Large-Scale Approach to Control *Phragmites australis* (Common Reed) and *Leymus arenarius* (Lyme Grass). Joe Henry*; Wisconsin Department of Natural Resources, Green Bay, WI (259)

3:00 Panel Discussion

3:15 Break

Invasive Plants Symposium

Room: Regency A

Moderator: Mark Renz

Assessing Invasion Potential of Species in Trade

3:30 Evaluation of *Miscanthus* Cultivars for Fecundity and Potential Invasiveness. Kayri Havens-Young*¹, Glen Madeja²; ¹Chicago Botanic Garden, Glencoe, IL, ²Northwestern University, Evanston, IL (260)

4:00 *Poa pratensis* Invasiveness in Prairies. Sabrina J. Ruis*¹, Mark Garrison¹, Mark J. Renz¹, Geunhwa Jung², John Stier²; ¹University of Wisconsin - Madison, Madison, WI, ²University of Massachusetts, Amherst, MA (261)

4:15 Worldwide Genetics of Reed Canarygrass: Is Native North American Reed Canarygrass Invading Wetlands? Andrew R. Jakubowski*¹, Randall D. Jackson¹, Michael D. Casler²; ¹University of Wisconsin-Madison, Madison, WI, ²USDA-ARS, Madison, WI (262)

4:45 Comparison of Seed Production and Viability of Burning Bush (*Euonymus alatus*) Cultivars in the Upper Midwest. Brendon J. Panke*, Mark J. Renz, Laura G. Jull; University of Wisconsin-Madison, Madison, WI (263)

Invasive Plants Symposium

Room: Regency D

Moderator: Courtney LeClair

Control of Herbaceous Invasive Plants

3:30 Weedy White Umbel Identification and Control. Courtney A. LeClair*; Invasive Plants Association of Wisconsin, Madison, WI (264)

4:00 Long-Term Leafy Spurge (*Euphorbia esula*) Management in an Oak Savanna Ecosystem. Jerry D. Doll*¹, Kim Mello²; ¹University of Wisconsin, Waunakee, WI, ²Ft. McCoy, Tomah, WI (265)

4:15 Japanese Hedge Parsley Ecology and Use of Mowing as a Management Tool. Rose M. Heflin*, Mark J. Renz; University of Wisconsin-Madison, Madison, WI (266)

4:30 Identification of Invasive Ornamental Grasses and Their Look-Alikes. Courtney A. LeClair*; Invasive Plants Association of Wisconsin, Madison, WI (267)

4:45 Strategies for Control Based on Life Cycle of Invasive Plants. Courtney A. LeClair*; Invasive Plants Association of Wisconsin, Madison, WI (268)

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North Central Weed Science Society Information

Honorary Members/Fellows

Honorary Members	1984	Edward W. Stroube *
1948	L.W. Dephart *	Oliver E. Strand *
1949	A.H. Larson *	Gail A. Wicks *
1950	J.W. Zahnley *	1985 Robert Hiltibran *
1951	R.W. Fuelleman	1986 Elroy J. Peters
	(posthumous citation)	Deane W. Finnerty *
	Ted F. Yost	Oliver G. Russ
	(posthumous citation)	1987 Ralph Althaus *
1952	Henry E. Wood *	William M. Phillips
1953	George Briggs *	Gerald R. Miller
	Walter C. Dutton *	1988 Robert Benson
1954	A.L. Bakke *	Calvin Messersmith
1955	Charles J. Willard *	Edward Stoller
1956	R.S. Dunham *	1989 Lloyd M. Wax
1957	P.J. Olson *	Alan R. Putman
1958	L.W. Melander	1990 Alan G. Dexter
	T.K. Pavlychenko	Russel L. Nash
	(posthumous citation)	1991 George Kapusta *
1959	E.A. Helgeson *	Marshall McGlamery
1960	Oliver C. Lee *	Russell Moomaw
1962	Sig Bjerken *	Don Penner
1964	K.P. Buchholtz *	1992 R. Gordon Harvey, Jr. *
	E.P. Sylwester *	Larry K. Binning
1966	Robert C. Beatty *	Alex R. Martin
	Clare Buskirk *	Don Taylor
1967	J.K. Freeman	1993 Merrill A. Ross, Jr.
1968	E.K. Alban *	Robert G. Wilson
	H.A. Friesen *	Jerry D. Doll
1969	Lawrence Southwick	1994 Ted R. Warfield
	David W. Staniforth *	William W. Witt
1970	Delbert D. Hemphill *	Fellows¹
	George Frederick Warren *	1995 Charles R. Fenster
1971	Fred W. Slife *	Leon J. Wrage
1972	Thomas Victor Beck	1996 Thomas T. Bauman
	O. Hale Fletchall *	Earl W. Chamberlain
1973	Richard Behrens	Richard S. Fawcett
	Lawrence H. Hannah	William E. Lueschen
1974	William Lobay	1997 Stephen D. Miller
1975	John D. Furrer	Michael D.K. Owen
1976	Lyle A. Derscheid *	Fred W. Roeth
	LeRoy G. Holm *	1998 Paul J. Ogg
1977	James W. Divall	James P. Worthington
	James L. Williams, Jr. *	1999 Michael Barrett
1978	Melwin K. McCarty *	Norman J. Probst
	Robert E. Nylund	2000 Douglas D. Buhler
1979	Ellery L. Knake *	Bill Miller
	Kenneth W. Bradfield *	Philip L. Orwick
1980	John D. Nalewaja	Stephen C. Weller
	O.C. Burnside	2001 LeRoy R. Cobia
1981	Rodney J. Fink	2002 James J. Kells
	Juett C. Hogancamp *	2003 Karen Ann Renner
	Larry W. Mitich *	Charles Slack
1982	W.D. Warpenter	Phillip Stahlman
	James W. Herron *	2004 Duane Rathman
	William F. Meggitt	David Regehr
1983	Robert N. Andersen	2005 Dallas E. Peterson
	Dale E. Bush	2006 James R. Martin
	Ronald E. Doersch	Bernard H. Zandstra

North Central Weed Science Society Information

Honorary Members/Fellows (continued)

2007	Chris M. Boerboom Michael J. Horak	2009	Jonathan D. Green Thomas B. Threewitt
2008	Thomas J. Peters Jeffrey Gunsolus Kassim Al-Khatib	2010	Robert N. Klein No nominations

* Deceased

¹Society members being honored were originally referred to as Honorary Members. Beginning in 1995, the award was changed to Fellow.

North Central Weed Science Society Presidents

1944	No President	1978	Doersch, Ronald E.
1945	Yost, Ted F. *	1979	Nalewaja, John D.
1946	Yost, Ted F. *	1980	Stroube, Edward W.
1947	Hanson, Noel S. *	1981	Herron, James W. *
1948	Willard, Charles J. *	1982	Benson, Robert L.
1949	Dunham, R. S. *	1983	DiVall, James W.
1950	Worzella, W. W. *	1984	Miller, Gerald R.
1951	Sylwester, Erhardt P. *	1985	Messersmith, Calvin G.
1952	Buchholtz, Kenneth P. *	1986	Wax, Lloyd M.
1953	Gilbert, C. J. *	1987	Chamberlain, Earl
1954	Lee, Oliver C. *	1988	Harvey, R. Gordon *
1955	Grigsby, Buford H. *	1989	Worthington, James P.
1956	Helgeson, Earl A. *	1990	Martin, Alex R.
1957	Slife, Fred W. *	1991	Taylor, T. Don
1958	Derscheid, Lyle A.	1992	Stoller, Edward W.
1959	Foster, J. Roe *	1993	Warfield, Ted R.
1960	Holm, Leroy G. *	1994	Bauman, Thomas T.
1961	Alban, E. K. *	1995	Cobia, LeRoy R.
1962	Bjerken Sig. *	1996	Dexter, Alan G.
1963	Hemphill, Delbert D. *	1997	Miller, Bill
1964	Hemphill, Delbert D. *	1998	Buhler, Douglas D.
1965	Furrer, John D.	1999	Orwick, Philip L.
1966	Furrer, John D.	2000	Kells, James J.
1967	Warden, Robert L. *	2001	Rathmann, Duane P.
1968	Flethall, O. Hale *	2002	Peterson, Dallas E.
1969	Beck, Thomas V.	2003	Horak, Michael J.
1970	Hannah, Lawrence H.	2004	Doll, Jerry D.
1971	Knake, Ellery *	2005	Peters, Tom
1972	Williams, Jr., James L. *	2006	Miller, Stephen D.
1973	Meggitt, William	2007	Moses, Adrian
1974	Bradfield, Kenneth W.	2008	Johnson, William G.
1975	Burnside, Orvin C.	2009	Holm, Mick
1976	Fink, Rodney J.	2010	Boerboom, Chris
1977	Carpenter, Will D.	2011	Wrucke, Mark

* Deceased

North Central Weed Science Society Information

Distinguished Achievement Award

1990	Gerald W. Gogan – Education Gail A. Wicks - Service Robert G. Wilson - Research Jeffrey L. Gunsolus - Young Scientist
1991	F. Strizke - Education Paul G. Mayland - Industry Patrick J. Shea - Research
1992	William W. Witt - Education James P. Worthington - Education Rex A. Liebl - Research Jerry D. Doll - Service
1993	Robert G. Hartzler - Education Douglas D. Buhler - Research Karen A. Renner - Young Scientist
1994	David L. Regehr - Education Deane W. Finnerty - Industry Robert N. Andersen - Service David A. Mortensen - Young Scientist
1995	Will D. Carpenter - Industry Phillip W. Stahlman - Research Michael D.K. Owen - Service
1996	Beverly R. Durgan - Education Charles L. Kern - Industry E. James Retzinger - Industry Michael J. Horak - Young Scientist
1997	Roger Becker - Education Joseph G. Vollmer - Industry Charles H. Slack - Research Richard Zollinger - Service David E. Stoltenberg - Young Scientist
1998	Randy W. Lloyd - Industry Ronald F. Krausz - Research James R. Martin - Service
1999	Thomas R. Hoverstad - Professional Staff Robert J. Kremer - Research J. D. Green - Service Chris M. Boerboom - Young Scientist Reid J. Smeda - Young Scientist
2000	Harlan P. Palm - Industry James F. Lux - Professional Staff Gary E. Powell - Professional Staff David A. Vox - Professional Staff William G. Johnson - Young Scientist
2001	John B. Masiunas - Education Bernard H. Zandstra - Education Patrick W. Geier - Professional Staff Douglas J. Maxwell - Professional Staff Kassim Al-Khatib - Research
2002	Paul L. Sprinkle - Industry Thomas B. Threewitt - Industry Monica Elmes - Professional Staff John L. Luecke - Professional Staff Bryan Young - Young Weed Scientist
2003	Mark Loux - Education Kenneth Carlson - Industry Daniel E. Schroeder - Industry Andrew Chomas - Professional Staff Jeffrey Stachler - Professional Staff

North Central Weed Science Society Information
Distinguished Achievement Award (continued)

2004 Gordon Roskamp - Education
 Robert N. Klein - Education
 David Stoltenberg - Research
 Robert E. Wolf - Service
 Patrick J. Tranel - Young Weed Scientist

2005 Chris Boerboom - Education
 Dennis Belcher - Industry
 Anthony F. Dobbels - Professional Staff
 Curtis R. Thompson - Service
 Christy Sprague - Young Scientist

2006 Richard K. Zollinger - Education
 John R. Hinz - Industry
 Christy Shropshire - Professional Staff
 Glenn Nice - Service
 Dean E. Riechers - Young Scientist

2007 Douglas Doohan - Education
 Kevin Gibson - Young Scientist
 Martin M. Williams II - Young Scientist

2008 Frank Forcella - Research
 Anita Dille - Young Scientist
 Damian Franzenburg - Professional Staff
 Joseph Matthews - Professional Staff

2009 Kevin W. Bradley – Young Scientist
 Adam S. Davis – Young Scientist
 Reid J. Smeda – Education
 Adrian J. Moses – Industry
 James L. Moody – Professional Staff

2010 Darren Robinson – Young Scientist
 Aaron Hager – Education
 Jon Scott – Professional Staff
 Peter Sikkema - Research

Herbicide Index

Common Name	Trade Name(s)	Manufacturer
2,4-D	Several	Several
2,4-D + triclopyr	Crossbow	Dow
2,4-DB	Butyrac	Albaugh
Acetochlor	Harness, Surpass, etc.	Monsanto, Dow
Acetochlor + atrazine	Harness Xtra, Keystone, etc	Monsanto, Dow
Acetochlor + flumetsulam + clopyralid	SureStart	Dow
Acifluorfen	Ultra Blazer	United Phosphorus
Acifluorfen + bentazon	Storm	United Phosphorus
Alachlor	Intrro, Micro-Tech	Monsanto
Ametryn	Evik	Syngenta
Aminocyclopyrachlor	Imprelis	DuPont
Aminopyralid	Milestone	Dow
Aminopyralid + 2,4-D	Forefront	Dow
Atrazine	Several	Several
Atrazine + s-metolachlor	Bicep II Magnum, etc.	Syngenta, etc.
Benefin	Balan	Loveland
Bensulide	Prefar	Gowan
Bentazon	Basagran	Arysta
Bromacil	Hyvar	DuPont
Bromacil + diuron	Krovar I	DuPont
Bromoxynil	Buctril	Bayer
Bromoxynil + MCPA	Bronate Advanced	Bayer
Carfentrazone-ethyl	Aim	FMC
Chlorimuron-ethyl	Classic	DuPont
Chlorimuron + metribuzin	Canopy	DuPont
Chlorimuron + thifensulfuron	Synchrony XP	DuPont
Chlorimuron + tribenuron	Canopy EX	DuPont
Chlorsulfuron	Glean, Telar	DuPont
Chlorsulfuron + metsulfuron	Finesse	DuPont
Chlorsulfuron + flucarbazone	Finesse Grass & Broadleaf	DuPont
Chlorsulfuron + sulfometuron + sulfentrazone	Throttle	DuPont
Clethodim	SelectMax	Valent
Clodinafop	Discover	Syngenta
Clomazone	Command	FMC
Clopyralid	Stinger	Dow
Clopyralid + 2,4-D	Curtail, Commando	Dow, Albaugh
Clopyralid + MCPA	Cutback M	Dow
Cloransulam-methyl	FirstRate	Dow
Cloransulam-methyl + flumetsulam	Frontrow	Dow
Cycloate	Ro-Neet	Helm Agro
DCPA	Dacthal	Ambac
Desmedipham	Betanex	Bayer
Desmedipham + phenmedipham + ethofumesate	Progress	Bayer
Dicamba	Banvel, etc.	Micro Flo
Dicamba + atrazine	Rifle Plus	Loveland
Dicamba + diflufenzopyr	Distinct, Overdrive, Status	BASF
Dichlobenil	Casoron	Chemtura
Dichlorprop (2,4-DP)	Several	Several
Diclosulam	Strongarm	Dow
Diffufenzopyr	BAS 654	BASF
Dimethenamid-P	Outlook	BASF
Dimethenamid-P + atrazine	Guardsman Max, Gmax Lite	BASF
Dimethipin	Harvade	Chemtura
Diquat	Reglone	Syngenta
Dithiopyr	Dimension	Dow
Diuron	Karmex, Direx	Several
Endothal	Several	Elf Atochem
EPTC	Eptam, Eradicane	Gowan
Ethalfuralin	Curbit	Loveland
Ethalfuralin + clomazone	Strategy	Loveland
Ethametsulfuron	Muster	DuPont
Ethofumesate	Nortron	Bayer
Fenoxaprop	Acclaim, Puma, Whip	Bayer
Fenoxaprop + pyrasulfotole + bromoxynil	Wolverine	Bayer
Florasulam + MCPA-Ester	Orion	Syngenta
Fluazifop-P	Fusilade DX	Syngenta
Fluazifop-P + fenoxaprop	Fusion	Syngenta
Flucarbazone	Everest	Bayer
Flufenacet	Define	Bayer
Flumetsulam	Python	Dow
Flumetsulam + clopyralid	Hornet	Dow
Flumeturon	Cotoran	Syngenta

Herbicide Index

Common Name	Trade Name(s)	Manufacturer
Flumiclorac	Resource	Valent
Flumioxazin	Valor	Valent
Flumioxazin + chlorimuron	Valor XLT	Valent
Flumioxazin + cloransulam-methyl	Gangster	Valent
Flumioxazin + pyroxasulfone	Fierce	Valent
Flumioxazin + pyroxasulfone + chlorimuron	Fierce XLT	Valent
Fluthiacet-ethyl	Cadet	FMC
Fluthiacet-ethyl + pyroxasulfone	Anthem	FMC
Fluroxypyr	Starane, etc.	Dow
Fluroxypyr + aminopyralid	CleanWave	Dow
Fluroxypyr + bromoxynil	Starane NXT	Dow
Fluroxypyr + clopyralid	WideMatch	Dow
Fomesafen	Flexstar, Reflex	Syngenta
Fomesafen + glyphosate	Flexstar GT	Syngenta
Foramsulfuron	Option	Bayer
Foramsulfuron + iodosulfuron	Equip	Bayer
Fosamine	Krenite	DuPont
Glufosinate	Ignite, Finale, Rely	Bayer
Glyphosate	Several	Several
Glyphosate + 2,4-D	Landmaster BW	Monsanto
Halosulfuron	Permit, Manage, Sempra	Gowan
Halosulfuron + dicamba	Yukon	Gowan
Hexazinone	Velpar	DuPont
Hexazinone + diuron	Velpar Alfamax	DuPont
Hexazinone + sulfometuron	Westar	DuPont
Imazamethabenz	Assert	Nufarm
Imazamox	Raptor, Beyond	BASF
Imazapic	Plateau	BASF
Imazapyr	Arsenal, Chopper, Habitat	BASF
Imazapyr + imazethapyr	Lightning	BASF
Imazapyr + sulfometuron + metsulfuron	Lineage HWC, Lineage Prep	DuPont
Imazapyr + metsulfuron	Lineage, Clearstand	DuPont
Imazaquin	Scepter, Image	BASF
Imazethapyr	Pursuit	BASF
Imazethapyr + glyphosate	Extreme	BASF
Indaziflam	Alon	Bayer
Iodosulfuron	Autumn	Bayer
Isoxaben	Gallery	Dow
Isoxaflutole	Balance Flexx	Bayer
Isoxaflutole + thiencazone-methyl	Corvus	Bayer
Lactofen	Cobra, Phoenix	Valent
Linuron	Lorox, Linex	Tessenderlo Kerley
MCPA	Several	Several
MCPB	Thistrol	NuFarm
Mecoprop (MCP)	Several	Several
Mesosulfuron	Osprey, Silverado	Bayer
Mesosulfuron + propoxycarbazone	Olympus Flex	Bayer
Mesosulfuron-methyl	Osprey, Silverado	Bayer
Mesotrione	Callisto, Tenacity	Syngenta
Mesotrione + s-metolachlor	Camix	Syngenta
Mesotrione + s-metolachlor + atrazine	Lexar, Lumax	Syngenta
Mesotrione + s-metolachlor + glyphosate	Halex GT	Syngenta
Metribuzin	Several	Several
Metsulfuron	Ally, Escort, Cimarron	DuPont
Metsulfuron + chlorsulfuron	Cimarron Plus, Cimarron X'tra	DuPont
Metsulfuron + 2,4-D + dicamba	Cimarron Max	DuPont
Metsulfuron + tribenuron + thifensulfuron	Ally Extra	DuPont
Molinate	Ordram	Syngenta
MSMA	Several	Several
Napropamide	Devrinol	United Phosphorus
Naptalam	Alanap	Chemtura
Nicosulfuron	Accent	DuPont
Nicosulfuron + thifensulfuron	Stout	DuPont
Norflurazon	Solicam	Syngenta
Oryzalin	Surflan	Dow
Oxadiazon	Ronstar	Bayer
Oxyfluorfen	Goal	Dow
Paraquat	Gramoxone Inteon	Syngenta
Pendimethalin	Prowl, etc.	BASF
Phenmedipham	Spin-aid	Bayer
phenmedipham + desmedipham	Betamix	Bayer
Picloram	Tordon, etc.	Dow
Pinoxaden	Axial XL	Syngenta

Herbicide Index

Common Name	Trade Name(s)	Manufacturer
Primisulfuron	Beacon	Syngenta
Primisulfuron + dicamba	NorthStar	Syngenta
Primisulfuron + prosulfuron	Exceed, Spirit	Syngenta
Prodiamine	Barricade	Syngenta
Prometon	Pramitol	Syngenta
Prometryn	Caparol	Syngenta
Pronamide	Kerb	Dow
Propaflin	Stam, Strel, Stampede	Dow
Propoxycarbazone	Olympus	Bayer
Prosulfuron	Peak	Syngenta
Pyraflufen	Vida	Gowan
Pyrasulfotole + bromoxynil	Huskie	Bayer
Pyrazon	Pyramin	Arysta
Pyriithiobac sodium	Staple	DuPont
Pyroxasulfone	KIH-485, Zidua	Kumiai, BASF
Pyroxulam	Powerflex	Dow
Quinclorac	Facet, Drive, Paramount	BASF
Quizalofop	Assure II, Targa	DuPont, Gowan
Rimsulfuron	Matrix, Titus, Resolve	DuPont
Rimsulfuron + nicosulfuron	Steadfast	DuPont
Rimsulfuron + thifensulfuron	Basis, Resolve Q	DuPont
Saflufenacil	Sharpen, Treevix	BASF
Saflufenacil + dimethenamid-P	Verdict	BASF
Saflufenacil + imazethapyr	Otill	BASF
Sethoxydim	Poast, Poast Plus	BASF
Sethoxydim + bentazon	Clearmax	BASF
Siduron	Tupersan	Gowan
Simazine	Princep	Syngenta
s-metolachlor	Dual II Magnum, etc.	Syngenta, etc.
s-metolachlor + metribuzin	Boundary	Syngenta
Sulfentrazone	Spartan	FMC
Sulfentrazone + chlorimuron	Authority XL	FMC
Sulfentrazone + cloransulam-methyl	Sonic, Authority First	Dow, FMC
Sulfentrazone + imazethapyr	Authority Assist	FMC
Sulfentrazone + metribuzin	Authority MTZ	FMC
Sulfometuron-methyl	Oust	DuPont
Sulfometuron + chlorsulfuron	Landmark XP	DuPont
Sulfometuron + metsulfuron	Oust Extra	DuPont
Sulfometuron + hexazinone	Oustar	DuPont
Sulfosulfuron	Maverick, Outrider	Monsanto
Tebuthiuron	Spike	Dow
Tembotrione	Laudis	Bayer
Tembotrione + thiencazone-methyl	Capreno	Bayer
Terbacil	Sinbar	Tessenderlo Kerley
Thiazopyr	Visor, Mandate	Dow
Thidiazuron	Dropp	Bayer
Thifensulfuron-methyl	Harmony SG	DuPont
Thifensulfuron-methyl + tribenuron	Harmony Extra, Affinity Broadspec, etc.	DuPont
Thifensulfuron + tribenuron + metsulfuron + dicamba	Agility SG	DuPont
Thiobencarb	Bolero	Valent
Topramezone	Impact	Amvac
Tralkoxydim	Achieve	Syngenta
Triallate	Far-Go	Gowan
Triasulfuron	Amber	Syngenta
Triasulfuron + dicamba	Rave	Syngenta
Tribenuron-methyl	Express	DuPont
Triclopyr	Garlon, Remedy, etc.	Dow
Triclopyr + fluroxypyr	PastureGard	Dow
Trifloxysulfuron	Envoke, Monument	Syngenta
Trifluralin	Treflan, etc.	Dow
Trifluralin-methyl	UpBeet	DuPont

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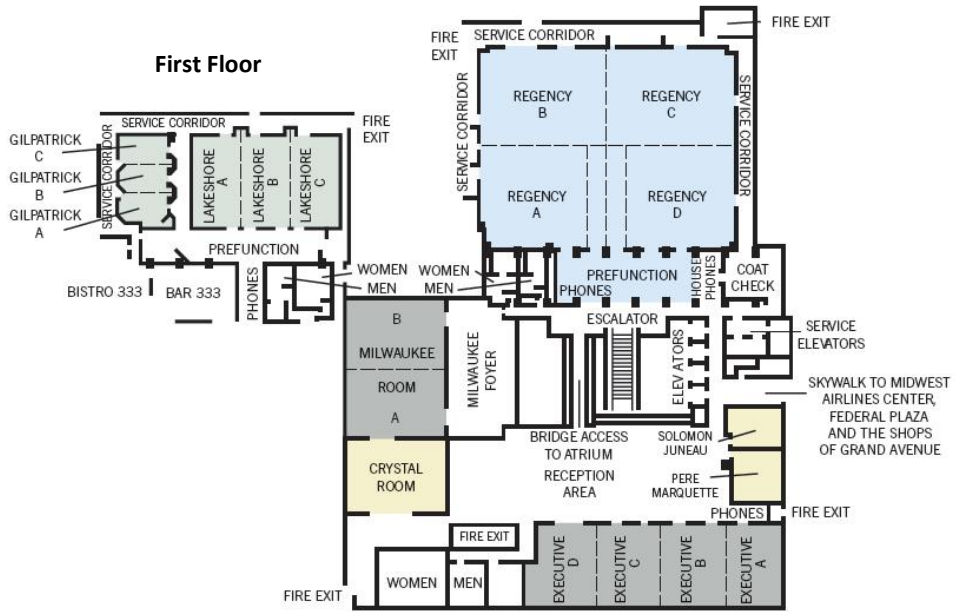
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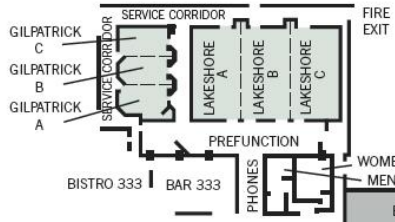
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