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WSSA

2022 Annual Meeting
February 21-24, 2022
Vancouver, Canada

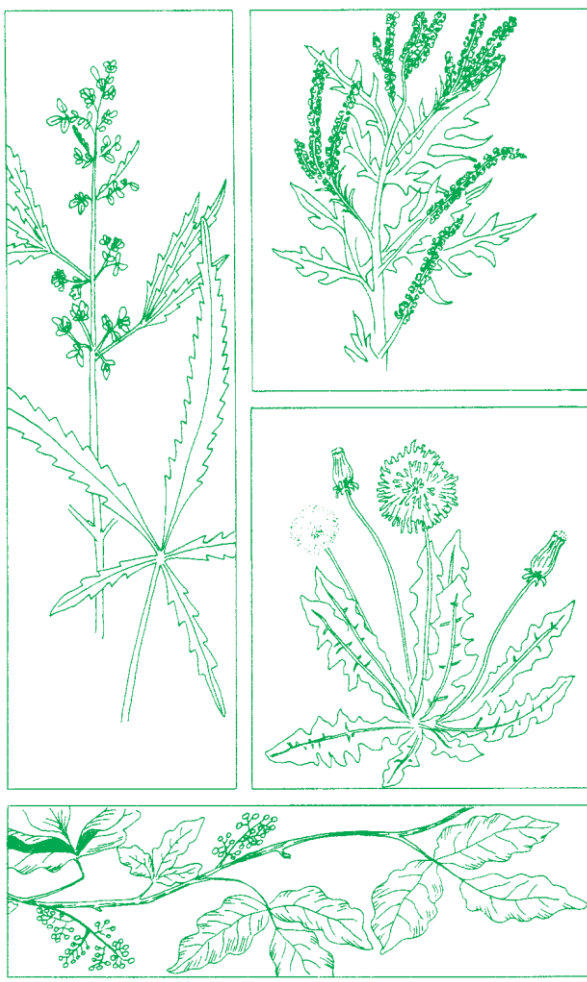
2023 Annual Meeting
January 30 – February 02, 2023
Arlington, VA

WEED SCIENCE SOCIETY OF AMERICA

61st Meeting

2021 MEETING PROGRAM

February 15-19, 2021



WSSA Sustaining Members

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61st Meeting of the
Weed Science Society of America

I am excited to invite you to join us for a unique and unprecendented experience at the 2021 Virtual WSSA annual meeting. Each of us will be able to participate from our 'home office' with opportunities to connect with each other online and to learn from each other through sharing our scientific posters and oral papers, and to join in online discussions. We have contracted with Community Brands to host our virtual conference - WSSA Virtual conference 2021

We needed to plan different ways to complete our WSSA business. All committees were asked to share reports with the WSSA leadership and to have meetings completed by Thursday, February 11, so that the WSSA Board of Directors can learn of your accomplishments during our BOD meetings on Friday, February 12 and Monday, February 15.

We will kick off our annual meeting on Monday, Feburary 15 at 3:00 pm Central time. We will hear from the Peterson Farm Bros., a family of three brothers from Assaria, KS that have become social media sensations as they promote agriculture through music paradies, vlogs, and through Facebook and Twitter. After their presentation, we will recognize our outstanding award winners and new Fellows & Honorary Members of the WSSA. We will host a 'virtual' reception afterwards.

Our scientific program begins on Tuesday morning, February 16 and runs through 12:30 pm Friday, February 19. Each day will consist of three 90-minute sessions with three different concurrent sessions. All times listed are in the Central Time Zone, so from 9:00 to 10:30 am, 11 am to 12:30 pm, and 3:00 to 4:30 pm.

The three concurrent sessions are labeled with names of Kansas Frontier Trails: Oregon Trail, Sante Fe Trail, and the Chisholm Trail. All poster sessions are located on the Pony Express, and the 3MT presentations are on the Smoky Hill Trail. Just like Kansas was on the Frontier for many people to travel westward in the USA, the WSSA is on the Frontier of new and different ways of sharing our science, connecting with our stakeholders, and exploring new ways to understand and manage weed species.

During the long break each afternoon between 12:30 and 3:00 pm CST, there will be extended discussion sessions available to join and connect with each other over topics of common interest. These will be found in our Networking Lounge on the virtual platform.

On Tuesday, February 16, the Women in Weed Science will be able to participate in a networking event from 1:00 to 2:30 pm.

On Wednesday, Feburary 17, the WSSA Graduate Student Organization will be hosting a session from 11:00 am to 12:30 pm CST. This will include a business meeting where new officers will be announced and a fun interactive Quiz Bowl activity with real (*good*!) prizes for the winners!

Throughout the week, we have five different symposia that have brought in a diversity of speakers. Each symposium has time for panel discussions where you can actively participate in asking questions of the panelists.

We have fantastic participation from our Graduate Students in the Poster and 3MT™ contests. The judging will take place during the week prior to the conference as all presentations will be prerecorded and uploaded. All presentations and posters will be available on-demand for you to view in the virtual platform throughout the week and for 30 days after the conference ends.

The Graduate Student 3MT™ and Poster winners will be announced during the WSSA Business meeting (all members and attendees are invited to learn more about WSSA) on Thursday afternoon, February 18 from 3:00 to 4:30 pm.

Thank you to everyone that has provided support and guidance as we navigated this new approach to our WSSA annual meeting. I am looking forward to your active participation in our conference and to 'see' you soon.

Anita Dille
WSSA Program Chair and President-Elect

WSSA Virtual conference 2021

2021 Program Committee

General Program Chair…….....	Anita Dille
Vice Chair……..	Stanley Culpepper
Agronomic Crops……	Alejandro Perez-Jones
Horticultural Crops……..	Stephen Meyers
Turf and Ornamentals……..	Sandeep Rana
Pastures, Rangelands,……..	David Russell
Forests, Rights of Way, Wildlands and Aquatic Invasive Plants	
Regulatory Aspects	Cherilyn Moore
Teaching and Extension…….....	Parminder Chahal
Formulation, Adjuvant, ……. & Application Technology	Vipan Kumar
Weed Biology and Ecology…….	Caio Brunharo
Biocontrol of Weeds……	Min Rayamajhi
Physiology …….	Zahoor Ganie
Integrated Weed…… Management	Shilpa Singh
Sustaining Member Exhibits……	Kyle Kepner
Poster Sessions…….	Thomas Mueller
Student Poster and 3MT Contests……	Darrin Dodds and Marty Schraer

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WSSA Virtual conference 2021

CONDENSED PROGRAM

WSSA GENERAL MEETINGS

Friday FEBRUARY 12

WSSA Board of Directors	08:00 AM - 05:00 PM	zoom

Monday FEBRUARY 15

WSSA Board of Directors	08:00 AM - 12:00 PM	zoom
General Session	03:00 PM - 05:00 PM	Oregon Trail
Welcome Reception	05:00 PM - 6:00 PM	

Tuesday FEBRUARY 16

Women in Weed Science Event	1:00 PM - 02:30 PM	

Wednesday FEBRUARY 17

WSSA Graduate Student Organization Meeting	11:00 AM - 12:30 PM	Sante Fe Trail

Thursday FEBRUARY 18

WSSA Business Meeting and Student Award Presentations	3:00 PM - 4:30 PM	

FRIDAY FEBRUARY 19

WSSA Board of Directors Meeting	01:30 PM - 03:00 PM	zoom

PROGRAM

MONDAY AFTERNOON FEBRUARY 15

General Session

LOCATION: Oregon Trail
TIME: 03:00 PM - 05:00 PM
MODERATOR: Anita Dille
Kansas State University
Manhattan, KS

***SPEAKER**

Welcome, Introductions and Announcements.
Anita Dille*; Kansas State University, Manhattan, KS

Keynote: Peterson Farm Bros.
Greg Peterson*, Nathan Peterson, Kendal Peterson; Assaria, KS

Presidential Address. William S Curran*; Penn State University, University Park, PA.

Presentation of Awards. Dwight Lingenfelter*; Penn State University, University Park, PA.

Adjourn for Virtual Welcome and Awards Reception

FEBRUARY 15 to 19

Posters will be available to view for the entire conference (and after the conference for 30 days). Utilize the Chat feature to ask questions from the poster presenters.

All Poster Presenters to participate in Chat on Wednesday February 17 from 1:00 pm to 2:30 pm.

LOCATION: Pony Express
MODERATOR: Thomas C. Mueller
University of Tennessee
Knoxville, TN

POSTER - 01. Agronomic Crops

***PRESENTER**

Herbicide-Resistant Palmer Amaranth (*Amaranthus palmeri* S. Wats.) and Common Waterhemp (*Amaranthus tuberculatus*) in Kansas. Vipan Kumar*, Rui Liu, Taylor Lambert, Phillip Stahlman; Kansas State University, Hays, KS **(1)**

Reductions in Palmer Amaranth Groundcover Following an Auxin Herbicide Application. Grant L. Priess*[1], Jason K. Norsworthy[1], Rodger B. Farr[1], Thomas R. Butts[2]; [1]University of Arkansas, Fayetteville, AR, [2]University of Arkansas System Division of Agriculture, Lonoke, AR **(2)**

An EnlistDUO Systems Approach to Control Palmer Amaranth. Bradley J. Norris*[1], Jacob P. McNeal[1], Larry C. Walton[2], William J. Rutland[3], Darrin M. Dodds[1], Brian K. Pieralisi[4]; [1]Mississippi State University, Mississippi State, MS, [2]Corteva Agriscience, Tupelo, MS, [3]Mississippi State University, Starkville, MS, [4]Mississippi State University, Stoneville, MS **(3)**

Optimal Order and Respray Interval Using Glufosinate, 2,4-D and Dicamba for Waterhemp (*Amaranthus tuberculatus*) Control. Brent S. Heaton*[1], Alexis L. Meadows[2], Elaina M. Crawford[1], Mark L. Bernards[1]; [1]Western Illinois University, Macomb, IL, [2]Western Illinois University, Ames, IA **(4)**

Response to Herbicides with Different Modes of Action on 50 *Amaranthus hybridus* L. Populations in Argentina. Julio A. Scursoni*[1], Martin M. Vila Aiub[1], Daniel Tuesca[2], Federico Balassone[2], Juan P. Morello[1], Daniela Medina Herrera[1], C Lescano[2], N Montero Bulacio[2], Roberto J. Crespo[2], M Depetris[2]; [1]Facultad de Agronomía. Universidad de Buenos Aires, Buenos Aires, Argentina, [2]Facultad de Ciencias Agrarias. Universidad deRosario, Rosario, Argentina **(5)**

No Seed Means No Weeds or No Herbicide-Resistant Weeds. Taghi Bararpour*, Jason A. Bond, Henry M. Edwards, Jimmy D. Peeples; Mississippi State University, Stoneville, MS **(6)**

Industrial Hemp Sensitivity to Pre- and Post-emergence Herbicides. Lynn M. Sosnoskie, Elizabeth Maloney*; Cornell University, Geneva, NY **(7)**

Peanut Response to Diuron. Chad C. Abbott, Eric P. Prostko*, Taylor M. Randell; University of Georgia, Tifton, GA **(8)**

White-Margined Flatsedge (*Cyperus flavicomus* Michx.): Controlling This New Problematic Weed in Arkansas Rice. Thomas R. Butts*[1], Tom Barber[1], Jason K. Norsworthy[2]; [1]University of Arkansas System Division of Agriculture, Lonoke, AR, [2]University of Arkansas, Fayetteville, AR **(9)**

Acetochlor Use for Weed Control in Rice. Tristen H. Avent*, Jason K. Norsworthy, Leonard B. Piveta, Mason C. Castner, James W. Beesinger; University of Arkansas, Fayetteville, AR **(10)**

Use Patterns of Bicyclopyrone in Minor Crops. Eric Rawls*[1], Peter Eure[2], Gordon D. Vail[3], Tom H. Beckett[3], Cheryl Dunne[1], Victor Mascarenhas[4], Henry McLean[5], Monti Vandiver[6], John Gordy[7], Tim Trower[8], Scott A. Payne[9]; [1]Syngenta Crop Protection, Vero Beach, FL, [2]Syngenta Crop Protection, Greensboro, NC, [3]Syngenta, Greensboro, NC, [4]Syngenta Crop Protection, Nashville, NC, [5]Syngenta Crop Protection, Perry, GA, [6]Syngenta Crop Protection, Vero Beach, TX, [7]Syngenta Crop Protection, Pearland, TX, [8]Syngenta Crop Protection, Oskosh, WI, [9]Syngenta Crop Protection, Slater, IA **(11)**

Asulam Tank Mixes with Trifloxysulfuron and Topramezone on Fall Panicum Control in Sugarcane. D Calvin Odero*[1], Raphael Mereb Negrisoli[2]; [1]University of Florida, Belle Glade, FL, [2]University of Florida, Gainesville, FL **(12)**

Effect of Residual Herbicide Application Timing on Weed Management in 2,4-D- and Dicamba-tolerant Soybean. Daniel O. Stephenson, IV*; LSU Ag Center, Alexandria, LA **(13)**

Reduction in DGA Dicamba Volatility as a Function of Potassium Tetraborate Tetrahydrate Concentration. Mason C. Castner*, Jason K. Norsworthy, Trenton L. Roberts, Leonard B. Piveta; University of Arkansas, Fayetteville, AR **(14)**

Impact of Fall-seeded Cereal Rye Cover Crop on Pre-emergence Herbicide Fate and Grain-yield in Wisconsin Food-grade Soybean Production. Nicholas J. Arneson*, Ryan P. DeWerff, John Gaska, Brian Mueller, Shawn P. Conley, Damon Smith, Rodrigo Werle; University of Wisconsin - Madison, Madison, WI **(15)**

Potential Burndown Options Before Cover Crop Establishment. Dwight Lingenfelter*, John M. Wallace; Pennsylvania State University, University Park, PA **(16)**

Survey of California Weedy Rice (*Oryza sativa* f. *spontanea*) Acreage: Infestation Patterns and Severity. Whitney Brim-DeForest*[1], Luis Espino[2], Troy Clark[2], Timothy Blank[3]; [1]University of California Division of Agriculture and Natural Resources, Yuba City, CA, [2]University of California Division of Agriculture and Natural Resources, Oroville, CA, [3]California Crop Improvement Association, Davis, CA **(17)**

Airborne Hyperspectral Imaging to Classify Different Desiccants Performance in Lentil (*Lens culinaris*) Crop. Keshav D. Singh*, Eric N. Johnson, Hema S. Duddu, Steve J. Shirtliffe; University of Saskatchewan, Saskatoon, SK, Canada **(18)**

Impact of Weedy Invasion on Subsistence Agriculture and Pasture Degradation of Cold Arid Region of Ladakh India. Mahendra Singh Raghuvanshi*[1], Stanzin Landol[2], Mohammad Raza[2], Ngawang Dorje[2]; [1]ICAR-National Bureau of Soil Survey and Land Use Planning, Nagpur, India, [2]RRS, ICAR-Central Arid Zone Research Institute, Leh-Ladakh, Leh-ladakh, India **(19)**

Field Pennycress (*Thlaspi arvense*) Response to Herbicides Applied Postemergence. Kevin Betts[1], M. Scott Wells[1], Debalin Sarangi[1], Mark L. Bernards*[2], Donald L. Wyse[1]; [1]University of Minnesota, St. Paul, MN, [2]Western Illinois University, Macomb, IL **(20)**

Evaluation of Herbicide Programs in Oklahoma Soybean. Todd A. Baughman*, Zachary R. Treadway, Robbie W. Peterson; Oklahoma State University, Ardmore, OK **(21)**

Identification of Soybean Lines That Have Differential Sensitivity to Dicamba. Matthew Osterholt*[1], Scott McAdam[1], Katy Rainey[1], Caio Canella Vieira[2], Pengyin Chen[2], Bryan G. Young[3]; [1]Purdue University, West Lafayette, IN, [2]University of Missouri, Portageville, MO, [3]Purdue University, Brookston, IN **(22)**

Managing Ryegrass (*Lolium multiflorum*) in Northeast Texas Wheat. Curtis A. Jones*; Texas A&M University, Commerce, TX **(23)**

POSTER - 02. Horticultural Crops

***PRESENTER**

IR-4: Weed Control Project Updates - Food Crops. Roger B. Batts*[1], Jerry J. Baron[1], Daniel L. Kunkel[2], Michael P. Braverman[2]; [1]IR-4 Project HQ, NC State University, Raleigh, NC, [2]IR-4 Project Headquarters, Princeton, NJ **(24)**

Canada Thistle Control in Hop with a Sponge Wiper Application of Clopyralid. Marcelo L. Moretti*, David R. King; Oregon State University, Corvallis, OR **(25)**

Response of Sweetpotato Cultivars to Dicamba and 2,4-D. Ziming Yue*[1], Isabel S. Werle[2], Steve L. Meyers[3], Mark W. Shankle[4], Te-Ming (Paul) Tseng[1]; [1]Mississippi State University, Mississippi State, MS, [2]University of Arkansas, Fayetteville, AR, [3]Purdue University, West Lafayette, IN, [4]Mississippi State University, Verona, MS **(26)**

Table Beet Response to Simulated Carryover of HPPD Herbicides. Lynn M. Sosnoskie*, Elizabeth Maloney; Cornell University, Geneva, NY **(27)**

Cabbage/Cauliflower Tolerance to Pyridate Formulations. Sushila Chaudhari*, Bernard H. Zandstra, Monique Hemker; Michigan State University, East Lansing, MI **(28)**

Evaluation of Weed Control Efficacy and Plant Safety of Selected Herbicides for Bearing Avocado (*Persea americana)*. Peggy Mauk[1], Sonia I. Rios*[2], Ben Faber[3], Oleg Daugovish[3], Dee L. Vega[3], Travis Bean[4]; [1]University of California - Riverside, Riverside, CA, [2]University of California, Division of Agriculture and Natural Resources, Moreno Valley, CA, [3]University of California, Division of Agriculture and Natural Resources, Ventura, CA, [4]University of California, Division of Agriculture and Natural Resources, Riverside, CA **(29)**

POSTER - 03. Turf and Ornamentals

***PRESENTER**

Developing a Decision-Support Tool for Facilitating the Selection of Diverse Herbicide Mode of Action in Turf. Vanaja Kankarla*[1], Edicarlos Batista de Castro[2], Jay McCurdy[2], Daniel Hathcoat[1], Rebecca Bowling[3], Muthukumar V. Bagavathiannan[1]; [1]Texas A&M University, College Station, TX, [2]Mississippi State University, Mississippi, MS, [3]Texas A&M University, Dallas, TX **(30)**

POSTER - 04. Pasture, Range, Forest, & Rights of Ways, Wildland, and Aquatic Invasive Plants

***PRESENTER**

Potassium Application Impacts *Andropogon* Densities in Bahiagrass (*Paspalum notatum*) Pastures. Brent A. Sellers*, Maria L. A. Silveira; University of Florida, Ona, FL **(31)**

Pursuit: Does it Fit a Forage Weed Control System? John D. Byrd, Jr.*, Hayden D. Quick, Kayla D. Broster; Mississippi State University, Mississippi State, MS **(32)**

Effect of Mowing Timing on Johnsongrass Herbicide Efficacy: Three Years of Trials. Joe Omielan*, Michael Barrett; University of Kentucky, Lexington, KY **(33)**

POSTER - 06. Teaching and Extension

***PRESENTER**

2020 Survey Results for the Most Common and Troublesome Weeds in Grass Crops, Pasture and Turf. Lee Van Wychen*[1], Lavesta C. Hand[2]; [1]Weed Science Society of America, Alexandria, VA, [2]University of Georgia, Tifton, GA **(34)**

Time to Make Dilemma-nade: Insights on the Impact of the COVID-19 Pandemic on Weed Science Extension Outreach in the USA. Nicholas J. Arneson, Rodrigo Werle*; University of Wisconsin - Madison, Madison, WI **(35)**

POSTER - 07. Formulation, Adjuvant, & Application Technology

***PRESENTER**

Utility of Roller Wiper Applications of Dicamba for Palmer Amaranth (*Amaranthus palmeri*) Management. Rodger B. Farr*[1], Jason K. Norsworthy[1], Thomas R. Butts[2], James W. Beesinger[1], Tristen H. Avent[1], Grant L. Priess[1]; [1]University of Arkansas, Fayetteville, AR, [2]University of Arkansas System Division of Agriculture, Lonoke, AR **(36)**

POSTER - 08. Weed Biology and Ecology

***PRESENTER**

Mechanism of Lactofen Resistance in Palmer Amaranth from Kansas. Ednaldo A. Borgato*, Balaji Aravindhan Pandian, Sathishraj Rajendran, Anita Dille, Mithila Jugulam; Kansas State University, Manhattan, KS **(37)**

Accumulation of Target-site Mutations in Multiple Resistant *Lolium multiflorum* Populations from Southern USA. Gulab Rangani*[1], Nilda Roma-Burgos[1], Ana C. Langaro[1], Robert C. Scott[2], Reio Salas[3]; [1]University of Arkansas, Fayetteville, AR, [2]University of Arkansas - RREC, Stuttgart, AR, [3]Dole Philippines, Inc., South Cotabato, Philippines **(38)**

Non-target-site Resistance of Barnyardgrass [*Echinochloa crus-galli* (L.) P. Beauv.] to Florpyrauxifen-benzyl. Jeong-In Hwang*[1], Jason K. Norsworthy[1], Fidel Gonzalez Torralva[1], Grant L. Priess[1], Tom Barber[2], Thomas R. Butts[2]; [1]University of Arkansas, Fayetteville, AR, [2]University of Arkansas System Division of Agriculture, Lonoke, AR **(39)**

Glyphosate Resistant Bird Rape Mustard (*Brassica rapa*) Through Introgression of a Transgenic Construct: Distribution and Genetic Characterization. Martin Laforest*[1], Brahim Soufiane[2], Sara Martin[3], Marie-Josee Simard[2]; [1]AAC-AAFC, St-jean-sur-richelieu, QC, Canada, [2]Agriculture and Agri-Food Canada, Saint-jean-sur-richelieu, QC, Canada, [3]Agriculture and Agri-Food Canada, Ottawa, ON, Canada **(40)**

Phenotypic Characteristics of F_1 Hybrid Progenies Originating from Crosses Between *Sorghum bicolor* and *S. halepense*. Usha R. Pedireddi*[1], Cynthia Sias[1], Sara Ohadi[2], Nithya K. Subramanian[1], George Hodnett[1], William Rooney[1]; [1]Texas A&M University, College Station, TX, [2]University of California - Davis, Davis, CA **(41)**

Characterization of Johnsongrass (*Sorghum halepense*) x Grain Sorghum (*S. bicolor*) Hybridization Under Field Conditions. Nithya K. Subramanian*, George Hodnett, William Rooney, Muthukumar V. Bagavathiannan; Texas A&M University, College Station, TX **(42)**

POSTER - 11. Soil and Environmental Aspects

***PRESENTER**

Future Efficacy of Preemergence Herbicides in Corn Threatened by More Variable Weather. Christopher A. Landau*[1], Aaron Hager[1], Patrick Tranel[1], Adam Davis[1], Nicolas F. Martin[2], Martin Williams[3]; [1]University of Illinois, Urbana, IL, [2]University of Illinois, Urban, IL, [3]USDA-ARS, Urbana, IL **(43)**

Crossroads: The Intersection of Herbicide Resistant Weed Control, Tillage, and Soil Quality. Andrew Price*[1], Audrey Gamble[2]; [1]USDA-ARS, Auburn, AL, [2]Auburn University, Auburn, AL **(44)**

How Much Do Perennial Ryegrass and Tall Fescue Crop Residue Retain Herbicides? Seth Bernard E. Abugho*, Caio A. Brunharo, Andrew G. Hulting; Oregon State University, Corvallis, OR **(45)**

POSTER - 12. Integrated Weed Management

***PRESENTER**

Smooth Brome (*Bromus inermis*) as a Trap for a Wheat Pest: Volatile Profiles Influence Wheat Stem Sawfly Behavior. Rekha Bhandari*[1], David Weaver[2], Tracy M. Sterling[2]; [1]Cornell University, Ithaca, NY, [2]Montana State University, Bozeman, MT **(46)**

Potential Application of High-Intensity Red Light for Weed Seedbank Management. Albert T. Adjesiwor*[1], Andrew R. Kniss[2]; [1]University of Idaho, Kimberly, ID, [2]University of Wyoming, Laramie, WY **(47)**

Molecular Marker-based Detection and Characterization of Rice Root-knot Nematodes Infecting Weedy Rice (*Oryza sativa* var *spontanea*) in San Juan, Batangas, Philippines. Romnick A. Latina, Priscilla M. Barcial, Clare Hazel R. Tabernilla, Analiza Henedina M. Ramirez*; UP Los Banos, College, Los Banos, Laguna, Philippines **(48)**

The Effect of Row Spacing and Seeding Rate on Russian Thistle (*Salsola tragus*) in Spring Barley and Spring Wheat. Judit Barroso[1], Nicholas G. Genna*[2]; [1]Oregon State University, Adams, OR, [2]Oregon State University, Pendleton, OR **(49)**

FEBRUARY 15 to 19

POSTER - PhD Student Contest

LOCATION: Pony Express
MODERATOR: Marty Schraer
Syngenta
Meridian, ID
CO-MODERATOR: Darrin M. Dodds
Mississippi State University
Mississippi State, MS

***PRESENTER † STUDENT CONTEST**

†Characterize 2,4-D and Dicamba Volatility as Affected by Formulation and Exposure Duration. Patrick J. Maxwell*, Travis Gannon, Matthew C. Vann; North Carolina State University, Raleigh, NC **(50)**

†Supplying Phosphite as a Source of Phosphorus for Weed Suppression in *PtxD* Cotton. Shilpa Singh*[1], Devendra Pandeya[1], Keerti Rathore[1], Kater Hake[2], Muthukumar V. Bagavathiannan[1]; [1]Texas A&M University, College Station, TX, [2]Cotton Incorporated, Raleigh-durham, NC **(51)**

†Differential Expression Patterns of Three Wheat CYP81A-like Homoeologs in Response to Halauxifen-methyl and Cloquintocet-mexyl Foliar Treatments. Olivia A. Obenland*, Brendan V. Jamison, Kris N. Lambert, Dean E. Riechers; University of Illinois, Urbana, IL **(52)**

†How Are Soybean Yield Components Affected by Reduced Rates of Florpyrauxifen-benzyl? David C. Walker*[1], Eric Webster[2], Daniel O. Stephenson, IV[3], Samer Y. Rustom[1], Connor Webster[1], Bradley Greer[2], John A. Williams[1]; [1]LSU Ag Center, Baton Rouge, LA, [2]Louisiana State University, Baton Rouge, LA, [3]LSU Ag Center, Alexandria, LA **(53)**

†Herbicide Application Timing for Barnyardgrass and Palmer Amaranth Control in Furrow-irrigated Rice. Jay W. Seale*[1], Jason A. Bond[1], Bobby R. Golden[1], Daniel B. Reynolds[2], Tom W. Allen[3], Frank Carey[4]; [1]Mississippi State University, Stoneville, MS, [2]Mississippi State University, Mississippi State, MS, [3]Delta Research and Extension Center, Stoneville, MS, [4]Valent USA, Olive Branch, MS **(54)**

†Evaluating Interaction of Dicamba, Fluthiacet-methyl, And/or Glyphosate for Control of Velvetleaf (*Abutilon theophrasti*) in Dicamba/Glyphosate-Resistant Soybean. Jose H. de Sanctis*, Amit J. Jhala; University of Nebraska - Lincoln, Lincoln, NE **(55)**

†Are Cover Crops Effective for Weed Management in the Southeast USA? A Meta-analysis. Nicholas T. Basinger[1], David Weisberger*[1], Virginia Sykes[2]; [1]University of Georgia, Athens, GA, [2]University of Tennessee, Knoxville, TN **(56)**

†Effects of Dicamba Vapor on Soybean Injury and Yield. Ryan D. Langemeier*[1], Steve Li[1], Greg Kruger[2], Mark L. Bernards[3], Katilyn J. Price[1], Bruno C. Vieira[4]; [1]Auburn University, Auburn, AL, [2]University of Nebraska - Lincoln, North Platte, NE, [3]Western Illinois University, Macomb, IL, [4]University of Nebraska - Lincoln, Lincoln, NE **(57)**

†Residual Herbicide Use in Upland Rice Production. Connor Webster*[1], Eric Webster[2], Samer Y. Rustom[1], David C. Walker[3], Bradley Greer[2], John A. Williams[1]; [1]LSU AgCenter, Baton Rouge, LA, [2]Louisiana State University, Baton Rouge, LA, [3]Mississippi State University, Starkville, MS **(58)**

†Trends in Weed Control Research in Kansas Soybeans. Tyler P. Meyeres*, Dallas E. Peterson, Sarah Lancaster; Kansas State University, Manhattan, KS **(59)**

†Large-Scale Field Evaluation of Dicamba Volatilization When Mixed with Glyphosate. Maria Leticia M. Zaccaro*[1], Jason K. Norsworthy[1], Grant L. Priess[1], Mason C. Castner[1], Thomas C. Mueller[2]; [1]University of Arkansas, Fayetteville, AR, [2]University of Tennessee, Knoxville, TN **(60)**

†Transplanted Industrial Hemp Tolerance to Soil-active Herbicides Grown for Cannabidiol. Michael L. Flessner, Kevin W. Bamber, Cynthia Sias*; Virginia Tech, Blacksburg, VA **(61)**

†Rice Weed Management Using Herbicide Coated Fertilizer. Bradley Greer*[1], Eric Webster[1], Samer Y. Rustom[2], Connor Webster[2], John A. Williams[2], David C. Walker[2]; [1]Louisiana State University, Baton Rouge, LA, [2]LSU AgCenter, Baton Rouge, LA **(62)**

†Evaluation of Cover Crops as a Sustainable Weed Management Strategy in Citrus (*Citrus sinensis*) Production. Miurel T. Brewer*[1], Ramdas Kanissery[2], Davie M. Kadyampakeni[1]; [1]University of Florida, Lake Alfred, FL, [2]University of Florida - IFAS, Immokalee, FL **(63)**

†Tolerance of Cotton Chromosomal Substitution Lines to 2,4-D: a Dose-response Study. Willian M. Daróz Matte*[1], Loida M. Perez[2], Sukumar Saha[3], J Connor Ferguson[2], Te-Ming (Paul) Tseng[2]; [1]Maringá State University, Maringá - Paraná State, Brazil, [2]Mississippi State University, Mississippi State, MS, [3]USDA-ARS, Mississippi State, MS **(64)**

†Pollen-Mediated Gene Flow Between ALS-Inhibitor-Resistant and -Susceptible Johnsongrass (*Sorghum halepense*). Aniruddha Maity*, Muthukumar V. Bagavathiannan; Texas A&M University, College Station, TX **(65)**

†Seed Production Estimation in Late-season Escapes of *Amaranthus* spp. and *Sorghum halepense* Using Drone-based Multi-spectral Imagery. Matthew Kutugata*, Chengsong Hu, Bishwa B. Sapkota, Muthukumar V. Bagavathiannan; Texas A&M University, College Station, TX **(66)**

†Remote Sensing-Based Estimation of Herbicide Drift Injury and Prediction of Yield Loss in Cotton. Bishwa B. Sapkota*[1], Zachary S. Howard[1], Scott A. Nolte[2], Nithya Rajan[1], Peter A. Dotray[3], Gaylon Morgan[4], Muthukumar V. Bagavathiannan[1]; [1]Texas A&M University, College Station, TX, [2]Texas A&M AgriLife Extension, College Station, TX, [3]Texas Tech University and Texas A&M AgriLife Research and Extension Service, Lubbock, TX, [4]Cotton Incorporated, Cary, NC **(67)**

†Inheritance of 2,4-D Resistance in Palmer Amaranth Population from Kansas. Chandrima Shyam*, Dallas E. Peterson, Mithila Jugulam; Kansas State University, Manhattan, KS **(68)**

†Cotton Varietal Response to Low Rates of 2,4-D. Kyle R. Russell*[1], Peter A. Dotray[2], Irish L. B. Pabuayon[1], Glen L. Ritchie[1]; [1]Texas Tech University, Lubbock, TX, [2]Texas Tech University and Texas A&M AgriLife Research and Extension Service, Lubbock, TX **(69)**

†Evaluation of Shade Cloth to Simulate Palmer Amaranth (*Amaranthus palmeri*) Competition in Sweetpotato. Levi D. Moore*, Katherine M. Jennings, David Monks, Michael D. Boyette, David L. Jordan, Ramon G. Leon; North Carolina State University, Raleigh, NC **(70)**

†Identification of Candidate Sex Determining Genes in *Amaranthus tuberculatus* Through Genomic Approaches. Brent P. Murphy*, Patrick Tranel; University of Illinois, Urbana, IL **(71)**

†Optimizing 2D Image Synthesis Techniques for Training Neural Network-based Weed Detection Models. Chengsong Hu*[1], Bishwa B. Sapkota[1], John Alex Thomasson[2], Muthukumar

V. Bagavathiannan[1]; [1]Texas A&M University, College Station, TX, [2]Mississippi State University, Starkville, MS **(72)**

†Will a Drift Reducing Adjuvant Impact the Weed Control in a XtendFlex Soybean? Jesaelen Gizotti de Moraes*, Guilherme Sousa Alves, Jeffrey A. Golus, Greg Kruger; University of Nebraska - Lincoln, North Platte, NE **(73)**

†Seedling Emergence Patterns of *Poa annua* in Texas. Andrew W. Osburn*[1], Muthukumar V. Bagavathiannan[1], Rebecca Bowling[2]; [1]Texas A&M University, College Station, TX, [2]Texas A&M University, Dallas, TX **(74)**

†Investigating Transcriptional Regulation of Metabolic Resistance in Palmer Amaranth (*Amaranthus palmeri*). Carlos Alberto Gonsiorkiewicz Rigon*[1], Anita Küpper[2], Roland S. Beffa[3], Todd A. Gaines[1]; [1]Colorado State University, Fort Collins, CO, [2]Bayer AG, Frankfurt / Main, Germany, [3]Bayer AG, CropScience Division, Frankfort / Main, Germany **(75)**

†Vegetative Growth of Palmer Amaranth (*Amaranthus palmeri*) Surviving Glufosinate Treatments in Soybeans (*Glycine max*). Eric A. Jones*, Marco Antonio Fajardo Menjivar, Diego J. Contreras, Diego E. Salazar, Charlie W. Cahoon, Ramon G. Leon, Wesley Everman; North Carolina State University, Raleigh, NC **(76)**

†Soybean (*Glycine max L.*) Exposure to Low-Rates of Dicamba. Zachary R. Treadway*[1], Todd A. Baughman[1], Robbie W. Peterson[1], Misha R. Manuchehri[2]; [1]Oklahoma State University, Ardmore, OK, [2]Oklahoma State University, Stillwater, OK **(77)**

†Glyphosate Resistance in Palmer Amaranth Lacking EPSPS Amplification. Matheus Machado Noguera*, Isabel S. Werle, Gulab Rangani, Nilda Roma-Burgos; University of Arkansas, Fayetteville, AR **(78)**

†Using Recombinant Inbred Lines of Sorghum for Studying Genetic Control of Inter-specific Hybridization Between *Sorghum bicolor* and *S. halepense*. Usha R. Pedireddi*, Nithya K. Subramanian, George Hodnett, Patricia Klein, William Rooney, Muthukumar V. Bagavathiannan; Texas A&M University, College Station, TX **(79)**

†Developmental Factors Influencing Resistance to PPO Inhibitors. Abigail Barker*, Franck E. Dayan; Colorado State University, Fort Collins, CO **(80)**

†Can Significant Amounts of Glyphosate and Glufosinate Transfer to Almonds During Harvest Operations? Katie Martin*[1], Brad Hanson[2]; [1]University of California - Davis, Davis, CA, [2]University of California - Davis, Winters, CA **(81)**

†Biochemical Characterization of Acetyl-CoA Carboxylase with an Ala2004Val Mutation That Confers Quizalofop Resistance in CoAXium® Wheat. Raven Bough*, Franck E. Dayan, Todd A. Gaines; Colorado State University, Fort Collins, CO **(82)**

†The Effects of Inter-seeded Winter Wheat on Weed Suppression and Soybean Yield. Madison R. Decker*, Ronald F. Krausz, Karla L. Gage; Southern Illinois University Carbondale, Carbondale, IL **(83)**

FEBRUARY 15 to 19

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†Investigation of Management Strategies to Optimize Cover Crop-Based Weed Mitigation in Canadian Sweet Corn Production. Hayley Brackenridge*[1], Jichul Bae[2], Marie-Josee Simard[3], Francois Tardif[1], Kerry Bosveld[4], Robert E. Nurse[4]; [1]University of Guelph, Guelph, ON, Canada, [2]Agriculture and Agri-Food Canada, Agassiz, BC, Canada, [3]Agriculture and Agri-Food Canada, Saint-jean-sur-richelieu, QC, Canada, [4]Agriculture and Agri-Food Canada, Harrow, ON, Canada **(84)**

†Crop Response and Weed Management Systems Utilizing Isoxaflutole in HPPD Tolerant Cotton. Delaney C. Foster*[1], Peter A. Dotray[2], Corey Thompson[3], Greg Baldwin[4], Frederick T. Moore[5]; [1]Texas Tech University, Lubbock, TX, [2]Texas Tech University and Texas A&M AgriLife Research and Extension Service, Lubbock, TX, [3]BASF, Abernathy, TX, [4]BASF, Research Triangle Park, NC, [5]BASF, Lubbock, TX **(85)**

†Assessing St. Augustinegrass (*Stenotaphrum secundatum*) Grow-in Following Preemergence Herbicide Application. Amy L. Wilber*[1], James D. McCurdy[2], Joby Czarnecki[1], Barry Stewart[1], Hongxu Dong[1]; [1]Mississippi State University,

Mississippi State, MS, [2]Mississippi State University, Starkville, MS **(86)**

†Crabgrass (*Digitaria sanguinalis*) Control by Tank Mixes and Carrier Volumes Used in 2,4-D Resistant Soybeans. Chad J. Lammers*, Sarah Lancaster, Tyler P. Meyeres; Kansas State University, Manhattan, KS **(87)**

†Interaction of Trifludimoxazin + Saflufenacil and Pyroxasulfone for Control of False Cleavers (*Galium spurium*). Kathryn Aldridge*, Eric N. Johnson, Steve J. Shirtliffe; University of Saskatchewan, Saskatoon, SK, Canada **(88)**

†Efficacy and Crop Safety of Dimethenamid-P, S-Metolachlor, and Pyroxasulfone for Management of ALS-Inhibitor-Resistant Palmer Amaranth (*Amaranthus palmeri*) in Dry Edible Bean. Joshua Wa Miranda Teo*[1], Jeff Bradshaw[1], Amit J. Jhala[2], Nevin Lawrence[3]; [1]University of Nebraska - Lincoln, Scottsbluff, NE, [2]University of Nebraska - Lincoln, Lincoln, NE, [3]University of Nebraska, Scottsbluff, NE **(89)**

†Activity Interactions of a Gambit Plus Propanil Mixture in Rice Production. John A. Williams*[1], Eric Webster[2], Bradley Greer[2], David C. Walker[1], Connor Webster[1], Samer Y. Rustom[1]; [1]LSU AgCenter, Baton Rouge, LA, [2]Louisiana State University, Baton Rouge, LA **(90)**

†The Impact of Application Equipment and Methodology on Hexazinone Efficacy for Controlling Smutgrass (*Sporobolus indicus*). Mason T. House*[1], Zachary S. Howard[1], Scott A. Nolte[2]; [1]Texas A&M University, College Station, TX, [2]Texas A&M AgriLife Extension, College Station, TX **(91)**

†Rice Response and Weed Control of Clomazone Applied at Different Timing in a Continuous Rice Flood System. Aaron Becerra-Alvarez*, Kassim Al-Khatib; University of California - Davis, Davis, CA **(92)**

†Effects of Interseeding Corn and Alfalfa on Weed Population Dynamics. Sarah A. Chu*[1], Erin E. Burns[2]; [1]Michigan State University, Lansing, MI, [2]Michigan State University, East Lansing, MI **(93)**

†Confirmation of Widespread Distribution of Herbicide-Resistant Waterhemp (*Amaranthus tuberculatus*) in Wisconsin. Felipe A. Faleco*, Nicholas J. Arneson, Mark J. Renz, David E. Stoltenberg, Rodrigo Werle; University of Wisconsin - Madison, Madison, WI **(94)**

†Response of Established Peppermint (*Mentha* × *piperita*) to Pyroxasulfone: a Greenhouse Study. Jeanine Arana*, Stephen L. Meyers, Brandi C. Woolam; Purdue University, West Lafayette, IN **(95)**

†Tolerance of Rice Cultivars to Florpyrauxifen-benzyl Followed by Benzobicyclon. James W. Beesinger*, Jason K. Norsworthy, Leonard B. Piveta, Tristen H. Avent; University of Arkansas, Fayetteville, AR **(96)**

†Rescue Control of Palmer Amaranth (*Amaranthus palmeri*) in 2,4-D Resistant Soybean. Spencer J. Michael*, Kevin W. Bamber, Michael L. Flessner; Virginia Tech, Blacksburg, VA **(97)**

†Sensitivity of Fluazifop-Resistant Grain Sorghum to ACCase-inhibiting Herbicides. Jacob A. Fleming*[1], Jason K. Norsworthy[1], Muthukumar V. Bagavathiannan[2], Leonard B. Piveta[1]; [1]University of Arkansas, Fayetteville, AR, [2]Texas A&M University, College Station, TX **(98)**

†Use of Mulches and Herbicides on Non-rooted Cuttings and Their Effect on Root Growth After Transplant. Isha Poudel*, Anthony L. Witcher; Tennessee State University, Mcminnville, TN **(99)**

†Greenhouse and Laboratory Investigations of an ALS-inhibitor Herbicide-Resistant Fall Panicum Accession from Wisconsin. Jose J. Nunes*[1], Damilola A. Raiyemo[2], Nicholas J. Arneson[1], Patrick Tranel[3], Rodrigo Werle[1]; [1]University of Wisconsin - Madison, Madison, WI, [2]University of Idaho, Moscow, ID, [3]University of Illinois, Urbana, IL **(100)**

†*Amaranthus palmeri ppo2* (?G210) Mutation Confers Resistance to Preemergence Application of Fomesafen in Rice. Pamela Carvalho-Moore*[1], Gulab Rangani[1], Shan Zhao[1], Ana Claudia Langaro[2], Vibha Srivastava[1], Nilda Roma-Burgos[1]; [1]University of Arkansas, Fayetteville, AR, [2]Federal University of Rio de Janeiro, Seropedica, Brazil **(101)**

†Minimizing Off-target Movement of Florpyrauxifen-benzyl to Soybean. Bodie Cotter*, Jason K. Norsworthy, James W. Beesinger, Mason C. Castner, Grant L. Priess; University of Arkansas, Fayetteville, AR **(102)**

†Field Surveys for Assessing Weed Seedbank Additional Potential and Feasibility of Harvest Weed Seed Control in Texas Rice. Isidor Ceperkovic*[1], Xin-Gen Zhou[2], Muthukumar V. Bagavathiannan[1]; [1]Texas A&M University, College Station, TX, [2]Texas A&M University, Beaumont, TX **(103)**

†Weed-suppressive Potential of Sweetpotato Cultivars on Targeted Weed Species. Isabel S. Werle*[1], Matheus Machado Noguera[1], Pamela Carvalho de Lima[1], Jeremie Kouame[1], Te-

Ming (Paul) Tseng[2], Nilda Roma-Burgos[1]; [1]University of Arkansas, Fayetteville, AR, [2]Mississippi State University, Mississippi State, MS **(104)**

†Effect of Surfactants on Postemergent Applications of Glyphosate and Glufosinate on Palmer Amaranth (*Amaranthus palmeri*) and Kochia (*Bassia scoparia*). Ely D. Anderson*[1], Bruno C. Vieira[1], Susan Sun[2], Greg Kruger[1]; [1]University of Nebraska - Lincoln, North Platte, NE, [2]Croda Inc., New Castle, DE **(105)**

†Metribuzin Tolerance of Winter Wheat Varieties in Oklahoma. Lane S. Newlin*[1], Misha R. Manuchehri[1], Brett F. Carver[1], Amanda De Oliveira Silva[1], Hannah C. Lindell[1], Justin T. Childers[2], Caitlyn C. Carnahan[1]; [1]Oklahoma State University, Stillwater, OK, [2]Oklahoma State University, Marlow, OK **(106)**

†Season-Long Horseweed (*Erigeron canadensis* L.) Suppression with Fall-Seeded Cereal Cover Crops and Narrow Soybean Row Widths. Justine L. Fisher*, Christy Sprague; Michigan State University, East Lansing, MI **(107)**

†Weed Management Systems in XtendFlex Soybean. Adam L. Constine*, Christy Sprague; Michigan State University, East Lansing, MI **(108)**

†Interaction of Glyphosate and Dicamba Tank Mixtures on Glyphosate-resistant Horseweed (*Erigeron canadensis)* and Barnyardgrass (*Echinochloa crus-galli)* Control. Estefania Gomiero Polli*[1], Leandro H S Guimaraes[1], Jose H. de Sanctis[2], Guilherme Sousa Alves[1], Greg Kruger[1]; [1]University of Nebraska - Lincoln, North Platte, NE, [2]University of Nebraska - Lincoln, Lincoln, NE **(109)**

†Influence of Cover Crop Termination Timing with Soil Residual Herbicides on Palmer Amaranth Control in No-till Soybean. Isaac N. Effertz*[1], Vipan Kumar[2], Anita Dille[1], Augustine Obour[2]; [1]Kansas State University, Manhattan, KS, [2]Kansas State University, Hays, KS **(110)**

†Testing Redekop® Seed Destructor for Managing Herbicide-Resistant Waterhemp Seed Bank at Soybean Harvest in Iowa. Alexis L. Meadows*, Prashant Jha, Ramawatar Yadav, Avery J. Bennett, Ryan Hamberg, Edward Dearden; Iowa State University, Ames, IA **(111)**

†Potential Sweetpotato Yield Losses Due to Weeds. Fnu Chitra*[1], Sushila Chaudhari[2], Katherine M. Jennings[1], Stephen L. Meyers[3], Mark W. Shankle[4], A Stanley Culpepper[5], Mark VanGessel[6], Charlie W. Cahoon[1], Donnie Miller[7], Levi D. Moore[1], Shawn C. Beam[8], Nilda Roma-Burgos[9]; [1]North Carolina State University, Raleigh, NC, [2]Michigan State University, East Lansing, MI, [3]Purdue University, West Lafayette, IN, [4]Mississippi State University, Verona, MS, [5]University of

Georgia, Tifton, GA, [6]University of Delaware, Georgetown, DE, [7]Louisiana State University AgCenter, St .Joseph, LA, [8]Virginia Tech, Blacksburg, VA, [9]University of Arkansas, Fayetteville, AR **(112)**

†Monitoring the Frequency and Distribution of Herbicide-Resistant Waterhemp (*Amaranthus tuberculatus*) Populations in Iowa. Ryan C. Hamberg*, Prashant Jha, Ramawatar Yadav, Avery J. Bennett, Alexis L. Meadows, Edward S. Dearden, Iththiphonh A. Macvilay; Iowa State University, Ames, IA **(113)**

†*Poa annua* (Annual Bluegrass) Presents a Large Diversity of Mutations That Endow Target-Site Resistance. Claudia A. Rutland*[1], Nathan D. Hall[1], James D. McCurdy[2], Lambert B. McCarty[3], James Brosnan[4], Travis Gannon[5], Daniel Hathcoat[6], Muthukumar V. Bagavathiannan[6], Joseph S. McElroy[1]; [1]Auburn University, Auburn, AL, [2]Mississippi State University, Starkville, MS, [3]Clemson University, Clemson, SC, [4]University of Tennessee, Knoxville, TN, [5]North Carolina State University, Raleigh, NC, [6]Texas A&M University, College Station, TX **(114)**

†*Poa annua* (Annual Bluegrass) Species Response to Preemergence Herbicides with Differing Target-Site Mutations. Eli C. Russell*; Auburn University, Auburn, AL **(115)**

†Integrated Management of Rescuegrass (*Bromus catharticus*) in Grain Only Winter Wheat Production in the Southern Great Plains. Hannah C. Lindell*[1], Misha R. Manuchehri[1], Todd A. Baughman[2], Emi Kimura[3], Gary Strickland[4], David Graf[5], Brett F. Carver[1], Lane S. Newlin[1], Justin T. Childers[1], Caitlyn C. Carnahan[1]; [1]Oklahoma State University, Stillwater, OK, [2]Oklahoma State University, Ardmore, OK, [3]Texas A&M University, Vernon, TX, [4]Oklahoma State University, Altus, OK, [5]Texas A&M University, Iowa Park, TX **(116)**

†Efficacy of Chaff-Lining in Managing Herbicide-Resistant Waterhemp (*Amaranthus tuberculatus*) Seedbanks. Avery J. Bennett*, Prashant Jha, Alexis L. Meadows, Ramawatar Yadav, Ryan Hamberg, Edward Dearden; Iowa State University, Ames, IA **(117)**

†Pumpkin Growth and Yield Response to Simulated Dicamba Drift. Lindsey M. Orphan*, Karla L. Gage, S. Alan Walters; Southern Illinois University Carbondale, Carbondale, IL **(118)**

FEBRUARY 15 to 19

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†Flattening the Curve: Using Multiple Tactics to Delay the Spread of Herbicide Resistance. Lavesta C. Hand*[1], Taylor M. Randell[1], Robert L. Nichols[2], Larry Steckel[3], A Stanley Culpepper[1]; [1]University of Georgia, Tifton, GA, [2]Cotton Incorporated, Cary, NC, [3]University of Tennessee, Jackson, TN **(119)**

†The Effect of Substrate Stratification and Fertilizer Placement on the Common Liverwort (*Marchantia Polymorpha*) Establishment and Growth of Blue Plumbago (*Plumbago Auriculata*) in Container Nursery Production. Yuvraj Khamare*[1], Stephen C. Marble[2], James Altland[3], Annette Chandler[1]; [1]University of Florida, Apopka, FL, [2]University of Florida - Mid Florida Research and Education Center, Apopka, FL, [3]USDA-ARS, Wooster, OH **(120)**

†Allelopathy: Weeds Practicing Social Distancing. Varsha Varsha*[1], Te-Ming (Paul) Tseng[2]; [1]Mississippi State University, Starkville, MS, [2]Mississippi State University, Mississippi State, MS **(121)**

†Variable Weather and Implications for Herbicides Efficacy and Yield Loss Due to Weeds. Christopher A. Landau*[1], Adam Davis[1], Patrick Tranel[1], Aaron Hager[1], Nicolas F. Martin[1], Martin Williams[2]; [1]University of Illinois, Urbana, IL, [2]USDA-ARS, Urbana, IL **(122)**

†Residual Activity of Glyphosate Damages Transplant Squash but can be Influenced by Tillage and Irrigation. Taylor M. Randell*[1], Jenna C. Vance[1], Lavesta C. Hand[1],

Hannah E. Wright[2], A Stanley Culpepper[1]; [1]University of Georgia, Tifton, GA, [2]University of Georgia, Athens, GA **(123)**

†The Effect of Florpyrauxifen-benzyl and Other Pasture Herbicides on Sward Composition. Wykle C. Greene*, Michael L. Flessner, Kevin W. Bamber, Matthew P. Spoth, Cynthia Sias; Virginia Tech, Blacksburg, VA **(124)**

†The Effects of Cereal Rye (*Secale cereale*) Seeding Rate and Termination Timing on Weed Control and Soybean Yield. Alyssa Essman*, Mark Loux, Anthony Dobbels, Alexander Lindsey; The Ohio State University, Columbus, OH **(125)**

†Can We Improve Detection Methods for Herbicide Residues in Plants? Hannah E. Wright*[1], John Shugart[2], Carrie Crabtree[2], Taylor M. Randell[3], Lavesta C. Hand[3], A Stanley Culpepper[3]; [1]University of Georgia, Athens, GA, [2]Georgia Department of Agriculture, Tifton, GA, [3]University of Georgia, Tifton, GA **(126)**

†Seasonal Herbicide Efficacy for Smutgrass (*Sporobolus indicus*) Control in Improved Pastures in Texas. Zachary S. Howard*[1], Mason T. House[1], Matthew Matocha[2], Scott A. Nolte[3]; [1]Texas A&M University, College Station, TX, [2]Texas A&M AgriLife Extension Service, College Station, TX, [3]Texas A&M AgriLife Extension, College Station, TX **(127)**

†From Pest to Pal: Discovering Stress Tolerant Weedy Rice. Shandrea D. Stallworth*[1], Swati Shrestha[1], Brooklyn C. Schumaker[2], Nilda Roma-Burgos[3], Te-Ming (Paul) Tseng[1]; [1]Mississippi State University, Mississippi State, MS, [2]Mississippi State University, Starkville, MS, [3]University of Arkansas, Fayetteville, AR **(128)**

†Utility of Potassium Tetraborate Tetrahydrate as a Dicamba Volatility Reduction Agent. Mason C. Castner*, Jason K. Norsworthy, Trenton L. Roberts, Maria Leticia M. Zaccaro; University of Arkansas, Fayetteville, AR **(129)**

†Optimization of Glufosinate Efficacy in Low-light Conditions. Grant L. Priess*, Jason K. Norsworthy, Maria Leticia M. Zaccaro, Mason C. Castner, Rodger B. Farr; University of Arkansas, Fayetteville, AR **(130)**

†Aspects of Growth and Development of Female and Male Palmer Amaranth (*Amaranthus palmeri*). Ednaldo A. Borgato*, Mithila Jugulam, Anita Dille; Kansas State University, Manhattan, KS **(131)**

†Evaluation of Multi-tactic Weed Management Strategies to Target Palmer Amaranth in Cotton. Sarah E. Kezar*[1], Delaney C. Foster[2], Michael M. Houston[3], Peter A. Dotray[4], Jason K. Norsworthy[3], Ramon G. Leon[5], Gaylon Morgan[6], Muthukumar V. Bagavathiannan[1], Fernando Oreja[5]; [1]Texas

A&M University, College Station, TX, [2]Texas Tech University, Lubbock, TX, [3]University of Arkansas, Fayetteville, AR, [4]Texas Tech University and Texas A&M AgriLife Research and Extension Service, Lubbock, TX, [5]North Carolina State University, Raleigh, NC, [6]Cotton Incorporated, Cary, NC **(132)**

†Could Epigenetics Help to Understand Herbicide Resistance in Weeds? Gourav Sharma*, Jacob Barney, Shawn Askew, James Westwood, David C. Haak; Virginia Tech, Blacksburg, VA **(133)**

†Controlling Palmer Amaranth: A Growing Threat to US Cotton Production Systems. Rohith Vulchi*[1], Muthukumar V. Bagavathiannan[1], Joshua A. McGinty[2], Scott A. Nolte[3]; [1]Texas A&M University, College Station, TX, [2]Texas A&M AgriLife Extension, Corpus Christi, TX, [3]Texas A&M AgriLife Extension, College Station, TX **(134)**

†Using Living Mulch in Reduced Tillage Organic Soybeans. Veronica Yurchak*, Cerruti R. Hooks; University of Maryland, College Park, MD **(135)**

†Assessing Genetic Diversity in Weed-suppressive Cotton Chromosome Substitution Lines. Worlanyo Segbefia*[1], Grace Fuller[1], Sukumar Saha[1], Te-Ming (Paul) Tseng[2]; [1]Mississippi State University, Starkville, MS, [2]Mississippi State University, Mississippi State, MS **(136)**

†Antagonizing Effects of Dicamba Tank Mixes in Controlling *Echinochloa*. Clay M. Perkins*[1], Larry Steckel[1], Thomas C. Mueller[2]; [1]University of Tennessee, Jackson, TN, [2]University of Tennessee, Knoxville, TN **(137)**

†Influence of Environment and Soybean Trait Adoption on Dicamba Concentrations in Rainwater and Air Deposits in Missouri. Eric G. Oseland*, Mandy Bish, Kevin W. Bradley; University of Missouri, Columbia, MO **(138)**

†Shedding Light on the Power of Plant Competition. Nicole Berardi*, Clarence Swanton; University of Guelph, Guelph, ON, Canada **(139)**

†Maximizing Cotton Defoliation Efficacy. Jacob P. McNeal*[1], Darrin M. Dodds[1], Brian K. Pieralisi[2], Greg Kruger[3], Bradley J. Norris[1], John J. Williams[1], William J. Rutland[4], Steven D. Hall[4]; [1]Mississippi State University, Mississippi State, MS, [2]Mississippi State University, Stoneville, MS, [3]University of Nebraska - Lincoln, North Platte, NE, [4]Mississippi State University, Starkville, MS **(140)**

†Many Little Hammers to Manage Herbicide-Resistant Waterhemp (*Amaranthus tuberculatus*) in Iowa Corn and Soybean. Ramawatar Yadav*, Prashant Jha, Avery J. Bennett,

Ryan Hamberg, Alexis L. Meadows, Edward Steven Dearden; Iowa State University, Ames, IA **(141)**

†Accessing Genetic Diversity in Cotton Chromosomal Substitution Lines Tolerant to Sublethal Rate of 2,4-D Using Molecular Markers. Josiane C. Argenta*[1], Te-Ming (Paul) Tseng[2]; [1]Mississippi State University, Starkville, MS, [2]Mississippi State University, Mississippi State, MS **(142)**

†Quantifying Pesticide Concentrations Using a Simulated Vegetable Bed. Kayla M. Eason*[1], Timothy L. Grey[1], A Stanley Culpepper[1], Nicholas L. Hurdle[2], Juliana de Souza Rodrigues[1]; [1]University of Georgia, Tifton, GA, [2]University of Georgia, Collierville, TN **(143)**

†Investigating Soybean Response from Dicamba and the Environmental and Chemical Influences That Lead to Increased Dicamba Volatility. Matthew Osterholt*[1], William G. Johnson[1], Manoj Ghaste[1], Joshua R. Widhalm[1], Scott McAdam[1], Bryan G. Young[2]; [1]Purdue University, West Lafayette, IN, [2]Purdue University, Brookston, IN **(144)**

†Using Bacterial Endophyte MS79 as Bioherbicide to Control Weeds. Mohammad R. Alsabri*; University of Kentucky, Lexington, KY **(145)**

†The Effects of Increased CO_2 Concentration in the Atmosphere on Weed Morphology, Development and Resistance. Juliana de Souza Rodrigues*, Timothy L. Grey; University of Georgia, Tifton, GA **(146)**

†Understanding 2,4-D Tolerance Mechanisms in Cotton Chromosome Substitution Lines. Loida M. Perez*[1], Isabel S. Werle[1], Sukumar Saha[2], Johnie Jenkin[2], David M. Stelly[3], Jeffrey F. D. Dean[1], Te-Ming (Paul) Tseng[1]; [1]Mississippi State University, Mississippi State, MS, [2]USDA-ARS, Mississippi State, MS, [3]Texas A&M University, College Station, TX **(147)**

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†Novel Advances in Allelopathy: A Pragmatic Solution to Weed Pestilence. Kira Howell*[1], Shandrea D. Stallworth[2], Te-Ming (Paul) Tseng[2]; [1]Mississippi State University, Starkville, MS, [2]Mississippi State University, Mississippi State, MS **(148)**

†Quantifying Vegetable Crops Response to Simulated Dicamba Drift Rates Using Image Analysis Techniques. Maggie H. Wasacz*[1], David J. Mayonado[2], Mark VanGessel[3], Matthew T. Elmore[4], Thierry E. Besancon[5]; [1]Rutgers University, Wall Township, NJ, [2]Affiliation Not Specified, Hebron, MD, [3]University of Delaware, Georgetown, DE, [4]Rutgers University, New Brunswick, NJ, [5]Rutgers University, Chatsworth, NJ **(149)**

†What's Old is New Again: Revisiting Alternative Weed Management Strategies for Palmer Amaranth (*Amaranthus palmeri*) Control. Rodger B. Farr*[1], Jason K. Norsworthy[1], Tom Barber[2], Thomas R. Butts[2], Grant L. Priess[1], James W. Beesinger[1]; [1]University of Arkansas, Fayetteville, AR, [2]University of Arkansas System Division of Agriculture, Lonoke, AR **(150)**

†Use of an Unmanned Aerial System for Detecting Low Rates of 2,4-D Injury in Cotton. Ubaldo Torres*[1], Peter A. Dotray[2], Kyle R. Russell[1], Wenxuan Guo[3], Murilo M. Maeda[4]; [1]Texas Tech University, Lubbock, TX, [2]Texas Tech University and Texas A&M AgriLife Research and Extension Service, Lubbock, TX, [3]Texas Tech University and Texas A&M AgriLife Research, Lubbock, TX, [4]Texas A&M AgriLife Extension, Lubbock, TX **(151)**

†Improving Cotton, the Fabric of Your Life. Mary Gracen A. Fuller*; Mississippi State University, Starkville, MS **(152)**

†Safening of Chloroacetamide Applications with a Rice Seed Treatment. Tristen H. Avent*[1], Jason K. Norsworthy[1], Scott Rushing[2], Andy Hurst[3]; [1]University of Arkansas, Fayetteville, AR, [2]UPL, Jonesboro, AR, [3]UPL, Macon, GA **(153)**

†Evapotranspiration of Palmer Amaranth (*Amaranthus palmeri*) in Corn/soybean and Non-crop Situation Under Subsurface Drip and Center-pivot Irrigation Systems. Jasmine M. Mausbach*[1], Suat Irmak[1], Debalin Sarangi[2], John Lindquist[1], Amit J. Jhala[1]; [1]University of Nebraska - Lincoln, Lincoln, NE, [2]University of Wyoming, Laramie, WY **(154)**

†Auxin-type Herbicide and Rhizobia Application for Weed Control and Nodulation Potential in Auxin-Tolerant Soybean. Joy Amajioyi*, Sharon Clay; South Dakota State University, Brookings, SD **(155)**

†Harvest Loss in Corn and Volunteerism. Trey Stephens*, Jenny Rees, Amit J. Jhala; University of Nebraska - Lincoln, Lincoln, NE **(156)**

†Effect of Herbicide and Nitrogen Inhibitors on Nitrification in Corn. William Neels*, Amit J. Jhala, Richard Little, Bijesh Maharjan, Laila Puntel, Javed Iqbal; University of Nebraska - Lincoln, Lincoln, NE **(157)**

†Economics of Overlapping Residual Herbicide Programs for Control of Glyphosate-resistant Palmer Amaranth in Soybean. Shawn T. McDonald*[1], Adam Striegel[1], Prashant Jha[2], Amit J. Jhala[1]; [1]University of Nebraska - Lincoln, Lincoln, NE, [2]Iowa State University, Ames, IA **(158)**

†Evaluation of Electrocution as a Method of Managing Problematic Weeds. Haylee E. Schreier*, Kevin W. Bradley, Mandy Bish, Brian Dintelmann; University of Missouri, Columbia, MO **(159)**

†A Multi-state Evaluation of the Response of Waterhemp Populations to Dicamba and Glufosinate. Travis Winans*, Brian Dintelmann, Mandy Bish, Kevin W. Bradley; University of Missouri, Columbia, MO **(160)**

†Impact of Tillage Regime and Cover Cropping on Weed Dynamics in Organic Cotton Production. McKenzie J. Barth*, Muthukumar V. Bagavathiannan; Texas A&M University, College Station, TX **(161)**

†Integrated Physical and Cultural Weed Management in Table Beets. Daniel M. Priddy*, Daniel C. Brainard, Zachary D. Hayden, Monique Hemker; Michigan State University, East Lansing, MI **(162)**

†Response of Non-Irrigated Peanut to Delayed Flumioxazin Applications. Nicholas L. Hurdle*[1], Timothy L. Grey[2], Walter S. Monfort[2]; [1]University of Georgia, Collierville, TN, [2]University of Georgia, Tifton, GA **(163)**

TUESDAY MORNING FEBRUARY 16

"Weed Genomics"

ORAL - 10. Physiology

LOCATION: Sante Fe Trail
TIME: 09:00 AM - 10:30 AM Central Time
MODERATOR: Zahoor A. Ganie
FMC
Newark, DE

***SPEAKER**

09:00 AM **The International Weed Genomics Consortium: The Growing Community Resources for Weed Genomics Research.** Todd A. Gaines*[1], Eric L. Patterson[2], Sarah Morran[1], Dana R. MacGregor[3], Roland S. Beffa[4], Joseph S. McElroy[5], Mithila Jugulam[6], Patrick Tranel[7]; [1]Colorado State University, Fort Collins, CO, [2]Michigan State University, East Lansing, MI, [3]Rothamsted Research, Harpenden, United Kingdom, [4]Bayer AG, CropScience Division, Frankfort / Main, Germany, [5]Auburn University, Auburn, AL, [6]Kansas State University, Manhattan, KS, [7]University of Illinois, Urbana, IL **(164)**

09:15 AM **The Reactivation and Expansion of FHY3/FAR1-Like Genes in *Bassia scoparia* (Kochia) and its Impact of Glyphosate Resistance.** Jinyi Chen[1], Nathan D. Hall*[1], Christopher A. Saski[2], Todd A. Gaines[3], Eric L. Patterson[1]; [1]Michigan State University, East Lansing, MI, [2]Clemson University, Clemson, SC, [3]Colorado State University, Fort Collins, CO **(165)**

09:30 AM **Putting it Together: Multiomic Insights into Epigenetic Driven Herbicide Stress Responses.** Suzanne Laliberte*, Gourav Sharma, Jacob Barney,

Shawn Askew, James Westwood, David C. Haak; Virginia Tech, Blacksburg, VA **(166)**

09:45 AM **How Sub-Lethal Doses of Herbicides and Abiotic Stresses Shape the *Sorghum bicolor* Methylome.** Gourav Sharma*, Jacob Barney, Shawn Askew, James Westwood, David C. Haak; Virginia Tech, Blacksburg, VA **(167)**

10:00 AM **Analysis of *Poa annua* (Annual Bluegrass) Genome Reveals Subgenome Bias for Herbicide-Resistance-Endowing Mutations.** Claudia A. Rutland*, Nathan D. Hall, Joseph S. McElroy; Auburn University, Auburn, AL **(168)**

10:15 AM **Family Dynamics of EPSPS Gene Copy Number and Gene Flow in Glyphosate-Resistant Kochia.** Philip Westra*, Andrew Effertz, Todd A. Gaines, Crystal D. Sparks; Colorado State University, Fort Collins, CO **(169)**

TUESDAY MORNING FEBRUARY 16

"Herbicide Efficacy in Horticultural Crops"

ORAL - 02. Horticultural Crops

LOCATION: Chisholm Trail
TIME: 09:00 AM - 10:30 AM Central Time
MODERATOR: Stephen L. Meyers
Purdue University
West Lafayette, IN

***SPEAKER**

09:00 AM **Holistic Carrot Production Systems for Season-Long Weed Management: A Model for Other Crops?** Jed Colquhoun*, Richard Rittmeyer, Daniel J. Heider; University of Wisconsin - Madison, Madison, WI **(170)**

09:15 AM **Which Way Should Pendimethalin be Applied in Onion: PRE, Delayed PRE, or Early POST?** Harlene M. Hatterman-Valenti*, Collin P. Auwarter; North Dakota State University, Fargo, ND **(171)**

09:30 AM **Weed Control in Direct-Seeded Onion with Pyroxasulfone Herbicide.** Joel Felix*, Joey Ishida; Oregon State University, Ontario, OR **(172)**

09:45 AM **Acorn Squash, Butternut Squash, and Bell Pepper Response to Fomesafen PRE.** Stephen L. Meyers*, Jeanine Arana, Brandi C. Woolam; Purdue University, West Lafayette, IN **(173)**

10:00 AM **Evaluation of Herbicide Combinations for Improving Weed Control Efficacy in Florida Citrus.** Ramdas Kanissery*; University of Florida - IFAS, Immokalee, FL **(174)**

10:15 AM **Peppermint (Mentha x Piperita) Response to Post-harvest Application of Tiafenacil.** Brandi C. Woolam*, Stephen L. Meyers, Jeanine Arana; Purdue University, West Lafayette, IN **(175)**

TUESDAY MORNING FEBRUARY 16

SYMPOSIUM - 1. Sustainable Weed Management – What is it and How are we Doing?

LOCATION: Oregon Trail
TIME: 09:00 AM - 12:30 PM Central Time
MODERATOR: Cara L. McCauley
Corteva Agriscience
Indianapolis, IN

***SPEAKER**

09:00 AM **Introduction to Symposium**

09:10 AM **Sustainability and Weed Control - is it a Compatible Tank Mix?** Travis Legleiter*; University of Kentucky, Princeton, KY **(176)**

09:30 AM **Beyond Sustainable: A Food System to Restore the Planet.** Michael Doane*; The Nature Conservancy, Kansas City, MO **(177)**

09:50 AM **What Sustainable Innovation Means to Me.** Reza Rasoulpour*; Corteva Agriscience, Indianapolis, IN **(178)**

10:10 AM **Perspectives on Sustainability from the WSSA-Herbicide Resistance Education Committee.** Jill Schroeder*; New Mexico State University, Las Cruces, NM **(179)**

10:30 AM **Break**

11:00 AM **Integrated Weed Management, from Buzzword to Reality.** Catherine M. De Vulder*; Bayer AG, Monheim, Germany **(180)**

11:20 AM **How Corteva is Shaping a Sustainable Future: Corteva Sustainability 2030 Goals.** Todd Pilcher*; Corteva Agriscience, Indianapolis, IN **(181)**

11:40 AM **5 Simple Ways to Communicate Our Role in Sustainability.** Karen Meinders*; Corteva Agriscience, Indianapolis, IN **(182)**

12:00 PM **Panel Discussion**

TUESDAY MORNING FEBRUARY 16

"Herbicide Resistance in Turf, Ornamental, and Horticultural Crops"

ORAL - 03. Turf and Ornamentals

LOCATION: Sante Fe Trail
TIME: 11:00 AM - 12:30 PM Central Time
MODERATOR: Sandeep S. Rana
Bayer Crop Science
Galena, MD

***SPEAKER**

11:00 AM **Understanding the Basis for Increased 2,4-D Tolerance in Red Clover (*Trifolium pratense*): Field Evaluations, Metabolism, and Gene Expression.** Lucas Araujo*[1], Michael Barrett[1], Randy Dinkins[2], Troy Bass[2], Gene Olson[1], Linda D. Williams[1]; [1]University of Kentucky, Lexington, KY, [2]U. S. Department of Agriculture, Lexington, KY **(183)**

11:15 AM **ALS Inhibitor Resistance in *Cyperus difformis* Has Multiple Metabolic Pathways.** Alex R.

Ceseski*, Kassim Al-Khatib; University of California - Davis, Davis, CA **(184)**

11:30 AM **Indaziflam Resistance in Annual Bluegrass (*Poa annua* L).** Jinyi Chen*[1], Eric L. Patterson[2]; [1]Michigan State University, East Lansing, MI, [2]Clemson University, Clemson, SC **(185)**

11:45 AM **Identification of Goosegrass (*Eleusine indica*) Resistant to Dithiopyr and Dinitroaniline Herbicides.** Eli C. Russell*; Auburn University, Auburn, AL **(186)**

12:00 PM **Characterizing Herbicide Resistance in Native and Invasive Populations of Palmer Amaranth (*Amaranthus palmeri*)..** Romy C. Lum*[1], Anil Shrestha[2], Katherine Waselkov[1]; [1]California State University, Fresno, Fresno, CA, [2]California State Univeristy, Fresno, Fresno, CA **(187)**

12:15 PM **Control of Purple Amaranth, an Emerging Weed in Michigan Vegetable Production.** Sushila Chaudhari*, Erin C. Hill; Michigan State University, East Lansing, MI **(188)**

TUESDAY MORNING FEBRUARY 16

"Potential for Pesticide Movement and Impacts"

ORAL – 11. Soil and Environmental Aspects

LOCATION: Chisholm Trail
TIME: 11:00 AM - 12:30 PM Central Time
MODERATOR: Hayden Quick
Mississippi State University
Mississippi State, MS

***SPEAKER**

11:00 AM **Pesticide Movement in the Atmosphere: It's Complicated.** Mandy Bish*, Eric G. Oseland, Kevin W. Bradley; University of Missouri, Columbia, MO **(189)**

11:15 AM **Evaluation of Dicamba Volatility Reducing Agents Under Different Environmental Conditions.** Ryan D. Langemeier*[1], Steve Li[1], Rodrigo Werle[2], Greg Kruger[3], Katilyn J. Price[1],

Sarah V. Striegel[2], Bruno C. Vieira[4]; [1]Auburn University, Auburn, AL, [2]University of Wisconsin - Madison, Madison, WI, [3]University of Nebraska - Lincoln, North Platte, NE, [4]University of Nebraska - Lincoln, Lincoln, NE **(190)**

11:30 AM **Characterize the Effect of Off-Target Synthetic Auxin Exposure to Tobacco.** Patrick J. Maxwell*, Travis Gannon, Matthew C. Vann; North Carolina State University, Raleigh, NC **(191)**

11:45 AM **Impact of Spray Target Surface and Glufosinate on Dicamba Volatility.** Maria Leticia M. Zaccaro*, Jason K. Norsworthy, Leonard B. Piveta, Michael M. Houston; University of Arkansas, Fayetteville, AR **(192)**

12:00 PM **Snap Bean Morphological and Yield Response to Sublethal Rates of Dicamba.** Maggie H. Wasacz*[1], Baylee L. Carr[2], Mark VanGessel[3], Lynn M. Sosnoskie[4], Thierry E. Besancon[2]; [1]Rutgers University, Wall Township, NJ, [2]Rutgers University, Chatsworth, NJ, [3]University of Delaware, Georgetown, DE, [4]Cornell University, Geneva, NY **(193)**

12:15 PM **Response of Peach Trees to Low Rates of Dicamba Using Sequential Applications and Varying Droplet Sizes.** Matthew B. Bertucci*, Jason K. Norsworthy, Michael M. Houston, Leonard B. Piveta; University of Arkansas, Fayetteville, AR **(194)**

TUESDAY AFTERNOON FEBRUARY 16

"Connecting with our Stakeholders"

ORAL - 06. Teaching and Extension

LOCATION: Oregon Trail
TIME: 03:00 PM - 04:30 PM Central Time
MODERATOR: Parminder Chahal
FMC
Lincoln, NE

***SPEAKER**

03:00 PM **Connecting Electronically with Farmers and Agronomy Professionals.** Jeanne S. Falk Jones*; Kansas State University, Colby, KS **(195)**

03:15 PM **Farmer's Perception of Weedy Rice (*Oryza sativa* Var *spontanea*) from Southern Luzon, Philippines.** Analiza Henedina M. Ramirez*, Clare Hazel R. Tabernilla, Priscilla M. Barcial; UP Los Banos, College, Los Banos, Laguna, Philippines **(196)**

03:30 PM **Bridging the Knowing-Doing Gap in the Science, Policy, and Management of Invasive Species.** Jacob Barney*, Vasiliy T. Lakoba, David C. Haak, Scott Salom, Todd Schenk, Bryan Brown; Virginia Tech, Blacksburg, VA **(197)**

03:45 PM **The Drivers of Herbicide Use Among Arable Farmers in Central Canterbury, New Zealand.** Martin Espig*; AgResearch, Lincoln, New Zealand **(198)**

04:00 PM **A Review of Selected Published Herbicide Resistance Validations.** Harry J. Strek*[1], Ian M. Heap[2], Mark Peterson[3]; [1]Bayer AG, Frankfurt / Main, Germany, [2]WeedScience LLC, Corvallis, OR, [3]Affiliation Not Specified, West Lafayette, IN **(199)**

04:15 PM **Insights into Publishing in Weed Science.** William K. Vencill*; University of Georgia, Athens, GA **(200)**

TUESDAY AFTERNOON FEBRUARY 16

"Studying Herbicide-Resistant Waterhemp"

ORAL - 10. Physiology

LOCATION: Sante Fe Trail
TIME: 03:00 PM - 04:30 PM Central Time
MODERATOR: Zahoor A. Ganie
FMC
Newark, DE

***SPEAKER**

03:00 PM **The Genetic Architecture of HPPD-Inhibitor Resistance in *Amaranthus tuberculatus.*** Brent P. Murphy*, Patrick Tranel; University of Illinois, Urbana, IL **(201)**

03:15 PM **Identifying and Quantifying Resistance to Soil-Applied Herbicides in Multiple-Resistant Waterhemp (*Amaranthus tuberculatus*) Seedlings Using a Soilless Greenhouse Assay.** Dylan R. Kerr*, Seth A. Strom, Jeanaflor Crystal T. Concepcion, Dean E. Riechers; University of Illinois, Urbana, IL **(202)**

03:30 PM **Resistance Mechanism to a Non-Selective HPPD-inhibiting Herbicide in Waterhemp Involves Multiple Detoxification Pathways.** Jeanaflor Crystal T. Concepcion*[1], Shiv S. Kaundun[2], James A. Morris[2], Sarah-Jane Hutchings[2], Anatoli V. Lygin[1], Dean E. Riechers[1]; [1]University of Illinois, Urbana, IL, [2]Syngenta, Bracknell, United Kingdom **(203)**

03:45 PM **Herbicide-Resistance in Waterhemp (*Amaranthus tuberculatus*) Identified in Israel is Due to a Long Distance Gene Transfer.** Inon Yadid, Aviv Zinger, Zvi Peleg, Baruch Rubin*; Hebrew University of Jerusalem, Rehovot, Israel **(204)**

04:00 PM **Distinct Metabolic Mechanisms for Tolerance and Resistance to *S*-Metolachlor in Corn and Two Illinois Waterhemp (*Amaranthus tuberculatus*) Populations.** Seth Strom*[1], Aaron Hager[1], Adam Davis[1], Shiv S. Kaundun[2], Dean E.

Riechers[1]; [1]University of Illinois, Urbana, IL, [2]Syngenta, Bracknell, United Kingdom **(205)**

04:15 PM **Suppressing Herbicide-Resistant *Amaranthus* Populations by Inhibiting Reproduction.** Efrat Lidor Nili*[1], Ido Shwartz[1], Herve Huet[1], Miriam Aminia[1], A Stanley Culpepper[2], Micheal D. Owen[3], Orly Noivirt-Brik[1]; [1]WeedOUT, Ness Ziona, Israel, [2]University of Georgia, Tifton, GA, [3]Affiliation Not Specified, Ames, IA **(206)**

TUESDAY AFTERNOON FEBRUARY 16

"Pesticide Spray Drift and Non-Target Impacts"

ORAL - 11. Soil and Environmental Aspects

LOCATION: Chisholm Trail
TIME: 03:00 PM - 04:00 PM Central Time
MODERATOR: Hayden Quick
Mississippi State University
Mississippi State, MS

***SPEAKER**

03:00 PM **Spray Drift of Florpyrauxifen-Benzyl from Ground Spray Equipment and Agricultural Aircraft.** Thomas R. Butts*[1], Tom Barber[1], Jason K. Norsworthy[2], W Jeremy Ross[1], Gus M. Lorenz[3], John J. Adamczyk[4]; [1]University of Arkansas System Division of Agriculture, Lonoke, AR, [2]University of Arkansas, Fayetteville, AR, [3]University of Arkansas, Lonoke, AR, [4]USDA-ARS, West Poplarville, MS **(207)**

03:15 PM **2,4-D Drift Delays Hazelnut Abscission.** Marcelo L. Moretti*, Larissa Larocca De Souza; Oregon State University, Corvallis, OR **(208)**

03:30 PM **Effect of Simulated Herbicide Drift on Agronomic Crops.** Ronald R. Rogers*, Travis Gannon, Patrick J. Maxwell, Daniel Freund, Shwetha S. Ramanathan, Mathieu LeCompte; North Carolina State University, Raleigh, NC **(209)**

03:45 PM **Assessment of Triclopyr Non-Target Injury to Native Shrubs Following Basal Bark Treatment.**

Stephen F. Enloe*, Conrad Oberweger; University of Florida, Gainesville, FL **(210)**

TUESDAY AFTERNOON FEBRUARY 16

"Science Policy Fellow Report"

LOCATION: Chisholm Trail
TIME: 04:00 PM - 04:30 PM Central Time
MODERATOR: Hayden Quick
Mississippi State University
Mississippi State, MS

***SPEAKER**

04:00 PM **The Intersection of Weed Science and Politics: What We Learned During Our Virtual Science Policy Fellowships.** Vasiliy T. Lakoba*[1], Lavesta C. Hand[2], Lee Van Wychen[3]; [1]Virginia Tech, Blacksburg, VA, [2]University of Georgia, Tifton, GA, [3]Weed Science Society of America, Alexandria, VA **(211)**

WEDNESDAY MORNING FEBRUARY 17

"Using Cover Crops for Weed Management"

ORAL - 12. Integrated Weed Management

LOCATION: Sante Fe Trail
TIME: 09:00 AM - 10:30 AM Central Time
MODERATOR: Shilpa Singh
Texas A&M University
College Station, TX

***SPEAKER**

09:00 AM **Weed Control and Herbicide Tolerance of Establishing White Clover (*Trifolium repens*) as a Living Mulch.** Nicholas T. Basinger*, Nicholas S. Hill; University of Georgia, Athens, GA **(212)**

09:15 AM **Multi-Species and Intensified Cover Crops for California Nut Tree Orchards.** Steven C. Haring*[1], Brad Hanson[2]; [1]University of California - Davis, Davis, CA, [2]University of California - Davis, Winters, CA **(213)**

09:30 AM **Using Weed-Suppressive Corn and Cover Crops for Weed Management and Increased Profitability of Corn.** Rachel Nobles*[1], Gracen A. Fuller[2], W. Brien Henry[1], Te-Ming (Paul) Tseng[1]; [1]Mississippi State University, Mississippi State, MS, [2]Mississippi State University, Starkville, MS **(214)**

09:45 AM **Evaluating Cover Crop Termination Timing on Cover Crop Biomass, Weed Suppression, and Ultimate Yield Goal Outcome.** Cynthia Sias*, Michael L. Flessner, Kevin W. Bamber; Virginia Tech, Blacksburg, VA **(215)**

10:00 AM **Evaluation of Cover Crop, Herbicide, and Tillage Combinations for Integrated Weed Management.** Kurt M. Vollmer*[1], Mark VanGessel[2], Barbara A. Scott[2], Quintin R. Johnson[2]; [1]University of Maryland, Queenstown, MD, [2]University of Delaware, Georgetown, DE **(216)**

10:15 AM **Using Soil Steaming and Cover-Crops for Weed Management and Increased Profitability of**

Organic Tomato Production. Sydney Stockwell*[1], Shandrea D. Stallworth[1], Isabel S. Werle[1], Clay Cheroni[2], Shaun R. Broderick[2], Te-Ming (Paul) Tseng[1]; [1]Mississippi State University, Mississippi State, MS, [2]Mississippi State University, Crystal Springs, MS **(217)**

WEDNESDAY MORNING FEBRUARY 17

"Management Strategies for Invasive Plants"

ORAL - 04. Pasture, Range, Forest, & Rights of ways, Wildland, and Aquatic Invasive Plants

LOCATION: Chisholm Trail
TIME: 09:00 AM - 10:30 AM Central Time
MODERATOR: David P. Russell
Auburn University
Belle Mina, AL

***SPEAKER**

09:00 AM **INHABIT: a Web Application to Deliver Habitat Suitability Models and Bridge the Scientist-Practitioner Divide.** Peder S. Engelstad*[1], Catherine Jarnevich[2], Terri Hogan[3], Helen Sofaer[4], Ian Pearse[2], Jennifer Sieracki[3], Nicholas E. Young[1], Janet Prevey[2], Jillian LaRoe[2], Pairsa Belmaric[2]; [1]Colorado State University, Fort Collins, CO, [2]U.S. Geological Survey, Fort Collins Science Center, Fort Collins, CO, [3]National Park Service, Fort Collins, CO, [4]U.S. Geological Survey, Pacific Island Ecosystems Science Center, Hawaii National Park, HI **(218)**

09:15 AM **Niche Dynamics of a Global Invader.** Vasiliy T. Lakoba*[1], Daniel Z. Atwater[2], Jacob Barney[1]; [1]Virginia Tech, Blacksburg, VA, [2]Earlham College, Richmond, IN **(219)**

09:30 AM **Evaluating the Impact of Timed Hexazinone Applications on Brunswickgrass.** Clay Cooper*[1], Brent A. Sellers[2]; [1]University of Florida, Lecanto, FL, [2]University of Florida, Ona, FL **(220)**

09:45 AM **Field-release of *Pseudophilothrips ichini* on Brazilian Peppertree (*Schinus terebinthifolia*) Infestations and Monitoring its Longterm**

Impact Has Begun in Florida. Min B. Rayamajhi*[1], Dale A. Halbritter[2], Jorge G. Leidi[2], Jenna Owens[2]; [1]USDA-ARS - IPRL, Cooper City, FL, [2]USDA-ARS, Fort Lauderdale, FL **(221)**

10:00 AM **Current Status of Mycoherbicide Use in the Bio-control of Noxious Weeds.** Ajay Kumar Singh*; Principal Scientist & Head R&D, Hyderabad, India **(222)**

WEDNESDAY MORNING FEBRUARY 17

SYMPOSIUM - 2. A History, Overview, and Plan of Action on PPO Inhibiting Herbicides

LOCATION:	Oregon Trail
TIME:	09:00 AM - 12:30 PM Central Time
MODERATOR:	Franck E. Dayan Colorado State University Fort Collins, CO
CO-MODERATOR:	John Pawlak Valent USA Corporation Lansing, MI

***SPEAKER**

09:00 AM **Introduction to Symposium**

09:10 AM **Discovery and Mode of Action of Protoporphyrinogen Oxidase-Inhibiting Herbicides.** Stephen O. Duke*[1], Franck E. Dayan[2], Abigail Barker[2]; [1]University of Mississippi, Oxford, MS, [2]Colorado State University, Fort Collins, CO **(223)**

09:30 AM **History and Distribution of PPO-Resistant Weeds.** Roland S. Beffa*; Bayer AG, CropScience Division, Frankfort / Main, Germany **(224)**

09:50 AM **Mechanisms of Resistance to PPO Inhibitors.** Patrick Tranel*; University of Illinois, Urbana, IL **(225)**

10:10 AM **Greenhouse and Lab Methodologies for Detection of Resistance to PPO-Inhibiting Herbicides.** R Joseph Wuerffel*; Syngenta, Gerald, MO **(226)**

10:30 AM **Break**

11:00 AM **How Does Resistance to PPO-inhibitors Compare with Other MOA Resistance?** Bryan G. Young*; Purdue University, West Lafayette, IN **(227)**

11:20 AM **PPO Biochemistry and Protein Structure as Tools for Optimizing New Herbicide Candidates and Resistance Research.** Aimone Porri*[1], Rex A. Liebl[2], Raphael Aponte[1], Douglas A. Findley[3], Michael Betz[1], Jens Lerchl[1]; [1]BASF Corp, Limburgerhof, Germany, [2]BASF Corp, Raleigh, NC, [3]BASF Corp, Research Triangle Park, NC **(228)**

11:40 AM **Herbicide Resistant Management Options Versus Mandatory Practices.** A Stanley Culpepper*[1], Kevin W. Bradley[2], Bryan G. Young[3]; [1]University of Georgia, Tifton, GA, [2]University of Missouri, Columbia, MO, [3]Purdue University, Brookston, IN **(229)**

WEDNESDAY MORNING FEBRUARY 17

SYMPOSIUM - 3. Optimizing Invasive Aquatic Plant Management, Monitoring, and Outreach Efforts to Meet Regional Needs

LOCATION: Chisholm Trail
TIME: 11:00 AM - 04:30 AM Central Time
MODERATOR: Robert J. Richardson
North Carolina State University
Raleigh, NC

***SPEAKER**

11:00 AM **Introduction to Symposium**

11:10 AM **Implementing Invasive Aquatic Plant Management Programs Within the California Regulatory System. A Case Study of the California Delta Program.** John D. Madsen*; USDA-ARS, Davis, CA **(230)**

11:30 AM **Lake Istokpoga: Addressing Complex Stakeholder Relations.** Jason Ferrell*; University of Florida, Gainesville, FL **(231)**

11:50 AM **Increased Invasiveness of Hybrid Species. A Case Study of Hybrid Watermilfoil.** Ryan Thum*; Montana State University, Bozeman, MT **(232)**

12:10 PM **Biology and Management of Flowering Rush in the Northern US.** Ryan M. Wersal*; Minnesota State University, Mankato, Mankato, MN **(233)**

12:30 PM **Break**

03:00 PM **Monoecious Hydrilla: Researching Plant Biology, Sensing Techniques, and Herbicide Optimization for Management in Disparate Systems.** Robert J. Richardson*; North Carolina State University, Raleigh, NC **(234)**

03:20 PM **Water Soldier in Canada: Development of Research and Management Programs to Address This Invader.** Holly Simpson*; Ontario

Ministry of Natural Resources and Forestry, Peterborough, ON, Canada **(235)**

03:40 PM **Aquatic Plant Management in Middle Earth. Development of Management Programs for Unique Environments in New Zealand.** Deborah Hofstra*; National Institute of Water & Atmospheric Research Ltd, Hamilton, New Zealand **(236)**

04:00 PM **Aquatic Plant Management in the Victoria, Australia Irrigation System.** Tony Dugdale*; Agriculture Victoria Research, Bundoora, Australia **(237)**

04:20 PM **Panel Discussion**

WEDNESDAY AFTERNOON FEBRUARY 17

"Latest Technologies for Weed Management"

ORAL - 07. Formulation, Adjuvant, & Application Technology

LOCATION: Oregon Trail
TIME: 03:00 PM - 04:30 PM Central Time
MODERATOR: Vipan Kumar
Kansas State University
Hays, KS

***SPEAKER**

03:00 PM **Influence of Sodium Cation and Various AMS Adjuvants on the Performance of Various Glyphosate Formulations.** Gregory K. Dahl*[1], David A. Van Dam[2], Martin M. Carr[2], Amanda Flipp[3], Laura J. Hennemann[3], Joshua J. Skelton[4]; [1]Winfield United, Eagan, MN, [2]Winfield United Canada, Saskatoon, SK, Canada, [3]Winfield United, River Falls, WI, [4]WinField United, Saint Paul, MN **(238)**

03:15 PM **Smooth Scouringrush (*Equisetum laevigatum*) Control with Glyphosate is Affected by Surfactant, Rate, and Timing.** Mark E. Thorne*, Drew J. Lyon; Washington State University, Pullman, WA **(239)**

03:30 PM **Precision See & Spray™ - Enabling New Opportunities for Weed Management.** William L. Patzoldt*; Blue River Technology, Sunnyvale, CA **(240)**

03:45 PM **Efficacy of a Precision Herbicide Applicator for Row Middles in Plasticulture Production Systems.** Ravneet K. Sandhu*[1], Nathan Boyd[2], Arnold W. Schumann[3], Shaun M. Sharpe[4]; [1]University of Florida, Wimauama, FL, [2]University of Florida, Balm, FL, [3]University of Florida, Lake Alfred, FL, [4]Agriculture and Agri-Food Canada, Saskatoon, SK, Canada **(241)**

04:00 PM **Deep Learning-Based Weed Recognition in Australian Ginger (*Zingiber officinale*) Production.** Caleb Squires*[1], Guy Coleman[2], Michael J. Walsh[3]; [1]University of Sydney,

Brownlow Hill, Australia, [2]University of Sydney, Camden, Australia, [3]University of Sydney, Narrabri, Australia **(242)**

04:15 PM **Introduction of the CPDA Application Enhancement Program.** Joe V. Gednalske*[1], Susan Sun[2], Greg Kruger[3], Bradley K. Fritz[4], Jim Reiss[5]; [1]CPDA, River Falls, WI, [2]Croda Inc., New Castle, DE, [3]University of Nebraska - Lincoln, North Platte, NE, [4]USDA-ARS, College Station, TX, [5]Precision Lab, Waukegan, IL **(243)**

WEDNESDAY AFTERNOON FEBRUARY 17

"Physical & Mechanical Weed Control Tools"

ORAL - 12. Integrated Weed Management

LOCATION: Sante Fe Trail
TIME: 03:00 PM - 04:30 PM Central Time
MODERATOR: Shilpa Singh
Texas A&M University
College Station, TX

***SPEAKER**

03:00 PM **Initial Impressions of the Redekop Seed Control Unit for Harvest Weed Seed Control.** Michael L. Flessner*[1], Steven Mirsky[2]; [1]Virginia Tech, Blacksburg, VA, [2]USDA-ARS, Beltsville, MD **(244)**

03:15 PM **Phenological Shifts in Flowering Due to Selection Pressures of Harvest Weed Seed Control.** Lauren M. Lazaro*[1], Gabrielle LaBiche[1], Daniel O. Stephenson, IV[2], Josh T. Copes[3], Donnie Miller[4]; [1]Louisiana State University AgCenter, Baton Rouge, LA, [2]LSU Ag Center, Alexandria, LA, [3]LSU AgCenter, St. Joseph, LA, [4]Louisiana State University AgCenter, St. Joseph, LA **(245)**

03:30 PM **Integration of Chaff Lining into Weed Management Programs in Soybean.** Katie M. Mestayer*[1], Gabrielle LaBiche[1], Karla L. Gage[2], Steven Mirsky[3], Claudio G. Rubione[4], Lovreet S. Shergill[5], Mark VanGessel[4], Lauren M. Lazaro[1]; [1]Louisiana State University AgCenter, Baton Rouge, LA, [2]Southern Illinois University

Carbondale, Carbondale, IL, [3]USDA-ARS, Beltsville, MD, [4]University of Delaware, Georgetown, DE, [5]USDA-ARS & University of Delaware, Beltsville, MD **(246)**

03:45 PM **Soil Surface Effects on Finger and Flextine Cultivation Efficacy in Vegetables.** Daniel M. Priddy*[1], Daniel C. Brainard[1], Zachary D. Hayden[2], Monique Hemker[1]; [1]Michigan State University, East Lansing, MI, [2]Michigan State Univeristy, East Lansing, MI **(247)**

04:00 PM **Electrical Discharge Systems for Weed Control in Agronomic and Horticultural Crops.** Lynn M. Sosnoskie*[1], Bryan Brown[2], Elizabeth Maloney[1], Julie Kikkert[3]; [1]Cornell University, Geneva, NY, [2]New York State Integrated Pest Management Program, Geneva, NY, [3]Cornell Cooperative Extension, Canandaigua, NY **(248)**

04:15 PM **Control of Annual Ryegrass (*Lolium rigidum*) and Turnipweed (*Rapistrum rugosum*) with a Diode Laser.** Guy Coleman*[1], Michael J. Walsh[2]; [1]University of Sydney, Camden, Australia, [2]University of Sydney, Narrabri, Australia **(249)**

THURSDAY MORNING FEBRUARY 18

"Herbicide Efficacy in Agronomic Crops A"

ORAL - 01. Agronomic Crops

LOCATION: Sante Fe Trail
TIME: 09:00 AM - 10:30 AM Central Time
MODERATOR: Alejandro Perez-Jones
Bayer Crop Science
Chesterfield, MO

***SPEAKER**

09:00 AM **Acuron XR Herbicide - Residual Weed Control, Crop Safety and Yield in Corn.** Scott E. Cully*[1], Mark J. Kitt[2], Tom H. Beckett[3]; [1]Syngenta Crop Protection, Marion, IL, [2]Syngenta Crop Protection, Greensboro, NC, [3]Syngenta, Greensboro, NC **(250)**

09:15 AM **Do Tank Mix Partners with Isoxaflutole Increase Soil Residual Activity Across the Cotton Belt?** Delaney C. Foster*[1], Peter A. Dotray[2], Todd A. Baughman[3], Seth A. Byrd[4], A Stanley Culpepper[5], Darrin M. Dodds[6], Steven D. Hall[7], Jacob P. McNeal[6], Bradley J. Norris[6], Reagan L. Noland[8], Scott A. Nolte[9], Mason T. House[10], Jason K. Norsworthy[11], Rodger B. Farr[11], Larry Steckel[12], Corey Thompson[13]; [1]Texas Tech University, Lubbock, TX, [2]Texas Tech University and Texas A&M AgriLife Research and Extension Service, Lubbock, TX, [3]Oklahoma State University, Ardmore, OK, [4]Oklahoma State University, Stillwater, OK, [5]University of Georgia, Tifton, GA, [6]Mississippi State University, Mississippi State, MS, [7]Mississippi State University, Starkville, MS, [8]Texas A&M AgriLife Extension, San Angelo, TX, [9]Texas A&M AgriLife Extension, College Station, TX, [10]Texas A&M University, College Station, TX, [11]University of Arkansas, Fayetteville, AR, [12]University of Tennessee, Jackson, TN, [13]BASF, Abernathy, TX **(251)**

09:30 AM **Acuron GT Launch: T-minus Spring 2021.** Ryan D. Lins*[1], Tom H. Beckett[2], Mark J. Kitt[3]; [1]Syngenta Crop Protection, Rochester, MN, [2]Syngenta, Greensboro, NC, [3]Syngenta Crop Protection, Greensboro, NC **(252)**

09:45 AM **Influence of Various Broadleaf Herbicides on the Control of Corn and Other Grasses with Clethodim Herbicides.** Gregory K. Dahl[1], Joshua J. Skelton*[2], Laura J. Hennemann[3], Ryan J. Edwards[3], Amanda Flipp[3]; [1]Winfield United, Eagan, MN, [2]WinField United, Saint Paul, MN, [3]Winfield United, River Falls, WI **(253)**

10:00 AM **Do New Herbicide Technologies for Grain Sorghum Differ in Effectiveness on Arkansas Johnsongrass Accessions?** Jacob A. Fleming*, Jason K. Norsworthy; University of Arkansas, Fayetteville, AR **(254)**

10:15 AM **Evaluation of Herbicide-Resistant Grain Sorghum Technologies for Grass Weed Control in High Plains.** Vipan Kumar*[1], Isaac N. Effertz[2], Taylor Lambert[1], Rui Liu[1], Brent Bean[3]; [1]Kansas State University, Hays, KS, [2]Kansas State University, Manhattan, KS, [3]Sorghum Checkoff Program, Lubbock, TX **(255)**

10:30 AM **Break**

THURSDAY MORNING FEBRUARY 18

"Herbicide Efficacy in Agronomic Crops B"

ORAL - 01. Agronomic Crops

LOCATION: Sante Fe Trail
TIME: 11:00 AM - 12:30 PM Central Time
MODERATOR: Alejandro Perez-Jones
Bayer Crop Science
Chesterfield, MO

***SPEAKER**

11:00 AM **Impact CORE: A New Herbicide Premixture for Postemergence Use in Corn.** Richard M. Porter[1], Joseph A. Bruce*[2]; [1]AMVAC Chemical Corporation, Ankeny, IA, [2]AMVAC Chemical Corporation, Glen Carbon, IL **(256)**

11:15 AM **Do Planting Date and Environmental Conditions Impact Rice Tolerance to Florpyrauxifen-benzyl?** James W. Beesinger*,

Jason K. Norsworthy, Leonard B. Piveta, Mason C. Castner; University of Arkansas, Fayetteville, AR **(257)**

11:30 AM **Impregnating Florpyrauxifen-benzyl on Urea for Weed Control in Rice.** Bodie Cotter*, Jason K. Norsworthy, James W. Beesinger, Tristen H. Avent, Leonard B. Piveta; University of Arkansas, Fayetteville, AR **(258)**

11:45 AM **The Effects of Rate and Timing of Pre-harvest Glyphosate on Malting Barley (*Hordeum vulgare*).** Breanne D. Tidemann*[1], John T. O'Donovan[1], Hiroshi Kubota[1], K. Neil Harker[1], T. Kelly Turkington[1], William May[2], Eric N. Johnson[3], Brian Beres[4], Marta Izydorczyk[5], Lori Oatway[6], Patricia Juskiw[6], Henry de Gooijer[2], Alick Mulenga[7]; [1]Agriculture and Agri-Food Canada, Lacombe, AB, Canada, [2]Agriculture and Agri-Food Canada, Indian Head, SK, Canada, [3]University of Saskatchewan, Saskatoon, SK, Canada, [4]Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [5]Canadian Grain Commission, Winnipeg, MB, Canada, [6]Alberta Agriculture and Forestry, Lacombe, AB, Canada, [7]Agriculture and Agri-Food Canada, Scott, SK, Canada **(259)**

12:00 PM **Topramezone + Glufosinate: A Unique Premixture.** Richard K. Zollinger*[1], Peter Porpiglia[2]; [1]AMVAC Chemical Corporation, Spokane Valley, WA, [2]AMVAC Chemical Corporation, Newport Beach, CA **(260)**

12:15 PM **Diuron Use in Oklahoma Wheat Double-crop Soybean Systems.** Misha R. Manuchehri*[1], Todd A. Baughman[2], Robbie W. Peterson[2], Zachary R. Treadway[2], Hannah C. Lindell[1], Lane S. Newlin[1], Caitlyn C. Carnahan[1], Justin T. Childers[3]; [1]Oklahoma State University, Stillwater, OK, [2]Oklahoma State University, Ardmore, OK, [3]Oklahoma State University, Marlow, OK **(261)**

THURSDAY MORNING FEBRUARY 18

"Phytochemical Impacts on Weeds"

ORAL - 08. Weed Biology and Ecology

LOCATION: Chisholm Trail
TIME: 09:00 AM - 10:30 AM Central Time
MODERATOR: Caio A. Brunharo
Oregon State University
Corvallis, OR

***SPEAKER**

09:00 AM **Phytotoxic Activity of Bioactive Compounds from Four Plants Against Selected Weeds.** Tauseef Anwar*[1], Huma Qureshi[2]; [1]Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi, Pakistan, [2]Institute of Biological Sciences, Gomal University, Dera Ismail Khan, Pakistan **(262)**

09:15 AM **Characterization of Sicklepod Extract as a Deer Repellent and Insecticide for Soybean Looper (Lepidoptera: Noctuidae).** Ziming Yue*[1], Charles L. Cantrell[2], Natraj Krishnan[1], David J. Lang[1], Mark W. Shankle[3], Te-Ming (Paul) Tseng[1]; [1]Mississippi State University, Mississippi State, MS, [2]USDA ARS Natural Products Utilization Research Unit, Oxford, MS, [3]Mississippi State University, Verona, MS **(263)**

09:30 AM **Suppression of Germination and Growth by Industrial Hemp (*Cannabis sativa* L.) Extracts and Residue.** Avery Shikanai*; Southern Illinois University Carbondale, Carbondale, IL **(264)**

09:45 AM **The Effect of Variability in Climatic Conditions on the Control Efficacy of Tumble Pigweed (*Amaranthus albus*) in Processing Tomatoes.** Roni Gafni*[1], Lior Blank[2], Hanan Eizenberg[3]; [1]Hebrew University of Jerusalem, Rehovot, Israel, [2]Agricultural Research Organization, Volcani Center, Rishon Lezion, Israel, [3]Newe Ya'ar Research Center, Ramat Yishay, Israel **(265)**

10:00 AM **Assessing Impacts of Drought on Weed Communities in the Great Lakes Region.** Allyson M. Rumler, Erin E. Burns*; Michigan State University, East Lansing, MI **(266)**

10:15 AM **Influence of Cover Crops on Soil Microbial Activity and Degradation of Atrazine and *S*-Metolachlor.** William G. Johnson[1], Bryan G. Young[2], Shalamar Armstrong[1], Eileen J. Kladivko[1], Joshua R. Widhalm[1], Manoj S. Ghaste[1], Lucas Oliveira Ribeiro Maia*[1]; [1]Purdue University, West Lafayette, IN, [2]Purdue University, Brookston, IN **(267)**

10:30 AM **Break**

THURSDAY MORNING FEBRUARY 18

"Dynamics of Weed Seed Germination and Emergence"

ORAL - 08. Weed Biology and Ecology

LOCATION: Chisholm Trail
TIME: 11:00 AM - 12:30 PM Central Time
MODERATOR: Caio A. Brunharo
Oregon State University
Corvallis, OR

***SPEAKER**

11:00 AM **Impact of Bio-solarization on Soil Conditions and Weed Seedbank in Tomato Field.** O. Adewale Osipitan*[1], Jesus D. Fernarndez-Bayo[1], Brad Hanson[2], Mohsen B. Mesgaran[1]; [1]University of California - Davis, Davis, CA, [2]University of California - Davis, Winters, CA **(268)**

11:15 AM **Cranberry Seed Germination as Affected by Environmental Conditions.** Thierry E. Besancon*; Rutgers University, Chatsworth, NJ **(269)**

11:30 AM **Thermal Time to Emergence of California Weedy Rice (*Oryza sativa* f. *spontanea*) Under Flooded Field Conditions: A 2-year Study.** Liberty B. Galvin*[1], Whitney Brim-DeForest[2], Kassim Al-Khatib[1]; [1]University of California - Davis, Davis, CA, [2]University of California Division of Agriculture and Natural Resources, Yuba City, CA **(270)**

11:45 AM **Emergence Pattern of Economically Important Weeds in the North-Central, Mid-Atlantic, and South-Central Regions of the United States.** Lovreet S. Shergill*[1], Adam Davis[2], Jason A. Bond[3], Jason K. Norsworthy[4], John Lindquist[5], Kevin W. Bradley[6], Lauren M. Lazaro[7], Mandy Bish[6], Mark VanGessel[8], Michael L. Flessner[9], Muthukumar V. Bagavathiannan[10], Nicholas Jordan[11], Steven Mirsky[12]; [1]Montana State University, Huntley, MT, [2]University of Illinois, Urbana, IL, [3]Mississippi State University, Stoneville, MS, [4]University of Arkansas, Fayetteville, AR, [5]University of Nebraska - Lincoln, Lincoln, NE, [6]University of Missouri, Columbia, MO, [7]Louisiana State University AgCenter, Baton Rouge, LA, [8]University of Delaware, Georgetown, DE, [9]Virginia Tech, Blacksburg, VA, [10]Texas A&M University, College Station, TX, [11]University of Minnesota, St. Paul, MN, [12]USDA-ARS, Beltsville, MD **(271)**

12:00 PM **Light and Red/Far-Red Ratio Responses of Bohemian Knotweed (*Reynoutria* × *bohemica*) Seed Germination and Seedling Growth.** Virginia Oeggerli*[1], David R. Clements[1], Vanessa L. Jones[1], Delia D. Anderson[1], Jichul Bae[2]; [1]Trinity Western University, Langley, BC, Canada, [2]Agriculture and Agri-Food Canada, Agassiz, BC, Canada **(272)**

12:15 PM **Weed Community Response to Four Years of Repeated Application of Calcium or Magnesium Sulfate to Soil.** Andrea Leiva Soto*[1], Catherine P. Herms[1], Allison M. Robinson[1], Steve Culman[1], Douglas Doohan[2]; [1]The Ohio State University, Wooster, OH, [2]The Ohio State University, Wooser, OH **(273)**

THURSDAY MORNING FEBRUARY 18

SYMPOSIUM - 4. Beyond the Boom – Benefits of Weed and Brush Management in Grasslands

LOCATION: Oregon Trail
TIME: 09:00 AM - 12:30 PM Central Time
MODERATOR: Byron B. Sleugh
Corteva Agriscience
Carmel, IN

***SPEAKER**

09:00 AM **Introduction to Symposium**

09:05 AM **Beyond the Boom – Benefits of Managing Weeds and Brush in Grasslands.** Morgan Treadwell*; Texas A&M AgriLife Extension, San Angelo, TX **(274)**

09:30 AM **Realizing the Value of Managing Weeds and Brush in Conservation Grassland Sites.** Mark J. Renz*; University of Wisconsin - Madison, Madison, WI **(275)**

09:50 AM **Toxic Plants in Grasslands and the Impact on Livestock.** Catherine Barr*; Texas A&M Veterinary Medical Diagnostic Lab, College Station, TX **(276)**

10:10 AM **Panel Discussion**

10:30 AM **Break**

11:00 AM **Livestock Performance Benefits as A Result of Managing Weeds and Brush in Grassland.** Jose Debeux*; University of Florida, Marianna, FL **(277)**

11:15 AM **Forage Response and Economic Benefits of Weed and Brush Management in Grasslands.** Scott Flynn*[1], Byron B. Sleugh[2]; [1]Corteva Agriscience, Lees Summit, MO, [2]Corteva Agriscience, Carmel, IN **(278)**

11:30 AM **New Technology to Enhance Management of Weeds and Brush in Grasslands.** Charles Hart*; Corteva Agriscience, Abilene, TX **(279)**

11:45 AM **If We Build It, Will They Come? Challenges, Opportunities, and Needs in Weed and Brush Management Research in Grasslands.** Daniel Tekiela[1], Byron B. Sleugh*[2]; [1]University of Wyoming, Laramie, WY, [2]Corteva Agriscience, Carmel, IN **(280)**

12:00 PM **Panel Discussion**

THURSDAY AFTERNOON FEBRUARY 18

WSSA Business Meeting and Student Contest Awards

All WSSA members and conference attendees are invited to participate in the WSSA Business Meeting. You will hear updates from your WSSA leadership team.

Agenda for meeting will be available online.

LOCATION:	Oregon Trail
TIME:	03:00 PM - 04:30 PM Central Time
MODERATOR:	William Curran Penn State University University Park, PA

Student Contest winners will be announced following the business meeting.

CO-MODERATOR:	Darrin M. Dodds Mississippi State University Mississippi State, MS
CO-MODERATOR:	Marty Schraer Syngenta Meridian, ID

FRIDAY MORNING FEBRUARY 19

"New Insights into Weed Competition"

ORAL - 08. Weed Biology and Ecology

LOCATION: Chisholm Trail
TIME: 09:00 AM - 10:30 AM Central Time
MODERATOR: Caio A. Brunharo
Oregon State University
Corvallis, OR

***SPEAKER**

09:00 AM **The Critical Period for Photosynthesis and the Legacy of Competition.** Andrew McKenzie-Gopsill*[1], Sasan Amirsadeghi[2], Sherry Fillmore[3], Clarence Swanton[2]; [1]Agriculture and Agri-Food Canada, Charlottetown, PE, Canada, [2]University of Guelph, Guelph, ON, Canada, [3]Agriculture and Agri-Food Canada, Kentville, NS, Canada **(281)**

09:15 AM **The Importance of Singlet Oxygen in Resource-independent Competition.** Nicole Berardi*, Clarence Swanton; University of Guelph, Guelph, ON, Canada **(282)**

09:30 AM **Using Plant Growth Regulators to Enhance Carrot Competitiveness with Weeds.** Jordan Schuler*, Jed Colquhoun, Richard Rittmeyer, Daniel J. Heider; University of Wisconsin - Madison, Madison, WI **(283)**

09:45 AM **Faba Bean Crop Competition Effects on Common Sowthistle (*Sonchus oleraceus*) Growth and Reproductive Development.** Asad Shabbir*[1], Adam McKiernan[2], Michael Widderick[2], Michael J. Walsh[3]; [1]The University of Sydney, Camden, Australia, [2]Department of Agriculture and Fisheries, Toowoomba, Australia, [3]University of Sydney, Narrabri, Australia **(284)**

10:00 AM **Linkages Among Weed Control, Weather Variability, and Soybean Management on Yield Loss Due to Weeds.** Christopher A. Landau*[1], Aaron Hager[1], Martin Williams[2]; [1]University of Illinois, Urbana, IL, [2]USDA-ARS, Urbana, IL **(285)**

10:15 AM **Multiple Years of Competition Between *Ailanthus altissima* (Tree of Heaven) and *Rhus typhina* (Staghorn Sumac: Removal Success and Impacts of an Herbivore.** Cynthia Huebner*; USDA Forest Service - Northern Research Station, Morgantown, WV **(286)**

FRIDAY MORNING FEBRUARY 19

"Herbicide Efficacy in Broadleaf Crops"

ORAL - 01. Agronomic Crops

LOCATION: Sante Fe Trail
TIME: 09:00 AM - 10:30 AM Central Time
MODERATOR: Alejandro Perez-Jones
Bayer Crop Science
Chesterfield, MO

***SPEAKER**

09:00 AM **A23372A - A Broad-Spectrum Solution for Superior Weed Management in Soybean.** Brett R. Miller*[1], Peter Eure[2], Tom H. Beckett[3], Ryan Jackson[4]; [1]Syngenta Crop Protection, Fargo, ND, [2]Syngenta Crop Protection, Greensboro, NC, [3]Syngenta, Greensboro, NC, [4]Syngenta Crop Protection, Carrollton, MS **(287)**

09:15 AM **Biologically Effective Dose of Bromoxynil, Applied Alone and Tankmixed with Metribuzin, for the Control of Glyphosate-Resistant Canada Fleabane (*Conyza canadensis)* Applied Preplant in Soybean.** Peter Sikkema, David Hooker, David Westerveld*, Darren Robinson; University of Guelph, Ridgetown, ON, Canada **(288)**

09:30 AM **Response of Putative Glyphosate-resistant Horseweed Accessions from Wisconsin to Spring Burndown Herbicides.** Alexandre T. Rosa*, Nicholas J. Arneson, Nikola Arsenijevic, Rodrigo Werle; University of Wisconsin - Madison, Madison, WI **(289)**

09:45 AM **Pollen-Mediated Gene Flow from Dicamba/Glyphosate-Resistant- to Conventional Soybean (*Glycine max*).** Zahoor A. Ganie*[1],

Parminder Chahal[2], Amit J. Jhala[2]; [1]FMC, Newark, DE, [2]University of Nebraska - Lincoln, Lincoln, NE **(290)**

10:00 AM **Are Dicamba and Glufosinate Still Viable Options for Palmer Amaranth in U.S. Soybean Production Systems?** Jason K. Norsworthy*[1], Tom Barber[2], Grant L. Priess[1], Michael M. Houston[1], Leonard B. Piveta[1], Kevin W. Bradley[3], Karla L. Gage[4], Aaron Hager[5], Greg Kruger[6], Larry Steckel[7], Daniel B. Reynolds[8], Bryan G. Young[9]; [1]University of Arkansas, Fayetteville, AR, [2]University of Arkansas System Division of Agriculture, Lonoke, AR, [3]University of Missouri, Columbia, MO, [4]Southern Illinois University Carbondale, Carbondale, IL, [5]University of Illinois, Urbana, IL, [6]University of Nebraska - Lincoln, North Platte, NE, [7]University of Tennessee, Jackson, TN, [8]Mississippi State University, Mississippi State, MS, [9]Purdue University, Brookston, IN **(291)**

10:15 AM **Reduction of Palmer Amaranth (*Amaranthus palmeri*) Growth Surviving Glufosinate Treatments in Cotton (*Gossypium hirsutum*).** Eric A. Jones*, Marco Antonio Fajardo Menjivar, Diego J. Contreras, Diego E. Salazar, Charlie W. Cahoon, Ramon G. Leon, Wesley Everman; North Carolina State University, Raleigh, NC **(292)**

10:30 AM **Break**

FRIDAY MORNING FEBRUARY 19

"Challenges with Palmer amaranth Management"

ORAL - 10. Physiology

LOCATION: Sante Fe Trail
TIME: 11:00 AM - 12:30 PM Central Time
MODERATOR: Zahoor A. Ganie
FMC
Newark, DE

***SPEAKER**

11:00 AM **Frequency of Herbicide Resistance in Palmer Amaranth (*Amaranthus palmeri*) Introduced**

into North Dakota Through Sunflower Screenings. Joseph T. Ikley*, Nathan H. Haugrud, Stephanie A. DeSimini; North Dakota State University, Fargo, ND **(293)**

11:15 AM **Improvements in Genetic Testing for the Identification of Palmer Amaranth in Seed Mixtures.** Anthony Brusa*; University of Minnesotta, Saint Paul, MN **(294)**

11:30 AM **The Potential of 1,4-naphthoquinone Natural Products as Bioherbicides for the Control of Herbicide-Resistant Amaranthus Species.** Clarence Swanton*, Peter Smith; University of Guelph, Guelph, ON, Canada **(295)**

11:45 AM **NTSR And Cross Resistance to PPO Inhibitors in Palmer Amaranth.** Matheus Machado Noguera*[1], Isabel S. Werle[1], Gulab Rangani[1], Reiofeli Salas-Perez[2], Taghi Bararpour[3], Nilda Roma-Burgos[1]; [1]University of Arkansas, Fayetteville, AR, [2]Dole Philippines, Inc., South Cotabato, Philippines, [3]Mississippi State University, Stoneville, MS **(296)**

12:00 PM **Reduced Sensitivity to Dicamba in Palmer Amaranth Populations from Mid-southern US.** Nilda Roma-Burgos*[1], Matheus Machado Noguera[1], Isabel S. Werle[1], Gulab Rangani[1], Larry Steckel[2], Taghi Bararpour[3], James Heiser[4]; [1]University of Arkansas, Fayetteville, AR, [2]University of Tennessee, Jackson, TN, [3]Mississippi State University, Stoneville, MS, [4]University of Missouri, Portageville, MO **(297)**

12:15 PM **Metabolic Resistance to HPPD Inhibitors in Palmer Amaranth (*Amaranthus palmeri*) Does Not Facilitate Resistance Evolution to Glufosinate.** Anita Küpper*[1], Erica Manesso[1], Roland S. Beffa[2], Todd A. Gaines[3]; [1]Bayer AG, Frankfurt / Main, Germany, [2]Bayer AG, CropScience Division, Frankfurt / Main, Germany, [3]Colorado State University, Fort Collins, CO **(298)**

FRIDAY MORNING FEBRUARY 19

SYMPOSIUM - 5. Advances in Sensor-Based Weed Detection and Precision Management

LOCATION: Oregon Trail
TIME: 09:00 AM - 12:30 PM Central Time
MODERATOR: Muthukumar V. Bagavathiannan
Texas A&M University
College Station, TX
CO-MODERATOR: Vijay Singh
Virginia Tech
PAINTER, VA

***SPEAKER**

09:00 AM **Introduction to Symposium**

09:05 AM **Precision Weeds Technologies: A Multi-national Effort to Automate Sensing Weed Species, Density, Cover, and Biomass for Researchers and Farmers.** Steven Mirsky*; USDA-ARS, Beltsville, MD **(299)**

09:20 AM **Potential and Pitfalls Experienced Utilizing AI/ML for Weed Detection and Classification in the Pursuit of Actable Weedmaps.** Rasmus N. Jorgensen*; Aarhus University, Aarhus, Denmark **(300)**

09:35 AM **Machine Learning for Weed Detection and Classification: Applications in Weed Ecology and Precision Management.** Muthukumar V. Bagavathiannan*[1], Chengsong Hu[1], Bishwa B. Sapkota[1], Matthew Kutugata[1], Steven Mirsky[2]; [1]Texas A&M University, College Station, TX, [2]USDA-ARS, Beltsville, MD **(301)**

09:50 AM **3D Mapping of Weeds for Weed Biomass Estimation.** Paula Ramos Giraldo*; North Carolina State University, Raleigh, NC **(302)**

10:00 AM **Hyperspectral Imaging for Weed Species Detection and Herbicide Resistance Monitoring**

In-crop. Prashant Jha*; Iowa State University, Ames, IA **(303)**

10:15 AM **A Weed Recognition System That Enables In-crop Physical Weed Control in Australian Cropping Systems.** Michael J. Walsh*[1], Guy Coleman[2]; [1]University of Sydney, Narrabri, Australia, [2]University of Sydney, Camden, Australia **(304)**

10:30 AM **Break**

11:00 AM **Precision Weed Management with UAVs and Ground Robots.** Vijay Singh*[1], Daniel E. Martin[2], Muthukumar V. Bagavathiannan[3]; [1]Virginia Tech, Painter, VA, [2]USDA-ARS, College Station, TX, [3]Texas A&M University, College Station, TX **(305)**

11:15 AM **Spray Drift Characterization of Hydraulic Nozzles for Remotely Piloted Aerial Application Systems.** Daniel E. Martin*; USDA-ARS, College Station, TX **(306)**

11:30 AM **Automated Weed Removal in Vegetable Crops.** Steve Fennimore*; University of California - Davis, Salinas, CA **(307)**

11:45 AM **Precision Weed Management in Florida Vegetable Production.** Nathan Boyd*[1], Arnold W. Schumann[2], Shaun M. Sharpe[3]; [1]University of Florida, Balm, FL, [2]University of Florida, Lake Alfred, FL, [3]Agriculture and Agri-Food Canada, Saskatoon, SK, Canada **(308)**

12:00 PM **Panel Discussion**

AUTHOR INDEX

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Meeting Conduct Reminder

The WSSA Code of Ethics defines professional conduct binding on all members of the Society. Members should recognize that this code of ethics and conduct signifies a voluntary assumption of the obligation of self-discipline and members should strive to uphold and maintain the honor and dignity of the Society.
The following rules and standards of conduct have been developed for the safe and efficient operation of the WSSA and for the benefit and protection of the rights and safety of all. WSSA members are expected to observe the highest standards of professional conduct at all times, while at work or engaged in Society business.

1. **Obey all laws, rules and regulations governing our business.** The WSSA is subject to applicable federal laws in the state or country of the meeting or event. It is the policy of the WSSA that all laws, rules and regulations are complied with fully and completely. If it is unclear whether an action or activity is a legal or ethical violation, contact the WSSA President and/or Executive Secretary immediately for advice. Any incident or situation that violates the law or this policy should be immediately reported to the President and/or Executive Secretary; in person or via this contact information: info@wssa.net or 720-445-4789.

2. **Be honest, truthful, fair and trustworthy in all WSSA activities and relationships.** The WSSA expects each member to treat other members with respect and honesty. This includes providing information that is accurate, complete, objective, timely, relevant, and understandable.

3. **Respect and protect WSSA assets.** Assets are anything of value owned by the WSSA. All WSSA members are expected to be custodians of those assets. Members are responsible to maintain Society assets in good condition and to protect them from loss. This includes, but is not limited to, real assets and equipment as well as “soft assets” such as intellectual property, member lists, and other confidential information owned by the Society. WSSA assets of any kind should not be used for personal benefit.

4. **Avoid all conflicts of interest between Society business and personal affairs.** All WSSA members are expected to act with total objectivity regarding WSSA business. Accordingly, it is improper for a WSSA member to be in a position where their personal interests’ conflict, or appears to conflict, with WSSA interests. WSSA members should not use their position within the WSSA to influence WSSA members or others for their personal benefit. If a member believes that a conflict of interest has developed or may develop, it should be promptly reported to the WSSA President and/or Executive Secretary. The Society’s Conflict of Interest Policy is outlined in 5.8.

5. **Promote a culture of respect for all WSSA members.** The WSSA supports and adheres to laws and regulations dealing with fair member practices. Membership discrimination in our Society based on sex, race, age, religion, national origin, or sexual preference will not be tolerated. Sexual harassment will not be tolerated. Sexual harassment is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature that explicitly or implicitly affects an individual's membership in the society, unreasonably interferes with an individual's activities within the society, or creates an intimidating, hostile or offensive society environment. This also includes inappropriate use of nudity and/or sexual images in public spaces (including within visual presentations, Twitter, and other online media); deliberate intimidation, stalking, or unwelcome following; harassing photography or recording; and sustained disruption of talks or other events.

6. **Use your best efforts to maintain a safe environment and protect the Society.** The WSSA believes in and supports the laws designated to keep our Society safe and designed to protect the environment. If you believe that an unsafe condition exists in our Society, bring it immediately to the attention of the President, a member of the Board, or Executive Secretary. If an accident takes place, report it pursuant to policy and immediately take action to address the problem. Any incident or situation that violates the law or this policy should be immediately reported to the President and/or Executive Secretary; in person or via this contact information: info@wssa.net or 720-445-4789.

7. **Promote an ethical culture for all WSSA members.** The WSSA always expects all of its members to conduct themselves ethically and to encourage and support that behavior in their fellow members. Members exercise integrity in scientific research activities and in the reporting of results.

8. **Relation of professionals to the public.** They shall not knowingly permit the publication of reports or other documents for any unsound or illegitimate undertaking.

9. **Respect fellow WSSA members.** Members shall freely give credit for work done by others to whom the credit is due and shall refrain from plagiarism in oral and written communication, and not knowingly accept credit rightfully due to another person.

10. **Reporting alleged violations.** Violation of the WSSA Code of Ethics and Conduct may subject a member to disciplinary action up to and including membership revocation. At the annual conference, when "Safe WSSA" members become aware of a complaint, they will seek out the alleged victim(s) and offender(s) separately and gather facts. Immediate responses at the conference may range from warning a harasser to cease his or her behavior immediately, to ending a speaker's talk early if the speaker uses inappropriate language or images, to requiring a

harasser to leave the conference immediately with no refund, to banning a harasser from future events “either indefinitely or for a certain time period.” Law enforcement may be engaged if circumstances require.

PERSONAL TIME SCHEDULE (Central Time)

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:00					
9:15					
9:30					
9:45					
10:00					
10:15					
Break					
11:00					
11:15					
11:30					
11:45					
12:00					
12:15					
Discussion Sessions			Chat with Poster Presenters		
3:00	General Session and Awards Ceremony			WSSA Business Meeting and Student Awards	
3:15					
3:30					
3:45					
4:00					
4:15					
4:30					
4:45					
5:00	Virtual Award Reception				
5:15					
5:30					
5:45					

Section Business meetings to attend:

Date:	Time:	Section:

Discussion Sessions to attend:

Date:	Time:	Topic:

NOTES