
74th WSWS Meeting

**WESTERN SOCIETY
OF WEED SCIENCE**

39th WAPMS Meeting

**WESTERN AQUATIC PLANT
MANAGEMENT SOCIETY**

March 1-4, 2021

Virtual Meeting



PROGRAM

MONDAY MORNING MARCH 1

- 09:00 AM** WERA 77
- 10:00 AM** WSWS New Member Orientation
- 11:00 AM** WSWS New Officer Orientation
- 12:15 PM** Diversity and Inclusion Social

MONDAY MORNING MARCH 1

SYMPOSIUM - Annual Invasive Grass Management

LOCATION:
TIME: 10:30 AM – 3:45 PM Mountain Time
CHAIR: Julie A. Kraft
Sublette County Weed and Pest
Pinedale, WY
MODERATOR: Brian Mealor
University of Wyoming
Laramie, WY

***SPEAKER**

- 10:30 AM** "Invasive Annual Grass Challenge: Stepping it Down for a Path Forward". Lindy Garner*; Invasive Species Coordinator, Sagebrush Ecosystem Team USFWS Upper Colorado Basin (IR7) & Missouri River Basin (IR5) Interior Regions, Great Falls, MT (1)
- 10:50 AM** Bio-pesticides for Exotic Annual Grasses: Review of Evidence for Effectiveness of Weed-suppressive Bacteria. Matthew Germino*¹, Brynne E. Lazarus²; ¹Supervisory Research Ecologist U.S. Geological Survey, Boise, ID, ²Botanist USGS Forest and Rangeland Ecosystem Science Center, Boise, ID (2)
- 11:05 AM** Managing Rangelands for Outcomes. John F. Ruhs*; Idaho State Director Bureau of Land Management, Boise, ID (3)
- 11:20 AM** Changing the Tide by Targeting the Seed Bank and Preserving In-tact Perennial Systems. Scott J. Nissen*; Colorado State University, Fort Collins, CO (4)

11:35 AM Putting it All Together: Putting Tools into Landscape Context. Brian Mealor*; University of Wyoming, Laramie, WY (5)

11:55 AM Questions

12:00 PM Break

01:00 PM Sublette County Invasive Species Taskforce: Countywide Cheatgrass Program. Julie A. Kraft*; Sublette County Weed and Pest, Pinedale, WY (6)

01:20 PM Ventenata and Medusahead in Northeast Wyoming. Jaycie N. Arndt*, Brian A. Mealor; University of Wyoming, Sheridan, WY (7)

01:35 PM Invasive Annual Grass Management in Utah – Ventanata. Corey V. Ransom; Utah State University, Logan, UT (8)

01:50 PM Colorado Front Range Invasive Annual Grass Management Successes. Steve Sauer*; Affiliation Not Specified, Longmont, CO (9)

02:05 PM Collaborative Invasive Grass Projects from the Federal Level in Colorado and Nevada. William Kutosky*; USFWS, Partners for Fish and Wildlife Service, Elko, NV (10)

02:20 PM Questions

02:30 PM Break

02:45 PM Live Discussion

MONDAY AFTERNOON MARCH 1

SYMPOSIUM - Are Herbicide-Resistant Crops the Solution to Herbicide-resistant Weeds?

LOCATION:

TIME: 01:00 PM – 03:45 PM Mountain Time

CHAIR: Caio A. Brunharo
Oregon State University
Corvallis, OR

MODERATOR: Carol Mallory-Smith
Oregon State University
Corvallis, OR

***SPEAKER**

- 01:00 PM** Welcome, Caio A. Brunharo*, Oregon State University, Corvallis, OR
- 01:05 PM** How Herbicide-resistant Crops Can Contribute to Integrated Weed Management. Hugh J. Beckie*; University of Western Australia, Perth, WA, Australia (11)
- 01:30 PM** Herbicide Tolerance Technologies: Past, Present, Future. Roger E. Gast*¹, Terry Wright¹; ¹Corteva Agriscience, Indianapolis, IN (12)
- 01:45 PM** Herbicide Resistant Crops: Friend or Foe in the Canadian Prairies? Breanne D. Tidemann*¹, Eric N. Johnson², Robert Gulden³; ¹Agriculture and Agri-Food Canada, Lacombe, AB, Canada, ²University of Saskatchewan, Saskatoon, SK, Canada, ³Affiliation Not Specified, Winnipeg, MB, Canada (13)
- 02:00 PM** PNW Herbicide Resistant Crops: Any Role in Resistance Management? Carol Mallory-Smith*; Oregon State University, Corvallis, OR (14)
- 02:15 PM** Role of Herbicide-Resistant Crops for Controlling Herbicide-Resistant Weeds in the Great Plains. Vipin Kumar*, Phillip W. Stahlman; Kansas State University, Hays, KS (15)
- 02:30 PM** Break
- 02:45 PM** Live Discussion

MONDAY AFTERNOON MARCH 1

WELCOME RECEPTION

LOCATION: Virtual Room 1
TIME: 04:30 PM - 06:30 PM Mountain Time
MODERATOR: Pat Clay
Valent U.S.A. LLC
Fresno, CA

TUESDAY MORNING MARCH 2

LOCATION: Poster Room
TIME: 08:00 AM - 09:30 AM Mountain Time
CHAIR: Clarke Alder
Amalgamated Sugar
Boise, ID
CO-CHAIR: Caleb Dalley
North Dakota State University
Hettinger, ND

*PRESENTER † STUDENT CONTEST

POSTER Project 1-Weeds of Range, Forestry, and Natural Areas

†Effects of Indaziflam Treatment on Seed Bank Density and Richness in a Sagebrush-grassland Plant Community in Sublette County, WY US. Jacob Courkamp*¹, Paul Meiman²; ¹Colorado State University, Fort Collins, CO, ²University of Nevada-Reno, Reno, NV (16)

Cheatgrass Seed Bank Densities Following Imazapic and Indaziflam Treatments. Charlie D. Clements*; USDA-ARS, Reno, NV (17)

†Integrating Seeding with Indaziflam: Evaluating Establishment of Grasses, Forbs, and Shrubs. Jodie A. Crose*¹, Brian Mealor²; ¹University of Wyoming, Sheridan, WY, ²University of Wyoming, Laramie, WY (18)

Indaziflam Effects on Native Plants: General Hazard Analysis and Application to Northern Colorado Front Range. John Vickery*; Colorado Native Plant Society, Denver, CO (19)

†African Mustard Response to Treatment Over Time. Natalie L. Fronk*, Corey V. Ransom; Utah State University, Logan, UT (20)

Control of Russian Knapweed by Aminopyralid, Clopyralid, and Quinclorac Delayed by Insufficient Precipitation. Boyd M. Kitchen*¹, Corey V. Ransom²; ¹Utah State University, Vernal, UT, ²Utah State University, Logan, UT (21)

POSTER Project 2-Weeds of Horticultural Crops

Bicyclpyrone Use Patterns in Minor Crops. Pete Forster*¹, Scott Payne², Timothy Trower³, Eric Rawls⁴, Tom Beckett⁵, Pete Eure⁵; ¹Syngenta Crop Protection, Eaton, CO, ²Syngenta Crop Protection, Slater, IA, ³Syngenta Crop Protection, Baraboo, WI, ⁴Syngenta Crop Protection, Vero Beach, FL, ⁵Syngenta Crop Protection, Greensboro, NC (22)

Humulus lupulus Response to Tiafenacil and Tolpiralate. David R. King, Ryan Jacob Hill, Marcelo L. Moretti*; Oregon State University, Corvallis, OR (23)

†Tree and Vine Crop Sensitivity to Florpyrauxifen-benzyl in California. Deniz Inci*, Kassim Al-Khatib, Brad Hanson; University of California, Davis, CA (24)

Efficacy and Safety of Topramezone for the Control of Summer Grass Weeds in Turf. Kai Umeda*; University of Arizona, Phoenix, AZ (25)

POSTER Project 3-Weeds of Agronomic Crops

Resistance Fighter: Local Partnerships Drive Better Herbicide Recommendations. Marty Schraer*¹, Dane L. Bowers², Pete Eure², Marshall Hay³, Ethan T. Parker³; ¹Syngenta Crop Protection, Meridian, ID, ²Syngenta Crop Protection, Greensboro, NC, ³Syngenta Crop Protection, Vero Beach, FL (26)

†Weed Suppression Versus Water Use: Can Cover Crops be Sustainable in Water Limited Agroecosystems? Prashasti Agarwal*, Erik A. Lehnhoff; New Mexico State University, Las Cruces, NM (27)

†Palmer Amaranth Interference and Seed Production in Dry Edible Bean. Joshua Wa Miranda Teo*¹, Jeff Bradshaw¹, Amit J. Jhala², Nevin Lawrence¹; ¹University of Nebraska, Scottsbluff, NE, ²University of Nebraska, Lincoln, NE (28)

Sulfosulfuron for Control of Roughstalk Bluegrass in Kentucky Bluegrass Seed Crops. John F. Spring*¹, Richard P. Affeldt²; ¹Central Oregon Agricultural Research & Extension Center, Oregon State University, Madras, OR, ²Central Oregon Seed, Inc., Madras, OR (29)

Lactofen Efficacy as Affected by Increased Temperature in PPO-Inhibitor-Resistant and -Susceptible Palmer Amaranth (*Amaranthus palmeri*). Edinaldo A. Borgato*, Anita Dille, Mithila Jugulam; Kansas State University, Manhattan, KS (30)

†Metabolism of Fluroxypyr in Fluroxypyr-ALS Resistant Kochia from Eastern Colorado. Olivia E. Todd*, Todd A. Gaines; Colorado State University, Fort Collins, CO (31)

†CoAXium Wheat Variety Tolerance to Quizalofop in the Southern Great Plains. Caitlyn C. Carnahan*¹, Misha R. Manuchehri¹, Vipin Kumar², Brett F. Carver¹, Hannah C. Lindell¹, Lane S. Newlin¹, Justin T. Childers³; ¹Oklahoma State University, Stillwater, OK, ²Kansas State University, Hays, KS, ³Oklahoma State University, Marlow, OK (32)

Evaluation of ALS- and ACCase- Inhibiting Herbicides for Green Foxtail Control. Rui Liu*¹, Vipin Kumar¹, Isaac N. Effertz², Taylor Lambert¹; ¹Kansas State University, Hays, KS, ²Kansas State University, Manhattan, KS (33)

State of Herbicide-Resistant Palmer Amaranth in Kansas. Vipin Kumar*, Rui Liu, Taylor Lambert, Phillip W. Stahlman; Kansas State University, Hays, KS (34)

†*Amaranthus palmeri* Interference in Sugar Beet. Whitney R. Frazier*, Nevin Lawrence; University of Nebraska, Scottsbluff, NE (35)

Population Dynamics of Weedy Rice (*Oryza sativa f. spontanea*) in a California Rice Field. Whitney Brim-DeForest*¹, Luis Espino²; ¹University of California Division of Agriculture and Natural Resources, Yuba City, CA, ²University of California Division of Agriculture and Natural Resources, Oroville, CA (36)

Kochia Control with Dichlorprop-P. Andrew R. Kniss*; University of Wyoming, Laramie, WY (37)

Oat Tolerance to Soil- and Postemergence-Applied Herbicides. Brian Jenks*¹, Caleb D. Dalley²; ¹North Dakota State University, Minot, ND, ²North Dakota State University, Hettinger, ND (38)

†Organic Weed Management of Creeping Perennials Field Bindweed and Canada Thistle. Lydia S. Fields*, Rachel J. Zuger, Carol McFarland, Ian C. Burke, Ronald Sloot; Washington State University, Pullman, WA (39)

†Genetic Architecture of Flowering Time Traits in *Bromus tectorum* of the Pacific Northwest. Samuel R. Revolinski*¹, Ian C. Burke¹, Craig Coleman², Jeff Maughan²; ¹Washington State University, Pullman, WA, ²BYU, Provo, UT (40)

†Gibberellic Acid as a Prospective Management Tool for Italian Ryegrass and Downy Brome in Eastern Washington. Madisyn R. Beaudoin*, Rachel J. Zuger, Ian C. Burke; Washington State University, Pullman, WA (41)

†Control of Mayweed Chamomile in Winter Pea with Bentazon plus Acifluorfen. C. Lyman*, Madisyn R. Beaudoin, Lydia S. Fields, Ron Sloot, Derek Appel, Ian C. Burke; Washington State University, Pullman, WA (42)

POSTER Project 4-Teaching and Technology

Methods of Accounting for Sensor Uncertainty in Research and Decision-making. Dirk V. Baker*; Campbell Scientific, Inc., Logan, UT (44)

Novel Methods to Teach Difficult Pest Control Concepts in Classroom and Extension Environments. Lance V. Stott*, Corey V. Ransom; Utah State University, Logan, UT (45)

POSTER Project 5-Basic Biology and Ecology

†Constructing a Synthetic EPSPS Copy Number Variation System to Assess Fitness and Glyphosate Resistance. Liliana Fendler*¹, Crystal D. Sparks¹, Eric L. Patterson², Todd A. Gaines¹; ¹Colorado State University, Fort Collins, CO, ²Michigan State University, East Lansing, MI (46)

†Evaluating Phytohormone Response to Glyphosate Treatment in Rapid Response Giant Ragweed. Crystal D. Sparks*¹, Christopher Van Horn², Roland S. Beffa³, Franck E. Dayan¹, Philip Westra¹, Todd A. Gaines¹; ¹Colorado State University, Fort Collins, CO, ²Bayer CropScience, O'fallon, MI, ³Bayer AG, CropScience Division, Frankfurt / Main, Germany (47)

†Microbial Diversity in Response to Solarization. Tanner S. Hoffman*, Linda T.a. van Diepen, Andrew R. Kniss; University of Wyoming, Laramie, WY (48)

POSTER - WSWS - Education and Regulatory

2020 Survey Results for the Most Common and Troublesome Weeds in Grass Crops, Pasture and Turf. Lee Van Wychen*¹, Lavesta C. Hand²; ¹Weed Science Society of America, Alexandria, VA, ²University of Georgia, Tifton, GA (49)

TUESDAY MORNING MARCH 2

GENERAL SESSION

LOCATION: Virtual Room 1
TIME: 10:00 AM - 12:00 PM Mountain Time
MODERATOR: Sandra K. McDonald
Mountain West Pesticide Education and Safety Training
Fort Collins, CO

10:00 AM WSWS/WAPMS 2021 Virtual Meeting Welcome. Sandra K. McDonald*; Mountain West Pesticide Education and Safety Training, Fort Collins, CO (52)

10:05 AM WSWS Presidential Address. Corey V. Ransom*; Utah State University, Logan, UT (53)

10:25 AM WAPMS Presidential Address. Tom Warmuth*; BioSafe Systems, East Hartford, CT (54)

10:45 AM Western Wildfires. Patricia Grantham*; United States Forest Service Acting Director of Fire and Aviation Management, Washington, DC (55)

11:30 AM Live Discussion

TUESDAY AFTERNOON MARCH 2

ORAL Student Project 5-Basic Biology and Ecology

LOCATION: Virtual Room 1
TIME: 01:00 PM - 02:30 PM Mountain Time
CHAIR: Neeta Soni
Corteva Agriscience
Indianapolis, IN
MODERATOR: O. Adewale Osipitan
University of California-Davis
Davis, CA

*SPEAKER † STUDENT CONTEST

01:00 PM Session Introduction

01:05 PM †Genetic Mapping of Dicamba Resistance in *Bassia scoparia*.. Jacob S. Montgomery*¹, Neeta Soni², Sarah Morran¹, Franck E. Dayan¹, Philip Westra¹, Eric L. Patterson³, Todd A. Gaines¹; ¹Colorado State University, Fort Collins, CO, ²Corteva Agriscience, Indianapolis, IN, ³Michigan State University, East Lansing, MI (56)

01:20 PM †Utilizing Thermal Time to Assist in Scheduling Management Practices to Control Weedy Rice (*Oryza sativa spontanea*) in California Rice Cropping Systems. Liberty B. Galvin*¹, Whitney Brim-DeForest², Kassim Al-Khatib¹; ¹University of California, Davis, CA, ²University of California Division of Agriculture and Natural Resources, Yuba City, CA (57)

01:35 PM †Enhanced Metabolism of 2,4-D in 2,4-D Resistant Palmer Amaranth Population from Kansas. Chandrima Shyam*, Dallas E. Peterson, Mithila Jugulam; Kansas State University, Manhattan, KS (58)

01:50 PM †Isolation of Acetyl-CoA Carboxylase to Compare Specific Activity and Enzyme-Level Quizalofop Resistance of CoAXium® and Non-CoAXium® Wheat. Raven A. Bough*, Franck E. Dayan, Todd A. Gaines; Colorado State University, Fort Collins, CO (59)

TUESDAY AFTERNOON MARCH 2

ORAL Non-Student - WSWS Project 4-Teaching and Technology

LOCATION: Virtual Room 2
TIME: 01:00 PM - 01:30 PM Mountain Time
CHAIR: Chris Mayo
Bayer
Salina, KS
MODERATOR: Breanne D. Tidemann
Agriculture and Agri-Food Canada
Lacombe, AB, Canada

***SPEAKER**

01:00 PM Herbicide Diversity Calculator: Interactive Web App That Estimates the Risk of Herbicide Resistance. Andrew R. Kniss¹, Albert T. Adjesiwor*², Nevin Lawrence³; ¹University of Wyoming, Laramie, WY, ²University of Idaho, Kimberly, ID, ³University of Nebraska, Scottsbluff, NE (61)

01:15 PM The International Weed Genomics Consortium: a Resource for Weed Genomics. Sarah Morran*¹, Dana R. MacGregor², Eric L. Patterson³, Joseph S. McElroy⁴, Roland S. Beffa⁵, Todd A. Gaines¹; ¹Colorado State University, Fort Collins, CO, ²Rothamsted Research, Harpenden, United Kingdom, ³Michigan State University, East Lansing, MI, ⁴Auburn University, Auburn, AL, ⁵Bayer AG, CropScience Division, Frankfort / Main, Germany (62)

TUESDAY AFTERNOON MARCH 2

ROUNDTABLE - Future of Contract Research

LOCATION: Facilitated Discussion Room
TIME: 01:00 PM - 01:45 PM Mountain Time
FACILITATORS: George D. Newberry, Gowan Company, Boise, ID
Michael Hubbard, Hubbard Agricultural Science, Bonners Ferry, ID

Future of Contract Research

TUESDAY AFTERNOON MARCH 2

ORAL WAPMS Aquatics

LOCATION: Virtual Room 3
TIME: 01:00 PM - 04:15 PM Mountain Time

***SPEAKER**

01:00 PM Session Introduction

01:05 PM The Phenology of Flowering Rush (*Butomus umbellatus*) in the Western United States. John D. Madsen*¹, Kurt D. Getsinger²; ¹USDA-ARS, Davis, CA, ²US Army Engineer Research and Development Center, Vicksburg, MS (63)

01:25 PM Sequential Years Spraying to Reduce Flowering Rush Rhizomes. Peter M. Rice*¹, Virgil Dupuis², Ian McRyehew², Alvin Mitchel²; ¹Peter M Rice Consulting, Missoula, MT, ²Salish Kootenai College, Pablo, MT (64)

01:45 PM IPM In Aquatic, Natural Areas and Rights of Way. Lyn Gettys*; UF/IFAS Ft. Lauderdale Research and Education Center, Davie, FL (66)

02:25 PM Questions

02:30 PM Break

02:45 PM Session Introduction

02:50 PM Endothall Development and Stewardship in Irrigation Canals. Nathan Hicks*; UPL, Dixon, CA (67)

03:10 PM Soft Sediment Reduction Using MD Pellets and MuckBiotics. Deborah L. Lee*; Aquafix Inc., Madison, WI (69)

03:30 PM Estimating *Lyngbya wollei* Biomass Using Non-Destructive Echosounding Measures. Andrew Howell*; North Carolina State University, Raleigh, NC (70)

04:10 PM Questions

TUESDAY AFTERNOON MARCH 2

ORAL Non-Student Project 1-Weeds of Range, Forestry, and Natural Areas

LOCATION: Virtual Room 2
TIME: 01:45 PM - 04:15 PM Mountain Time
CHAIR: Shannon Clark
Bayer CropScience
Fort Collins, CO
MODERATOR: William L. Hatler
Corteva Agriscience
Meridian, ID

***SPEAKER**

- 01:45 PM** Indaziflam Injury to Root Systems of Non-target Perennial Grasses. Peter M. Rice*; Peter M Rice Consulting, Missoula, MT (71)
- 02:00 PM** Restoring Cheatgrass Invaded Rangelands with Indaziflam Decreases Wildfire Risk and Improves Wildlife Browse and Habitat. James Sebastian*¹, Shannon Clark², Derek J. Sebastian², Steve Sauer¹; ¹Boulder County Open Space, Longmont, CO, ²Bayer CropScience, Fort Collins, CO (72)
- 02:15 PM** Four Years After Application: Medusahead Control with Indaziflam in North Eastern California. Thomas J. Getts*; University of California Division of Agriculture and Natural Resources, Susanville, CA (73)
- 02:30 PM** **Break**
- 02:45 PM** Spring Application of Aminopyralid Reduced Germination of Medusahead and Ventenata. Lisa C. Jones*¹, Corey V. Ransom², Timothy S. Prather¹; ¹University of Idaho, Moscow, ID, ²Utah State University, Logan, UT (74)
- 03:00 PM** Noxious, Invasive and Non-Crop Weed Control with Florpyrauxifen-benzyl + Aminopyralid: Western Species Research Update. William L. Hatler*¹, Byron B. Sleugh², Scott Flynn³, D Chad Cummings⁴; ¹Corteva Agriscience, Meridian, ID, ²Corteva Agriscience, Carmel, IN, ³Corteva Agriscience, Lees Summit, MO, ⁴Corteva Agriscience, Bonham, TX (75)
- 03:15 PM** Removal of Invasive Scotch Broom Imparts Negative Legacy Effects to Soil and Plant Communities. Robert Slesak*, Timothy B. Harrington; USDA Forest Service - PNW Research Station, Olympia, WA (76)
- 03:30 PM** Evaluating Reclamation Methods of Rangeland from Invasive Annual Grasses. Cody J. Beckley*, Hailey L. Buell, Corey V. Ransom; Utah State University, Logan, UT (77)
- 03:45 PM** Abiotic and Biotic Factors Associated with *Ventenata dubia* in Montana. Jane Mangold*, Michelle L. Majeski; Montana State University, Bozeman, MT (78)

04:00 PM Assessing Non-target Impacts to Plants from Basal Bark Treatments of *Prunus padus* in Alaska. Gino A. Graziano*; University of Alaska Fairbanks Cooperative Extension Service, Anchorage, AK (79)

TUESDAY AFTERNOON MARCH 2

ROUNDTABLE - Weed Extension Education

LOCATION: Facilitated Discussion Room
TIME: 02:00 PM - 02:45 PM Mountain Time
FACILITATOR: Matt Yost, Utah State University, Logan, UT

Becoming a More Efficient Weed Extension Educator

TUESDAY AFTERNOON MARCH 2

ORAL Student Project 3-Weeds of Agronomic Crops

LOCATION: Virtual Room 1
TIME: 02:45 PM - 04:15 PM Mountain Time
CHAIR: Joseph T. Ikley
North Dakota State University
Fargo, ND
MODERATOR: Nevin Lawrence
University of Nebraska
Scottsbluff, NE

*SPEAKER † STUDENT CONTEST

02:45 PM Session Introduction

02:50 PM †Sequential PRE/POST Application Timing of Dimethenamid-P to Control ALS-Inhibitor-Resistant Palmer Amaranth in Dry Edible Bean. Joshua Wa Miranda Teo*¹, Jeff Bradshaw¹, Amit J. Jhala², Nevin Lawrence¹; ¹University of Nebraska, Scottsbluff, NE, ²University of Nebraska, Lincoln, NE (80)

03:05 PM †Effect of Winter Wheat Cover Crop Termination Time on Dry Bean Production. Tyler C. Hicks*, David A. Claypool, Andrew R. Kniss; University of Wyoming, Laramie, WY (81)

03:20 PM †Hemp Canopy Light Interception and Injury with Pre-Emergence Herbicides. Joseph E. Mettler*; North Dakota State University, Fargo, ND (82)

03:35 PM †Metribuzin Tolerance of Southern Great Plains Winter Wheat Varieties. Lane S. Newlin*¹, Misha R. Manuchehri¹, Brett F. Carver¹, Amanda De Oliveira Silva¹, Hannah C. Lindell¹,

Justin T. Childers², Caitlyn C. Carnahan¹; ¹Oklahoma State University, Stillwater, OK,
²Oklahoma State University, Marlow, OK (83)

03:50 PM †Tillage System Impact on Efficacy of Delayed Preemergence Herbicides in Winter Wheat.
Grace Flusche Ogden*, Misha R. Manuchehri, Jason G. Warren; Oklahoma State University,
Stillwater, OK (84)

TUESDAY AFTERNOON MARCH 2

ROUNDTABLE – Irrigated Orchards

LOCATION: Facilitated Discussion Room
TIME: 03:00 PM - 03:45 PM Mountain Time
FACILITATORS: Brad Hanson, University of California, Davis, CA
Marcelo L. Moretti, Oregon State University, Corvallis, OR

Opportunities to Use Chemigation For Supplemental Weed Control in Irrigated Orchards

TUESDAY AFTERNOON MARCH 2

ROUNDTABLE - Virtual Weed Tours

LOCATION: Facilitated Discussion Room
TIME: 04:00 PM - 04:45 PM Mountain Time
FACILITATORS: Scott J. Nissen, Colorado State University, Fort Collins, CO
Harold Quicke, Bayer, Windsor, CO

Virtual Weed Tours - a 2020 keeper?

TUESDAY AFTERNOON MARCH 2

WSWS Student Meeting / Social

LOCATION: Virtual Room 1
TIME: 04:30 PM - 05:30 PM Mountain Time
MODERATOR: Mirella F. Ortiz
Colorado State University
Fort Collins, CO
CO-MODERATOR: Jodie A. Crose
University of Wyoming
Sheridan, WY

TUESDAY AFTERNOON MARCH 2

STUDENT NIGHT OUT

LOCATION: Virtual Room 1
TIME: 05:30 PM - 07:00 PM Mountain Time
MODERATOR: Mirella F. Ortiz
Colorado State University
Fort Collins, CO
CO-MODERATOR: Jodie A. Crose
University of Wyoming
Sheridan, WY

WEDNESDAY MORNING MARCH 3

ORAL Student Project 3-Weeds of Agronomic Crops

LOCATION: Virtual Room 1
TIME: 08:00 AM - 08:30 AM Mountain Time
CHAIR: Joseph T. Ikley
North Dakota State University
Fargo, ND
MODERATOR: Nevin Lawrence
University of Nebraska
Scottsbluff, NE

***SPEAKER † STUDENT CONTEST**

08:00 AM †Effect of Planting Date Window and Herbicide Selection on Rescuegrass (*Bromus catharticus*) Management in Winter Wheat. Hannah C. Lindell*¹, Misha R. Manuchehri¹, Todd A. Baughman², Emi Kimura³, Brett F. Carver¹, Lane S. Newlin¹, Caitlyn C. Carnahan¹, Justin T. Childers¹; ¹Oklahoma State University, Stillwater, OK, ²Oklahoma State University, Ardmore, OK, ³Texas A&M University Extension, Vernon, TX (85)

08:15 AM †Metabolic Resistance to PPO-inhibitors in a Six-way-resistant Palmer Amaranth Population from Kansas. Ednaldo A. Borgato*, Chandrima Shyam, Balaji Aravindhnan Pandian, Sathishraj Rajendran, Dallas E. Peterson, Anita Dille, Mithila Jugulam; Kansas State University, Manhattan, KS (86)

WEDNESDAY MORNING MARCH 3

DISCUSSION SESSION Project 4-Teaching and Technology

LOCATION: Facilitated Discussion Room
TIME: 08:00 PM - 08:45 AM Mountain Time
CHAIR: Chris Mayo
Bayer
Salina, KS
MODERATOR: Breanne D. Tidemann
Agriculture and Agri-Food Canada
Lacombe, AB, Canada

“Techniques & Ideas That Will Make Your Virtual Meeting Zooom!”

WEDNESDAY MORNING MARCH 3

ROUNDTABLE –Endangered Species & Herbicides

LOCATION: Facilitated Discussion Room
TIME: 08:00 AM - 08:45 AM Mountain Time
FACILITATOR: Lee Van Wychen
Weed Science Society of America
Alexandria, VA

Actual Glyphosate Use Patterns in the West

WEDNESDAY MORNING MARCH 3

ORAL - Student Project 1-Weeds of Range, Forestry, and Natural Areas

LOCATION: Virtual Room 1
TIME: 08:40 AM - 11:30 AM Mountain Time
CHAIR: Shannon Clark
Bayer CropScience
Fort Collins, CO
MODERATOR: William L. Hatler
Corteva Agriscience
Meridian, ID

***SPEAKER † STUDENT CONTEST**

08:40 AM Session Introduction

08:45 AM †The Effectiveness of Traditional and Novel Management Strategies on Ventenata and Cheatgrass. Lilly L. Sencenbaugh*, Lisa J. Rew; Montana State University, Bozeman, MT (87)

09:00 AM †Effects of Ventenata Control on Northern Mixed Prairie Ecosystem Goods and Services Two Years Posttreatment. Marshall Hart*¹, Brian Meador²; ¹University of Wyoming, Sheridan, WY, ²University of Wyoming, Laramie, WY (88)

09:15 AM †Priority Effects or Rapid Growth Rates: What Helps Cool-season Bunchgrasses Compete with Invasive Grasses. Jaycie N. Arndt*; University of Wyoming, Sheridan, WY (89)

09:30 AM Break

09:45 AM †Sagebrush Steppe Plant Community Response and Annual Grass Control After Aerial and Ground Application of Indaziflam and Imazapic. Georgia R. Harrison*¹, Lisa C. Jones¹, Harry Quicke², Timothy S. Prather¹; ¹University of Idaho, Moscow, ID, ²Bayer CropScience, Windsor, CO (90)

10:00 AM †Does Seeding Depth Affect Native Species Establishment in the Presence of Indaziflam? Jodie A. Crose*¹, Brian Meador²; ¹University of Wyoming, Sheridan, WY, ²University of Wyoming, Laramie, WY (91)

10:15 AM †Considerations of Life Cycle in Invasive Mustard Management. Natalie L. Fronk*, Corey V. Ransom; Utah State University, Logan, UT (92)

10:30 AM †Understanding Auxin Herbicides for Aquatic Plant Management. Mirella F. Ortiz*, Scott J. Nissen, Franck E. Dayan; Colorado State University, Fort Collins, CO (93)

10:45 AM Withdrawn

WEDNESDAY MORNING MARCH 3

WAPMS Business Meeting

LOCATION: Virtual Room 3
TIME: 08:00 AM - 08:30 AM Mountain Time
MODERATOR: Tom Warmuth
BioSafe Systems
East Hartford, CT

WAPMS Business Meeting

WEDNESDAY MARCH 3

ORAL - WAPMS Aquatics

LOCATION: Virtual Room 3
TIME: 08:30 AM - 04:00 PM Mountain Time
CHAIR: Tom Warmuth
Biosafe Systems
East Hartford, CT
MODERATOR: R. Cory Greer
USDA-NRCS
Wenatchee, WA

***SPEAKER**

08:30 AM Session Introduction

08:35 AM The Aquatic Plant Management Society Update. John D. Madsen*; USDA-ARS, Davis, CA (95)

08:55 AM Aquatic Ecosystem Restoration Foundation Update. Carlton Layne*; Aquatic Ecosystem Restoration Foundation, Marietta, GA (96)

09:15 AM Women of Aquatics Update. Amy Kay*; Clarke Aquatic Services, Oakwood Hills, IL (97)

09:35 AM The First Year of Operational Use of Florpyrauxifen-benzy Herbicide in the Pacific Northwest, Observations and Results. Terry McNabb*; Aquatechnex, LLC, Bellingham, WA (98)

09:55 AM Questions

10:00 AM Break

10:15 AM Session Introduction

10:20 AM Chemical-Free Algae Mitigation with Air Nanobubbles. Christian Ference*; Moleaer Aeration, Torrance, CA (99)

10:40 AM The Role of the Southwestern Aquatic Applicator. Rick Amalfi*; Aquatic Consulting, Tempe, AZ (100)

11:00 AM Endothall Translocation in Three *Hydrocharitaceae* Species. Mirella F. Ortiz*, Scott J. Nissen; Colorado State University, Fort Collins, CO (101)

11:20 AM Why Herbicides Fail. Jay Ferrel*; UF/IFAS Center for Aquatic and Invasive Plants and the Pesticide Information Office, Gainesville, FL (102)

11:40 AM Questions

11:45 AM Break

01:00 PM Session Introduction

01:05 PM Evaluation of Unmanned Aerial Vehicles for Weed Mapping and Site Specific Weed Management. Andrew Howell*; North Carolina State University, Sanford, NC (103)

01:25 PM From Bench Scale Trials to Field Cyanobacterial Management with PAA+ Peroxide. Tom Warmuth*; BioSafe Systems, East Hartford, CT (104)

01:45 PM Preventative Submersed Aquatic Weed Control Utilizing a Preemergence Use Pattern of Fluridone. Scott Shuler*, Michael Shaner, Ajay Jones, Mark Heilman; SePRO Corporation, Carmel, IN (105)

02:05 PM What to Look for in Water Quality When Managing and Learning About Ecosystem-Specific Algal Blooms. Sam Sardes*; SOLitude Lake Management, Tampa, FL (106)

02:25 PM Questions

02:30 PM Break

02:45 PM Session Introduction

02:50 PM Do Cyanobacteria Spill Their Guts When Treated with an Algaecide? John H. Rodgers*; Clemson University, Clemson, SC (107)

03:10 PM The Threat of Cyanobacteria and Cyanotoxins. West Bishop*; SePRO Corporation, Carmel, IN (108)

03:30 PM Effect of Herbicides on Sprouting Curlyleaf Pondweed Turions. Lars Anderson*; Waterweed Solutions, Inverness, CA (109)

03:50 PM Questions

WEDNESDAY MORNING MARCH 3

DISCUSSION SESSION - Project 2-Weeds of Horticultural Crops

LOCATION: Project Discussion Sections
TIME: 09:00 AM - 09:45 AM Mountain Time
CHAIR: Harlene M. Hatterman-Valenti
North Dakota State University
Fargo, ND
MODERATOR: Marcelo L. Moretti
Oregon State University
Corvallis, OR

Topic: "Weed Management Concerns for Specialty Crops"

WEDNESDAY MORNING MARCH 3

ROUNDTABLE - Implementing Science

LOCATION: Facilitated Discussion Room
TIME: 09:00 AM - 09:45 AM Mountain Time
FACILITATOR: Timothy S. Prather, University of Idaho, Moscow, ID

Implementing Science "On the Ground"

WEDNESDAY MORNING MARCH 3

ORAL Non-Student Project 2-Weeds of Horticultural Crops

LOCATION: Virtual Room 2
TIME: 10:00 AM - 11:30 AM Mountain Time
CHAIR: Harlene M. Hatterman-Valenti
North Dakota State University
Fargo, ND
MODERATOR: Marcelo L. Moretti
Oregon State University
Corvallis, OR

***SPEAKER**

10:00 AM Canada Thistle and Hop Response to Clopyralid Applied with a Sponge Wiper. Marcelo L. Moretti*, David R. King, Ryan Jacob Hill; Oregon State University, Corvallis, OR (110)

10:15 AM Response of Direct-Seeded Onion and Weed Control with Bicyclopyrone Plus Bromoxynil Premix. Joel Felix*, Joey Ishida; Oregon State University, Ontario, OR (111)

10:30 AM Pendimethalin Application Methods in Onion. Harlene M. Hatterman-Valenti*, Collin Auwarter; North Dakota State University, Fargo, ND (112)

10:45 AM Intelligent Weed Management in California Lettuce Production. Elizabeth G. Mosqueda*¹, Steven A. Fennimore², Richard Smith³; ¹California State University-Monterey Bay, Marina, CA, ²University of California, Davis, CA, ³University of California Division of Agriculture and Natural Resources, Salinas, CA (113)

11:00 AM Withdrawn

11:15 AM My Experience Using Video Recordings of Potato Research Trial Plot “Walk-Throughs” for Virtual Weed Control Tours: the Good, the Not Too Bad, and the Definitely Not Ugly. Pamela J.s. Hutchinson*; University of Idaho Aberdeen R & E Center, Aberdeen, ID (115)

WEDNESDAY MORNING MARCH 3

ROUNDTABLE – Selecting Herbicides

LOCATION: Facilitated Discussion Room
TIME: 10:00 AM - 10:45 AM Mountain Time
FACILITATOR: Chad Clark, VDSC, Fort Collins, CO

What goes in the tank? Selecting Herbicides for the Most Efficacious “On –The-Ground” Uses

WEDNESDAY MORNING MARCH 3

ROUNDTABLE – Government Contracting

LOCATION: Facilitated Discussion Room
TIME: 11:00 AM - 11:45 AM Mountain Time
FACILITATORS: John B. Coyle, Ark Valley Weed Management and Consulting LLC, Canon City, CO
Todd Neel, USDA Forest Service, Denver, CO

Better Land Management through Better Understanding of Government Contracting

WEDNESDAY MORNING MARCH 3

AWARDS

LOCATION: Virtual Room 1
TIME: 12:00 AM - 01:00 PM Mountain Time
MODERATOR: Craig Alford
Corteva Agriscience
Johnston, IA
CO-MODERATOR: Jesse M. Richardson
Corteva Agriscience
Mesa, AZ

WEDNESDAY AFTERNOON MARCH 3

ORAL Student Project 2-Weeds of Horticultural Crops

LOCATION: Virtual Room 1
TIME: 01:00 PM - 01:20 PM Mountain Time
CHAIR: Harlene M. Hatterman-Valenti
North Dakota State University
Fargo, ND
MODERATOR: Marcelo L. Moretti
Oregon State University
Corvallis, OR

***SPEAKER † STUDENT CONTEST**

01:00 PM Session Introduction

01:05 PM †Mustard Cover Crop for Early Season Weed Control in Chile Pepper. Akash Bajagain*,
Brian Schutte, Erik A. Lehnhoff, Robert Steiner; New Mexico State University, Las Cruces,
NM (127)

WEDNESDAY AFTERNOON MARCH 3

ORAL Non-Student Project 3-Weeds of Agronomic Crops

LOCATION: Virtual Room 2
TIME: 01:00 PM - 04:30 PM Mountain Time
CHAIR: Joseph T. Ikley
North Dakota State University
Fargo, ND
MODERATOR: Nevin Lawrence
University of Nebraska
Scottsbluff, NE

***SPEAKER**

- 01:00 PM** Fall-Established Cover Crop Tolerance to Soybean Herbicides. Grgeory J. Endres*¹, Kirk A. Howatt², Mike Ostlie¹, Joseph E. Mettler²; ¹North Dakota State University, Carrington, ND, ²North Dakota State University, Fargo, ND (116)
- 01:15 PM** Picking on the Panicle - a New Management Timing Opportunity for Wild Oat (*Avena fatua*). Breanne D. Tidemann*¹, K Neil Harker², Steve Shirliff³, Christian Willenborg³, Eric N. Johnson³, Elizabeth Sroka¹, Jennifer Zuidhof¹; ¹Agriculture and Agri-Food Canada, Lacombe, AB, Canada, ²Affiliation Not Specified, Lacombe, Canada, ³University of Saskatchewan, Saskatoon, SK, Canada (117)
- 01:30 PM** Precision Vs. Uniform Spraying for Broadleaf Weed Control. Judit Barroso¹, Nicholas G. Genna*²; ¹Oregon State University, Adams, OR, ²Oregon State University, Pendleton, OR (118)
- 01:45 PM** Influence of Sodium on Glyphosate Performance and Interaction with AMS Adjuvants. Gregory K. Dahl*¹, David A. Van Dam², Martin M. Carr³, Errin M. Willenborg³, Amanda Flipp⁴, Laura J. Hennemann⁴, Joshua J. Skelton⁴; ¹Winfield United, Eagan, MN, ²Winfield United Canada, Winnipeg, MB, Canada, ³Winfield United Canada, Saskatoon, SK, Canada, ⁴Winfield United, River Falls, WI (119)
- 02:00 PM** Tame Mustard and Buckwheat Response to Various Herbicides. Kirk A. Howatt*¹, Joseph E. Mettler¹, Caleb D. Dalley²; ¹North Dakota State University, Fargo, ND, ²North Dakota State University, Hettinger, ND (120)
- 02:15 PM** Rush Skeletonweed (*Chondrilla juncea*) Control in Winter Wheat Fallow. Mark E. Thorne*, Drew J. Lyon; Washington State University, Pullman, WA (121)
- 02:30 PM** **Break**
- 02:45 PM** Control of Multiple Herbicide-Resistant Kochia in Fallow. Vipin Kumar*¹, Taylor Lambert¹, Phillip W. Stahlman¹, Randall S. Currie², Bob Bruss³; ¹Kansas State University, Hays, KS, ²Kansas State University, Garden City, KS, ³Nufarm Americas, Morrisville, NC (122)

- 03:00 PM** Distribution of Herbicide-Resistant Kochia in Southcentral Great Plains. Rui Liu*¹, Vipan Kumar¹, Taylor Lambert¹, Misha R. Manuchehri², Muthukumar V. Bagavathiannan³, Randall S. Currie⁴, Phillip W. Stahlman¹; ¹Kansas State University, Hays, KS, ²Oklahoma State University, Stillwater, OK, ³Texas A&M University, College Station, TX, ⁴Kansas State University, Garden City, KS (123)
- 03:15 PM** Investigation of Herbicide Resistance in Palmer Amaranth (*Amaranthus palmeri*) Introduced Through Sunflower Screenings. Joseph T. Ikley*, Nathan H. Haugrud, Stephanie A. DeSimini; North Dakota State University, Fargo, ND (124)
- 03:30 PM** Sequential Applications of Metamitron for Control of Palmer Amaranth and Kochia in Sugarbeet. Nevin Lawrence*¹, Andrew R. Kniss²; ¹University of Nebraska, Scottsbluff, NE, ²University of Wyoming, Laramie, WY (125)
- 03:45 PM** Banded Cover Crop Termination to Reduce Negative Impacts on Sugarbeet. Andrew R. Kniss*¹, David A. Claypool¹, Albert T. Adjesiwor²; ¹University of Wyoming, Laramie, WY, ²University of Idaho, Kimberly, ID (126)

WEDNESDAY AFTERNOON MARCH 3

ROUNDTABLE - Integrating BioControl and Herbicides

LOCATION: Facilitated Discussion Room
TIME: 01:00 PM - 01:45 PM Mountain Time
FACILITATORS: Carol Randall, USDA Forest Service, Medimont, ID
Todd Neel, USDA Forest Service, Denver, CO

Integrating Biocontrol and Herbicides

WEDNESDAY AFTERNOON MARCH 3

ORAL Student Project 4-Teaching and Technology

LOCATION: Virtual Room 1
TIME: 01:30 PM - 01:50 PM Mountain Time
CHAIR: Chris Mayo
Bayer
Salina, KS
MODERATOR: Breanne D. Tidemann
Agriculture and Agri-Food Canada
Lacombe, AB, Canada

*SPEAKER † STUDENT CONTEST

01:30 PM Session Introduction

01:35 PM †Assessment of Light Activated Sensor Controlled Spray Technology in Eastern Washington Fallow Systems. Lydia S. Fields*, Ian C. Burke, Rachel J. Zuger, Derek Appel, Ronald Sloat; Washington State University, Pullman, WA (128)

WEDNESDAY AFTERNOON MARCH 3

ROUNDTABLE - Invasive Weeds

LOCATION: Facilitated Discussion Room
TIME: 02:00 PM - 02:45 PM Mountain Time
MODERATOR: Brian Mealor
University of Wyoming
Laramie, WY

Invasive Weeds – EDRR

WEDNESDAY AFTERNOON MARCH 3

DISCUSSION SESSION Project 1-Weeds of Range, Forestry, and Natural Areas

LOCATION: Project Discussion Sections
TIME: 03:00 PM - 03:45 PM Mountain Time
CHAIR: Shannon Clark
Bayer CropScience
Fort Collins, CO
MODERATOR: William L. Hatler
Corteva Agriscience
Meridian, ID

Topic: "New Technologies for Combatting Invasive Weeds on Rangeland and Natural Areas"

WEDNESDAY AFTERNOON MARCH 3

ROUNDTABLE - Hemp

LOCATION: Facilitated Discussion Room
TIME: 03:00 PM - 03:45 PM Mountain Time
FACILITATOR: Eric Westra, Colorado State University, Fort Collins, CO

Hemp Research Needs and Stumbling Blocks

WEDNESDAY AFTERNOON MARCH 3

DISCUSSION SESSION - Education and Regulatory

LOCATION: Virtual Room 1
TIME: 04:00 PM - 04:45 PM Mountain Time
CHAIR: Todd Neel
USDA Forest Service
Denver, CO

MODERATOR:

Topic: “Endangered Species and Herbicides”

WEDNESDAY AFTERNOON MARCH 3

ROUNDTABLE - Weed Management Trials

LOCATION: Facilitated Discussion Room
TIME: 04:00 PM - 04:45 PM Mountain Time
FACILITATORS: D Chad Cummings, Corteva Agriscience, Bonham, TX
Jane Mangold, Montana State University, Bozeman, MT

Weed Management Trials - Adding Data Points to Expand Usefulness

WEDNESDAY AFTERNOON MARCH 3

ROUNDTABLE - Aquatics

LOCATION: Virtual Room 3
TIME: 04:15 PM - 05:00 PM Mountain Time
FACILITATOR: Tom Warmuth, BioSafe Systems, East Hartford, CT

Golden Algae and General Algae: Recent algae issues and methods for control in lakes, reservoirs, and irrigation canals

WEDNESDAY AFTERNOON MARCH 3

What's New in Industry

LOCATION: Virtual Room 1
TIME: 05:00 PM - 06:30 PM Mountain Time
MODERATOR: Charlie Hicks
Bayer CropScience
Fort Collins, CO

THURSDAY MORNING MARCH 4

WSWS Student Silent Auction

LOCATION: WSWS Student Booth
TIME: 08:00 AM - 08:30 AM Mountain Time
MODERATOR: Mirella F. Ortiz
Colorado State University
Fort Collins, CO
CO-MODERATOR: Jodie A. Crose
University of Wyoming
Sheridan, WY

THURSDAY MORNING MARCH 4

WSWS BUSINESS MEETING

LOCATION: Virtual Room 1
TIME: 08:30 AM - 09:15 AM Mountain Time
MODERATOR: Corey V. Ransom
Utah State University
Logan, UT

THURSDAY MORNING MARCH 4

DISCUSSION SESSION Project 5-Basic Biology and Ecology

LOCATION: Project Discussion Sections
TIME: 09:30 AM - 10:15 AM Mountain Time
CHAIR: Neeta Soni
Corteva Agriscience
Indianapolis, IN
MODERATOR: O. Adewale Osipitan
University of California-Davis
Davis, CA

Topic: “What High Throughput Data Can Teach Us about Weed Biology and Control?”

THURSDAY MORNING MARCH 4

ORAL Non-Student Project 3-Weeds of Agronomic Crops

LOCATION: Virtual Room 1
TIME: 09:30 AM - 10:00 AM Mountain Time
CHAIR: Joseph T. Ikley
North Dakota State University
Fargo, ND
MODERATOR: Nevin Lawrence
University of Nebraska
Scottsbluff, NE

***SPEAKER**

09:30 AM Management of Texas Panicum, Green Foxtail, and Large Crabgrass Through ImiFlex™ (Imazamox) Herbicide Programs in Igrowth® Grain Sorghum. Ryan Bryant-Schlobohm*¹, Lynn Justesen², Cody Gray³; ¹UPL, Amarillo, TX, ²UPL, Omaha, NE, ³UPL, Peyton, CO (129)

09:45 AM Cutleaf Vipergrass: an Emerging Threat to Alfalfa Production and Rangeland. Jody A. Gale*¹, Corey V. Ransom², Mark Nelson³, Beckley J. Cody⁴; ¹Utah State University - Extension, Richfield, UT, ²Utah State University, Logan, UT, ³Utah State University - Extension, Beaver, UT, ⁴Utah State University - Extension, Logan, UT (130)

THURSDAY MORNING MARCH 4

SYMPOSIUM - Updates from Weed Biocontrol- An Unsung Component of Integrated Weed Management on Land and in Water

LOCATION: Virtual Room 3
TIME: 09:30 AM - 05:00 ApriceM Mountain Time
CHAIR: Carol Randall
USDA Forest Service
Medimont, ID

***SPEAKER**

09:30 AM Session Introduction

09:35 AM Biological Control of Invasive Weeds: Ensuring Safety Through the Regulatory Process. Bob Pfannenstiel*; USDA- APHIS- PPQ, Riverdale, MD (131)

09:55 AM Western Weed Biocontrol Collaboration: Using Low Tech Tools to Pool Resources and Amplify Understanding and Impact. Carol Randall*; USDA Forest Service, Medimont, ID (132)

10:15 AM Monitoring Weed Biocontrol with the Standardized Impact Monitoring Protocol (SIMP). Joseph Milan*; Bureau of Land Management, Boise, ID (133)

10:35 AM New Online Weed Biocontrol Tools iBiocontrol, SIMP Survey 1 2 3, SIIPA, Apps. Chuck Bargeron*; University of Georgia, Tifton, GA (134)

10:55 AM Questions

11:00 AM Break

11:15 AM The Knotweed Psyllid: A New Tool to Combat Knotweeds in Riparian Zones. Joel Price*¹, Fritzi Grevstad²; ¹Oregon Department of Agriculture, Salem, OR, ²Oregon State University, Corvallis, OR (135)

11:35 AM What Seven Sequential Years of Spring Dry Ground Applications of Imazapyr and Imazamox to Deplete the Rhizomes of Flowering Rush Has Taught Us About the Need to Continue Biocontrol Development for Flowering Rush. Peter M. Rice*¹, Virgil Dupuis², Ian McRyehew², Alvin Mitchell²; ¹Peter M Rice Consulting, Missoula, MT, ²Salish Kootenai College, Pablo, MT (136)

11:55 AM Prospects for Classical Weed Biocontrol to Address Expanding Populations of Flowering Rush. Jennifer Andreas*; Washington State University, Puyallup, WA (137)

12:15 PM Where We Stand After 20 Years of Tamarisk Biological Control. Dan Bean*; Colorado Department of Agriculture Palisade Insectary, Palisade, CO (138)

12:35 PM Questions

12:45 PM Break

01:30 PM Managing Post-Fire Landscape Scale Toadflax Infestations Using Biocontrol And/or Herbicide. Sharlene Sing*; USFS Rocky Mountain Research Station, Bozeman, MT (139)

01:50 PM Houndstongue Root Weevil: Montana's Science Advisory Panel and Efforts to Assess Non-target Impact in MT, WA, and ID. Melissa Maggio*¹, Bryce Christiaens²; ¹Montana Biocontrol Project, Missoula, MT, ²Missoula County Weed District, Missoula, MT (140)

02:10 PM Inundative Biological Control Releases for Leafy Spurge Management: The Bureau of Land Management's Experience Using Biocontrol Along with Additional Options in an Integrated Weed Management Approach. Matthew Clarkson*; Bureau of Land Management, Idaho Falls, ID (141)

02:30 PM Canada Thistle Rust, a New Tool to Address a Persistent Foe. Dan, Bean*, Karen Rosen; Colorado Department of Agriculture Palisade Insectary, Palisade, CO (142)

02:50 PM Questions

03:00 PM Break

03:15 PM Russian Knapweed Biological Control Success with Host Specific Wasps and Midges. Sonya Daly*; Colorado Department of Agriculture Palisade Insectary, Palisade, CO (143)

03:35 PM A Newly Approved Biological Control Agent for Yellow Starthistle: the Rosette Weevil, *Ceratapion basicorne*. Lincoln Smith*¹, Ikju Park²; ¹USDA-ARS, Albany, CA, ²USDA Agricultural Research Service, Albany, CA (144)

03:55 PM Annual Grass Biological Control Update. Brian Rector*; USDA Agricultural Research Service, Reno, NV (145)

04:15 PM Live Discussion

THURSDAY MORNING MARCH

ROUNDTABLE - Teaching Weed Science

LOCATION: Facilitated Discussion Room
TIME: 09:30 AM - 10:15 AM Mountain Time
FACILITATOR: Franck E. Dayan, Colorado State University, Fort Collins, CO

The Future of Teaching Graduate Weed Science

THURSDAY MORNING MARCH 4

ORAL Non-Student Project 5-Basic Biology and Ecology

LOCATION: Virtual Room 2
TIME: 10:15 AM - 11:00 AM Mountain Time
CHAIR: Neeta Soni
Corteva Agriscience
Indianapolis, IN
MODERATOR: O. Adewale Osipitan
University of California-Davis
Davis, CA

***SPEAKER**

- 10:15 AM** Integrating Grazing, Herbicide, and Seeding to Diversify Crested Wheatgrass Monocultures. Peter T. Bugoni*; Montana State University, Bozeman, MT (146)
- 10:30 AM** Exploring the Constitutive Shade Avoidance Response in *Beta vulgaris*. Joe Ballenger*, David A. Claypool, Andrew R. Kniss; University of Wyoming, Laramie, WY (147)
- 10:45 AM** Russian Thistle Genomics to Help Understand "Tumbleweeds". Philip Westra*¹, Eric L. Patterson², Todd A. Gaines¹, Jacob S. Montgomery¹, Kevin Dorn³; ¹Colorado State University, Fort Collins, CO, ²Michigan State University, East Lansing, MI, ³USDA Sugarbeet Unit, Fort Collins, CO (148)

THURSDAY MORNING MARCH 4

DISCUSSION SESSION Project 3-Weeds of Agronomic Crops

LOCATION: Project Discussion Sections
TIME: 10:30 AM - 11:15 AM Mountain Time
CHAIR: Joseph T. Ikley
North Dakota State University
Fargo, ND
MODERATOR: Nevin Lawrence
University of Nebraska
Scottsbluff, NE

Topic: "Herbicide-Resistance Management in Minor and Specialty Crops"

THURSDAY MORNING MARCH

ROUNDTABLE – Weed Specialists

LOCATION: Facilitated Discussion Room
TIME: 09:30 AM - 10:15 AM Mountain Time
FACILITATOR: Andrew Kniss, University of Wyoming, Laramie, WY

The Future of Training Weed Specialists

THURSDAY MORNING MARCH 4

GOOD BYE -- See You in California

LOCATION: Virtual Room 1
TIME: 11:15 AM - 11:30 AM Mountain Time
MODERATOR: Sandra K. McDonald
Mountain West Pesticide Education and Safety Training
Fort Collins, CO