

Western Society of Weed Science Newsletter

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SPRING 2020

IN THIS ISSUE:

President's Report

Note from the Business Office

Student Liaison Report

Awards Committee Report Outstanding Weed Scientists Weed Manager President's Award of Merit

2019-2020 Officers and Executive Committee

2020 Fellow Awards

Elena Sanchez Scholarships

Student Weed Contest

2020 Student Awards

Volunteer Opportunity: Social Media Administrator

Gorse Bio-Control

Washington Report

Herbicide Efficacy Action Resistance Workshop

Membership Renewal Form

Publication Order Form

Sidebar highlights:

- Contact Us
- Officers & Executive Committees
- Publications
- Calendar of Events



President's Report - by Corey Ransom

Aloha! I hope all who attended the meeting in Maui made it home safely and are doing well. Who could have known how fast the world situation would change! The setting was spectacular for our 73rd Annual WSWS meeting combined with WSSA. We missed those unable to travel due to the location or other travel restrictions. While some of the meeting areas such as the Poster Section were tight, it demonstrated the huge

success of the meeting with over 700 registrants and approximately 135 guests. Special thanks to Eric Gustafson for many last-minute changes at the venue to accommodate the overwhelming number of attendees at various events. President Pat Clay did an excellent job splitting time with the WSSA President and highlighting some of the activities and events at the meeting that are unique to WSWS. The keynote address by Sam Gon was exceptional and a wonderful welcome to the unique setting and culture of Hawaii. Congratulations to all the award winners. It is great that the Society honors members for their significant contributions to the field of weed science and the Society. I particularly enjoyed the award presentations being made at the end of the General Session, which provided opportunity for members to congratulate the awardees throughout the rest of the week at the meeting.

While there were several changes in how the combined meeting was organized, I appreciated the opportunity to visit with colleagues from the WSSA. There were an impressive number of poster and paper presentations in addition to five symposia and a workshop. There should have been many topics of interest to everyone in attendance. The sessions were generally well attended, notwithstanding the distracting ocean and beaches just outside of the meeting rooms. Thank you to everyone who contributed to the meeting in various roles and made it run as smoothly as possible. I was happy that we were able to maintain our WSWS discussion sessions as part of the combined meeting with WSSA. I also appreciated all of the efforts made to share our traditional student night out with all of the students of WSWS and WSSA. This was a massive undertaking and thanks goes to our Student Liaison, Lucas Bobadilla, for his persistence in getting this organized and to several of our members who stepped up at the last minute to find and be hosts for all of the students. There were over 160 students registered for the meeting and the numbers of poster and paper contributions by WSWS students were similar to the meeting last year in Denver. Congratulations to the winners in the Student Poster and Paper competitions. All of the student presentation and posters were of excellent quality, as always, and contributed significantly to the meeting. Unfortunately, due to an oversight associated with generating lists from the registration software many of our WSWS students who participated in the poster competition were not judged. My deepest apologies. Please know that this was a mistake and has created deep disappointment for those volunteers who work

CONTINUED ON PAGE 2

President's Report — CONTINUED FROM PAGE 1

passionately and selflessly to make these competitions possible. We have discussed some possible opportunities for those left out of the completion and will be contacting those students in the near future.

We learned important lessons from this year and trust that that experience will improve our ability to effectively plan and carry out the program next year in Boise under the leadership of Sandra McDonald. Please be thinking of symposia ideas for the 2021 meeting that are fitting for that venue. The local arrangements chair (George Newberry) is already looking at activities and opportunities for the meeting.

In such volatile and uncertain times, it is evident why our by-laws require the Society to maintain a surplus of money in order to cover expenses and obligations in the case of an emergency. If the meeting had been a week later, I am unsure what the economic ramifications for the Society would have been.

Beyond the economic impacts, I am sure many members of our Society are dealing with high levels of stress and uncertainty given the worldwide COVID-19 pandemic. It will take flexibility, resilience, and resourcefulness to not only endure the pandemic, but also to continue to move forward in productive and meaningful ways. I have optimism that this situation can provide a unique opportunity to consider priorities in both our careers and lives that will allow greater focus on the most important things as we go forward.

I wish you the best of health, safety, and positivity as we experience this challenging world event together.

Note from the Business Office — Eric Gustafson

The 2020 WSWS Annual Meeting in Maui at the Hyatt Regency Maui was a joint meeting with the WSSA in early March. The event was a huge success by all attendance and submission indications. The event was a success due to the efforts, hard work and dedication of many Society members and the Board of Directors. The WSWS leadership had some extra responsibility this year due to the extra details of joint meeting planning and ensuring all the DNA of traditional WSWS annual meetings were included. All the of traditional events from WSWS annual meetings were integrated into the meeting: student contest, student night out, student awards, business meeting, poster session, oral presentations, and we gained some new fans of the discussion sessions. All attendees were able to enjoy a luau and tours were offered for attendees and guests. I heard the whale watching was especially enjoyable.

In 2019 the Bomb-Cyclone will be a remembered part, in 2020 it may be not what hit but what missed. The COVID-19 pandemic exploded shortly after the completion of the meeting; had the meeting been just two short weeks later it likely would have been cancelled. We are very fortunate the meeting went so well and thanks to all that came to be part of the event and we missed those of you that could not join us this year.

The 2021 meeting will be hosted in Boise, Idaho with more details to come.

If you were not able to attend the 2020 Annual Meeting, it is time to renew your WSWS membership. To pay by credit card, simply log in to the Members Only Section on the www.wsweedscience.org website. If you have forgotten your username and/or password, please give us a call at the IMI office 303-327-8016 or drop us an email at info@wsweedscience.org. To send a check, simply fill out the Membership Form at the end of the newsletter and send that in with the check for \$30.00.

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Student Liaison Report - Mirella Ortiz

Hello WSWS Students,

What a meeting! I hope you all had a great time in Maui this year, as it was probably our last time seeing our friends and peers before getting locked down at home. This meeting will be positively remembered due to the fantastic quality of student papers and posters presented. Congratulations to all of you for your presentations, especially for the ones who brought an award home! Great job everyone and let us keep in mind that if you are in the student contest you need to make sure to present data that was not previously presented in another meeting.

The silent auction this year was hard as we were nott able to bring some of the donated items to Maui, but we did a good job with what we had on hand! On behalf of the students I would like to thank everybody that participated, donated items and gave monetary donations for our event. A special thanks to Eric Gustafson for all of his great help and support. This year we were able to raise \$1,100.00 that will be used for the Elena Sanchez Memorial Outstanding Student Scholarship.

I would like to congratulate the recipients of the Elena Sanchez Memorial Outstanding Student Scholarship. Because the meeting was in Hawaii we had an extraordinary high number of applications this year. Let us work to keep these application numbers high to show the board that we as a student group are taking advantage of this great opportunity. Please keep applying and encourage other students to do so as well.

I would like to give a special thanks to Lucas Bobadilla for his fantastic contribution to the society as the student liaison this last year. He did a amazing job organizing the Student Night Out for more than 130 students, more than twice the numbers we are used to hosting! Thank you, Lucas! I also want to give a big thank you to Chloe M. Mattilio from University of Wyoming for serving as the student representative to the judging committee this year.

Congratulations to the University of Wyoming folks, Jodie Crose for being elected as the next student liaison and Tyler Hicks as the next student representative to the judging committee. Please, consider being a candidate for both of these positions next year. The society is also looking for a student representative on the 'herbicide-resistant plants' committee. If you are interested in helping the society, please contact myself or Jodie. This is a great chance to be part of the society and network with many great weed scientists!

I hope you are all healthy and well at home, using this time to enjoy outside, read a good book or paper, and maybe even write a paper that was put aside before due to lack of time. Let us make this lock down as positive as we can and be prepared to go back to our labs and universities hopefully sooner than later.

Thank you,

Mirella Ortiz, Student Chair mirella@colostate.edu

Jodie Crose, Student Chair (elect) jcrose@uwyo.edu

The WSWS would like to thank **Joseph Omielan**-University of Kentucky who graciously volunteered his time and talents to furnish many of the photographs included in this newsletter.

WSWS 2020 Professional Awards

The Outstanding Weed Scientist – Early Career award was granted to Dr. Vipan Kumar, Assistant Professor of Weed Science at Kansas State University. The Outstanding Weed Scientist – Public Sector award was granted to Dr. Timothy "Tim" Harrington, Research Forester and Team Leader, Insects, Pathogens, and Stressors Team, Threat Characterization and Management Program, United States Forest Service, Olympia, Washington. The Outstanding Weed Scientist – Private Sector award was granted to Dr. Stephen "Marty" Schraer, Senior Scientist, Syngenta Crop Protection Field Development. The Outstanding Weed Manager award was granted to Steve Sauer, Boulder County Weed Coordinator, Boulder County, Colorado.







Tim Harrington

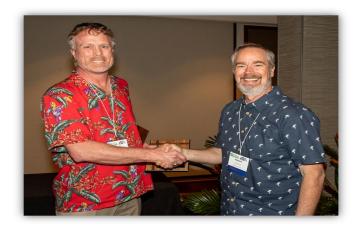


Marty Schraer



Steve Sauer

2020 Presidential Award of Merit



Marty Schraer and Pat Clay

2020-2021 WSWS Officers and Executive Committee

The 2020-2021 WSWS Board of Directors are: Corey Ransom-President, Sandra MacDonald-President-Elect, Pat Clay-Past President, John Madsen-Secretary, D. Chad Cummings-Outgoing Secretary & new Constitution and Operating Procedures, Eric Gustafson-Business Manager, Julie Kraft (Public) & John Coyle (Private) Members-At-Large, Mithila Jugulam-Research Section Chair, Judit Barroso-Research Section Chair Elect, Todd Neel-Education and Regulatory Section Chair, Carl Coburn-Education and Regulatory Section Chair-Elect, Joel Felix-Outgoing Education and Regulatory Section Chair, Mirella Ortiz-Student Liaison Chair, Jodie Crose-Student Liaison Chair-Elect, Marty Schraer-WSSA Liaison, Gegory Dahl-CAST Representative, George Newberry-2021 Local Arrangements Chair, and Lee Van Wychen-Executive Director of Science Policy. Their contact information can be found in the sidebar sections of the newsletter.

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Publications

WSWS ONLINE EDUCATION

http://passel.unl.edu/pages/in dex2col.php?category=weedsci ence#

WSSA Journals Website Online www.wssa.net/publications/

CALENDAR OF EVENTS

Aquatic Plant Management Society Annual Meeting July 19 - 22, 2020

San Antonio, Texas www.apms.org

Herbicide Efficacy, Action, and Resistance Workshop

Aug. 3 - 6, 2020 Fort Collins, Colorado HEAR Workshop

Canadian Weed Science Society Annual Meeting

Nov. 23-26, 2020 Gatineau, Quebec www.weedscience.ca

North Central Weed Science Society Annual Meeting

Nov. 30 – Dec. 2, 2020 Minneapolis, MN www.ncwss.org

Northeastern Weed Science Society Annual Meeting

Jan. 4 – 7, 2021 Gettysburg, Pennsylvania www.newss.org

Southern Weed Science Society Annual Meeting

Jan. 24 - 28, 2021 Knoxville, Tennessee www.swss.ws

Weed Science Society of America Annual Meeting

> Feb. 15 - 18, 2021 San Antonio, Texas www.wssa.net

Western Society of Weed Science Annual Meeting

Mar. 1 - 4, 2021 Boise, Idaho www.wsweedscience.org

Fellow & Honorary Awards - Jill Schroeder, Chair

The WSWS Fellows and Honorary Member Committee is pleased to announce the Fellow Awards for 2020 were presented to Traci Rauch and Monte Anderson. The Honorary Member Award was presented to Dr. William Price.







The 2020 committee members were Jill Schroeder (Chair), Jesse Richardson, and Joan Campbell. Jesse will assume the role of committee chair for 2021. Please submit nominations for the Fellow and Honorary member Awards for 2021 to Dr. Richardson by December 1, 2020 (see future newsletter announcements).

Elena Sanchez Memorial Scholarship

Lesley Beckworth, Awards Committee Chair announced the recipients of the Elena Sanchez Memorial Scholarship were Hudson Takano, (Colorado State University), Jaycie Arndt, (University of Wyoming), and Hannah Kuhns (University of Wyoming). A big thanks to their advisors for bringing along such great promising talent for the future of weed science.

Student Weed Contest Invitation

The 2020 North Central Weed Science Society Student Contest will be on Thursday, July 23^{rd,} 2020, at North Dakota State University in Fargo, North Dakota. We would also like to extend an invitation for schools in the Western Society of Weed Science to participate in this contest. WSWS had a good presence at the national contest this past summer, so we would like to invite interested students to continue with this great Weed Science training experience this upcoming summer.

Wednesday, July 22nd will be a travel day, and volunteers will meet at the site during the day to review contest plots and finalize preparations. An orientation dinner will be held on NDSU's campus in the evening for all participants as well.

Please see the rules to begin preparations for the contest.

Team, individual, and volunteer registration, as well as hotel and travel information, will follow at a later date.

Please mark your calendars and begin to study for the contest. We look forward to seeing all of you in North Dakota in July.

Joe Ikley,

Extension Weed Specialist / Department of Plant Sciences Office Phone: (701) 231-8157 Mobile phone: (701) 238-6065 joseph.ikley@ndsu.edu

2020 STUDENT PAPER AND POSTER CONTEST WINNERS

Carl Coburn - Chair

With the joint 2020 meeting, the WSWS held a student paper contest while the poster contest was held in combination with the WSSA (WSSA Spring Newsletter). The 2020 WSWS graduate student paper contest had a total of 33 contestants and 15 judges volunteered their time. All contestants exhibited exceptional quality and professionalism and participants are to be commended. In accordance with WSWS operating procedures, the number of winning places in different sections varied depending on the number of students that participated in each section. Students in the paper contest were divided into five sections with 33 entries.



Clint Beiermann



Jodie Crose



Mirella Ortiz



Jake Courkamp



Nathan Haugrud



Pragya Asthana



Marcelo Figveireda



Olivia E. Todd

Not Pictured: Justin Childers

Weeds of Agronomic Crops:

- 1st Clint W. Beiermann, University of Nebraska-Lincoln, "Herbicide Potential for Palmer Amaranth Control in Sugarbeet, Selectivity of Desmedipham and Phenmedipham".
- 2nd Justin Childers, Oklahoma State University, "Non-tolerant Wheat Response to Quizalofop-P-ethyl in Central Oklahoma".

Pasture, Range, Forest, Rights of Ways, and Natural Areas:

- 1st Jodie Crose, University of Wyoming, "Influence of Seeding Depth on Native Species Establishment in the Presence of Indaziflam".
- 2nd Mirella Ortiz, Colorado State University, "Florpyrauxifen-benzyl: A Novel Auxin Herbicide for Aquatic Plant Management".

• 3rd – Jake Courkamp, Colorado State University, "Long-term Downy Brome (Bromus tectorum) Seedling Reduction with Indaziflam in Sagebrush-Grassland Plant Communities in Sublette County, WY US".

Weeds of Horticulture Crops and Integrated Weed Management:

• 1st – Nathan Haugrud, North Dakota State University, "Inter-row Cultivation Integrated with Residual Herbicide Programs in Sugarbeet".

Basic Biology and Ecology:

- 1st Pragya Asthana, Washington State University, "EPSPS Gene Amplification Confers Resistance in Bromus Tectorum (Downy Brome)".
- 2nd Marcelo Figveireda, Colorado State University, "Escaping Proteolysis: A 27 base pair deletion in Aux/IAA2 Degron tail Confers resistance to auxinic herbicides in Sisymbrium Orientale".

Physiology:

• 1st – Olivia E. Todd, Colorado State University, "Candidate Mutations for Fluroxypyr Resistance in Kochia from Colorado".

Finally, a huge thank you to all the judges who contributed their time and energy for this year's contests.

WSWS Volunteer Opportunity: Social Media Administrator

Are you passionate about weed science and looking for a unique, creative way to serve the WSWS? If so, then the newly created WSWS Social Media Administrator role is a great opportunity for you!

Currently, the WSWS has only one social media account (Twitter: @WSWeedSci) and we would like expand our presence and outreach through these platforms. The Public Relations committee is launching the new Social Media Administrator (SMA) role for the WSWS and is looking for a creative, social media-savvy person to serve the society in this new capacity. The purpose and responsibility of this role is to develop, maintain, and enhance the WSWS's presence on various social media platforms (Twitter, YouTube, Instagram, and others) to promote the society's members, activities, and capture and share key events from the annual meetings. Additionally, the SMA is strongly encouraged to partner with the WSWS membership to showcase and share their diverse research and educational contributions to weed science and the great work with they do with farmers, producers, landowners, government agencies, and the general public.

This SMA role is not intended to be a full-time responsibility, but rather a "volunteer" opportunity (supported with a small stipend) to serve and promote the WSWS and its members in an impactful way. If you are interested in serving as the WSWS Social Media Administrator or have further questions about this opportunity, please contact Joe Armstrong (joe.armstrong@corteva.com) or Rich Zollinger (richardz@amvac.com), Public Relation committee co-chairs, for more information.

Thanks!

Joe Armstrong and Rich Zollinger

Oregon begins 2020 gorse control efforts using newly permitted gorse thrips, *Sericothrips staphylinus*

Joel Price, Oregon Department of Agriculture, Salem, Oregon

Gorse (*Ulex europaeus*) is an evergreen, woody shrub in the pea family (fabaceae). Gorse re-sprouts from the crown when cut, grows up to 13 feet tall, and can live 30 years. Gorse illuminates the landscape with endless yellow flowers that reach peak bloom in winter. Although seedlings are poor competitors that struggle in shade, seed can last many decades, germinating profusely after disturbance by logging operations or beachfront erosion. Over time, nitrogen fixing nodules on gorse roots can leach nitrate into the watershed and reduce water quality.

Native to western Europe, gorse was introduced to coastal Oregon in the 1800s for livestock containment hedging. Mature gorse plants are completely covered in sharply pointed spines. Gorse is listed as noxious along the entire western coast of the U.S., including Hawaii. The epicenter of the infestation occurs near Bandon, OR where gorse fueled a number of wildfires. Coastal homeowners express concern with rapid mechanical or chemical treatment that could potentially leave the embankments supporting their property exposed to the elements. Biocontrol is a critical tool in combating remaining infestations, with previously released agents reducing seed production (Exapion ulicis) or weakening plants (Tetranychus lintearus).





The host-specific gorse thrips, *Sericothrips staphylinus*, was first permitted for field releases in November, 2019. The thrips family contains some 6,000 species, each with their own life cycle, feeding behavior, and habitats. This particular species is native to western Europe; collected in Portugal, England, and France. It has been safely utilized as a biocontrol agent in New Zealand, Australia, and Hawaii for many years. Testing conducted at Oregon State University showed the thrips cannot survive on any of 135 congeners, ornamentals, crops, and T&E plant species.

Multiple generations of thrips can build up on plants in one year's time. Thrips rasping mouthparts drain cell contents leaving host plant material pale and speckled in appearance. In lab testing, thrip feeding was shown to be especially damaging to seedlings, reducing height and outright killing some seedlings after two months. Even gorse plants several feet tall do not reach their full potential height or biomass when thrips feed on freshly growing branch tips.

Continued pressure on gorse from new biocontrol agent development like the gorse thrip is critical for protecting our western coastline, and well-inland. Through efforts of groups like the Gorse Action Group (http://gorseactiongroup.org/), gorse is currently being limited to less than one percent of the over 16 million acres specifically susceptible to gorse in Oregon alone.

Partnerships with private, municipal, and state landowners along the south coast of Oregon are developing field nurseries for 2020 thrips establishment, study, and redistribution. Greenhouse colonies are also being used to rapidly build thrips populations. Eventual multi-state sharing and reduction of gorse invasion potential on a larger regional scale should bring incalculable value in sustainably restoring our lands with little cost. For additional information, contact jprice@oda.state.or.us.

WASHINGTON REPORT

April 3, 2020 Lee Van Wychen

Administrative Relief for Federal Grant Recipients Due to COVID-19

On March 19, 2020, the federal Office of Management and Budget (OMB) issued a memo (M-20-17) titled: "Administrative Relief for Recipients and Applicants of Federal Financial Assistance Directly Impacted by the Novel Coronavirus (COVID-19) due to Loss of Operations."

The USDA National Institute of Food and Agriculture (NIFA) is particularly concerned institutions with faculty, staff, and students who depend on grant funding for their livelihood and are required to shelter in place. However, the OMB memo states: specifically **Awarding** agencies may allow recipients to continue to charge salaries and benefits to currently active Federal awards consistent with the recipients' policy of paying salaries (under unexpected or extraordinary circumstances) from all funding sources, Federal and non-Federal (Appendix A, No. 6).

OMB's March 19th memo bolsters NIFA's continued response to COVID-19 as it allows the agency to also provide flexibilities for recipient organizations affected by the loss of operational capacity. Appendix A the memorandum details administrative relief actions and procedures Federal awarding agencies are authorized to take. Questions regarding the applicability of the memorandum's administrative relief provisions should be directed to NIFA's Awards Management Division at awards@usda.gov. For more information, see OMB's M-20-17.

EPA Approves Isoxaflutole Use on Soybeans

On March 30, EPA announced the registration of the use of isoxaflutole on genetically engineered soybeans. "Safe and effective weed management is a constant challenge that farmers face," said American Soybean Association President and soybean grower from Worthington, Minnesota, Bill Gordon. "EPA's registration of isoxaflutole will provide soybean growers with an important new tool to combat damaging weeds and help better control emerging herbicideresistance issues.

Isoxaflutole is already registered by EPA for use on corn in 33 states. Like this existing use, the new registered use of isoxaflutole on genetically engineered soybeans is classified as a restricted-use pesticide, meaning that applicators must receive special training in order to use it. The training will emphasize ways applicators will protect ground and surface water and non-target plants.

The new use on genetically engineered soybeans would be limited to specific counties in 25 states. EPA is limiting use to these specific counties to endangered or threatened species from exposure. EPA is including additional use strictions, such as not allowing aerial and irrigation system applications.

The registration is limited to five years during which EPA will evaluate any potential weed resistance issues that may result. As part of the terms and

conditions of the registration, the registrant must provide a herbicide-resistance management plan and submit annual reports to EPA. More information, including the final registration decision, can be found on: isoxaflutole soybeans

USDA Casts Vision for Scientific Initiatives Through 2025

The Agriculture Department has published a "USDA Science Blueprint" to serve as its vision for and commitment to scientific research through 2025. It lays out five overarching themes research. education. and economics, each with established objectives, strategies, and evidence-building measures. The five Program Themes include: sustainable ag intensification, 2) ag-climate adaptation, 3) food and nutrition translation, 4) valueadded innovations, and 5) ag science policy leadership.

The USDA Science Blueprint (PDF, 2.6 MB) includes the four REE mission area agencies — the Agricultural Research Service (ARS), the Economic Research Service (ERS), the National Agricultural Statistics Service (NASS), and the National Institute of Food and Agriculture (NIFA) along with the Office of the Chief Scientist (OCS) and the science arms of the U.S. Forest Service (FS), Food Safety and Inspection Service (FSIS), Natural Resources Conservation Service (NRCS), Food and Nutrition Service (FNS), and the Animal and Plant Health Inspection Service (APHIS).

Some strategies listed under plant production, health and

genetics within the sustainable ag intensification theme include:

- Tap into genetic diversity and use genomic technology to accelerate breeding progress, decrease susceptibility to climate variability, pests, diseases, and weeds, and increase yield potential.
- Use precision agriculture technologies, innovative input technologies and stand improvement to optimize resource use and reduce the gap between actual yield and yield potential.
- Improve surveillance, early detection, rapid response, and recovery for transboundary, vector-borne, emerging/reemerging, and costly endemic crop diseases, insects, and weeds through research, education, and extension.
- Identify key factors in producer behavior change and technology adoption models emphasizing the critical decisions and thresholds.

Bill Authorizing 600 New Agricultural Inspectors Signed into Law

On March 4, "The Protecting America's Food & Agriculture Act of 2019" was signed into law, which addresses the shortage of agricultural inspectors who protect the nation's food supply and agriculture industry and ensure safe and secure trade of agricultural goods across borders. The act authorizes U.S. Customs & Border Protection (CBP) to hire additional inspectors, support staff and K-9 teams to fully staff

America's airports, seaports and land ports of entry.

The USDA and CBP work together to facilitate safe and secure importation of agricultural goods into the U.S. The program's agricultural specialists and K-9 units conduct inspections passengers, commercial vessels. trucks, aircraft and railcars at U.S. ports of entry to protect health and safety by preventing the entry of harmful goods and invasive species that may pose a threat to American food and agriculture. On a typical day (prior to COVID-19), inspectors process more than 1 million passengers and 78,000 truck, rail and sea containers carrying goods worth approximately \$7.2 billion.

The act authorizes the annual hiring of 240 agricultural specialists a year until the workforce shortage is filled and 200 agricultural technicians a year to carry out administrative and support functions. The act also authorizes the training assignment of 20 new K-9 teams a year, which have proven valuable in detecting illicit fruits, vegetables and animal products that may have otherwise been missed in initial inspections. Finally, supplemental authorizes appropriations each year to pay for the activities of the agriculture specialists, technicians and K-9 teams.

COOPERATION Extension System COVID-19 Resource Collection Grows

A comprehensive collection of COVID-19 resources developed by the Cooperative Extension System is available at Extension-

Response. To date, 48 landgrant institutions have contributed to the collection with new items being added nearly every day. In addition to materials submitted by states, the site also includes a number of general resources that Extension professionals and others may find useful. Recently added were collections of materials related to farmworkers, food systems, and health insurance for farm families. Navigation of the site has been aided by the addition of labels indicating whether a particular link contains information regarding institutional policies and procedures related to COVID-19 or programmatic resources for engaging the public. Links to additional resources can be sent directly to contact-us@extension.org.

The Unified Website for Biotechnology Regulation

The USDA, FDA, and EPA launched a Unified Website for Biotechnology Regulation: Biotechnology Regulation. website streamlines information the three regulatory about agencies charged with overseeing biotechnology agriculture products and is part of the President's Executive Order on Modernizing the Regulatory Framework for Agricultural Biotechnology Products.

Lee Van Wychen, Ph.D. Executive Director of Science Policy

National and Regional Weed Science Societies



Welcome to Hear@CSU, a workshop on Herbicide Efficacy, Action and Resistance

This workshop is specially designed for those who need a refresher on how herbicides work. Lectures include all mechanisms of action, how they are used, how they work and how plants have evolved resistance. Other topics include interactions with plants and soil, crop injury, and non-performance. This workshop will be held August 3-6 on the beautiful campus of Colorado State University in Fort Collins, Colorado.

Website: https://conferencereg.colostate.edu/HEAR2020 Contact: Franck Dayan at franck.dayan@colostate.edu

Monday

Morning Interactions interactions -PPO inhibitors

Afternoon -VLCFAE inhibitors -Transgenic crops

Tuesday

Morning -Glyphosate -Glufosinate -Synthetic auxins -Mitosis inhibitors

Afternoon -PSI and PSII -Bleaching herbicides

Wednesday

Morning -Crop injury -Herbicide non

Afternoon

Thursday

Morning -Aquatic weeds Novel target sites Summary





Colorado State University



Colorado State University



Colorado State University



Kansas State University



SCAN ME

2020 Membership Renewal Form for the Western Society of Weed Science

To pay by credit card, please go to **www.wsweedscience.org** and login to your account)

IF YOU DID NOT ATTEND THE ANNUAL MEETING BUT WANT TO REMAIN A MEMBER, FILL IN THE INFORMATION BELOW AND SEND \$30.00 FOR DUES TO THE ADDRESS GIVEN.

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(All prices include shipping and handling; bulk orders may be discounted, see below) ____ Aquatic and Riparian Weeds of the West...... \$45.00 Weeds of California and Other Western States.......\$85.00 Interactive Encyclopedia of North American Weeds DVD......\$50.00 Total All publications can be ordered online at www.wsweedscience.org (click on WEED BOOKS) To order by mail and pay by check, send this completed form with payment to: WSWS Business Manager, 12110 Pecos St., Ste 220, Westminster, CO 80234. Contact the Business Manager (Eric Gustafson) at (303) 327-8016 for bulk order prices. Shipping Information: Name: ____ City: Address: State: ___ Zip Code:____ Telephone:___ e-mail:

WSWS Objectives

- ❖To foster and encourage education and research in weed science.
- ❖To foster cooperation among state, federal and private agencies in matters of weed science.
- ❖To aid and support commercial, private and public agencies in the solution of weed problems.
- To support legislation governing weed control programs and weed research and education programs.
- To support the Weed Science Society of America and foster state and regional organizations and agencies interested in weed control.

