

5th Meeting International Weed Science Congress

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Location of Activities June 2008

Registration	Coat Check/Foyer
Lunches	Salon 2/3 & Cypress
Energy Breaks	Salon DEF
Speaker Ready Room	Capilano
Poster/Exhibit Hall	Salon DEF

Local Arrangements Committee IWSC-Vancouver, BC

Co-Chairs	Robert Blackshaw/ Carol Mallory-Smith
Registration	Kate Counter
Exhibits and Posters	Robert Blackshaw
Computers/LCD loading	Christopher Hall
Tours	Robert Blackshaw/Mahesh Upadhyaya

Welcome to Vancouver

Dear International Weed Scientists,

Welcome to the 5th International Weed Science Congress (IWSC) and to the beautiful city of Vancouver. We gather here to enjoy the unique experience of sharing knowledge, scientific advances and friendship among weed scientists from all over the world. Many have contributed to making this congress possible, most as volunteers, including the members of the Scientific Committee, the Local Arrangements Committee and the Finances Committee. Several donors have also provided the much needed financial support that we required to make the congress a reality. The Weed Science Society of America and the Canadian Weed Science Society have made a great effort to organize the congress in coordination with the IWSS. The European Weed Research Society has also been very supportive of this endeavor.

I hope you will find the scientific program very attractive. There is a rich collection of contributed posters, our main format of scientific communication, as well as enlightening plenary lectures, invited oral presentations and three workshops. We also have several field excursions to choose from and special social activities.

Enjoy your participation in the congress and your stay in Vancouver

Sincerely yours,

Bernal E. Valverde
President, IWSS

THE 2008 IWSC PROGRAM

Pre-meeting events for the 5th International Weed Science Congress include three workshops on Sunday, 22 June: a Weedy Rice Workshop organized by Dr. Bernal Valverde; a Workshop on Weeds and Biodiversity organized by Dr. Anne Légère; and a Workshop on Nonlinear Regression Problems in Weed Science organized by Dr. Jens Streibig and the EWRS Training and Education Working Group (limited enrollment, reservation required). A welcoming reception will take place on Sunday evening.

The Opening Ceremony for the Congress starts on Monday morning at 8:30, followed by the first of the two poster sessions. After the poster session, we will begin the invited oral presentations.

On Tuesday morning our first plenary speaker, Dr. Christopher Somerville, the Director of the Energy Biosciences Institute, will speak on “Scientific Issues Associated with the Development of Cellulosic Biofuels.” The plenary session will be followed by more invited oral presentations and poster discussions.

On Wednesday, Dr. Robert Blackshaw and Dr. Mahesh Upadhyaya have organized tours that are included in the registration. These tours will allow participants to view various agricultural and horticultural activities in the Vancouver area.

Thursday morning kicks off with our second plenary speaker, Dr. Bao-Rong Lu, Professor and Chairman of the Department of Ecology and Evolutionary Biology, Fudan University, Shanghai, P.R. China. Dr. Lu will make a presentation on “Development of Crop Production in China: A Case Study in Rice.” His talk will be followed by the second poster discussion section, and then more oral presentations. On Thursday night we will have our Congress Banquet. At that time we will recognize the student poster award winners.

On Friday morning, our last plenary speaker, Dr. Hermann Stuebler, the Head of Herbicide Research, Bayer CropScience AG, will speak to us on “Global Changes in Crop Production and Impact Trends on Innovation in Weed Management: An Industry View.” Following this session will be the last of the oral presentations and the Congress will end with a closing ceremony on Friday afternoon.

IWSC Program Committee

General Science Program Chair	Karl Hurler
Vice Chairs	Dale Shaner/Christopher Hall
Abstracts	Christopher Hall/Anne Légère
Weedy Rice Workshop.....	Bernal Valverde
Weeds and Biodiversity Workshop	Anne Légère
Non-linear Regression Workshop	Jens Streibig
Biology, Dynamics and Ecology of Weed ...	Clarence Swanton/Jon Marshall
Integrated Weed Management ...	Bo Melander/David Jordan
Modeling Problems and Solutions ..	Lammert Bastiaans/Matt Liebmann
Natural Products	Franck Dayan/C.H. Kong
Formulation and Adjuvants	Jerry M. Green/Per Kudsk
Educational, Socio-economic Regulatory Aspects and Adoption of Weed Management Practices	Janis E. McFarland/Rick Llewellyn/Jerry Doll/Eduardo S. Leguizamon
Herbicide Resistance in Crops and Weeds	Christopher Preston/Hugh J. Beckie
Biocontrol	Raghavan Charudattan/Mic Julien
New and Emerging Technologies	David Horvath
Site Specific Weed Management	Roland Gerhards/Svend Christensen
Weed Management in Turf, Parks, Recreation Areas and Right-of-Ways	Timothy Prather/Kai Umeda
Weed Management in Organic Farming	Paolo Barberi/Daniel Cloutier
Management of Parasitic Weeds	Koichi Yoneyama/Jochim Sauerborn
Spread and Management of Invasive Species ..	Liz Galli-Noble/Aníbal Pauchard
Aquatic Weed Management	Mike Netherland/Kevin Murphy
Environmental Aspects of Weed Management	Robert M. Zablotowicz/Roland Kubiak
Weed Management in Field Crops	Pedro J. Christoffoleti/Mark VanGessel
Weed Management in Forestry ...	Bruce Maxwell/Raj Prasad
Weed Management in Horticultural, Plantation and Minor Crops	Robert Bulcke/Robin R. Bellinder
Spotlights on Global Weeds	Ricardo Labrada Romero/R.M. Kathiresan
Synthetic Herbicides—Mode/Mechanisms of Action and Safeners	Clifford Gerwick/Hiroshi Matsumoto

General Information

Transportation

Vancouver International Airport

Vancouver International Airport is located on Sea Island in Richmond, British Columbia, Canada, about 15 kilometers from downtown Vancouver. It is the second busiest airport in Canada.

Transportation to Hotel:

YVR Airporter

Reservations are not required.

Pick-ups to Downtown Hotels at the Vancouver International Airport Domestic & International Terminals Tickets can be purchased at our Vancouver Airport ticket office, or directly from the driver.

For schedule information call: Vancouver area (604) 946-8866
Toll Free 1-800-668-3141

Fare: One way: \$13.50, Round trip: \$21.00 (CAN)

Taxicabs

Taxis charge a metered rate based on time and distance traveled; the approximate fare to downtown Vancouver is \$23-\$26 (inclusive of all taxes) under normal conditions.

Transportation between Westin and University of British Columbia

From UBC to the Westin

Two buses departing from UBC at 7:45am on Monday, Tuesday, Thursday, and Friday. On Wednesday, due to the excursions, both buses will leave UBC at 7:30am.

From the Westin to UBC

One bus departing the hotel at 6:30pm on Monday, Tuesday, Wednesday, and Friday. The time for the returning bus on Thursday will be announced at the meeting. Please note that only Congress delegates are permitted to ride IWSC-provided buses.

Program Booklet and Abstracts

All those registered for the Congress will receive a program booklet and a CD with the program and abstracts. To find the time and location of specific papers, look up the author in the author index in the back of the program.

No Smoking

By action of IWSS Board, smoking is not permitted in the sessions.

Locating Abstracts

In the Author Index, the abstract numbers for each author are listed. Posters are numbered 1-530, with posters 1-276 presented on Monday morning, and posters 277-530 presented on Thursday morning. Biodiversity abstracts are numbered 531-536. Weedy Rice workshop abstracts are numbered 537-542. All other abstracts are oral presentations in time sequence.

SUMMARY OF 2008 PROGRAM

Sunday, June 22

Time	Oak	Cypress 2	Cypress 1
06:30			Non-linear Regression Workshop
08:45			
09:00			
09:15			
09:30			
09:45			
10:00			
10:15			
10:30			
10:45			
11:00			
11:15			
11:30			
11:45			
12:00			
12:15			
12:30			
12:45			
13:00			
13:15			
13:30			
13:45			
14:00	Weeds and Biodiversity Workshop		
14:15			
14:30		Wedy Rice Workshop	
14:45			
15:00			
15:15			
15:30			
15:45			
16:00			
16:15			
16:30			
16:45			
17:00			
17:00	End	End	End

Reception

Monday, June 23

Time	Salon A	Salon B	Salon C	Salon 1
08:30		Opening ceremony (Salon ABC)		
08:45				
09:00				
09:15				
09:30				
09:45				
10:00			Poster Session 1 (Salon DEF)	
10:15				
10:30				
10:45				
11:00				
11:15			Energy break	
11:30	Herbicide Resistance in Crops and Weeds I	Integrated Weed Management	Management of Parasitic Weeds	Environmental Aspects of Weed Management
11:45				
12:00				
12:15				
12:30				
12:45				
13:00				
13:15			Lunch	
13:30				
13:45				
14:00				
14:15				
14:30	Herbicide Resistance in Crops and Weeds I	Integrated Weed Management	Management of Parasitic Weeds	Environmental Aspects of Weed Management
14:45				
15:00				
15:15				
15:30				
15:45				
16:00			Energy break	
16:15			Modeling Problems and Solutions	
16:30	Spread and Management of Invasive Species	Blockout		Educational, Socio-economic Regulatory Aspects and Adoption of Weed Management Practices
16:45				
17:00				
17:15				
17:30				
17:45				
18:00				
18:00	End	End	End	End

Tuesday, June 24

Wednesday, June 25

Time	Salon A	Salon B Plenary Session (Salon ABC)	Salon C	Salon 1
08:30				
08:45				
09:00				
09:15		Site-specific Weed Management	Weed Management in Organic Farming	Spotlights on Global Weeds
09:30	Herbicide Resistance in Crops and Weeds-I			
09:45				
10:00				
10:15				
10:30				
10:45				
11:00				
11:15			Energy break	
11:30		Site-specific Weed Management	Weed Management in Organic Farming	Spotlights on Global Weeds
11:45	Herbicide Resistance in Crops and Weeds-II			
12:00				
12:15				
12:30				
12:45				
13:00				
13:15				
13:30				
13:45				
14:00				
14:15				
14:30	Spread and Management of Invasive Species	Biocultural	Mixing Problems and Solutions	Educational, Socio-economic Regulatory Aspects and Adoption of Weed Management Practices
14:45				
15:00				
15:15				
15:30				
15:45				
16:00				
16:15			Energy break	
16:30	Biological Dynamics and Ecology of Weeds-I	Weed Management in Field Crops-II	Natural Products	Weed Management in Turf, Parks, Recreation Areas, and Right-of-Ways
16:45				
17:00				
17:15				
17:30				
17:45				
18:00	End	End	End	End

8:30	Excursion
18:15	End

Friday, June 27

Time	Salon A	Salon B	Salon C	Salon 1
08:30		Plenary Session (Salon ABC)		
08:45				
09:00				
09:15				
09:30	Biological Dynamics and Ecology of Weed-B	Synthetic Herbicides - Mode/Mechanisms of Action and Salience	Aquatic Weed Management	Weed Management in Horticultural, Plantation and Minor Crops
09:45				
10:00				
10:15				
10:30				
10:45				
11:00		Energy break		
11:15				
11:30	Biological Dynamics and Ecology of Weed-B	Synthetic Herbicides - Mode/Mechanisms of Action and Salience	Aquatic Weed Management	Weed Management in Horticultural, Plantation and Minor Crops
11:45				
12:00				
12:15				
12:30				
12:45				
13:00				
13:15				
13:30		Lunch		
13:45				
14:00				
14:15				
14:30				
14:45				
15:00		Closing session & general assembly (SALON ABC)		
15:15				
15:30				End

COMPLETE PROGRAM

SUNDAY, 22 June

Nonlinear Regression Workshop

Location: Cypress 1

Organizer: Jens Streibig, University of Copenhagen, Denmark

8:30 - 17:00

Biodiversity Workshop

Location: Oak

Organizer: Anne Légère, AAFC - Saskatoon Research Centre, Saskatoon, Canada

14:00 - 17:30

14:00

531. Weed Diversity Loss due to Farmland Homogenisation. Santiago Poggio¹, Claudio Ghera¹; ¹Facultad de Agronomía - Universidad de Buenos Aires, Buenos Aires, Ciudad Autónoma de Buenos Aires, Argentina

14:20

532. Arable Weeds as Indicators of Agricultural Sustainability. Terho Hyvonen¹, Erja Huusela-Veistola¹; ¹MTT Agrifood Research Finland, Jokioinen, Finland

14:40

533. How Can Weed Management Support the Development of a More Multifunctional Agriculture? Jonathan Storkey¹, Peter Lutman¹; ¹Rothamsted Research, Harpenden, Herts, United Kingdom

15:00

534. Demanding Weeds in Arable Fields – is it a Feasible Approach? Baerbel Gerowitt¹, Lena Ulber², Horst-Henning Steinmann²; ¹University of Rostock, Rostock, Mecklenburg-Vorpommern, Germany; ²University of Goettingen, Goettingen, Niedersachsen, Germany

15:20

535. Initial Results from Studies of the Role of Habitat Diversity on Arable Farms on the Diversity of Plants and Invertebrates. Peter Lutman¹, Jonathan Storkey¹, John Holland², Jim Orson³, Dan Chamberlain⁴; ¹Rothamsted Research, Harpenden, Herts, United Kingdom; ²Game Conservancy & Wildlife Trust, Fordingbridge, Hampshire, United Kingdom; ³The Arable Group, Morley, Norfolk, United Kingdom; ⁴British Trust for Ornithology, Thetford, Norfolk, United Kingdom

15:40

BREAK

16:00

536. Influence of Crop Rotation Intensity and Weed Control on Weed Species Richness and Composition in Winter Wheat Fields. Lena Ulber¹, Horst-Henning Steinmann¹; ¹Georg-August-University of Goettingen, Goettingen, Niedersachsen, Germany

16:20

Poster Discussion

Weedy Rice Workshop

Location: Cypress 2

Organizer: Bernal Valverde, IDEA Tropical, Alajuela, Costa Rica

14:00 - 17:30

14:00

537. A Weedy Rice Workshop: Towards the Development and Establishment of a Global Weedy Rice Initiative. Bernal Valverde¹; ¹Investigación y Desarrollo en Agricultura Tropical, S.A., Alajuela, Costa Rica

14:15

538. Weedy Rice (*Oryza sativa* L.) Evolution in Japan as a Model for Comparative International Studies of Weedy Rice. Jun Ushiki¹, Maiko Akasaka¹, Hiroaki Watanabe¹, Duncan Vaughan²; ¹National Agricultural Research Center, Tsukuba, Ibaraki, Japan; ²National Institute of Agricultural Sciences, Tsukuba, Ibaraki, Japan

14:40

539. Genetics of Weedy Rice Traits: Seed Dormancy and Red Pericarp Color. Xing-You Gu¹, Jie-Qiong Lou¹, Michael Foley²; ¹South Dakota State University, Brookings, SD, United States of America; ²USDA-ARS, Fargo, ND, United States of America

15:10

540. Hybridization and Introgression between Cultivated and Weedy Rices: its Environmental Consequences. Bao-Rong Lu¹; ¹School of Life Sciences, Fudan University, Shanghai, Shanghai, China (Peoples Republic of)

15:30

BREAK

16:00

541. Evolution of Herbicide Resistance in U.S.A. Weedy Rice: A Confluence of Genetic, Ecological, Agronomic and Economic Forces. Nilda Burgos¹, Vinod Shivrain¹, David

Gealy², Robert Scott¹, Yong Kuk³, Marites Sales¹, Kenneth Smith¹; ¹University of Arkansas, Fayetteville, Arkansas, United States of America; ²USDA-ARS, Dale Bumpers National Rice Research Center, Stuttgart, Arkansas, United States of America; ³Suncheon National University, Suncheon, Jeonnam, South Korea

16:15

542. Innovative Approaches to Manage Weedy Rice: Prospects and Speculations. Jonathan Gressel¹; ¹Assif Strategies Ltd., Yakum, Israel

16:35 - 17:10

Discussion of submitted posters

17:10 - 17:30

Open discussion – the need of a weedy rice initiative

Reception

Location: Bayshore Ballroom Foyer

18:00 - 19:30

MONDAY, 23 June

Opening Ceremony

Location: Salon ABC

8:30 - 9:15

Presiding: Bernal Valverde, President, IWSS, IDEA Tropical, Alajuela, Costa Rica

POSTER SESSION I

Location: Salon DEF

9:30 - 11:00

Organizer: Robert Blackshaw, Local Arrangements Chair, Agriculture & Agri-Foods Canada, Lethbridge, AB, Canada

Section 2. Integrated Weed Management

1. Integrated Weed Management (IWM) in Unpuddled Direct Seeded Rice (DSR). Pijush Mukherjee¹, Swapan Maity¹; ¹Uttar Banga Krishi Viswavidyalaya, Cooch Behar, West Bengal, India

2. Studies on Ecological Control of Weeds in the Orchard of Yunnan. Yiqing Guo¹, Guojing Zhao¹, Xiangdong Li¹; ¹Yunnan Academy of Agricultural Sciences, Kunming, Yunnan Province, China (Peoples Republic of)

3. Fecundity and Management of Annual Ryegrass (*Lolium rigidum* Gaud) in Wide Row Lupin (*Lupinus consetinii* Guss) Systems within Western Australian Wheatbelt. Abul Ha-

shem¹, Alex Douglas¹, Shahab Pathan¹; ¹Department of Agriculture and Food WA, Northam, WA, Australia

4. Response of More and Less Competitive Wheat Cultivars to Wild Oat Competition when Plant Density is Increased and Herbicide Rate is Reduced. Mohammad Armin¹, Eskandar Zand², Mohamamad Ali Baghestani²; ¹Islamic Azad University, Sabzevar, Razavi Khorasan, Iran; ²Plant, Pest and Disease Institute (weed branch), Tehran, Iran

5. Studies on Integration of Chemical and Manual Weed Control. Inayat Awan¹, Mohammad Khan¹, Gul Hassan², Nawaz Ahmad³; ¹Faculty of Agriculture, Gomal University, Dera Ismail Khan, North West Frontier Province (NWFP), Pakistan; ²NWFP Agricultural University Peshawar, Peshawar, North West Frontier Province (NWFP), Pakistan; ³Ramzan Sugar Mills, Chinioat, Punjab, Pakistan

6. Crop Rotation Effects on *Cyperus rotundus* and *C. esculentus* Population Dynamics in the Low Desert Vegetable Production. Milton McGiffen¹, Guangyao Wang¹; ¹University of California, Riverside, CA, United States of America

7. Determination of the Best Integrated Weed Management System in Maize (*Zea mays*). Mansour Ghorbanpour¹, Iraj Nosratti¹, Mansour Ghorbanpour¹; ¹University of Tehran, Karaj, Tehran, Iran

8. Characteristics and Integrated Management of *Spirogyra communis* in Rice Field. Fuhua Sun¹, Changshu Sun¹, Wei Shi²; ¹Institute of Binhai Rice Research, Hebei Academy of Agricultural and Forestry Sciences, Tangshan, Hebei Province, China (Peoples Republic of); ²Institute of Plant Protection, Chinese Academy of Agricultural Sciences, Beijing, China (Peoples Republic of)

9. A Bioherbicide System for Integrated Management of Torpedograss in Lake Okeechobee, Florida, USA: Summary of Three Years of Field Research. S Chandramohan¹, Raghavan Charudattan¹, James Devalerio¹, Charles Hanlon²; ¹University of Florida, Belle Glade, FL, United States of America; ²South Florida Water Management District, West Palm Beach, FL, United States of America

10. Evaluation of the Effects of Competition of Different Canola (*Brassica napus* L.) Cultivars on the Growth Parameters of Wild Mustard (*Sinapis arvensis* L.). Yahia Abtali¹, Mohamad Ali Baghestani Meibodi², Esmaeil Yasari³, Mehdi Abtali⁴; ¹Agriculture and Natural Resources Researches Center of Mazandaran, Iran, Sari, Mazandaran, Iran; ²Plant Protection Institute, Tehran, Iran; ³Payam Nour University, Mazandaran, Iran, Sari, Mazandaran, Iran; ⁴Agricultural Products Insurance Office of Mazandaran, Sari, Mazandaran, Iran

11. **Influence of Pendimethalin-Based Weed Management Systems on Weed Flora Composition and Diversity in Indian Spinach (*Basella alba* L.) and Okra (*Abelmoschus esculentus* (L.) Moench) in a Humid Tropical Environment.** Muphtha Smith¹, Kudrat Oloyede², Sunday Dabo¹; ¹The Federal University of Technology, Akure, Ondo, Nigeria; ²University of Ibadan, Ibadan, Oyo, Nigeria
12. **Challenges for Integrated *Cyperus rotundus* and *C. esculentus* Management in Irrigated Systems Infested with *Meloidogyne incognita*.** Jill Schroeder¹, Stephen Thomas¹, Leigh Murray², Cheryl Fiore¹, Jacki Trojan¹, James Libbin¹; ¹New Mexico State University, Las Cruces, New Mexico, United States of America; ²Kansas State University, Manhattan, Kansas, United States of America
13. **Quackgrass (*Elytrigia repens*) Response to a Hairy Vetch (*Vicia villosa*) Cover Crop in Vegetable Cropping Systems.** Mathieu Ngouajio¹, Erin Taylor¹, Guangyao Wang²; ¹Michigan State University, East Lansing, Michigan, United States of America; ²University of California Riverside, Riverside, California, United States of America
14. **Integrated Weed Management: A Key for Herbicide Life Management.** Martin Hess¹, Joachim Kaiser¹, Hansjoerg Kraehmer¹, Hubert Menne¹; ¹Bayer CropScience AG, Frankfurt, Hessa, Germany
15. **Reproduction and Integrated Management of Canada Thistle (*Cirsium arvense* (L.) Scop.).** Joanna Sciegienka¹, Fabian Menalled¹; ¹Montana State University, Bozeman, MT, United States of America
16. **Effect of *Avena ludoviciana* on Physiological Indices of More and Less Competitive Wheat Cultivars at Different Plant Densities.** Mohammad Armin¹, Eskandar Zand², Mohamamad Ali Baghestani²; ¹Isalmic Azad University, Sabzevar, Razavi Khorasan, Iran; ²Plant, Pest and Disease Institute (weed branch)., Tehran, Iran
17. **Distribution and Management of Weeds in Peanut (*Arachis hypogaea* L.) in Ghana, West Africa.** David Jordan¹, Grace Bolfrey-Arku, Israel Dzomeku², Mike Owusu-Akyaw, Mumuni Abudulai³, Rick Brandenburg¹; ¹North Carolina State University, Raleigh, NC, United States of America; ²University for Developmental Studies, Tamale, Ghana; ³CSIR-Savanna Agricultural Research Institute, Tamale, Ghana
18. **Corn (*Zea mays*) and Soybean (*Glycine max*) Strip Crops and Weed Population Dynamics.** Darío Verdelli¹, Clarence Swanton², Eduardo Leguizamón¹; ¹National University of Rosario / CONICET, Rosario, Santa Fe, Argentina; ²University of Guelph, Guelph, Ontario, Canada

19. **Effect of Density and Planting Pattern on Competition Ability of *Zea mays* L. Against *Amaranthus retroflexus* L.** Majid Aghaalikhani¹, Alireza Yadavi², Amir Ghalavand¹, Eskandar Zand³; ¹Tarbiat Modares University, Tehran, Tehran Province, Iran; ²Yasuj University, Yasuj, Kohgiluyeh va Boyer Ahmad, Iran; ³Plant Pest and Disease Research Institute, Tehran, Tehran Province, Iran
20. **Pesticide Interactions Complicate Implementation of Integrated Pest Management Strategies in *Arachis hypogaea* L. (Peanut).** Bridget Lassiter¹, David Jordan¹, Rick Brandenburg¹, Barbara Shew¹, Sarah Lancaster², Bridget Lassiter¹; ¹NCSU, Raleigh, NC, United States of America; ²TAMU, College Station, TX, United States of America
21. **The Relative Competition of Canola Versus Small Grain Cereals.** Kenneth Harker¹, John O'Donovan¹, George Clayton¹, Robert Blackshaw¹, Stewart Brandt¹, Eric Johnson¹, Rick Holm², Ken Sapsford²; ¹Agriculture & Agri-Food Canada, Lacombe, Alberta, Canada; ²University of Saskatchewan, Saskatoon, Saskatchewan, Canada
22. **Weed Control in Corn Fields with Reduction Eradicate (EPTC) Herbicides in Integrated with Tillage Method.** Majid Amini Dehghi¹, Abolfazle Baghbani¹, Mitra Gotbi¹, Reza Tabatabaie¹; ¹University of Shahed, Tehran, Department of Agronomy, Shahed University, Tehran, Iran
23. **Herbicide Resistant Weeds: Do Economic Thresholds Still Have a Role in Weed Management?** Bridget Lassiter¹, Gail Wilkerson¹, Bridget Lassiter¹, David Jordan¹, Lori Wiles²; ¹NCSU, Raleigh, NC, United States of America; ²USDA-ARS, Fort Collins, CO, United States of America
24. **Evaluation of Wheat Increasing Density Effect on Wheat Yield and Seed Production of Rye.** Gholam Abbas Akbari¹, Massoud Mokhtari¹, Zainab Javanmardi¹; ¹Abourayhan College, University of Tehran, Tehran, Iran
25. **Effect of Wheat Cultivars and Seed Rate on Weed and Yield of Wheat.** Khan Marwat¹; ¹NWFP Agricultural University, Peshawar, Peshawar, NWFP, Pakistan
26. **Weed Science Research on Integration for Improving Weed Management.** Ze Pu Zhang¹; ¹Chinese Academy of Agricultural Sciences, Beijing, China (Peoples Republic of)
27. **Investigating of Competition Ability of More and Less Competitive Cultivars of Wheat Against Garden Rocket Weed (*Eruca sativa* L.) at Different Densities of Wheat and Garden Rocket.** Mohammad Ali Baghestani¹, Manoochehr Jamnejad¹, Eskandar Zand¹; ¹Iranian Plant Protection Research Institute, Tehran, Iran

28. **Integrated Weed Management in Corn.** Mohammad Ali Baghestani¹, Arash Roozbehani¹, Hamid Rahimian², Ghorban NoorMohammadi³, Eskandar Zand¹; ¹Iranian Plant Protection Research Institute, Tehran, Iran; ²Tehran University, Tehran, Iran; ³Azad University, Tehran, Iran
29. **Preliminary Evaluation of Weed Management Method x Crop Variety Interaction on Weed Control and Okra Yield.** Muphtha Smith¹, Kudirat Oloyede², Asimiyu Adedeji; ¹The Federal University of Technology, Akure, Ondo, Nigeria; ²University of Ibadan, Ibadan, Oyo, Nigeria
30. **Comparison of Integrated Weed Management Strategies in Silage Maize.** Bo Melander¹, Paolo Barberi, Nicolas Munier-Jolain²; ¹Faculty of Agricultural Sciences / Aarhus University, Denmark; ²INRA, Dijon, France
31. **Effects of Nitrogen Fertilizer Management and Weed Control Strategies on Yield and Quality of Sugar Beet.** Afshan Karimi¹; ¹Shahrood University of Technology, Shiraz, Fars, Iran
32. **Comparing the Competitive Ability of Hybrid and Open-Pollinated Rapeseed (*Brassica napus* L.) Cultivars with Wild Mustard (*Sinapis arvensis* L.).** Keyvan Hosseinzadeh¹, Hamid Irannejad¹, Eskandar Zand², Assadollah Hejazi¹, Gholam Ali Akbari¹; ¹University of Tehran, Abooreihan Campus, Tehran, Iran; ²Plant Protection Research Institute, Tehran, Iran
33. **Effect of Integrated Weed Management on Weed Density and Biomass on Tomato Yield.** Reza Ghorbani¹, E. Kazerooni¹, Alireza Koocheki¹, Mehdi Nassiri¹; ¹Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran
34. **Weed Management in Horse Pastures After Renovation.** William Witt¹, Mitchell Blair¹, Thatsaka Saphangthong¹, Daisy Fryman¹; ¹University of Kentucky, Lexington, KY, United States of America
35. **Assessment of Allelopathic Capability of Iranian Barley Cultivars and their Variations over 64 Years Selection.** Mostafa Oveisi¹, Hamid Rahimian Mashhadi¹, Hassan Alizadeh¹, Mohamad Baghestani²; ¹The University of Tehran, Karadj, Tehran, Iran; ²Crop Protection Institute, Tehran, Iran
36. **The Evaluation of N Quantity, Time of N Application, and Herbicide Usage on Spatial Distribution of Lambsquarters Seed Banks of Corn Field.** Narges Poortoosi¹, Mohammad Hasan Rashed Mohasel¹, Elmira Mohammadvand¹, Mahdi Nasiri Mahalati¹; ¹Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran

37. **Evaluation of Amount and Time of Nitrogen Application, and Herbicide Usage on Spatial Distribution of Prostrate Pigweed (*Amaranthus blitoides*).** Narges Poortoosi¹, Elmira Mohammad Vand¹, Mohammad Hassan Rashed Mohassel¹; ¹Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran

Section 3. Modeling Problems and Solutions

38. **Validation of a Model Relating Yield Loss to Weed Time of Emergence and Removal in Late Winter Sown Maize.** Roberta Masin¹, Antonio Berti¹, Stefan Otto², Giuseppe Zanin¹; ¹Padova University, Padova, Italy; ²National Research Council (CNR), Institute of Agro-environmental and Forest Biology, Padova, Italy

39. **A Simulation Study of Competitive Ability of *Cicarietinum* Cultivars with *Sonchus oleraceus*.** Zahra Cici¹; ¹University of Guelph, Guelph, Ontario, Canada

40. **Quantifying the Effectiveness of Cultural Weed Management.** Lammert Bastiaans¹; ¹Wageningen University, Wageningen, Netherlands

41. **Spatial Modeling of Wind Dispersal of Weed Seeds.** Jihuai Wang¹, J Wang², Svend Christensen³, Preben Hansen⁴; ¹Guizhou Academy of Science, Guiyang, Guizhou Province, China (Peoples Republic of); ²Guangdong Ocean University, Zhangjiang, Guangdong, China (Peoples Republic of); ³University of Southern, Niels Bohr, Odense, Denmark; ⁴Crop Protection Research Center, Flakkebjerg, Slagelse, Denmark

42. **Directionality and Dispersion Analysis on Branching Patterns in *Melastoma malabathricum* L.** Mahdi Faravani¹, Baki Bakar¹; ¹Malaya University, Kuala Lumpur, WP, Malaysia

43. **Using Stochastic Efficiency Analysis to Factor Distribution of Weed Escapes into Weed Management Decisions.** L Wiles¹, Eihab Fathelrahman¹, Gail Wilkerson², James Ascough II¹; ¹USDA-ARS-NPA, Fort Collins, CO, United States of America; ²North Carolina State University, Raleigh, NC, United States of America

44. **Effect of Common Cocklebur (*Xanthium strumarium* L.) on Yield of Sesame (*Sesamum indicum* L.).** Ahmet Uludag¹, Bekir Bukun², Abdulbaki Bilgic²; ¹Ministry of Agriculture and Rural Affairs, Alsancak, Izmir, Turkey; ²College of Agriculture, Harran University, Sanliurfa, Turkey

45. **Yield Losses and Economic Thresholds from Rice-Weed Competition on Transplanted Rice.** Jong Gun Won¹; ¹Gyeongbuk ATA, Daegu, Gyeongbuk, Korea, South

46. **Branching Patterns of *Melastoma malabathricum* L. as Influenced by Density Regimes.** Mahdi Faravani¹, Baki Bakar¹; ¹Malaya University, Kuala Lumpur, WP, Malaysia

Section 6 and 16. Regulatory and Education

47. **Social and Economic Aspects Shaping the Adoption of Bioherbicides in Canada: A Research Perspective.** Susan Boyetchko¹, Karen Bailey¹; ¹Agriculture and Agri-Food Canada, Saskatoon, Saskatchewan, Canada

48. **The Problems of Federal Capital Territory Rural Farmers in Nigeria.** Mr Michael Adedotun¹; ¹Federal Capital Territory Administration, Federal Capital Territory, Abuja, Nigeria

49. **Building Collaborative Community Action to Manage Established Weeds and Prevent the Introduction of New Weeds.** Helen Anderson¹; ¹Dept Primary Industries, Hamilton, Victoria, Australia

50. **Herbicide Resistance is Not a Concern for Farmers of a Developing Country.** Hani Ghosheh¹; ¹Jordan University of Science and Technology, Irbid, Irbid, Jordan

51. **The Value of Herbicides in US Crop Production.** Leonard Gianessi¹; ¹CropLife Foundation, Washington, DC, United States of America

52. **Training in Identification of Weed Seeds in Mexico.** José Torres¹; ¹SAGARPA-SENASICA, México, Distrito Federal, Mexico

53. **Weed Management in Guyana Vegetable Production: An Assessment and Preliminary Recommendations.** Rakesh Chandran¹; ¹West Virginia University, Morgantown, West Virginia, United States of America

54. **Potential (Trans) Gene Movement from Flax (*Linum usitatissimum* L.) to Weedy and Wild Relatives in North America.** Amit Jhala¹, Linda Hall¹, Jocelyn Hall¹; ¹University of Alberta, Edmonton, Alberta, Canada

55. **Farm-Scale Economic Evaluation of Glyphosate-Resistant Sugarbeet in Wyoming, USA.** Andrew Kniss¹; ¹University of Wyoming, Laramie, Wyoming, United States of America

56. **South African Way of Conducting Weed Risk Assessment.** Ntakadzeni Jaqualine Tshidada¹; ¹Department of Agriculture, Pretoria, Gauteng, South Africa

Section 7. Herbicide Resistance in Crops and Weeds

57. **Rapid Analysis of Target-Site Resistance in Blackgrass Using Pyrosequencing® Technology.** Jean Wagner¹, Bernd Laber¹, Hubert Menne¹, Hansjörg Kraehmer¹; ¹Bayer CropScience AG, Frankfurt, Hessen, Germany
58. **Glyphosate Resistance in *Lolium multiflorum* of California: Distribution, Expression, and Molecular Evidence for an Altered Target Enzyme.** Marie Jasieniuk¹, Riaz Ahmad¹, Anna Sherwood¹, Jeffrey Firestone¹, Alejandro Perez-Jones², W. Thomas Lanini¹, Carol Mallory-Smith², Zachary Stednick¹; ¹University of California, Davis, California, United States of America; ²Oregon State University, Corvallis, Oregon, United States of America
59. **Herbicide Resistance Management Recommendations Based on Detailed analysis of Monitoring and Innovative Molecular Technologies in Blackgrass.** Hubert Menne¹, Jean Wagner², Hansjörg Kraehmer¹; ¹Bayer CropScience AG, Frankfurt/Main, Hessen, Germany; ²University of Hohenheim, Stuttgart, Baden-Württemberg, Germany
60. **Resistance to ACCase-Inhibiting Herbicides in Sprangle-top (*Leptochloa chinensis*) and Barnyardgrass (*Echinochloa crusgalli*) in Thailand.** Chanya Maneechote¹, Pruchaya Ekatin¹, Sansanee Jamjod²; ¹Ministry of Agriculture and Co-operatives, Chatuchak, Bangkok, Thailand; ²Chiang Mai University, Moeng, Chiang Mai, Thailand
61. **Engineering Soybean Resistance to the Dicamba Herbicide.** Paul Feng¹, Marianne Malven¹, Sio Wai Hoi¹, Ronald Brinker¹; ¹Monsanto Co, Chesterfield, MO, United States of America
62. **Low Glyphosate Rates can Rapidly Lead to Evolution of Glyphosate Resistance.** Roberto Busi¹, Stephen Powles¹; ¹WAHRI - Western Australian Herbicide Resistance Initiative, Perth, Western Australia, Australia
63. **Development of Imidazolinone-Tolerant Rice Variety in Malaysia.** Azmi M.¹, Azlan Shaari², Lim F. W.³, Hadzim K.², George V.⁴; ¹Malaysia Agriculture Research and Development Institute (MARDI), Kepala Batas, Penang, Malaysia; ²MARDI, Kepala Batas, Penang, Malaysia; ³BASF (Malaysia), Shah Alam, Selangor, Malaysia; ⁴BASF (Malaysia) Sdn. Bhd., Shah Alam, Selangor, Malaysia
64. **A Review on Grass Weed Resistance to ACCase Herbicides in Wheat in Iran: Current Situation and Future Challenges.** Eskandar Zand¹; ¹Plant Protection Institute, Tehran, Iran

65. **Frequency and Distribution of Herbicide Resistance in *Avena* spp Populations from the Western Australian (WA) Wheatbelt.** Mechelle Owen¹, Stephen Powles¹; ¹University of Western Australia, Perth, Western Australia, Australia
66. **Utilizing R Software Package for Dose Response Studies: The Concept and Data Analysis.** Stevan Knezevic¹,², Christian Ritz²; ¹Univ of Nebraska, Concord, NE, United States of America; ²Royal Veterinary and Agricultural University (KVL), Copenhagen,, Denmark, Denmark
67. **Glyphosate Resistance: Is Selection on this New Adaptive Trait Altering the Genetic Structure of *Lolium* (Poaceae) Populations within California?** Anna Sherwood¹, Marie Jasieniuk¹; ¹University of California Davis, Davis, CA, United States of America
68. **Confirmation and Control of Glyphosate-Resistant Giant Ragweed.** Jason Norsworthy¹, Robert Scott¹, Lawrence Oliver¹; ¹University of Arkansas, Fayetteville, AR, United States of America
69. **Proactive Detection of ALS-Based Herbicide Resistance in Weeds.** Christophe Délye¹, Karelle Boucansaud¹, Fanny Pernin¹, Cécile Petit¹; ¹INRA, Dijon, France
70. **Synergy of Paraquat with Glufosinate Ammonium and Terbutylazine in the Control of Paraquat-Resistant Ryegrass (*Lolium* spp.).** Frederik Eksteen¹, Pieter Pieterse², Andrew Cairns²; ¹Syngenta, Moorreesburg, Western Cape, South Africa; ²University of Stellenbosch, Stellenbosch, Western Cape, South Africa
71. **Glyphosate Tolerance Mechanism in Italian Ryegrass from Mississippi.** Vijay Nandula¹, Krishna Reddy, Daniel Poston, Agnes Rimando, Stephen Duke¹; ¹Mississippi State University, Stoneville, Mississippi, United States of America
72. **Resistance to Hormone Mimic Herbicides and Acetohydroxyacid Synthase-Inhibiting Herbicides in *Sisymbrium orientale*.** Chris Preston¹, Mohammed Mohamed Aman¹, Peter Boutsalis¹; ¹University of Adelaide, Adelaide, South Australia, Australia
73. **Respective Prevalences of Resistance to Three ACCase-Inhibiting Herbicides in France in *Alopecurus muosuroides*.** Cecile Petit¹, Christophe Délye¹; ¹Inra Dijon, Dijon, France
74. **Evaluating the Double Knockdown Technique: Sequence, Application Interval, and Annual Ryegrass (*Lolium rigidum* Gaud.) Growth Stage.** Abul Hashem¹, Catherine Borger¹; ¹Department of Agriculture and Food WA, Northam, WA, Australia

75. **Silky Bentgrass (*Apera spica-venti* L. Beauv.) Biotypes Resistance to ALS Herbicides - Control under Field Condition.** Roman Kierzek¹, Kazimierz Adamczewski¹; ¹Plant Protection Institute, Poznan, Wielkopolska, Poland
76. **Genetic Basis and Implications of Cross-Sensitivity in *Zea mays* L. (Sweet Corn) to Multiple Herbicides Metabolized by Cytochrome P-450 Enzymes.** Martin Williams II¹, Jerald Pataky², Dean Riechers²; ¹USDA-ARS, Urbana, IL, United States of America; ²University of Illinois, Urbana, IL, United States of America
77. **Some Weeds Resistance to Paraquat in South China (Guangdong) Plantations.** Yong Chen¹; ¹South China Agricultural University, Guangzhou, Guangdong, China (Peoples Republic of)
78. **Resistance of Silky Bent-Grass (*Apera spica-venti* (L.) Beauv.) to Sulfonylureas has Emerged in Central Europe.** Katerina Novakova¹, Josef Soukup¹, Pavel Hamouz¹, Jean Wagner², Miroslav Jursik¹, Veronika Venclova¹, Jaroslav Salava¹; ¹Czech University of Life Sciences in Prague, Prague, Czech Republic; ²University of, Stuttgart, Germany
79. **Reduced Target-Site Sensitivity and Mutations in Resistant Biotypes of Ryegrass to ACCase-Inhibitors Herbicides.** Jorge Díaz¹, Rafael Galdames¹, Juan Pedro Ruiz-Santaella², Nelson Espinoza¹, Antonio Franco², Rafael De Prado²; ¹INIA, Temuco, Araucania, Chile; ²Universidad de Córdoba, Córdoba, Spain
80. **Relative Competitive Ability of Dicamba-Resistant and Susceptible Biotypes of *Chenopodium album*.** Anis Rahman¹, Trevor James¹; ¹AgResearch, Hamilton, Waikato, New Zealand
81. **Simulating the Present and Future State of Glyphosate Resistance in Weeds in Contrasting Environments and Cropping Systems.** Art Diggle¹, Fiona Evans¹, John O'Donovan², Andrew Storrie³; ¹Department of Agriculture and Food, Western Australia, Perth, Australia; ²Agriculture and Agri-Food Canada, Lacombe, Alberta, Canada; ³NSW Dept of Primary Industries, Tamworth, New South Wales, Australia
82. **Are Portuguese *Echinochloa* spp. Populations still Susceptible to Propanil?** Isabel calha¹, Fátima Rocha¹; ¹Instituto Nacional dos Recursos Biológicos I.P.(INRB), Oeiras, Portugal
83. **Herbicide Resistance Detection on *Cynosurus echinatus* Biotypes in Chile.** Nelson Espinoza¹, Jorge Díaz¹, Rafael Galdames¹, Rafael De Prado²; ¹INIA, Temuco, Región de

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84. **Management of Volunteer *Glycine max* (Soybean) Plants Resistant to Glyphosate.** Fernando Adegas¹; ¹EMBRAPA SOJA, Londrina, Paraná, Brazil

85. **Chemical Control of *Conyza bonariensis* (Hairy Fleabane) Resistant to Glyphosate with Herbicides Sprayed in Crop Management Operations Performed at Pre-Sowing of *Glycine max* (Soybean).** Fernando Adegas¹; ¹EMBRAPA SOJA, Londrina, Paraná, Brazil

86. **Nucleotide Substitutions at the Acetyl Coenzyme A Carboxylase Gene Associated to Resistance Herbicide in Chilean Biotypes of *Lolium multiflorum* and *L. rigidum*.** Rafael Galdames¹, Jorge Díaz¹, Juan Pedro Ruiz-Santaela², Nelson Espinoza¹, Antonio Franco², Rafael De Prado²; ¹INIA-Carillanca, Temuco, Araucania, Chile; ²Universidad de Córdoba, Córdoba, Spain

87. **Metamitron-Resistant *Chenopodium album* L. from Sugar Beet: Cross-Resistance Profile.** Tania De Marez¹, Els Mechant¹, Olivier Hermann², Robert Bulcke¹; ¹Ghent University, Gent, O-VI, Belgium; ²KBIVB, Tienen, Belgium

88. **Efficacy of Herbicides in Winter Wheat to Control Resistance *Centaurea cyanus* in South-West Poland.** Henryka Rola¹, Katarzyna Marczevska¹; ¹Institute of Soil Science and Plant Cultivation, Wroclaw, Dolnolskie, Poland

89. **Clomazone Resistance in Late Watergrass (*Echinochloa phyllopogon*): Role of Herbicide Metabolism.** Hagai Yasuor¹, Albert Fischer¹; ¹University of California, Davis, Davis, California, United States of America

90. **Can Clearfield Wheat Control *Lolium* Spp with Multiple Resistance?** Hugo Enrique Cruz-Hipólito¹, Antonia Rojano¹, Nelson Espinoza², Maria Dolores Osuna Ruiz³, Jorge Diaz², Rafael De Prado¹; ¹Universidad de Córdoba, Córdoba, Spain; ²INIA. Carillanca., Temuco, Chile; ³Finca La Orden, Badajoz, Spain

91. **Response of Somaclones of Soybean to Imazaquin Following In vitro Selection for Imazaquin Resistance.** Mohammad Reza Tareghyan¹; ¹University of Birjand, Birjand, Southern Korasan, Iran

92. **An Alanine-to-Valine Mutation in Triazinone-Resistant *Chenopodium album* L..** Els Mechant¹, Tania De Marez¹, Olivier Hermann², Robert Bulcke¹; ¹Ghent University, Gent, Oost-Vlaanderen, Belgium; ²KBIVB-IRBAB, Tienen, Vlaams-Brabant, Belgium

93. **Glyphosate-Resistant Weeds in Europe: A Review.** Hugo Enrique Cruz-Hipólito¹, Christian Gauvrit², José Urbano³, Ribas Vidal⁴, Rafael De Prado¹; ¹Universidad de Córdoba, Córdoba, Spain; ²INRA, Dijon, France; ³Seville University, Sevilla, Spain; ⁴Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil
94. **Modeling Analysis of Herbicide Dose-Response Relationships: A New Proposal.** Daniela Neves¹, Durval Dourado-Neto¹, Saul Carvalho¹, Bianca Martins¹, Pedro Christoffoleti¹; ¹University of Sao Paulo, Piracicaba, Sao Paulo, Brazil
95. **Resistance Relationship of Glyphosate Rate and *Lolium multiflorum* Growth States: A 3D Model View.** Daniela Neves¹, Durval Dourado-Neto¹, Saul Carvalho¹, Bianca Martins¹, Rafael De Prado², Pedro Christoffoleti¹; ¹University of Sao Paulo, Piracicaba, Sao Paulo, Brazil; ²University of Cordoba, Cordoba, Andaluzia, Spain
96. **Effects of Landscape and Crop Management on Herbicide Resistance Evolution in *Echinochloa* spp. in California Rice Systems.** Claudia Marchesi¹, Chris Greer¹, James Hill¹, Marie Jasieniuk¹, Mick Canevary¹, Randall Mutters¹, Richard Plant¹, Albert Fischer¹; ¹UC Davis, Davis, CA, United States of America
97. **A Rapid Assay for Detection of ACCase-Inhibitor Resistance in Grass Weeds: *Avena sterilis*, *Lolium* spp. and *Phalaris paradoxa*.** Alberto Collavo¹, Anna Frezza¹, Maurizio Sattin¹; ¹National Council of Research, Legnaro, Pafova, Italy
98. **Characterization of the Biology and ALS-resistance in *Chrysanthemum coronarium* L. and *C. segetum* L.** Inbar Greenspoon¹, Moshe Sibony¹, Lydia Quansah¹, Baruch Rubin¹; ¹Faculty of Agriculture, The Hebrew University of Jerusalem, Israel, Rehovot, Israel
99. **Control of Herbicide Resistant *Limnocharis flava* (L.) Buchenau Using Herbicides Mixtures.** Abdul Juraimi¹, Ismail Sahid², Azmi Man³, Erwan Shari⁴; ¹University of Putra Malaysia, Serdang, Selangor, Malaysia; ²Universiti Kebangsaan Malaysia, Selangor, Malaysia; ³MARDI Seberang Prai, Pulau Pinang, Malaysia; ⁴University Kebangsaan Malaysia, Selangor, Malaysia
100. **Soil-Less Bioassays for Early Screening Resistance to Imazapyr in Sunflower (*Helianthus annuus* L.).** Tatiana Vega¹, Gabriela Breccia¹, Graciela Nestares¹, Maria Mayor², Roxana Zorzoli³, Liliana Picardi³; ¹Fac. Cs. Agrarias - Universidad Nacional de Rosario, Rosario, Santa Fe, Argentina; ²Iowa State University, Ames, Iowa,

United States of America; ³Universidad Nacional de Rosario, Rosario, Santa Fe, Argentina

101. Are Non Target-Site Herbicide Resistance and Environmental Stress Tolerance Related? Albert Fischer¹, Danijela Pavlovic², Hagai Yasuor¹, Aldo Merotto, Jr³, Sava Vrbnicanin⁴, Dragana Bozic⁴; ¹University of California-Davis, Davis, California, United States of America; ²Institute for Plant Protection and Environment, Belgrade, Yugoslavia; ³Universidade Federal Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; ⁴University of Belgrade, Belgrade, Yugoslavia

102. Evaluation the Efficacy of some Different Mode of Action Herbicides for Control the Susceptible and Resistant Canarygrass (*Phalaris* spp.) Biotypes to Clodinafop-Propargyl. Javid Gherekhloo¹, Eskandar Zand², Rafael De Prado³; ¹Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran; ²Plant Protection Research Institute, Tehran, Iran; ³Universidad De Cordoba, Cordoba, Spain

103. Target Site Mutations in the Acetolactate Synthase (ALS) Gene and Single Nucleotide Polymorphism (SNP) Genotyping in ALS Inhibitor-Resistant *Kochia scoparia*. Suzanne Warwick¹, Renlin Xu¹, Connie Sauder¹, Hugh Beckie¹; ¹Agriculture and Agri-Food Canada (AAFC), Ottawa, Ontario, Canada

104. Differential Tolerance to Diclofop-Methyl in Three *Lolium* Species from Chile. Hugo Enrique Cruz-Hipólito¹, Daniel Gil¹, Ribas Vidal², Nelson Espinoza³, Rafael De Prado¹; ¹Universidad de Córdoba, Córdoba, Spain; ²UFGRS, Porto Alegre, Porto Alegre, Brazil; ³INIA Carillanca, Temuco, Chile

105. Evaluation of Resistance to Diclofop-Methyl, Clodinafop Propargyl Herbicides in *Phalaris minor* Populations from Iran. Javid Gherekhloo¹, Mohammad Rashed Mohassel¹, Mehdi Nassiri Mahallati¹, Eskandar Zand², Ali Ghanbari¹, Rafael De Prado³, Maria Osuna Ruiz⁴; ¹Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran; ²Plant Protection Research Institute, Tehran, Iran; ³Universidad de Cordoba, Cordoba, Spain; ⁴Finca La Orden, Badajoz, Spain

106. ALS Resistance in Polyploid Beggarticks (*Bidens subalternans*). Fabiane Lamego¹, Nilda Burgos², Ribas Vidal¹, Marites Sales², Vinod Shivrain²; ¹Federal University of Rio Grande do Sul - UFRGS, Porto Alegre, RS, Brazil; ²University of Arkansas, Fayetteville, AR, United States of America

107. Simple to Complex: Modelling Pollen-Mediated Gene Flow. Hugh Beckie¹, Linda Hall²; ¹Agriculture and Agri-

Food Canada, Saskatoon, SK, Canada; ²University of Alberta/Alberta Agriculture & Food, Edmonton, AB, Canada

108. Response of Imidazolinone-Resistant Winter Wheat Cultivars to Imazamox Rate and Application Timing. Traci Rauch¹, Donn Thill¹, Arron Carter², Robert Zemetra¹, Jennifer Hansen¹; ¹University of Idaho, Moscow, Idaho, United States of America; ²Washington State University, Pullman, Washington, United States of America

109. Mechanism of Sulfonylurea Herbicide Resistance in Broadleaf Weed, *Monochoria korsakowii*. Park Tae Seon¹, Kang Chung Kil¹, So Jae Sung¹, Park Jae Eup¹; ¹Sedundong, Kwonseon-gu, Suwon, Republic of Korea, Suwon, Kyounggi, Korea, South

110. Has Herbicide Resistance in *Lolium rigidum* Led to Higher Weed Densities in Australian Cropping Fields? Rick Llewellyn¹, Francis D'Emden², Mechelle Owen³, Stephen Powles³; ¹CSIRO Sustainable Ecosystems, Glen Osmond, SA, Australia; ²Department of Agriculture and Food Western Australia, Esperance, WA, Australia; ³University of Western Australia, Crawley, WA, Australia

111. An Overview of Resistant Weeds to Sulfonylurea Herbicides in Korea. Park Tae Seon¹, Park Jae Eup¹, Oh Se Mun¹; ¹Sedundong, Kwonseon-gu, Suwon, Republic of Korea, Suwon, Kyounggi, Korea, South

112. ACCase Mutations Confer ACCase Resistance in Two *Phalaris minor* Populations from Iran. Javid Gherekhloo¹, Mohammad Rashed Mohassel¹, Mehdi Nassiri Mahallati¹, Eskandar Zand², Ali Ghanbari¹, Maria Osuna Ruiz³, Juan Ruiz-Santalla⁴, Jean Wagner⁵, Rafael De Prado⁴; ¹Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran; ²Plant Protection Research Institute, Tehran, Iran; ³Finca La Orden, Badajoz, Spain; ⁴Universidad de Cordoba, Cordoba, Spain; ⁵University of Hohenheim, Hohenheim, Germany

113. Molecular Study of Resistance to Aryloxyphenoxypropionate Herbicides in Winter Wild Oat (*Avena ludoviciana* Durieu.) Populations from Iran. Javid Gherekhloo¹, Mehdi Rastgoo², Mohammad Rashed Mohassel¹, Mehdi Nassiri Mahallati¹, Eskandar Zand³, Rafael De Prado⁴; ¹Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran; ²Zanjan University, Zanjan, Iran; ³Plant Protection Research Institute, Tehran, Iran; ⁴Universidad de Cordoba, Cordoba, Spain

114. Herbicide Resistant Crops Versus Conventional Herbicide Cropping System in 2-Year and 3-Year Winter Wheat

Rotations. Joan Campbell¹, Donald Thill¹; ¹University of Idaho, Moscow, ID, United States of America

115. Glyphosate-Resistant Crops as a Tool for Integrated Weed Management. Baruch Rubin¹, Gil Tsuk¹, Hagai Yasuor¹, Moshe Sibony¹; ¹Faculty of Agriculture, Hebrew University of Jerusalem, Rehovot, Israel

116. New Highly Resistant Grasses in Specific Summer Cropping Systems and the Value of Sustainable Weed Management. Maurizio Sattin¹, Guido Pignata¹, Laura Scarabel¹; ¹CNR, Legnaro, Padova, Italy

117. Herbicide Resistance to Photosystem-II Inhibitors in *Lolium multiflorum* in Oregon: Cross-Resistance Patterns and Investigation of the Mechanism of Resistance. Alejandro Perez-Jones¹, Wilson Avila¹, Carol Mallory-Smith¹; ¹Oregon State University, Corvallis, OR, United States of America

118. High-Throughput SNP Genotyping to Identify Target Site-Based Glyphosate Resistance in *Lolium multiflorum*. Alejandro Perez-Jones¹, Wilson Avila¹, Carol Mallory-Smith¹; ¹Oregon State University, Corvallis, OR, United States of America

119. Herbicide Resistance Action Committee (HRAC) – Its Role in the Management of Weed Resistance. Les Glasgow¹, Harvey Glick², Michelle Starke², Marvin Schultz³; ¹Syngenta Crop Protection Inc, Greensboro, North Carolina, United States of America; ²Monsanto, St Louis, Missouri, United States of America; ³Dow AgroSciences, Indianapolis, Indiana, United States of America

120. Accumulation of Shikimate in Glyphosate-Tolerant and – Susceptible Maize and Soybean. Danijela Pavlovic¹, Charlie Reinhardt², Nicolette Taylor², Sava Vrbnicanin³, Albert Fischer⁴; ¹Institute for Plant Protection and Environment, Belgrade, Yugoslavia; ²University of Pretoria, Pretoria, South Africa; ³University of Belgrade, Belgrade, Yugoslavia; ⁴University of California-Davis, Davis, California, United States of America

121. Penoxsulam Faces Metabolic Resistance in California's Late Watergrass [*Echinochloa phyllopogon* (Stapf) Koss.]. Hagai Yasuor¹, Maria Osuna¹, Aida Ortiz², Albert Fischer¹; ¹University of California, Davis, Davis, California, United States of America; ²Universidad Central de Venezuela, Maracay, Venezuela

122. Field Evidence of Multiple Glyphosate Resistance Mechanisms in *Amaranthus palmeri*. Kenneth Smith¹, Jason Norsworthy¹, Robert Scott¹, Nilda Burgos¹; ¹University of Arkansas, Monticello, AR, United States of America

123. **Prickly Lettuce Resistance to 2,4-D.** Ian Burke¹, Dilpreet Singh¹, Joseph Yenish¹; ¹Washington State University, Pullman, WA, Canada

124. **Glyphosate Resistant Crops and Evolved Glyphosate Resistant Weeds – the Need for Stewardship.** Micheal Owen¹; ¹Iowa State University, Ames, IA, United States of America

125. **Characterizing Glyphosate-Resistant Weeds.** Robert Sammons¹, Stephen Schrader¹, Keith Kretzmer¹, Erin Hall¹, Elizabeth Ostrander¹, Bill Duncan¹; ¹Monsanto, St. Louis, Missouri, United States of America

Section 8. Biocontrol

126. **Strategies for Enhancing the Efficacy of *Microsphaeropsis amaranthi* as a Bioherbicide to Control Weedy *Amaranthus* spp.** Daljit Singh¹, Yasser Shabana², David Doll³, David Smith⁴, Loretta Ortiz-Ribbing⁴, Gordon Roskamp⁵, Steven Hallett¹; ¹Purdue University, West Lafayette, Indiana, United States of America; ²University of Florida, Gainesville, Florida, United States of America; ³University of California, Davis, California, United States of America; ⁴University of Illinois, Urbana-Champaign, Illinois, United States of America; ⁵Western Illinois University, Macomb, Illinois, United States of America

127. **A Biological Control Program for Common Tansy (*Tanacetum vulgare*) in Canada and the United States.** Alec McClay¹, Monika Chandler², André Gassmann³, Gitta Grosskopf³, Urs Schaffner³, John Gaskin⁴; ¹McClay Ecoscience, Sherwood Park, Alberta, Canada; ²Minnesota Department of Agriculture, St. Paul, MN, United States of America; ³CABI Switzerland Centre, Delémont, Switzerland; ⁴USDA-ARS Northern Plains Agricultural Research Laboratory, Sidney, MT, United States of America

128. **Field Efficacy of *Exserohilum prolatum* for Biological Control of Itchgrass.** Hala Alloub¹, Abdul Shukor Juraimi², Juga Kadir³; ¹University of Gezira, Medani, Gezira, Sudan; ²University Putra Malaysia, Serdang, Selangor, Malaysia; ³University Putra Malaysia, Serdang, Selangor, Malaysia

129. **Biological Control of Lippia (*Phyla canescens*): Native Range Surveys for Rust and other Plant Pathogens.** María Guadalupe Traversa¹, Freda Anderson¹, Mirta Kiehr¹, Rolf Delhey¹, Mic Julien¹; ¹National University of the South, Bahía Blanca, Buenos Aires, Argentina

130. **Augmentative Biological Control of *Parthenium hysterophorus* L. using *Zygotrypa bicolorata* Pallister in**

Central India. Sushil Kumar¹; ¹National Research Centre for Weed Science, Jabalpur, Madhya Pradesh, India

131. **Biological Control of *Solanum viarum* (Solanaceae) in the USA: Current Status and Perspectives.** Julio Medal¹, Yorley Bustamante¹, William Overholt¹, Philip Stansly¹, Amy Roda², Kennett Hibbard³, Steven Hight⁴, Rodrigo Diaz¹, Divina Amalin¹, James Cuda¹; ¹University of Florida, Gainesville, Florida, United States of America; ²USDA-APHIS, Kendall, Florida, United States of America; ³FLDACS-DPI, Fort Pierce, Florida, United States of America; ⁴USDA-ARS, Tallahassee, Florida, United States of America

132. **Allelopathy of Saffron – A Biocontrol of *Phalaris minor*.** Ali Reza Astaraei¹; ¹College of Agriculture-Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran

133. **Comparison of Nutritional Effects on Sporulation, Desiccation Tolerance and Virulence of Two Isolates of *Fusarium Oxysporum* in Order to Introduce an Effective Biocontrol Agent of *Orobanche aegyptiaca*.** Mitra Ghotbi¹, Mansoor Montazeri², Majid Amini Dehghi³, Marjan Ghotbi¹, Jafar Kambouzia⁴; ¹University of Shahed, Tehran/Tehran, College of Agronomy/Shahed University, Tehran, Iran; ²Plant & Pathology Research Center, Tehran/Tehran/Velenjak, Institute of Weed Science/Research Center of Plant Pest, Iran; ³Shahed University, Tehran/Tehran, College of Agronomy/Shahed University, Tehran, Iran; ⁴University of Shahid Beheshti (Tehran), Tehran/Tehran, Department of Environmental Science/University of Shahid, Iran

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137. **Need for Combined Integrated Management of Aquatic Weeds by Augmentation of Biocontrol Agents.** Puja Ray¹, Akhilesh Pandey², Sushil Kumar¹; ¹National Research Centre for Weed Science, Jabalpur, Madhya Pradesh, India; ²R.D.University, Jabalpur, Madhya Pradesh, India

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140. **Host-Range and Factors Enhancing the Virulence and Desiccation Tolerance of *Fusarium oxysporum* as Promising Biocontrol Agent of *Orobanche aegyptiaca*.** Majid Amini Dehghi¹, Mitra Ghotbi¹, Marjan Ghotbi¹, Mansour Montazeri¹, Jafar Kambouzia¹; ¹University of Shahed, Tehran/Tehran, Department of Agronomy/Shahed University/ Tehran/Ir, Iran

141. **Antifungal Properties of Water Hyacinth.** Ayyathurai Eswaran¹, Balasubramaniyan Elavarasi¹, Vaikundaperumal Jaiganesh¹, M.S. Sangeetha¹; ¹Faculty of Agriculture, Annamalai University, Annamalainagar, Tamil Nadu, India

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163. **The Potential for Biological Control of *Lippia, Phyla canescens*.** Mic Julien¹, Alejandro Sosa², Guadalupe Traversa³, Mohammad Fatemi⁴, Eduardo Greizerstein⁵; ¹CSIRO Entomology, Clapiers, Languedoc, France; ²USDA, Hurlingham, Buenos Aires, Argentina; ³Universidad Nacional del Sur, Bahía Blanca, Buenos Aires, Argentina; ⁴University of New England, Armidale, New South Wales, Australia; ⁵University of Buenos Aires, Buenos Aires, Federal District, Argentina

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170. **Mycoherbicide Control of *Marsilea minuta* - a Weed of Rice Crop.** Rukhsana Bajwa¹, Nusrat Rabbani¹; ¹University of the Punjab, Lahore, Pakistan, Punjab, Pakistan
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172. **A Tale of Three Dodders for the Biocontrol of *Mikania micrantha* in Hong Kong.** Paul But¹, Yujia Hu¹, Lee-Man Chu¹, Jin-Hei Wan¹, Ting-Kwok Woo¹; ¹Chinese University of Hong Kong, Shatin, Hong Kong, China (Peoples Republic of)
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187. **Importance of Germination Patterns and Herbicide Application for the Control of Swamp Dodder, *Cuscuta gronovii*, in Massachusetts Cranberry Production.** Hilary Sandler¹; ¹UMass Cranberry Station, East Wareham, MA, United States of America

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189. **Disinfection of Broomrape Seeds on Agricultural Equipment with Didecyl Dimethyl Ammonium Bromide.** Yaakov Goldwasser¹, Shaul Graph², Abraham Gamliel³; ¹The Hebrew University of Jerusalem, Rehovot, Israel; ²Extension Service, Ministry of Agriculture, Kiryat Shmona, Israel; ³ARO, The Volcani Center, Bet Dagan, Israel

190. **Effect of Soil Solarization, A Nonchemical Method, on the Control of Egyptian Broomrape (*Orobanche aegyptiaca*) and Yield Improvement in Greenhouse Grown Cucumber.** Zoheir Ashrafi¹, Hassan Alizadeh¹, Sedigheh Sadeghi¹; ¹University of Tehran, Karaj, Tehran, Iran

191. **Parasitic Weeds of the Orobanchaceae Family and their Natural Hosts in Jordan.** Jamal Qasem¹; ¹University of Jordan, Amman, Jordan

192. **Host and Habitat Specificity of the *Cuscuta* species in Hungary.** Kornél Baráth¹, János Csiky¹; ¹University of Pécs, Pécs, Baranya, Hungary

193. **Mistletoes (*Viscum cruciatum* Siebr. ex Boiss. and *Loranthus acaciae* Zucc) and their Hosts in Jordan.** Jamal Qasem¹; ¹University of Jordan, Amman, Jordan

194. ***Erwinia carotovora* as a Stimulant Agent for *Orobanche aegyptiaca*.** Sirous Hasannejad¹, Hasan Mohamad Alizade¹, Soheila Porheidar Ghafarbi²; ¹University of Tehran, Karaj, Tehran, Iran; ²University of Birjand, Birjand, Khorasan Jonobi, Iran

195. **Evaluation of *Erwinia carotovora* and Three Isolates of *Fusarium oxysporum* as Biological Control Agents of Egyptian Broomrape (*Orobanche aegyptiaca*).** Sirous Hasannejad¹, Hasan Mohamad Alizade¹, Soheila Porheidar Ghafarbi²; ¹University of Tehran, Karaj, Tehran, Iran; ²University of Birjand, Birjand, Khorasan Jonobi, Iran

196. **Biological Control of *Striga hermonthica* by the use of *Polygala rarifolia* on Maize in Burkina Faso.** Oumar Ouedraogo¹; ¹INERA, Fada N'Gourma, Gourma, Burkina Faso

197. **Phanerogamic Parasite on Fruit Crops of Kerala.** Girija Vijayaraghavan¹, Chirathadam Abraham¹; ¹Kerala Agricultural University, Thrissur, Kerala, India

198. **Dodder (*Cuscuta pentagona*) Control in Processing Tomato (*Lycopersicon esculentum*).** Tom Lanini¹; ¹University of California, Davis, Davis, California, United States of America

199. **Effects of Some Medicinal Plant Extracts on *Orobanche cernua* Seed Germination.** Sirous Hasannejad¹, Saber Mirzaii²; ¹University of Tehran, Karaj, Tehran, Iran; ²Agricultural Institute of Karaj, Karaj, Tehran, Iran
200. **Parasitic Flowering Plants in Turkish Flora.** Ahmet Uludag¹, Yildiz Nemli²; ¹Ministry of Agriculture and Rural Affairs, Alsancak, Izmir, Turkey; ²Ege University, Bornova, Izmir, Turkey
201. **The Influence of Sowing Date and *Striga hemonthica* on the Yield of Different Varieties of Sorghum (*Sorghum bicolor*).** Friday Ekeleme¹, Alpha Kamara¹, Lucky Omoigui¹, David Chikoye¹; ¹International Institute of Tropical Agriculture (IITA), Ibadan, Oyo State, Nigeria
202. **Evaluating the Possibility of Chemical Control of Broomrape.** Somayeh Foruzesh¹, Hassan Alizadeh¹, Mohammad Baghestani², Hamid Mashhadi¹; ¹University of Tehran, Karaj, Tehran, Iran; ²Weed Research Institute, Tehran, Iran
203. **New Options for Biocontrol of Parasitic Weeds of the Genera *Orobanche* and *Cuscuta*.** Nadjia Zermane¹, Nadjia Zermane¹; ¹National Institute of Agronomy El-Harrach, Algiers, Algeria

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205. **Plant Community Response to Disturbance in the Presence of the Non-Native, *Linaria vulgaris* (Yellow Toadflax).** Erik Lehnhoff¹, Lisa Rew¹, Bruce Maxwell¹; ¹Montana State University, Bozeman, MT, United States of America
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208. ***Echinochloa oryzicola* (Barnyardgrass): A New Emerging Threat to Paddy Fields of Iran.** Bijan Yaghoubi¹, Abobakr Ali¹; ¹Rice Research Institute of Iran, Rasht, Guilan, Iran
209. **Parthenium Management by Allelopathic Grasses.** Arshad Javaid¹; ¹University of the Punjab, Lahore, Punjab, Pakistan
210. **The Biology of Invasive Alien Plants in Canada: A Series of Review Papers.** Suzanne Warwick¹, Stephen Darbyshire¹; ¹Agriculture and Agri-Food Canada (AAFC), Ottawa, Ontario, Canada
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213. **Can a Historical Analysis of the Spread of *Ambrosia artemisiifolia* Explain its Actual Success in France?** Bruno Chauvel¹, Fabrice Dessaint¹; ¹INRA, Dijon, Burgundy, France
214. **Invasive Alien Weeds in Hainan Island of China*.** Zhi Wei Fan¹, Yi De Shen¹, Ying Lu¹, Li Zhen Liu¹; ¹Chinese Academy of Tropical Agricultural Sciences, Danzhou, Hainan, China (Peoples Republic of)
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216. **Joint-pine (*Ephedra alata* Decne), an Invasive Weed and A Real Threat to Certain Forest and Fruit Trees in Jordan.** Jamal Qasem¹; ¹University of Jordan, Amman, Jordan
217. **Overview of Current South African Invasive Alien Plant Species Research.** Andrew Wannenburg¹; ¹Department of Water Affairs & Forestry, Cape Town, Western Cape, South Africa
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219. **Effect of *Datura stramonium* Aqueous, Ethanolic and Methanolic Extracts on *Trichophyton rubrum*.** Jamal Hashemi¹, Masood Hashemi², Pooran Hosainjani, Issa Gholampoor²; ¹Tehran University/Medical Sciences, Tehran, Iran; ²Islamic Azad University, Tonekabon, Guilan, Iran
220. **Georgia's Comprehensive State-Wide Program on *Imperata cylindrica* Detection and Control.** David Moorhead¹, Charles Bargerion¹, James Johnson², Carey Minter¹; ¹University of Georgia, Tifton, GA, United States of America; ²Georgia Forestry Commission, Athens, GA, United States of America
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226. ***Heracleum sosnowskyi* Manden. - the Invasive Alien Species in Poland.** Krystyna Miklaszewska¹; ¹Institute of Plant Protection, Poznań, Wielkopolskie, Poland
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Payne¹, Toni White¹, Mark McNeill¹; ¹AgResearch Ltd, Hamilton, Waikato, New Zealand

231. **Quantifying Non-Indigenous Plant Impacts in Natural Areas to Aid with Management Prioritization.** Tanya Skurski¹, Bruce Maxwell¹, Lisa Rew¹; ¹Montana State University, Bozeman, Montana, United States of America

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233. **Presentation of *Ambrosia artemisiifolia*.** Christian Bohren¹; ¹Agroscope ACW in Changins, CH 1260 Nyon, VD, Switzerland

234. **Reproductive Ecology of Invasive Weed - *Euphorbia geniculata* Ortega.** Mohd Araf¹, Irshad Hamal¹; ¹Department, University of Jammu, India, Jammu and Kashmir, India

235. **The Success Story of the Hluhluwe – iMfolozi Park's Invasive Alien Species Programme: a Role Model on which KwaZulu-Natal's Protected Areas Invasive Alien Species Clearing is being Based.** Colette Terblanche¹, Krissie Clark¹, Wayne Lotter²; ¹Ezemvelo KZN Wildlife, Pietermaritzburg, KwaZulu-Natal, South Africa; ²Game Rangers Association of Africa, Songea, Ruvuma, Tanzania

236. **Clonal Spread of Invasive *Ludwigia* Species in Freshwater Wetlands of California.** Miki Okada¹, Brenda Grewell¹, Marie Jasieniuk¹; ¹University of California, Davis, Davis, CA, United States of America

237. **Endemic Plants Became Local Weeds in Cuba.** Pável Rodríguez Vázquez¹; ¹Jardín Botánico de Cienfuegos, Granja Agropecuaria Pepito Tey, Cienfuegos, Cuba

238. **Ragweed (*Ambrosia artemisiifolia*) - the Greatest Weed Problem in Europe.** Tamas Komives¹, Peter Reisinger², Eva Lehoczky³; ¹Plant Protection Institute, Budapest, Hungary; ²University of West Hungary, Mosonmagyaróvár, Hungary; ³Pannon University, Keszthely, Hungary

239. **Invasive Plant Management in British Columbia.** Becky Brown¹, David Ralph, Linda Wilson; ¹Government of British Columbia, Victoria, British Columbia, Canada

Section 17. Environmental Aspects of Weed Management

240. **Vineyard Weed Management Practices Influence Soil Microbial Communities and Nitrogen Retention.** Kerri Steenwerth¹, Kelley Belina¹; ¹USDA Agricultural Research Service, Davis, CA, United States of America

241. **Molecular Basis for Metabolic Responses of Nitrogen-fixing Cyanobacteria to Monosulfuron.** Jianying Shen¹, Antonio DiTommaso², Jun Wu¹, Guoping Wu¹; ¹Shanghai Jiaotong University, Shanghai, China (Peoples Republic of); ²Cornell University, Ithaca, New York, United States of America

242. **Risk Analysis of Herbicide Water Contamination in the Field Conditions of a Flooded Rice Irrigation System.** Luiz Foloni¹, Antonio Oliveira¹, Jose Filho¹, Pedro Christoffoleti¹; ¹University of Campinas, Campinas, Sao Paulo, Brazil

243. **Comparative Rates of Metabolism of Atrazine, Propazine, Ametryn and Metribuzin, In 19 Soils with Different Histories of Triazine Use.** Dale Shaner¹, Brien Henry¹, Michael Poteet², Curtis Rainbolt³, Brad Hanson¹, Jason Krutz¹; ¹USDA-ARS, Fort Collins, CO, United States of America; ²Hawaii Agriculture Research Center, Aiea, HI, United States of America; ³University of Florida, Belle Glade, FL, United States of America

244. **Effect of pH on the Dissipation Behaviour of Clodinafop Propargyl in Soil and Water.** Hemanta Banerjee¹, M Paramasivam¹, D Banerjee¹, T Banerjee¹, S Roy¹; ¹Bidhan Chandra Krishi Viswavidyalaya, Kalyani, West Bengal, India

245. **Assessment of the Contribution of Ricehull Burning to Weed Management in Vegetable Production and Soil Fertility.** Clarita Aganon¹, Orlando Ramos²; ¹Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines; ²Local Government of San Jose City, San Jose City, Nueva Ecija, Philippines

246. **Effect of Soil Texture and Temperature on Atrazine Degradation.** Ebrahim Izadi¹, Ebrahim Izadi Darbandi¹, Mohammad Hassan Rashed Mohassel¹, Mehdi Nassiri Mohallati¹, Amir Lakzian¹, Karin Müller²; ¹Ferdowsi University, Mashhad, Khorassan Razavi, Iran; ²Ruakura Research Center, Hamilton, New Zealand

247. **Bioassay of Imazethapyr Herbicide Residual Quantity in the Soil.** Yuanju Huang¹; ¹Heilongjiang Academy of Agricultural Sciences, Harbin, Heilongjiang, China (Peoples Republic of)

248. **Leaching of MCPA in Soil: Effect of Organoclay based Formulations and of Soil Organic Amendment.** Lucia Cox¹, Rafael Celis¹, Alegria Cabrera¹, Carmen Trigo¹, Maria Hermosin¹, Juan Cornejo¹; ¹CSIC, Sevilla, Spain
249. **Soil Persistence and Bioavailability of Fluometuron under Rye and Balansa Clover Cover Crops in Cotton Production.** Martin Locke¹, Robert Zablotowicz², R. Wade Steinriede¹, Krishna Reddy²; ¹Water Quality & Ecology Research Unit, Oxford, MS, United States of America; ²Southern Weed Science Research Unit, Stoneville, MS, United States of America
250. **Analysis and Evaluation of Plants Grown in an Area Contaminated with Industrial Waste.** Sergio Jesus¹, Gerson Romao¹, Roberto Arevalo², Peres Waldemar³, Aline Coscione⁴, Monica Rossi¹, Neusa Nogueira¹; ¹University of Sao Paulo, Piracicaba, Sao Paulo, Brazil; ²Polo Regional Centro Sul - APTA/IAC, Piracicaba, Sao Paulo, Brazil; ³Government of Sao Paulo State, Piracicaba, Sao Paulo, Brazil; ⁴Agronomic Institute of Campinas, Campinas, Sao Paulo, Brazil
251. **The Residual Activities of Imazapyr and Glyphosate on Dormant *Pennisetum setaceum* (Forssk.) Chiov (Fountain Grass), under Arid Conditions within a Tropical High-Elevation Landscape in Hawaii.** James Leary¹, Creighton Litton¹, Joe DeFrank¹; ¹University of Hawaii at Manoa, Honolulu, HI, United States of America
252. **Leaching of Flazasulfuron and Fumioxazin in Two Brazilian Soils.** Robert Deuber¹, Waldinei Pastre¹, Andressa Giusti¹; ¹Instituto Agronomico de Campinas, Campinas, Sao Paulo, Brazil
253. **Long Term Studies on the Residual Fate of a New Herbicide: Penoxsulam in Rice Field under West Bengal Climatic Condition.** Anjan Bhattacharyya¹, Sukhendu Pramanik¹, A Roy²; ¹Bidhan Chandra Krishi Viswavidyalaya (BCKV), West Bengal, India; ²Dow AgroScience India Pvt. Ltd, Kolkata, Kolkata, West Bengal, India
254. **Glyphosate Effects on Symbiotic Relationships, Nitrogen Assimilation and Seed Composition in Glyphosate-Resistant Soybean.** Robert Zablotowicz¹, Nacer Bellaloui¹, Krishna Reddy¹, Craig Abel¹; ¹USDA, Agricultural Research Service, Stoneville, Mississippi, United States of America
255. **Atrazine-Degrading Bacteria Isolated from a Mississippi Delta Soils Expressing the Potential for Accelerated Atrazine Degradation.** Robert Zablotowicz¹, Cesare Accinelli², L. Jason Krutz¹, Krishna Reddy¹; ¹USDA, Agricul-

tural Research Service, Stoneville, Mississippi, United States of America; ²University of Bologna, Bologna, Italy

256. **Persistence of Metsulfuron-Methyl Residues in Wheat Crop and Soil.** Shobha Sondhia¹, Anil Dixit¹; ¹National Research Centre for Weed Science, Jabalpur, M.P., India

257. **Degradation of Fluroxypyr-MHE in the Soil of an Oil Palm Plantation in Malaysia.** Halimah Muhamad¹, Tan Yew Ai¹, Ismail Sahid²; ¹Malaysian Palm Oil Board, Kajang, Selangor, Malaysia; ²Universiti Kebangsaan Malaysia, Kajang, Selangor, Malaysia

258. **Search of Plant Resources and its Characteristics of Growth and Development for Reduction of Soil Erosion at Growth Chamber and Field Condition.** Chung Kang¹, Tae Park¹, Kwang Kim¹, Young Jang¹, Jung Lee¹; ¹Rural Development Administration, Suwon, Kyunggido, Korea, South

259. **Dissipation and Lixiviation of Penoxsulam and Molineate under Paddy Rice Conditions.** Claudio Alister¹, Patricio Gómez¹, Sandra Rojas¹, Lorena Cabezas¹, Marcelo Kogan¹; ¹Universidad de Viña del Mar, Viña del Mar, Valparaiso, Chile

260. **Effect of Interaction of Herbicide and Organic Inputs of Varying Resource Quality on Soil Organic Matter and Crop Yield in a Tropical Dryland Agroecosystem.** Pratibha Singh¹, Nandita Ghoshal¹; ¹Banaras Hindu University, Varanasi, Uttar Pradesh, India

Section 21. Spotlights on Global Weeds

261. **How to Manage *Eichhornia crassipes*? Pest Risk Analysis, Climatic Prediction and Management Strategies in European and Mediterranean Countries.** Sarah Brunel¹; ¹EPPO/OEPP, Paris, France

262. **Not all Colonizing Species (Weeds) are Bad all the Time.** Nimal Chandrasena¹; ¹Ecowise Environmental Pty Ltd, Penrith, NSW, Australia

263. **Characteristics of *Polygonum cuspidatum*: An Invasive Species.** Prasanta C. Bhowmik¹; ¹University of Massachusetts, Amherst, MA, United States of America

264. **Biochemical Adaptation of Purple Nutsedge to Flooding: Sugar Metabolism and Enzyme Activities in Upland and Lowland Ecotypes.** Aurora Baltazar¹, Jennifer Pena-Fronteras², Mizpah Villalobos³, Florinia Merca¹, Abdelbagi Ismail⁴, David Johnson⁴; ¹University of the Philippines Los Banos, Laguna, Philippines; ²University of the Philippines

Mindanao, Davao City, Philippines; ³Central Philippine University, Iloilo City, Philippines; ⁴International Rice Research Institute, Los Banos, Laguna, Philippines

265. **The Invasive *Buddleja davidii* (Butterfly Bush): History, Ecology and Management.** Nita Tallent-Halsell¹; ¹US EPA, Las Vegas, Nevada, United States of America

266. **Seedbank Dynamics and Depletion of *Commelina benghalensis* L. (Benghal Dayflower).** Michael Burton¹, Theodore Webster², Alan York¹; ¹North Carolina State University, Raleigh, NC, United States of America; ²USDA, Tifton, GA, United States of America

Weedy Rice Workshop Posters

267. **Weedy Rice Germination as Affected by Overwinter Temperatures and Water Conditions.** Aldo Ferrero¹, Silvia Fogliatto¹, Marco Milan¹, Francesco Vidotto¹; ¹AGROSELVITER, Università di Torino, Grugliasco, To, Italy

268. **Weed Species in Paddy Rice Soils in Chile and their Response to Sulfonylurea Herbicides.** Rodrigo Figueroa¹, Marcelo Kogan¹, Marlene Gebauer¹, Albert Fischer²; ¹Pontificia Universidad Católica de Chile, Santiago, Metropolitan Region, Chile; ²University of California, Davis, California, United States of America

269. **Weed Rice (*Oryza sativa* f. *spontanea*) in Thailand.** Chanya Maneechote¹, Benjavan Rerkasem², Sansanee Jamjod²; ¹Ministry of Agriculture and Co-operatives, Chatuchak, Bangkok, Thailand; ²Chaing Mai University, Moeng, Chiang Mai Thailand

270. **Environmental Impact of the Adoption of Imidazolinone-Resistant Rice in Contrasting Production Systems of Latin America.** Néstor Saldain¹, Fernando Pérez de Vida², Pedro Blanco², Fabían Capdeville², Andrés Lavecchia², Victoria Bonnacarreré², Raúl Bermúdez², Julio Méndez², Claudia Marchesi², Aída Ortiz³, Cástor Zambrano³, Catalina Ramis³, José Lazo³, Marjorie Cásares³, Thaura Ghneim⁴, Álvaro Anzalone⁵, Zaida Lentini⁶, Luis Ávila⁷, Aldo Merotto⁸, Albert Fischer⁹, David Gealy¹⁰, Martín Piríz¹¹, Artides Leal¹²; ¹Instituto Nacional de Investigación Agropecuaria, Treinta y Tres, Uruguay; ²Instituto Nacional de Investigación Agropecuaria, Treinta y Tres, Uruguay; ³Universidad Central de Venezuela, Maracay, Aragua, Venezuela; ⁴Instituto Venezolano de Investigaciones Científicas, San Antonio de Los Altos, Miranda, Venezuela; ⁵Universidad Centroccidental "Lisandro Alvarado," Barquisimeto, Lara, Venezuela; ⁶Centro Internacional de Agricultura Tropical, Cali, Valle del Cauca,

Colombia; ⁷Universidad Federal de Santa María, Santa María, Río Grande do Sul, Brazil; ⁸Universidad Federal de Porto Alegre, Porto Alegre, Río Grande do Sul, Brazil; ⁹University of California, Davis, California, United States of America; ¹⁰Dale Bumpers National Rice Research Center, Stuttgart, Arkansas, United States of America; ¹¹BASF Ltda. Uruguay, Montevideo, Uruguay; ¹²BASF Venezolana S.A., Maracay, Aragua, Venezuela

271. Density, Shattering and Seed Bank of Weedy Rice (*Oryza sativa* L.) under Commercial Conditions in Costa Rica. Carlos Rivera-Carballo¹, Bernal Valverde², Carlos Rodríguez³, Kathrine Madsen⁴; ¹Hacienda El Pelón de la Bajura, Bagaces, Guanacaste, Costa Rica; ²The University of Copenhagen, Taastrup, Denmark; ³Corporación de Desarrollo Agrícola Del Monte, S. A., San José, Costa Rica; ⁴Danish Institute of Agricultural Sciences, Slagelse, Denmark

272. Weedy Rice in Italy: Present Situation and Perspectives. Barbara Basso¹, Luca Militano¹, Alberto Spada¹, Francesco Sala¹; ¹University of Milan, Milano, Italy

273. Morphologic Characterization of Weedy Rice in Two Major Rice Growing Provinces in the Philippines. Madonna Casimero¹, Dindo King Donayre¹, Edwin Martin¹; ¹Philippine Rice Research Institute, Munoz, Nueva Ecija, Philippines

274. Southern U.S. Weedy Red Rice (*Oryza sativa*) Accessions for Entry into the National Small Grains Collection. David Gealy¹, Harold Bockelman²; ¹USDA-ARS, DBNRRC, Stuttgart, Arkansas, United States of America; ²USDA-ARS, NSGC, Aberdeen, Idaho, United States of America

275. Potential Gene Flow from Transgenic Rice (*Oryza sativa* L.) with Bar Gene to Different Weedy Rice (*Oryza sativa* f. *spontanea*) Accessions under Controlled Pollination Based on Compatibility. Xiaoling Song¹, Sheng Qiang¹, Linli Liu¹, Zhou Wang¹; ¹Nanjing Agricultural University, Nanjing, Jiangsu, China (Peoples Republic of)

276. Transfer of Herbicide-Resistant Gene to Weedy Rice Populations and its Implications. Vinod Shivrain¹, Nilda Burgos¹, Marites Sales¹, Kenneth Smith¹, David Gealy², Yong In Kuk³, Andy Mauromoustakos¹; ¹University of Arkansas, Fayetteville, AR, United States of America; ²USDA-ARS, Stuttgart, AR, United States of America; ³Suncheon National University, Suncheon, Korea, South

11:00 - 11:30

Energy Break

Location: Salon DEF

MAIN TOPIC SESSIONS

Section 2. Integrated Weed Management

Location: Salon B

11:30 - 16:00

Organizer: Bo Melander, University of Aarhus, Slagelse, Denmark

Co-Organizer: David L. Jordan, North Carolina State Univ., Raleigh, NC, USA

11:30

543. Integrated Weed Management, Integrated Pest Management or Integrated Crop Management? Robert Norris¹; ¹University of California, Davis, California, United States of America

12:00

544. Advances in Integrated Weed Management Systems for Cereal Crops. Robert Blackshaw¹, John O'Donovan¹, Ken Harker¹, Hugh Beckie¹; ¹Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada

12:15

545. Weed Science Research on Integration for Improving Weed Management. Ze Pu Zhang¹; ¹Chinese Academy of Agricultural Sciences, Beijing, China (Peoples Republic of)

12:30

546. Agroecological Approaches to Managing Weeds in Eggplant using the Stale-Seedbed Technique. Aurora Baltazar¹, Jhoana Opena¹; ¹University of the Philippines Los Banos, Los Banos, Laguna, Philippines

12:45

547. Winter Annual Weeds as Alternative Hosts for Soybean Cyst Nematode. William Johnson¹, Earl Creech², Valerie Mock¹; ¹Purdue University, W. Lafayette, Indiana, United States of America; ²University of Nevada, Fallon, Nevada, United States of America

13:00 - 14:30

LUNCH

14:30

548. An Integrated Strategy for Perpetual Management of *Nassella trichotoma*. Aaron Simmons¹, David Kemp¹, Warwick Badgery², David Michalk²; ¹Charles Sturt University, Orange, NSW, Australia; ²NSW Department of Primary Industries, Orange, NSW, Australia

14:45

549. **Management of *Striga hermonthica* (Del) Benth in *Zea mays* with *Sesamum indicum* and *Glycine max* as Intercrops and Nitrogen Fertilization in Benue State, Nigeria.** Rosemary Ahom¹, Okoronkwo Okereke¹, David Chikoye¹; ¹University of Agriculture Makurdi, Makurdi, Benue State, Nigeria

15:00

550. **Effect of Rice Establishment with Drumseeder on Growth of Weeds and Yield of Rice.** Anuruddhika Abeyssekara¹; ¹National Rice Research and Development Institute, Kurunegala, Northwestern Province, Sri Lanka

15:15 - 16:00

Poster Discussion

Section 7. Herbicide Resistance in Crops and Weeds

Location: Salon A

11:30 - 16:00

Organizer: Christopher Preston, University of Adelaide, Australia

Co-Organizer: Hugh J. Beckie, Saskatoon Research Center, Saskatoon, Canada

11:30

551. **Herbicide Resistant Weeds: Global Scale and Impact.** Ian Heap¹; ¹WeedSmart LLC, Corvallis, Oregon, United States of America

12:00

552. **Comparison of Pinoxaden's Resistance Profile with other ACCase Inhibitors.** Shiv Kaundun¹, Richard Dale¹, Amy Lycett¹; ¹Syngenta, Bracknell, Berkshire, United Kingdom

12:15

553. **Modelling Proactive Glyphosate Resistance Management in US Cropping Systems with Glyphosate-Resistant Crops.** Paul Neve¹, Jason Norsworthy², Kenneth Smith², Chuck Foresman³, Les Glasgow³, Ian Zelaya³; ¹University of Warwick, Wellesbourne, Warwickshire, United Kingdom; ²University of Arkansas, Fayetteville, Arkansas, United States of America; ³Syngenta Crop Protection, Greensboro, North Carolina, United States of America

12:30

554. **Multiple Resistance to Glyphosate and ALS- Inhibitors in *Euphorbia heterophylla* L. from Brazil.** Hugo Enrique Cruz-Hipólito¹, Ribas Vidal², M.M. Trezz², Daniel Gil¹, Javid Gherekhloo¹, Juan Pedro Ruíz-Santaella¹, Rafael De

Prado¹; ¹Universidad de Córdoba, Córdoba, Spain; ²Federal University at Rio Grande do Sul, Porto Alegre, Brazil., Porto Alegre, Brazil, Brazil

12:45

555. Resistance to Glyphosate in *Echinochloa colona* in Australia. Chris Preston¹, Peter Boutsalis¹, Jenna Malone¹, Fleur Dolman¹, Andrew Storrie²; ¹University of Adelaide, Glen Osmond, SA, Australia; ²NSW Department of Primary Industries, Tamworth, NSW, Australia

13:00 - 14:30

LUNCH

14:30

556. Glyphosate-Resistant Populations of *Amaranthus palmeri* Prove Difficult to Control in the Southern United States. Robert Nichols¹, Stanley Culpepper², Christopher Main³, Mike Marshall⁴, Thomas Mueller³, Jason Norsworthy⁵, Robert Scott⁵, Kenneth Smith⁵, Larry Steckel³, Alan York⁶; ¹Cotton Incorporated, Cary, NC, United States of America; ²University of Georgia, Tifton, GA, United States of America; ³University of Tennessee, Jackson, TN, United States of America; ⁴Clemson University, Blackville, SC, United States of America; ⁵University of Arkansas, Fayetteville, AR, United States of America; ⁶North Carolina State University, Raleigh, NC, United States of America

14:45

557. Molecular Genetics of Glyphosate Resistance and Gene Flow in *Amaranthus palmeri*. Todd Gaines¹, Philip Westra¹, Christopher Preston², Dale Shaner³, Bekir Bukun¹, Stephen Chisholm¹, Sarah Ward¹, Jan Leach¹, Stanley Culpepper⁴, Timothy Gray⁴, Ted Webster³, William Vencill⁴, Patrick Tranel⁵; ¹Colorado State University, Fort Collins, CO, United States of America; ²University of Adelaide, Adelaide, SA, Australia; ³USDA-ARS, Fort Collins, CO, United States of America; ⁴University of Georgia, Tifton, GA, United States of America; ⁵University of Illinois, Urbana, IL, United States of America

15:00

558. Gene Flow from Transgenic *Agrostis stolonifera* L. via Pollen Evaluated at a Landscape Level. Maria Zapiola¹, Carol Mallory-Smith¹; ¹Oregon State University, Corvallis, Oregon, United States of America

15:15

559. An Australian Farmer's Experience Living with Herbicide Resistance. Murray Scholz¹; ¹B. J. Scholz & Co, Culcairn, New South Wales, Australia

15:30 - 16:00

Poster Discussion

Section 13. Management of Parasitic Weeds

Location: Salon C

11:30 - 16:00

Organizer: Koichi Yoneyama, Utsunomiya University, Utsunomiya, Japan

Co-Organizer: Joachim Sauerborn, University of Hohenheim, Stuttgart, Germany

11:30

560. Can Resistant Cereals Solve the Striga Weed Problem in Africa. Julie Scholes¹; ¹University of Sheffield, Sheffield, S. Yorkshire, United Kingdom

12:00

561. Photoresponse Analysis of Phytochrome A in a Non-Photosynthetic Parasitic Plant, *Orobanche minor* Sm. Kazuteru Takagi¹, Atsushi Okazawa¹, Yu Wada¹, Chitra Trakulnaleamsai¹, Eiichiro Fukusaki¹, Koichi Yoneyama², Yasutomo Takeuchi², Akio Kobayashi¹; ¹Osaka University, Suita, Osaka, Japan; ²Utsunomiya University, Utsunomiya, Tochigi, Japan

12:15

562. Gene Silencing of Mannose 6-Phosphate Reductase in the Parasitic Weed *Orobanche aegyptiaca*. Radi Aly¹, Hela Cholakh¹, Anna Eykalis¹, Danny Joel¹, Benny Steinitz², Aharon Zelcer², Amit Gal-On²; ¹ARO, Newe-Yaar Research Center, Ramat Yeshai, Israel; ²ARO, Bet Dagan, Israel

12:30

563. How Mineral Nutrients Affect the Exudation of Strigolactones, Germination Stimulants for Root Parasitic Weeds. Kaori Yoneyama¹, Hitoshi Sekimoto¹, Yasutomo Takeuchi¹, Koichi Yoneyama¹; ¹Utsunomiya University, Utsunomiya, Tochigi-ken, Japan

12:45

564. Developing a Decision Support System (DSS) for *Orobanche aegyptiaca* Control in Tomato. Hanan Eizenberg¹, Jhonathan Ephrath, Tal Lande¹, Gay Achdari¹, Evgeny Smirnov¹, Joseph Hershenhorn¹; ¹ARO, Ramat Yishay, Israel

13:00 - 14:30

LUNCH

14:30

565. Introgression of Quantitative Trait Loci (QTL) for Striga Resistance into Adapted Sorghum Landraces through Marker Assisted Backcrossing in Sub-Saharan Africa. Heiko Parzies¹, Dan Kiambi², Rolf Folkertsma², C. Hash², Fred Rattunde², Santie de Villiers², Hartwig Geiger¹, Ismail Rabbi¹, Netra Bhandari¹, James Gethi³, Acar Touré⁴,

Ousmane Koita⁵, Abdalla Mohamed⁶, Abraha Tesfamichael⁷, Ben Kanyenji³, Bettina Haussmann², Dave Hoisington²; ¹University of Hohenheim, Stuttgart, BW, Germany; ²ICRISAT, Nairobi, Kenya; ³KARI, Nairobi, Kenya; ⁴IER, Bamako, Mali; ⁵University of Bamako, Bamako, Mali; ⁶ARC, Wad Medani, Sudan; ⁷NARI/CoA, Hamelmalo, Eritrea

14:45

566. Combining an Herbicide Resistance Gene with Natural Polygenic Resistance to Control *Striga hermonthica* (Del.) Benth in Maize. Abebe Menkir¹, David Chikoye¹, Lum Fontem¹; ¹International Institute of Tropical Agriculture, Ibadan, Oyo State, Nigeria

15:00

567. Co-delivering of Striga-Mycoherbicides with Fungicides Using Seed Treatment Technology: Compatibility, Field Efficacy and Implication. Abuelgasim Elzein¹, Juergen Kroschel², Beed Fen³, Adolphe Avocanh³, Paul Marley⁴, Gearg Cadisch¹; ¹University of Hohenheim (380), Stuttgart, BW, Germany; ²International Potato Center (CIP), Lima, Peru; ³IITA, Cotonou, Benin; ⁴Ahmadu Bello University, Samaru, Zaria, Nigeria

15:15

568. Field Applications of *F. oxysporum* f.sp. *Orthoceras* for the Control of *Orobanche cumana* Wallr. Dorette Müller-Stöver¹, Rossitza Batchvarova², Joachim Sauerborn³; ¹University of Copenhagen, Taastrup, Copenhagen, Denmark; ²AgroBioInstitute, Sofia, Bulgaria; ³University of Hohenheim, Stuttgart, Germany

15:30 - 16:00

Poster Discussion

Section 17. Environmental Aspects of Weed Management

Location: Salon 1

11:30 - 16:00

Organizer: Robert Zablotowicz, USDA-ARS, Stoneville, Mississippi, USA

Co-Organizer: Roland Kubiak, RLP AgroScience GmbH, Neustadt, Germany

11:30

569. The Influence of Herbicide Resistant Cropping Systems on the Soil Environment in Canada. Clarence Swanton¹, Robert Gulden², Jeff Powell¹, Rachel Campbell¹, Miranda Hart¹, David Levy-Booth¹, Kari Dunfield¹, Peter Pauls¹, Jack Trevors¹, John Klironomos¹; ¹University of Guelph,

Guelph, Ontario, Canada; ²University of Manitoba, Winnipeg, Manitoba, Canada

12:00

570. Impact of Glyphosate-Resistant Soybean Production on Biological Activity in the Soil and Rhizosphere Environment.

Robert Kremer¹; ¹USDA-ARS, Columbia, Missouri, United States of America

12:15

571. Is Management Effective? The Results of an Adaptive Experimental Management Program to Determine Best Practice Chemical Control on *Cytisus scoparius* and Impacts on Native Vegetation.

Lynise Wearne¹, Cathy Allan², Marie Keatley², Paula Dower²; ¹CSIRO, Townsville, Queensland, Australia; ²Parks Victoria, Omeo, Victoria, Australia

12:30

572. An Advanced Test Design to Evaluate Reversible Side Effects of Herbicides and their Active Ingredients on Terrestrial Non-Target Plants.

Roland Kubiak¹, Sandra Siemoneit-Gast¹, Andreas Höllrigl-Rosta², Stephan Reuter¹, Guido Velten¹; ¹RLP AgroScience GmbH, Neustadt Weinstr., Rhineland Palatinate, Germany; ²Federal Environmental Agency, Dessau, Saxony-Anhalt, Germany

12:45

573. Atrazine-Degrading Microbial Populations in Soils.

Thomas Mueller¹, Krishnakali Roy¹, Dhritiman Ghosh¹, Mark Radosevich¹; ¹University of Tennessee, Knoxville, TN, United States of America

13:00 - 14:30

LUNCH

14:30

574. Microbial Ecology of Herbicide Degradation – Potential and Limitations of Nucleic Acid Based Stable Isotope Probing.

Gerald Sims¹; ¹USDA-ARS, Urbana, IL, United States of America

14:45

575. Persistence and Phytotoxicity of Sulfosulfuron Residues and its Major Secondary Metabolites under Wheat Based Cropping System.

Shobha Sondhia¹; ¹National Research Centre for Weed Science, Jabalpur, M.P., India

15:00

576. Validation of a Leaching Model with the Herbicide Picloran in Clay Soils under *Brachiaria decumbens* Vegetation.

Edemir Mantovani¹, Luiz Foloni¹, Pedro Christoffoleti²; ¹University of Campinas, Campinas, Sao Paulo, Brazil; ²University of Sao Paulo - ESALQ, Piracicaba, Sao Paulo, Brazil

15:15

577. Buffer Strip Effect on Terbutylazine Runoff in Light Level Soil. Marco Milan¹, Francesco Vidotto¹, Franco Tesio¹, Michèle Nègre², Serenella Piano¹, Aldo Ferrero¹; ¹AGROSELVITER, Università di Torino, Grugliasco, To, Italy; ²Divapra, Università di Torino, Grugliasco, To, Italy

15:30 - 16:00

Poster Discussion

16:00 - 16:30

Energy Break

Location: Salon DEF

Section 3. Modeling Problems and Solutions

Location: Salon C

16:30 - 18:00

Organizer: Lammert Bastiaans, Wageningen University, Wageningen, The Netherlands

Co-Organizer: Matt Liebmann, Iowa State University, Ames, Iowa

16:30

578. Better Weed Management: What Advice do Farmers Need? Stephen Moss¹; ¹Rothamsted Research, Harpenden, Herts, United Kingdom

17:00

579. Have Models Contributed to Weed Management? Bruce Maxwell¹; ¹Montana State University, Bozeman, Montana, United States of America

17:30

580. Economic and Environmental Tradeoff Analysis for Site-Specific Weed Management under Risk. Eihab Fathelrahman¹, L. Wiles¹, J. Ascough II¹; ¹USDA-ARS-NPA, Fort Collins, CO, United States of America

17:45

581. Using Models to Guide Weed Management Strategies. Matt Liebman¹, Adam Davis², Paula Westerman³; ¹Iowa State University, Ames, Iowa, United States of America; ²USDA Agricultural Research Service, Urbana, Illinois, United States of America; ³Universitat de Lleida, Lleida, Spain

Sections 6. Regulatory and 16. Education

Location: Salon 1

16:30 - 18:00

Organizers: Janis McFarland, Syngenta Crop Protection, Greensboro, NC, USA, Jerry Doll, University of Wisconsin, Madison, WI, USA

Co-Organizers: Rick Llewellyn, CSIRO, Glen Osmond, Australia, Eduardo Leguizamon, Universidad Nacional de Rosario, Santa Fe, Argentina

16:30

582. The Ethics of Technology and Education in Weed Science. Robert Zimdahl¹; ¹Colorado State University, Fort Collins, CO, United States of America

17:00

583. A Mental Model of Ohio Grain and Produce Farmers' Perceptions and Beliefs about Weed Management. Douglas Doohan¹, Robyn Wilson¹, Mark Tucker², Neal Hooker¹, Jeff LeJeune¹; ¹The Ohio State University, Wooster, OH, United States of America; ²Purdue University, West Lafayette, IN, United States of America

17:15

584. Weed Science Education and Technology Transfer Systems in Brazil. Ricardo Filho¹; ¹Universidade de Sao Paula - ESALQ, Piracicaba, Sao Paulo, Brazil

17:30

585. Solving the Weed Problem in Africa would Increase Food Production and Improve the Lives of Women and Children. Leonard Gianessi¹; ¹CropLife Foundation, Washington, DC, United States of America

17:45

586. Achieving High Adoption of IWM in Direct-Seeded Rice in the Philippines. Sally Marsh¹, Madonna Casimero², Rick Llewellyn³, Jesusa Beltran¹, Leylani Juliano²; ¹University of Western Australia, Crawley, Western Australia, Australia; ²Philippines Rice Research Institute, Maligaya, Nueva Ecija, Philippines; ³CSIRO Sustainable Ecosystems, Urrbrae, South Australia, Australia

Section 8. Biocontrol

Location: Salon B

16:30 - 18:00

Organizer: Raghavan Charudattan, University of Florida/IFAS, Gainesville, FL, USA

Co-Organizer: Mic Julien, CSIRO European Laboratory, Montpellier, France

16:30

587. **Mass-Production of Insect Agents for Strategic Use in Classical Weed Biological Control.** Rosemarie De Clerck-Floate¹; ¹Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada

17:00

588. **Application of Biological Control to Vegetation Management in Forest Ecosystems.** Simon Shamoun¹; ¹Canadian Forest Service, Pacific Forestry Centre, Victoria, BC, Canada

17:30

589. **Efficacy of Granular Formulations Containing *Phoma macrostoma* for Control of *Taraxacum officinale* in Turf.** Karen Bailey¹, Jo-Anne Derby¹, Russell Hynes¹, Stuart Falk²; ¹Agriculture & Agri-Food Canada, Saskatoon, Saskatchewan, Canada; ²The Scotts Company, Marysville, Ohio, United States of America

17:45

590. **Possibilities of Activity Enhancement of *Zygomma bicolorata*, a Biocontrol Agent of *Parthenium hysterophorus*, by Temperature Regulated Diapause Aversion.** Puja Ray¹, Sushil Kumar¹; ¹National Research Centre for Weed Science, Jabalpur, Madhya Pradesh, India

Section 14. Spread and Management of Invasive Species

Location: Salon A

16:30 - 18:00

Organizer: Liz Galli-Noble, Center for Invasive Plant Management, Bozeman, MT, USA

Co-Organizer: Anibal Pauchard, Universidad de Concepción, Concepción, Chile

16:30

591. **Are there any General Patterns of Plant Invasions?** Marcel Rejmanek¹; ¹University of California, Davis, Davis, California, United States of America

17:00

592. **Understanding Patterns and Impacts of Invasive Species: Lessons from Two Fabaceae Species in Chile.** Anibal Pauchard¹; ¹Universidad de Concepción, Concepción, Chile

17:15

593. **Spread of an Invasive Macrophyte in Northern Queensland, Australia: Understanding Associated Factors and Areas at Risk.** Lynise Wearne¹, Peta Wright¹, Anthony Grice¹; ¹CSIRO, Townsville, Queensland, Australia

17:30

594. **Characterizing Pathways of Invasive Plant Spread to Alaska: Propagules from Container-Grown Ornamentals.** Jeffery Conn¹; ¹USDA-ARS, Fairbanks, Alaska, United States of America

17:45

595. **Evaluating the Role of Vehicles in the Transportation and Spread of Plant Propagules.** Lisa Rew¹, Hal Balbach; ¹Montana State University, Bozeman, MT, United States of America

TUESDAY, 24 June

PLENARY SESSION

Location: Salon ABC

8:30 - 9:15

Presiding: Bernal Valverde, President IWSS

Plenary Speaker: Chris Somerville, University of California at Berkeley, Berkeley, CA, USA

8:30 - 9:15

596. **The Development of Cellulosic Biofuels.** Chris Somerville¹; ¹University of California, Berkeley, Berkeley, CA, United States of America

MAIN TOPIC SESSIONS

Section 7. Long Term Impacts of Herbicide Tolerant Crops

Location: Salon A

9:30 - 13:00

Organizer: Christopher Preston, University of Adelaide, Adelaide, Australia

Co-Organizer: Hugh Beckie, Agriculture and Agri-Food Canada, Saskatoon, Canada

9:30

597. **Glyphosate-Resistant Wheat and Canola Systems: Volunteer Crop Persistence.** Robert Blackshaw¹, Ken Harker¹, George Clayton¹, John O'Donovan¹, Eric Johnson¹, Yantai Gan¹, Rick Holm², Ken Sapsford², Bryon Irvine¹, Rene Van Acker³; ¹Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada; ²University of Saskatchewan, Saskatoon, Saskatchewan, Canada; ³University of Guelph, Guelph, Ontario, Canada

9:45

598. **Glyphosate-Resistant Wheat and Canola Systems:**

Weed Communities. Kenneth Harker¹, George Clayton¹, Robert Blackshaw¹, John O'Donovan¹, Newton Lupwayi¹, Eric Johnson¹, Yantai Gan¹, Robert Zentner¹, Guy Lafond¹, Byron Irvine¹; ¹Agriculture & Agri-Food Canada, Lacombe, Alberta, Canada

10:00

599. Assessing Long-Term Viability of Roundup Ready Technology as a Foundation for Cropping Systems. David Shaw¹, Robert Wilson², William Johnson³, Stephen Weller³, Micheal Owen⁴, Bryan Young⁵, David Jordan⁶; ¹Mississippi State University, Mississippi State, MS, United States of America; ²University of Nebraska, Scotts Bluff, NE, United States of America; ³Purdue University, West Lafayette, IN, United States of America; ⁴Iowa State University, Ames, IA, United States of America; ⁵Southern Illinois University, Carbondale, IL, United States of America; ⁶North Carolina State University, Raleigh, NC, United States of America

10:30

600. Long-Term Effects of Herbicide-Tolerant Corn in the Philippines. Aurora Baltazar¹, Wilma Cuaterno², Santiago Palisada², Paulino Matamis², Roynic Aquino², Abraham Fajardo², Virginia Rendon², Eduardo Lit², Pepito Leya², Luduvina Dumaya², Dina Casa², Orlando Lorenzana²; ¹University of the Philippines Los Banos, Los Banos, Laguna, Philippines; ²Department of Agriculture, Manila, Philippines

11:00 - 11:30

Energy Break

Location: Salon DEF

11:30

601. Weed Infestation in Multi-Year Cultivation of Glyphosate-Resistant Maize. Arnd Verschwele¹, Norbert Müller²; ¹Julius-Kühn-Institute, Braunschweig, Niedersachsen, Germany; ²Monsanto International SARL, Morges, Switzerland

12:00

602. A Long-Term Study of Weed Flora Shifts in Arable Crops in Argentina. Eduardo Puricelli¹, Daniel Tuesca¹; ¹Universidad Nacional de Rosario, Rosario, Santa Fe, Argentina

12:30

603. Impacts of Long-Term Glyphosate-Resistant Cropping Systems on Weed Communities in Ontario. Peter Sikkema¹, Robert Gulden¹, Allan Hamill², Francois Tardif¹, Clarence Swanton¹; ¹University of Guelph, Ridgetown, Ontario, Canada; ²Agriculture & Agri-Food Canada, Ridgetown, Ontario, Canada

12:45

604. Sustainability of Glyphosate-Resistant Cropping Systems - Results from 10 Years of Research in the U.S. High Plains. Robert Wilson¹, Stephen Miller², Andrew Kniss², Philip Westra³, Phillip Stahlman⁴, Robert Klein¹; ¹University of Nebraska - Lincoln, Scottsbluff, Nebraska, United States of America; ²University of Wyoming, Laramie, Wyoming, United States of America; ³Colorado State University, Ft. Collins, Colorado, United States of America; ⁴Kansas State University, Hays, Kansas, United States of America

Section 10. Site Specific Weed Management

Location: Salon B

9:30 - 12:00

Organizer: Roland Gerhards, University of Hohenheim, Stuttgart, Germany

Co-Organizer: Svend Christensen, University of Southern Denmark, Odense, Denmark

9:30

605. Technology for Site-Specific Weed Control. Markus Sökefeld¹; ¹University of Hohenheim, Stuttgart, Germany

10:00

606. Progress in Site Specific Weed Control/Herbicide Use in The Netherlands. Corné Kempenaar¹, Vincent Achten¹, Frits van Evert¹, Bert Lotz¹, Rommie van der Weide¹, Jan van de Zande¹; ¹Wageningen University & Research Centre, Wageningen, Gelderland, Netherlands

10:15

607. Automated Detection and Spraying of Volunteer Potato Plants in Sugar Beet Fields. Ard Nieuwenhuizen¹, Jan Willem Hofstee¹, Eldert van Henten¹, Sebastiaan van der Steen¹, Jan van de Zande²; ¹Wageningen University, Wageningen, Gld, Netherlands; ²Plant Research International WUR, Wageningen, Gld, Netherlands

10:30

608. Identifying Weed Distribution Using Soil Properties. Hamid Salehian¹, Saeid Soltani¹; ¹Ghaemshahr Islamic Azad University, Sari, Mazandaran, Iran

10:45

609. Is Patch Spraying a Viable Option for UK Farmers in 2008? Jonathan Storkey¹, Paul Miller²; ¹Rothamsted Research, Harpenden, Herts, United Kingdom; ²The Arable Group, Silsoe, Beds, United Kingdom

11:00 - 11:30

Energy Break

Location: Salon DEF

11:30

610. **An Innovative Approach for Weed Detection using Laser Scanning Technology.** Hanan Eizenberg¹, Sagi Filin²; ¹ARO, Ramat Yishay, Israel; ²Technion – Israel Institute of Technology, Haifa, Israel

11:45

611. **Exploratory Spatial Analysis of Noxious *Orobanche* Species Data in Greece.** Dionyssia Lyra¹, Dionysios Kalivas¹, Garifalia Economou¹, Kostas Zahokostas¹, Georgios Kaltsoudas¹, Vasilios Mavrozidis¹, Panagiotis Dermatas¹, Georgios Doris¹, Giannis Papaiordanidis¹, Giannis Garilas¹, Kostas Ganasoulis¹, Vasileios Bournakas¹; ¹Agricultural University of Athens, Athens, Greece

Section 12. Weed Management in Organic Farming

Location: Salon C

9:30 - 13:00

Organizer: Paolo Barberi, Land Lab-Scuola Superiore, Pisa, Italy

Co-Organizer: Daniel Cloutier, Institut de Malherbologie, Beaconsfield, Canada

9:30

612. **Strategic use of Diversification, Soil-Improving Practices, and Knowledge of Seedbank Ecology Contributes to Progress in Organic Weed Management.** Eric Gallandt¹; ¹University of Maine, Orono, ME, United States of America

10:00

613. **New Technologies Call for New Research Priorities in Physical Weed Control with Low Selectivity.** Jesper Rasmussen¹, Michael Nørremark², Bo Martin Bibby²; ¹The University of Copenhagen, Taastrup, Denmark; ²The University of Aarhus, Horsens, Denmark

10:15

614. **Effects of Sowing Measures on Weeds and Yield of Organically Grown Wheat.** Arnd Verschwele¹; ¹Julius Kühn Institute, Braunschweig, Niedersachsen, Germany

10:30

615. **Organic Vegetable Cropping Systems for Purple Nutsedge Management.** Carlene Chase¹, Rosalie Koenig¹, Jeffery Pack²; ¹University of Florida, Gainesville, Florida,

United States of America; ²Escuela Agrícola Panamericana, Tegucigalpa, Honduras

10:45

616. **Pre-Plant Composting of Organic Matter Helps Weed Control in Organically Grown Vegetables.** Barakat Abu Irmaileh¹, Azmi Abu Rayyan¹; ¹Faculty of Agriculture-University of Jordan, Amman, Jordan

11:00 - 11:30

Energy Break

Location: Salon DEF

11:30

617. **System-Level Comparisons of Weed Control Strategies in Spring-Sown Barley.** Lauren Kolb¹, Eric Gallandt¹, Tom Molloy¹; ¹University of Maine, Orono, ME, United States of America

11:45

618. **Changes in Weed Communities During the Transition to Organic Production.** John Masiunas¹, Isabel Rosa¹; ¹University of Illinois, Urbana, IL, United States of America

12:00

619. **Changes of Weed Seedbank Characterization under Rice-Duck Farming System.** Wei Shouhui¹, Zhang Chaoxian¹, Qiang Sheng²; ¹Chinese Academy of Agricultural Sciences, Haidian, Beijing, China (Peoples Republic of); ²Nanjing Agricultural University, Nanjing, Jiangsu Province, China (Peoples Republic of)

12:15

620. **Optimizing the Role of Cover Crop Residue Material for Weed Suppression.** Marjolein Kruidhof¹, Lammert Bastiaans¹; ¹Wageningen University, Wageningen, Wageningen, Netherlands

12:30 - 13:00

Poster Discussion

Section 21. Spotlights on Global Weeds

Location: Salon 1

9:30 - 13:00

Organizer: Ricardo Labrada Romero, UN/FAO, Rome, Italy

Co-Organizer: R.M. Kathiresan, Annamalai University, Tamilnadu, India

9:30

621. ***Hydrilla verticillata* – A World-Wide Problem.** Michael Grodowitz¹, Michael Smart¹; ¹U.S. Army Engineers

Research and Development Center, Vicksburg, MS, United States of America

10:00

622. **Water Hyacinth is Dispersing to other Non-Tropical Areas.** Ricardo Labrada¹; ¹FAO, Rome, Italy

10:15

623. ***Solanum elaeagnifolium* Cav.: Importance, Distribution and Control Methods.** Mohamed Bouhache¹; ¹Institut Agronomique et Vétérinaire Hassan II, Rabat, Morocco

10:30

624. **Current Status of Distribution and Management of Parthenium at a Global Level.** Jay Varshney¹, Sushil Kumar¹; ¹National Research Centre for Weed Science, Jabalpur, Madhya Pradesh, India

10:45

625. **Parthenium Weed Research Aids Management of this Weed in the Agroecosystems of Ethiopia and Pakistan.** Stephen Adkins¹; ¹University of Queensland, Brisbane, Queensland, Australia

11:00 - 11:30

Energy Break

Location: Salon DEF

11:30

626. ***Ambrosia artemisiifolia* - Motivation for a European-Wide Activity.** Christian Bohren¹, Georges Mermillod¹, Nicolas Delabays¹; ¹Agroscope ACW, Nyon, Switzerland

11:45

627. **Honeysuckle Mesquite, *Prosopis juliflora* (Swartz) DC, A Major Invasive Plant in Various Regions of the World.** Ramanathan Kathiresan¹; ¹Annamalai University, Annamalai Nagar, Tamilnadu, India

12:00

628. **The Invasiveness of the African Tulip Tree (*Spathodea campanulata* Beauv.).** Ricardo Labrada¹; ¹FAO, Rome, Italy

12:15

629. ***Ulex Europaeus* - A Global Weed.** Hernan Norambuena¹; ¹Instituto de Investigaciones Agropecuarias (INIA), Temuco, Region de la Araucania, Chile

12:30 - 13:00

Poster Discussion

13:00 - 14:30

LUNCH

Section 3. Modeling Problems and Solutions

Location: Salon C

14:30 - 16:00

Organizer: Lammert Bastiaans, Wageningen University, Wageningen, The Netherlands

Co-Organizer: Matt Liebmann, Iowa State University, Ames, Iowa

14:30

630. **A Weed Traits Database for Predicting the Response of Weed Communities to Management.** Jonathan Storkey¹, Niels Holst²; ¹Rothamsted Research, Harpenden, Hertfordshire, United Kingdom; ²Danish Institute of Agricultural Sciences, Flakkebjerg, Slagelse, Denmark

14:45

631. **Hormesis in Mixtures – Can it be Predicted?** Regina Belz¹, Nina Cedergreen², Helle Sørensen²; ¹University of Hohenheim, Institute of Phytomedicine, Stuttgart, Baden-Württemberg, Germany; ²University of Copenhagen, Faculty of Life Science, Taastrup, Denmark

15:00

632. **Individual-Based Modeling Shows that Low Herbicide Application Rates Can Lead To Faster Development of Resistance.** Michael Renton¹, Art Diggle², Stephen Powles¹; ¹University of Western Australia, Perth, WA, Australia; ²Department of Agriculture and Food Western Australia, Perth, WA, Australia

15:15

633. **Stella® Modeling Encourages Systems-Thinking in an Undergraduate Weed Ecology and Management Class.** Lauren Kolb¹, Nadiya Dragan¹, David Merrill¹, Kara Cox¹, Eric Gallandt¹; ¹University of Maine, Orono, ME, United States of America

15:30 - 16:00

Poster Discussion

Section 8. Biocontrol

Location: Salon B

14:30 - 16:00

Organizer: Raghavan Charudattan, University of Florida/IFAS, Gainesville, FL, USA

Co-Organizer: Mic Julien, CSIRO European Laboratory, Montpellier, France

14:30

634. **The Economic Impact of Biocontrol Programs.** Rachel

McFadyen¹; ¹CRC for Australian Weed Management, Brisbane, Queensland, Australia

15:00

635. **SolviNix, A Bioherbicide for Tropical Soda Apple (*Solanum viarum*).** Raghavan Charudattan¹, Ernest Hiebert², Mark Elliott¹, James DeValerio¹, Gabriella Maia¹; ¹University of Florida, Gainesville, FL, United States of America; ²BioProdex, Inc., Gainesville, FL, United States of America

15:15

636. **The Bugs that Ate Garlic Mustard: New Possibilities for Biological Control.** Colin Yates¹, Stephen Murphy¹; ¹University of Waterloo, Waterloo, ON, Canada

15:30 - 16:00

Poster Discussion

Section 6. Regulatory and 16. Education

Location: Salon 1

14:30 - 16:00

Organizer: Janis McFarland, Syngenta Crop Protection, Greensboro, NC, USA, Jerry Doll, University of Wisconsin, Madison, WI, USA

Co-Organizer: Rick Llewellyn, CSIRO, Glen Osmond, Australia, Eduardo Leguizamon, Universidad Nacional de Rosario, Santa Fe, Argentina

14:30

637. **Atrazine and Amphibians: Lessons Learned from Risk Assessment of Reproductive Effects from Agricultural Uses.** Keith Solomon¹, James Carr², Louis Du Preez³, John Giesy⁴, Ronald Kendall², Ernest Smith², Glen Van der Kraak¹; ¹University of Guelph, Guelph, ON, Canada; ²Texas Tech University, Lubbock, TX, United States of America; ³North West University, Potchefstroom, South Africa; ⁴University of Saskatchewan, Saskatoon, SK, Canada

15:00

638. **Assessing the Value of Atrazine and the Value of Educating Producers About Proper Use of Atrazine in Pesticide Applicator Recertification Programs.** Glenn Nice¹, Fred Whitford¹, Bill Johnson¹, Cheri Janssen¹; ¹Purdue University, West Lafayette, Indiana, United States of America

15:15

639. **Pesticide Registration and Management in China.** Zhang Hongjun¹, Liu Xue¹; ¹ICAMA, Beijing, China (Peoples Republic of)

15:30 - 16:00

Poster Discussion

Section 14. Spread and Management of Invasive Species

Location: Salon A

14:30 - 16:00

Organizer: Liz Galli-Noble, Center for Invasive Plant Management, Bozeman, MT, USA

Co-Organizer: Anibal Pauchard, Universidad de Concepción, Concepción, Chile

14:30

640. **The Spatial Spread of *Microstegium vimineum* (Japanese Stiltgrass), an Invasive Weed.** Emily Rauschert¹, David Mortensen¹, Ottar Bjornstad¹, Andrea Nord¹, Nora Peskin²; ¹The Pennsylvania State University, University Park, PA, United States of America; ²Gobierno de la Ciudad de Buenos Aires, Buenos Aires, Argentina

14:45

641. **Changes in Seed Bank Communities Associated with Plant Invasions.** Margherita Gioria¹, Bruce Osborne²; ¹Arizona State University, Tempe, Arizona, United States of America; ²University College Dublin, Dublin, Ireland

15:00

642. **Establishment of a Precaution and Control Program for Invasive Alien Plants-A Case Study of Goldenrod (*Solidago canadensis*) in China.** Sheng Qiang¹; ¹Nanjing Agricultural University, Nanjing, Jiangsu Province, China (Peoples Republic of)

15:15

643. **Differences in Growth and Competitive Ability between Native and Introduced Populations of *Genista monspessulana* (French Broom).** Richard Smith¹, Angelica Herrera², Raymond Carruthers¹; ¹USDA-ARS, Albany, California, United States of America; ²USDA-ARS, UC Berkeley, Albany, California, United States of America

15:30 - 16:00

Poster Discussion

16:00 - 16:30

Energy Break

Location: Salon DEF

Section 1. Biology, Dynamics and Ecology of Weeds: Population Dynamics

Location: Salon A

16:30 - 18:00

Organizer: Clarence Swanton, University of Guelph, Guelph, ON, Canada

Co-Organizer: Jon Marshall, Marshall Agroecology Ltd., Somerset, United Kingdom

16:30

644. **Modelling Weed Population Dynamics: Problems & Prospects.** Robert Freckleton¹; ¹University of Sheffield, Sheffield, United Kingdom

17:00

645. **Population Regulation by Population Size: Small Populations of Weeds have Demographic and Genetic Limitations on Reproduction.** Jeffrey Firestone¹, Marie Jasieniuk¹; ¹Univ. California, Davis, Davis, California, United States of America

17:15

646. **A Quantative Analysis of Temperature-Dependent Dormancy Changes in *Polygonum aviculare* Seeds.** Diego Batlla¹, Andrea Grundy², Katherine Dent², Heather Clay², William Finch-Savage²; ¹Facultad de Agronomía, Universidad de Buenos Aires, Ciudad de Buenos Aires, Buenos Aires, Argentina; ²Warwick HRI, Warwick University, Wellesbourne, Warwick, United Kingdom

17:30

647. **Analysis of Early Growth of Weeds and Crops as Influenced by Temperature Regime.** Ivan Sartorato¹, Guido Pignata¹, Maurizio Sattin¹; ¹National Research Council - CNR, Legnaro, Padova, Italy

17:45

648. **Evaluation of Base Temperature of Several Weed Species.** Jean-Philippe Guillemain¹, Carole Reibel¹, Sylvie Granger¹; ¹ENESAD - UMR BGA, Dijon, Bourgogne, France

Section 4. Natural Products

Location: Salon C

16:30 - 18:00

Organizer: Franck Dayan, University of Mississippi, University, MS, USA

Co-Organizer: C.H. Kong, Chinese Academy of Sciences, Shenyang, China

16:30

649. **Novel Weapons and Exotic Plant Invasions.** Ragan Callaway¹; ¹The University of Montana, Missoula, MT, United States of America

17:00

650. **Benzoxazinones as Natural Herbicide Models.** Francisco Macias¹, Jose Molinillo, Nuria Arroyo, Rosa Varela; ¹University of Cadiz, Puerto Real (Cadiz), Saharaui Republic, Spain

17:30

651. **The Function of Momilactone A and B in Rice Allelopathy.** Hisashi Kato-Noguchi¹; ¹Kagawa University, Miki, Kagawa, Japan

17:45

652. **Inhibition of Plant Enoyl (Acyl Carrier Protein) Reductase by the Natural Diphenyl Ether Cyperin.** Franck Dayan¹, Zhiqiang Pan¹; ¹USDA-ARS NPUPU, Oxford, MS, United States of America

Section 11. Weed Management in Turf, Parks, Recreation Areas and Right-of-ways

Location: Salon 1

16:30 - 18:00

Organizer: Timothy Prather, University of Idaho, Moscow, ID, USA

Co-Organizer: Kai Umeda, Maricopa County Cooperative Extension, Phoenix, AZ, USA

16:30

653. **Advances in Non-Chemical Weed Control in Urban Landscapes.** Mario Lanthier¹; ¹CropHealth Advising & Research, Kelowna, British Columbia, Canada

17:00

654. **DuPont Aminocyclopyrachlor (Proposed Common Name) (DPX-MAT28/KJM44) Herbicide for use in Turf, IWC, Bare-ground and Brush Markets.** Jon Claus¹, Ronnie Turner¹, Gregory Armel², Mark Holliday¹; ¹DuPont, Wilmington, DE, United States of America; ²University of Tennessee, Knoxville, TN, United States of America

17:15

655. **Absorption and Translocation of 14C DPX-KJM44 and DPX-MAT28 in *Cirsium arvense* (Canada Thistle).** Bekir Bukun¹, Scott Nissen¹, Philip Westra¹, Galen Brunk¹, Dale Shaner¹, Todd Gaines¹; ¹Colorado State University, Fort Collins, Colorado, United States of America

17:30

656. Response *Cyperus esculentus* to Sulfosulfuron in Turfgrass. Prasanta C. Bhowmik¹, Dipayan Sarkar¹; ¹University of Massachusetts, Amherst, MA, United States of America

17:45

657. Control of *Cyperus rotundus* in Turfgrass with Four Consecutive Years of Postemergence Applications of ALS-Inhibiting Herbicides. Kai Umeda¹; ¹University of Arizona, Phoenix, Arizona, United States of America

Section 18. Weed Management in Field Crops

Location: Salon B

16:30 - 18:00

Organizer: Pedro Christoffoleti, Producao Vegetal ESALQ/USP, Piracicaba, Brazil

Co-Organizer: Mark VanGessel, University of Delaware, Georgetown, DE, USA

16:30

658. Challenges in Field Crops Production under Conservation Systems of Tropical Agriculture – an Overview of Weed Science in Brazil. Rubem Oliveira¹; ¹State University of Maringé, Maringé, Paraná, Brazil

17:00

659. Weed Dynamics and Grain Yield as Influenced by Tillage and Weed Control Methods in Rice-Wheat Cropping System in Chhattisgarh, India. Amrit Singh¹, Tapas Choudhary¹, S Kolhe¹, B Chandrakar¹; ¹Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India

17:15

660. Weed Survey, Weed Escapes and Crop Yield in Glyphosate-Resistant Soybean in Argentina. Julio Scursioni¹, Emilio Satorre¹; ¹Facultad de Agronomía, Buenos Aires, Buenos Aires, Argentina

17:30

661. Effect of Soil Tillage Systems on the Control of Perennial Weeds in a Fluvisol. Rusu Teodor¹, Gus Petru¹, Bogdan Ileana¹, Moraru Paula¹, Pop Adrian¹, Oroian Ioan¹, Pacurar Ioan¹, Paulette Laura¹; ¹University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Cluj Napoca, Cluj, Romania

17:45

662. Improved Weed Management and Production Methods for Conservation Tillage Dry Bean. Robert Blackshaw¹; ¹Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada

WEDNESDAY, 25 June EXCURSIONS

Busses departing from the UBC and the Westin: Final times to be announced. Busses returning at approximately 18:30.

THURSDAY, 26 June

PLENARY SESSION

Location: Salon ABC

8:30 - 9:15

Presiding: Bernal Valverde, President IWSS

Plenary Speaker: Bao-Rong Lu, School of Life Sciences, Fudan University, Shanghai, China (Peoples Republic of)

663. **Development of Crop Production in China: A Case Study in Rice.** Bao-Rong Lu¹, Hui Xia¹; ¹School of Life Sciences, Shanghai, Shanghai, China (Peoples Republic of)

POSTER SESSION 2

Location: Salon DEF

9:30 - 11:00

Organizer: Robert Blackshaw, Local Arrangements Chair, Agriculture & Agri-Foods Canada, Lethbridge, AB, Canada

Section 1. Biology, Dynamics and Ecology of Weeds

277. **Base Temperature Estimation of 21 Weeds and Crops.** Ivan Sartorato¹, Guido Pignata¹; ¹National Research Council - CNR, Legnaro, Padova, Italy

278. **Influence of Population Origin and Cohort on the Seasonal Emergence of *Galium* species.** Aritz Royo-Esnal¹, Àngels Blázquez¹, Josep Antoni Conesa¹, Jordi Recasens¹; ¹University of Lleida, Lleida, Spain

279. **Effect of Sowing Depth and Temperature Regime on Wild Barley (*Hordeum spontaneum*) and Wheat Seedling Emergence and Early Growth.** Farnaz Kordbacheh¹, Eshagh Keshtkar¹, Mohsen Mesgaran¹, Hamid Mashhadi¹, Hassan Alizadeh¹; ¹University of Tehran, Karaj, Tehran, Iran

280. **The Ability of *Medicago sativa* (alfalfa) to Establish Feral Populations in Natural and semi-Natural Environments in Western Canada.** Muthukumar Bagavathiannan¹, Rene

Van Acker²; ¹University of Manitoba, Winnipeg, Manitoba, Canada; ²University of Guelph, Guelph, Ontario, Canada

281. **Leaf Vertical Distribution of Common Cocklebur and Jimsonweed in Competition with Maize Crop.** Hassan Karimmojeni¹, Hamid Rahimian Mashadi¹, Hassan Mohammad Alizadeh¹, Mehdi Nassiri Mahallati², Mohsen Beheshtian Mesgaran¹; ¹University of Tehran, Karaj, Tehran, Iran; ²University of Mashhad, Mashhad, Khorasan Razavi, Iran

282. **Seed Predation Assessment - Comparing Methods.** Stanislava Koprdoва¹, Pavel Saska¹, Zdenka Martinkova¹; zyne, Czech Republic, Czech Republic

283. **Weed Seed Burial Rate as Affected by Seed Size and Crop Environment.** Paula Westerman¹, Philip Dixon², Matt Liebman²; ¹Universitat de Lleida, Lleida, Catalunya, Spain; ²Iowa State University, Ames, Iowa, United States of America

284. **The Impact of Water Stress on Wild Radish (*Raphanus raphanistrum* L.) Seed Dormancy.** Seyed Vahid Eslami¹, Gurjeet Gill², Glenn McDonald², Bill Bellotti²; ¹The University of Birjand, Birjand, South Khorasan, Iran; ²The University of Adelaide, Adelaide, South Australia, Australia

285. **Simulating the Effects of Solarization on Seed Germination of False Jagged-Chick Weed (*Lepyrodictis holosteoides* C.A.Mey).** Zoheir Ashrafi¹, Hamid Mashhadi¹, Hassan Alizadeh¹, Sedighe Sadeghi¹; ¹University of Tehran, Karaj, Tehran, Iran

286. **Genetic Diversity Analysis on *Commelina communis* L. by RAPD.** Hong Ma¹, Bo Tao¹; ¹Northeast Agriculture University, Harbin, Heilongjiang Province, China (Peoples Republic of)

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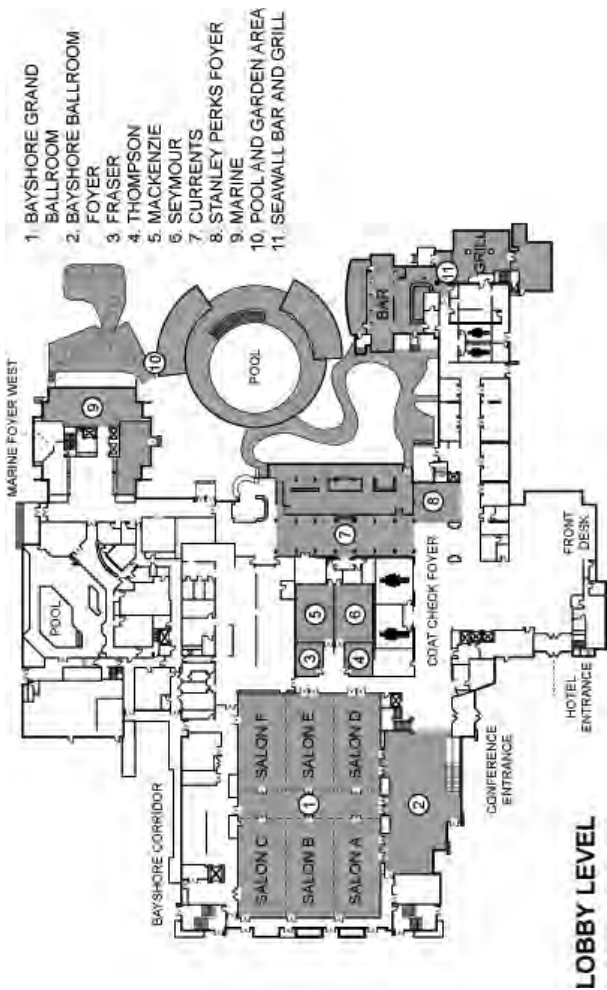
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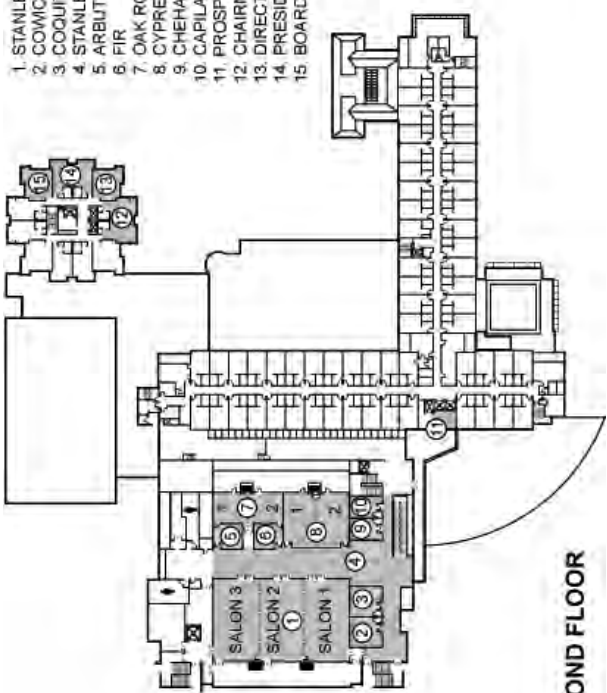
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1. STANLEY PARK BALLROOM
2. COWCHAN
3. COQUITLAM
4. STANLEY PARK FOYER
5. ARBUTUS
6. FIR
7. OAK ROOM
8. CYPRESS ROOM
9. CHEHALIS
10. CAPILANO
11. PROSPECT
12. CHAIRMAN
13. DIRECTOR
14. PRESIDENT
15. BOARDROOM



SECOND FLOOR

National University, Suncheon, Chollanamdo, Korea, South; ²ShinHung Pharmaceutical Co., Yeosu, Chollanamdo, Korea, South

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386. **Effect of Sunflower Extract on Wheat and Soil.** Javed Kamal¹, Asghari Bano¹, Muhammad Riaz¹; ¹Quaid-I-Azam University, Islamabad, Pakistan

387. **Study of Allelopathic Effects of Rye and Wheat on Germination and Early Growth of Lambsquarter (*Chenopodium album*) and Black Nightshade (*Solanum nigrum*).** Omid Younesi¹, Farzad Sharifzade¹, Allahverdi Haghpanah¹; ¹University of Tehran, Isfahan, Iran

388. **Study of Allelopathic Effects of Cool Season Crops Stubble on Germination and Early Growth of Spring Crops.** Omid Younesi¹, Farzad Aharifzade¹, Allahverdi Haghpanah¹, Zoheir Yaghoubi¹; ¹University of Tehran, Isfahan, Iran

389. **The Impact of Weed-Leaf Residues on the Growth of Wheat and Tomato Plants.** Shachi Gupta¹, Rup Narayan¹; ¹I. P. (Post-Graduate) College, Bulandshahr, Uttar Pradesh, India

390. **Herbicidal Activity of Clove Oil and its Constituents.** Asalatha Manda¹, Renata Matraszek¹, Murray Isman¹, Mahesh Upadhyaya¹; ¹University of British Columbia, Vancouver, B.C., Canada

391. **Allelopathic Potential of Rice (*Oryza sativa* L.) Root Exudates on *Echinochloa crus-galli* (Barnyardgrass) and *Sagittaria trifolia* (Arrowhead) Seedlings Growth Traits.** Jafar Asghari¹, Saman Berendji¹; ¹University of Guilan, Rasht, Guilan, Iran

392. **Screening Persian Rice (*Oryza sativa* L.) Allelopathic Varieties by Evaluating Hull Extracts on Two Important Weeds Seedlings Growth.** Saman Berendji¹, Jafar Asghari¹, Amir Abbas Matin²; ¹University of Guilan, Rasht, Guilan, Iran; ²Food and Chemical Analysis Research Lab, Jahad-

Daneshgahi, University of Urmia, Urmia, Western Azarbaijan, Iran

393. **Using Yellow Mustard Seed Meal and Seed Meal Extracts as Bioherbicides.** Lydia Clayton¹, Donald Thill¹, William Price¹, Matt Morra¹, Vladimir Borek¹; ¹University of Idaho, USA, Moscow, Idaho, United States of America

394. **Phytotoxic Effects of *Croton bonplandianum* Residues on some Weed and Crop Plants.** M Siddiqui¹, Swapnal Sisodia¹; ¹A.M. University, Aligarh, Uttar Pradesh, India

395. **Allelopathic Effects of *Parthenium hysterophorus* L. Extracts on Seed Germination and Growth of Wheat and Associated Weeds.** Anees Amin¹; ¹NWFP Agricultural University Peshawar, Pakistan, Peshawar, NWFP, Pakistan

Section 5. Formulation and Adjuvants

396. **The Evaluation of Metsulfuron -Methyl Formulations against Broad Leaf Weeds in Wheat (*Triticum aestivum* L.).** Ramesh Singh¹; ¹Institute of Agri. Sci. Banaras Hindu University, Varanasi, Uttar Pradesh, India

397. **Adjuvant Effects on Performance and Rainfastness of Tribenuron-Methyl on Broadleaved Weeds.** Euro Pannacci¹, Per Kudsk², Solvejg K. Mathiassen², Gino Covarelli¹; ¹University of Perugia, Perugia, Italy; ²Faculty of Agricultural Sciences, University of Aarhus, Slagelse, Denmark

398. **The Response of *Phalaris minor* to Different Adjuvant and Herbicides.** Atefeh Mousavi Nik¹, Eskandar Zand¹, Mohammad Ali Baghestani¹; ¹Plant Pests & Diseases Research Institute, Weed Science Department, Tehran, Iran

399. **Response of Three Weeds to Different Doses of Pinoxadone.** Atefeh Mousavi Nik¹, Mohamad Ali Baghestani¹, Eskandar Zand¹; ¹Plant Pests & Diseases Research Institute, Weed Science Department, Tehran, Iran

400. **The Effect of Various Adjuvants and Herbicides on *Avena fatua*.** Atefeh Mousavi Nik¹, Eskandar Zand², Mohammad Ali Baghestani²; ¹The Institution of Pests & Diseases Research, Weed Science Department, Tehran, Iran; ²Plant Pests & Diseases Research Institute, Weed Science Department, Tehran, Iran

401. **Evaluation Varies Adjuvant and Herbicides on *Lolium temulentum*.** Atefeh Mousavi Nik¹, Mohamad Ali Baghestani¹, Eskandar Zand¹; ¹Plant Pests & Diseases Research Institute, Weed Science Department, Tehran, Iran

Section 9. New and Emerging Technologies

402. **“Ultra High Throughput In Vivo Screening” - Fundamental Herbicide Research Screening Platform.** Dirk Schmutzler¹, Hansjörg Krähmer¹, Mark Wilhelm Drewes¹, Christian Paulitz¹; ¹Bayer CropScience, Frankfurt/Main, Hessen, Germany

403. **BAS 800H: A New Herbicide for Preplant Burndown and Preemergence Dicot Weed Control.** Steven Bowe¹, Rex Liebl¹, Helmut Walter¹, Thomas Holt¹, Bernd Sievernich¹, William Patzoldt¹; ¹BASF, Research Triangle Park, NC, United States of America

404. **Managing Striga Infestation with Metsulfuron and Imazapyr Seed Treatments in Grain Sorghum Resistant to Acetolactate Synthase-Inhibiting Herbicides.** Kassim Al-Khatib¹, Souley Soumana², Newton Ochanda¹, Issoufou Kapran², Aboubacar Toure³, Issoufou Salami², Siaka Dembele³, Aad van Ast⁴, Lammert Bastiaans⁴, Mitchell Tuinstra⁵; ¹Kansas State University, Manhattan, Kansas, United States of America; ²INRAN, Niamey, Niger; ³IER, Bamako, Mali; ⁴Wageningen University and Research Centre, Wageningen, Netherlands; ⁵Purdue University, West Lafayette, Indiana, United States of America

405. ***Avena fatua* as a Natural Biosorbent for Cu(II) and Zn(II) and the Effect of these Metals on Weed Growth.** Maria Mar Areco¹, Maria Dos Santos Afonso¹; ¹Buenos Aires University, Buenos Aires, Buenos Aires, Argentina

406. **Comparing Roundup Ready Alfalfa to Conventional Alfalfa for Weed Control, Yield, and Forage Quality.** Philip Westra¹, Neil Hanson¹, Joe Bremmer¹, Bill Wailes¹, Shawn Archibeque¹, Terry Angle¹, Brian Larson¹; ¹Colorado State University, Fort Collins, Colorado, United States of America

407. **Comparison of Broadcast and Wet-Blade Applications of 2,4-D and Triclopyr for Control of Woody Species and off Target Impacts on Conservation Reserve Program Lands in Alaska.** Steven Seefeldt¹, Jeffery Conn¹, Phil Kaspari²; ¹USDA/ARS, Fairbanks, Alaska, United States of America; ²University of Alaska Fairbanks, Delta Junction, Alaska, United States of America

408. **Advances in Determining Soil Water Potential Using an Engineered Porous Ceramic and Dielectric Permittivity.** T-jay Clevenger¹, Doug Cobos¹, Colin Campbell¹, Gaylon Campbell¹; ¹Decagon Devices, Inc., Pullman, WS, United States of America

409. **Comparison of Three Methodologies for Efficient Weed Seed Extraction in Studies of Soil Weed Seedbanks.** Mohsen

Mesgaran¹, Hamid Mashhadi¹, Eskandar Zand², Hassan Alizadeh¹; ¹University of Tehran, Karaj, Tehran, Iran; ²Plant and Pest Disease Research Institute, Tehran, Iran

Section 11. Weed Management in Turf, Parks, Recreation Areas and Right-of-ways

410. Innovating Practices for Vegetation Management in the Historic Sites. Garyfallia Economou¹, Maria Papafotiou¹, Ioanna Kanellou¹; ¹Agricultural University of Athens, Athens, Greece

411. The Effect of Suitable Methods of Controlling Destructive Weeds of Urban Foundation (Pavements, Side Walks of the Parks and Landscape). Sedighe Sadeghi¹, Zoheir Ashrafi¹, Hassan Alizadeh¹; ¹University of Tehran, Karaj, Tehran, Iran

412. Weed Management Potential for EPTC Applied Preplant for Sod Production. Sheryl Wells¹, R. H. Walker¹, J. L. Belcher¹; ¹Auburn University, Auburn, Alabama, United States of America

413. Centipedegrass Response to Mesotrione Applied Alone and in Combination with Atrazine. Jason Belcher¹, Robert Walker¹, Joseph McElroy¹; ¹Auburn University, Auburn, Alabama, United States of America

414. Watch on 'T' Weeds in Golf Turf in China. Xue Guang¹; ¹East China Weed Technology Institute, Nanjing, Jiangsu, China (Peoples Republic of)

415. A Precision Conservation Approach for the Efficient Management of a Woody Invasive Riparian Weed. Melissa Bridges¹, Dan Wolford², Ken Wicklund², Philip Westra¹; ¹Colorado State University, Fort Collins, Colorado, United States of America; ²City of Longmont, Colorado, Longmont, Colorado, United States of America

416. Herbicide Combinations to Reduce Application Rates of 2,4-D for Pasture Weed Control. Trevor James¹, Anis Rahman¹; ¹AgResearch, Hamilton, Waikato, New Zealand

417. Effect of N and Weed Control Methods on Weed Management in Lawn. Fazal Munsif¹, Muhammad Waqas²; ¹Agricultural Research Institute, Tarnab, Peshawar, NWFP, Pakistan; ²NWFP Agricultural University, Peshawar, NWFP, Pakistan

418. The Response of *Fimbristylis cymosa* (A Native Hawaiian Sedge) to Fluazifop-p-butyl and Triclopyr. Orville Baldos¹, Joseph DeFrank¹; ¹University of Hawaii at Manoa, Honolulu, Hawaii, United States of America

419. **Fall Applications of Glyphosate for Selective Control of Dallisgrass in Hybrid Bermudagrass Turf.** Robert Walker¹, Jason Belcher¹; ¹Auburn University, Auburn, Alabama, United States of America

420. **Floristic Studies in Urban Park Areas of Mashad (Iran).** Mohammad Bazoobandi¹, Alireza Ghorsi Anbaran, Reza Sadrabadi Haghighi¹; ¹Azad University of Mashhad-Golbahar, Mashhad, Khorasan Razavi, Iran

421. **Response of Dichondra (*Dichondra micrantha*) Turf to Postemergence Herbicides.** Vahid Zabihollahi¹, Fariba Maighany², Mohammad Ali Baghestani², Mohammad Javad Mirhadi³; ¹Tehran, Iran; ²Iranian Crop Protection Research Institute, Tehran, Iran; ³Science and Research Campus, Islamic Azad University, Tehran, Iran

422. **Chemical Control of Dandelion (*Taraxacum officinalis*) in Turf.** Vahid Zabihollahi¹, Fariba Maighany², Mohammad Ali Baghestani², Mohammad Javad Mirhadi³; ¹Tehran, Iran; ²Plant Protection Research Institute, Tehran, Iran; ³Science and Research Campus, Islamic Azad University, Tehran, Iran

423. **Study of Postemergence Herbicides Efficacy in Control of Yellow Foxtail (*Setaria glauca* (L.) P. Beauv) in Turf.** Vahid Zabihollahi¹, Fariba Maighany², Mohammad Ali Baghestani², Mohammad Javad Mirhadi³; ¹Tehran, Iran; ²Iranian Crop Protection Research Institute, Tehran, Iran; ³Science and Research Campus, Islamic Azad University, Tehran, Iran

424. **The Efficacy of Phenoxy Herbicide in Controlling Lawn Weeds.** Sedighe Sadeghi¹, Zoheir Ashrafi², Hassan Alizade¹, Mohsen Mesgaran¹; ¹University of Tehran, Karaj, Tehran, Iran; ²Institute of Medicinal Plants, Academic Center for Education and Cultural Research Complex, Karaj, Tehran, Iran

Section 15. Aquatic Weed Management

425. **Aquatic Weeds and Native Macrophytes in Zambia.** Kevin Murphy¹, Pauline Lang¹, Magdi Ali², Michael Kennedy³, Adam Hastie¹; ¹University of Glasgow, Glasgow, Scotland, United Kingdom; ²South Valley University, Aswan, Aswan Province, Egypt; ³University of Aberdeen, Aberdeen, Scotland, United Kingdom

426. **Effects of Doses of Glyphosate on Water Hyacinth Control and some Water Quality Parameters under Mesocosm Conditions.** Robinson Pitelli¹, Claudinei Cruz¹, Aritana Basile¹, Luiz Luna¹, Antonio Nader Neto¹; ¹Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil

427. **Evaluating Potential of Cross-Resistance Development in Fluridone-Resistant Hydrilla to other Bleaching Herbicides.** Atul Puri¹, William Haller¹, Michael Netherland²; ¹University of Florida, Gainesville, FL, United States of America; ²USACE, Gainesville, FL, United States of America
428. **Controlling Aquatic Weeds in Irrigation Canals with Endothall.** Cody Gray¹, Gerald Adrian¹, Jayne Walz¹; ¹United Phosphorus, Inc., Peyton, CO, United States of America
429. **Competitive Interaction between Two Aquatic Weeds: Water Hyacinth (*Eichhornia crassipes*) and Alligator Weed (*Alternanthera philoxeroides*).** Grama Nanjappa Dhana-pal¹; ¹University of Agricultural Sciences, Bangalore, Karnataka, India
430. **Use of Aquatic Weed as Organic Fertilizer in Eucalyptus.** Thais Clemente¹, Robinson Pitelli²; ¹Ouro Fino Group, Ribeirão Preto, São Paulo, Brazil; ²University of the State of Sao Paulo, Jabotical, São Paulo, Brazil
431. **New Herbicide Application Techniques for the Management of Aquatic Weeds in Australasia.** Bill Chisholm¹, Nimal Chandrasena², Peter Harper³; ¹Aquatic Weed Control Ltd, Dunedin, Otago, New Zealand; ²Ecowise Environmental Pty Ltd, Penrith, Sydney, New South Wales, Australia; ³Bettersafe Pest and Weed Management, Sydney, New South Wales, Australia
432. **Constraints to Managing Alligator Weed [*Alternanthera philoxeroides* (Mart.) Griseb] in Australia.** Nimal Chandrasena¹; ¹Ecowise Environmental Pty Ltd, Penrith, NSW, Australia
433. **Technical Approaches for the Use of Fluridone (Trade-name: Sonar) in Management of Invasive Submersed Aquatic Plants.** Mark Heilman¹, Tyler Koschnick¹; ¹SePRO Corporation, Whitakers, NC, United States of America
434. **Invasion of Loch Lomond Scotland by Alien *Elodea* Species.** Kevin Murphy¹, Sandrine Picq²; ¹University of Glasgow, Glasgow, Scotland, United Kingdom; ²ENSAM Montpellier, Montpellier, France
435. **Management of *Myriophyllum spicatum* and *Myriophyllum heterophyllum* in the United States.** Mike Netherland¹, LeeAnn Glomski¹, Angela Poovey¹, Jeremy Slade²; ¹US Army Engineer Research and Development Center, Gainesville, FL, United States of America; ²Mississippi State University, Mississippi State, MS, United States of America

436. **Selective Control of *Myriophyllum spicatum* L Using Diquat – A Five Year Case Study in Long Term Selective Plant Management.** James Petta¹, Marc Bellaud², Gerald Smith², Michael Lennon²; ¹Syngenta, Corpus Christi, TX, United States of America; ²Aquatic Control Technology, Inc., Sutton, MA, United States of America

437. **Imazamox Absorption and Metabolism by *Myriophyllum spicatum* (Eurasian Watermilfoil).** Joseph Vassios¹, Scott Nissen¹, Galen Brunk¹; ¹Colorado State University, Fort Collins, CO, United States of America

Section 18. Weed Management in Field Crops

438. **Effect of Tank Mixing of Herbicides and Fertilizers on Wheat (*Triticum aestivum*) Yield and Weed Management.** Zoheir Ashrafi¹, Hamid Mashhadi¹, Hassan Alizade¹, Sedighe Sadeghi¹; ¹University of Tehran, Karaj, Tehran, Iran

439. **Weed Management in Field Crops Using Allelopathy in Pakistan.** Zahid Ata Cheema¹, Abdul Khaliq¹, Muhammad Naeem Mushtaq¹, Muhammad Farooq¹; ¹University of Agriculture, Faisalabad, Punjab, Pakistan

440. **The Allelopathic Potential of Rye Grass and Rotational Crops in the Winter Rainfall Area of the Western Cape.** Michael Ferreira¹, Carl Reinhardt²; ¹Agriculture Western Cape, Elsenburg, Western Cape, South Africa; ²University of Pretoria, Gauteng, South Africa

441. **Can Drought Resistance be the Driving Force for Weed Management through Allelopathy?** Garyfallia Economou¹, Andreas Papastavrou¹, Georgios Livanos¹; ¹Agricultural University of Athens, Athens, Greece

442. **Introduction of Optimized Herbicide Dosages (MLHD System) in China.** Corné Kempenaar¹, Hongjun Zhang², Ye Jiming², Liu Xue², Harm Brinks³, Herman Krebbers³, Andries Rosema⁴, Roel Groeneveld¹, Bastiaan Bink⁵, Wu Xiao Bo⁵; ¹Wageningen University & Research Centre, Wageningen, Gelderland, Netherlands; ²ICAMA, Beijing, China (Peoples Republic of); ³DLV Plant, Wageningen, Gelderland, Netherlands; ⁴EARS, Delft, Netherlands; ⁵Hofung, Beijing, China (Peoples Republic of)

443. **Absorption, Translocation, and Metabolism of Glufosinate Confer Various Levels of Tolerance in Crop and Weed Species.** Wesley Everman¹, Scott Clewis², Alan York², John Wilcut²; ¹Michigan State University, East Lansing, MI, United States of America; ²North Carolina State University, Raleigh, NC, United States of America

444. **Cocklebur Control in Soybean.** Nader Soltani¹, Chris Kramer¹, Joshua Vyn¹, Christy Shropshire¹, Peter Sikke-
ma¹; ¹University of Guelph Ridgetown Campus, Ridge-
town, Ontario, Canada
445. **Effect of Crop Density and Weeding Times of Broad
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Zamani¹, Sohrab Mahmoodi¹; ¹University of Birjand,
Birjand, South Khorasan, Iran
446. **Effect of Crop-Weed Density on Common Lambs
Quarters (*Chenopodium album* L.) Competition with Cotton
(*Gossypium hirsutum* L.) in Birjand.** Gholam Reza Zamani¹,
Mojtaba Velayati¹, Majid Jami Alahmadi¹, Rahele Abedi-
ni¹; ¹The University of Birjand, Birjand, South Khorasan,
Iran
447. **Effects of Jimson Weed (*Datura stramonium* L.)
Competition on Growth, Yield and Yield Components of
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Mohsen Khanjani¹, Majid Jami-Al-Ahmadi¹, Ali Akbar
Ghanbari²; ¹University of Birjand, Birjand, Southern
Khorasan, Iran; ²Bean National Research Station, Kho-
mein, Markazi, Iran
448. **Simultaneous Competition of Redroot Pigweed (*Ama-
ranthus retroflexus* L.) and Jimsonweed (*Datura stramoni-
um*) in Corn/Soybean Intercropping.** Faezeh Zaefarian¹,
Majid Aghaalikhani¹, Hamid Rahimian Mashhadi², Es-
kandar Zand³, Mohammad Rezvani⁴; ¹Tarbiat Modares
University, Tehran, Iran; ²Tehran University, Karaj,
Tehran, Iran; ³Plant Pest and Diseases Research Institute,
Tehran, Iran; ⁴Islamic Azad Universty- Ghaemshahr
Branch., Ghaemshahr, Mazandaran, Iran
449. **The Effect of Corn Density and Planting Arrangement
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Amaranthus retroflexus L.** Alireza Yadavi¹, Majid Aghaa-
likhani², Amir Ghalavand², Eskandar Zand³; ¹Yasuj
University, Yasuj, Kohgiluyeh va Boyer Ahmad Province,
Iran; ²Tarbiat Modares University, Tehran, Tehran Prov-
ince, Iran; ³Weed Research Division, Plant Pest and
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450. **A Summary of Studies Comparing Nozzle Types,
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State University, Manhattan, Kansas, United States of
America
451. **Activity of Fenoxaprop-p-ethyl 10% EC in Rice-Wheat
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of Agri. Sci. Banaras Hindu University, Varanasi, Uttar Pradesh, India

452. **Allelopathic Effects of Sunflower (*Helianthus annuus*) on Germination and Initial Growth of Redroot Pigweed (*Amaranthus retroflexus*) and Common Lambsquarter (*Cenopodium album*).** Reza Ghorbani¹, Kobra Orooji¹, Mohammad Rashed¹, Hamid Khazaei¹, Majid Azizi¹; ¹Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran

453. **Bioavailability of Diuron, Imazapic and Isoxaflutole in Soils of Contrasting Textures.** Rubem Oliveira Jr.¹, Miriam Inoue², Jamil Constantin¹, Diego Alonso¹, Cássio Tormena¹; ¹State University of Maringá, Maringá, Paraná, Brazil; ²UNEMAT, Tangará da Serra, Mato Grosso, Brazil

454. **Chemical Weed Control in Canola.** Ijaz Ahmad Khan¹; ¹NWFP Agricultural University Peshawar Pakistan, Peshawar, NWFP (Pakistan), Pakistan

455. **Chemical Weed Control in Dry Lentil Field (*Lens culinaris* Medik.) in Yasuj, Iran.** Sirous Amiri¹, Mohammad Reza Tareghyan¹, Seyed Karim Mousavi; ¹University of Birjand, Birjand, South Khorasan, Iran

456. **Chemical Weed Management in Wheat Intercropped with Sugarcane.** bakhtiar Gul¹, Khan Marwat¹; ¹NWFP Agricultural University Peshawar, Peshawar, North West Frontier Province, Pakistan

457. **Comparing Flamer, Trifluralin, and Their Combination, to Control *Sinapis arvensis* L. and Other Weeds in Canola Fields.** Parviz Shimi¹; ¹Iranian Research Institute of Plant Protection, Tehran, Iran

458. **Competition of Wild Mustard (*Sinapis arvensis* L) Densities with Rapeseed (*Brassica napus* L.) under Different Levels of Nitrogen Fertilizer.** Hossein Ghadiri¹, Ruhollah Naderi Kharaji¹; ¹College of Agriculture, Shiraz University, Shiraz, Fars, Iran

459. **Control of the Field Dodder on Sowings of Sugar Beet and Alfalfa.** Aijan Jusupova¹, Shaken Zharasov², Gulnaz Mombekova²; ¹Al-Farabi Kazakh National University, Almaty, Kazakhstan; ²Kazakh Research Institute of Plant Protection, Almaty, Kazakhstan

460. **Control of Weedy Rice and Growth Response for Rice by Benzobicyclon.** Il-Bin Im¹, Seng Hyen Ahn¹, Sun Kim¹; ¹Honam Agricultural Research Institute, NICS, RDA, Iksan, Jeonbuk, Korea, South

461. **Control of Wild Barley in Wheat Fields of Iran.** Mohammad Ali Baghestani¹, Eskandar Zand¹, Alireza

Atri¹, Fariba Maighani¹; ¹Iranian Plant Protection Research Institute, Tehran, Iran

462. **Corn Yield and Weed Control as Affected by Method and Rate of Eradicane.** Eshagh Keshtkar¹, Hassan Alizadeh¹, Fariborz Abbasi¹, Mohsen Mesgaran¹; ¹University of Tehran, Karaj, Tehran, Iran

463. **Development of Herbicide Applied in Corn Field and its Application in China.** Gui Li¹, Jing Wu¹; ¹Jiangsu Academy of Agricultural Sciences, Nanjing, Jiangsu Province, China (Peoples Republic of)

464. **Effect of Sulfosulfuron Application Rate on Wild Barley (*Hordeum spontaneum* C.Koch.) Control in Wheat Field.** Iraj Nosratti¹, Mouna Dastouri¹, Hassan Alizadeh¹, Muhammad Baghestani²; ¹University of Tehran, Tehran, Iran; ²Institute of Plant Pest and Disease, Tehran, Iran

465. **Effect of Water Shortage, Dosage and Time of Herbicide Application on Phytotoxicity of Herbicides in Paddy Fields of Iran.** Bijan Yaghoubi¹, Hasan Alizadeh¹; ¹University of Tehran, Karaj, Tehran, Iran

466. **Effect of Weed Management Methods at Various Growth Stages on Yield and Weed Density of Wheat.** Khalid Nawab¹, Muhammad Arif¹, Muhammad Zafarullah Khan¹; ¹NWFP Agricultural University Peshawar, Peshawar, NWFP, Pakistan

467. **Effect of Wild Oat (*Avena fatua* L.) Densities and Nitrogen on Morphophysiological Traits of Several Iranian Wheat (*Triticum aestivum* L.) Cultivars.** Hossein Ghadiri¹, Meysam Ebrahimi¹, Eskandar Zand²; ¹College of Agriculture, Shiraz University, Shiraz, Fars, Iran; ²Institute of Plant Protection, Tehran, Iran

468. **Efficacy of Different Herbicides for Controlling Weeds in Onion at Higher Altitudes.** Muhammad Saeed¹, Khan Marwat¹; ¹Dept. of Weed Science NWFP Agricultural University Peshawar, Peshawar, NWFP, Pakistan

469. **Efficacy of Post-Emergence Herbicides on Control of Annual Grassy Weeds in *Arachis hypogaea* L. and their Residual Effect on Succeeding *Zea mays* L. in Peanut-Maize Sequence Cropping System.** Lokanath Malligawad¹; ¹University of Agricultural Sciences, Dharwad, Karnataka State, India

470. **Efficacy of Propaquizafop 10 EC (AGIL) – A Post-Emergence Herbicide on Control of Annual Grassy Weeds in *Arachis hypogaea* L. and *Vigna mungo* (L.) Hepper During Rainy Season Under Rainfed Farming Situations.** Lokanath Malligawad¹; ¹University of Agricultural Sciences, Krishinagar, Dharwad, Karnataka State, India

471. **Efficacy of Quizalofop Ethyl 5 EC (TARGA SUPER) - a Post-Emergence Herbicide on Control of Annual Grassy Weeds in *Arachis hypogaea* L. (Peanut) and its Interaction with Quinalphos, Mancozeb and Urea.** Lokanath Malligawad¹; ¹University of Agricultural Sciences, Krishinagar, Dharwad, Karnataka State, India
472. **Enhanced Herbicidal Activity against Grass Weeds through Mixture of Cyhalofop-Butyl with Metamifop and its Physiological Basis.** Jin-Seog Kim¹, Jung-Sup Choi¹, Jong Yeong Pyon²; ¹Korea Research Institute of Chemical Technology, Yuseong, Daejeon, Korea, South; ²Chungnam National University, Yuseong, Daejeon, Korea, South
473. **Evaluation Efficacy of Two Herbicides from Imidazolinone Group on Rapeseed Weeds Control from Cruciferae family in Mazandaran Province, Iran.** Afshin Esmaailifar¹, Ali Zaman Mirabadi², Rezapour Mehdi Alamdarlou²; ¹Islamic Azad University, Arak, Markazi Province, Iran; ²Oilseeds Research and Development Co., Saari, Mazandaran Province, Iran
474. **Evaluation of the Time of Weed Removal and Land Preparation Methods on Weed Composition, Crop Quality and Performance of Okra (*Abelmoschus esculentus* L. Moench).** Adeyemi Raphael¹, Smith Kenzie², Ojeniyi O²; ¹Obafemi Awolowo University, Ondo, Nigeria; ²Federal University of Technology, Akure, Ondo, Nigeria
475. **Fall- vs Spring-Applied Sulfentrazone for Weed Management in Chickpea (*Cicer arietinum*).** Eric Johnson¹, Robert Blackshaw¹, Ken Sapsford², Frederick Holm²; ¹Agriculture and Agri-Food Canada, Scott, SK, Canada; ²University of Saskatchewan, Saskatoon, SK, Canada
476. **Glyphosate Tolerant Sugar Beet (*Beta vulgaris* L.) Weed Control with Glyphosate Tank Mixtures.** Don Morishita¹, J. Daniel Henningsen¹, Donald Shouse¹; ¹University of Idaho, Twin Falls, Idaho, United States of America
477. **Herbicide Application Timing Affects Blackberry Control in Florida Pastures.** Brandon Fast¹, Jason Ferrell¹, Brent Sellers¹; ¹University of Florida, Gainesville, FL, United States of America
478. **Impact of *Conyza canadensis* on the Yield Character of Oilseed Rape and its Economic Threshold.** Zhu Wenda¹, Wei Shouhui², Yu Dazhao¹; ¹Hubei Academy of Agricultural Sciences, Wuhan, Hubei, China (Peoples Republic of); ²Chinese Academy of Agricultural Sciences, Haidian, Beijing, China (Peoples Republic of)
479. **Impacts of Grazing and Mechanical Defoliation on Weed Frequency and Biomass in Berseem Clover (*Trifolium***

alexandrinum) Pasture. Ershad Tavakol¹, Mohammad reza Chaichi², Parastoo Hoseinzadeh³; ¹Mahabghodss Consulting Engineering, Tehran, Iran; ²College of Agriculture California Polytechnic State University, Ponomo, California, United States of America; ³Yekom Consulting Engineers, Tehran, Iran

480. **Influence of Different Durations of Weed Interference on Grain Yield Loss in Three *Brassica napus* L. (Winter Oilseed Rape) Cultivars.** Adel Dabbagh Mohammadi Nassab¹, Javad Hamzei¹, Farrakh Rahim Zade Khoie¹, Aziz Javanshir¹, Mohammad Moghaddam¹; ¹Tabriz University, Tabriz, East Azarbaijan, Iran

481. **Inhibitory Effects of Common Lambs Quarters (*Chenopodium album*) Seeds on Germination of Maize (*Zea may*) and Sorghum (*Sorghum bicolor*) Seeds.** Gholam Reza Zamani¹, Mojtaba Velayati¹, Majid Jami Alahmadi¹; ¹The University of Birjand, Birjand, South Khorasan, Iran

482. **Investigation of the Effects of Planting Date, Seed Density and Weed Management on the Seed Yield of Wheat (Tajan cultivar).** Yahia Abtali¹, Mehdi Abtali², Esmail Yasari³; ¹Agriculture and Natural Resources Researches Center of Mazandaran, Iran, Sari, Mazandaran, Iran; ²Agricultural Products Insurance Office of Mazandaran, Iran, Sari, Mazandaran, Iran; ³Payam Nour University, Sari, Mazandaran, Iran

483. **New Methodologies for the Management of Associating Weeds in Crop Maize in the South-Western Region of Poland.** Hanna Golebiowska¹, Hanna Golebiowska¹; ¹Institute of Soil Science and Plant Cultivation, State Research Institute, Wroclaw, Lower Silesia, Poland

484. **Performance of Pre and Post-Emergence Herbicide Doses on *Asphodelus tenuifolius* CAV in Chickpea Field.** Muhammad Khan¹, Gul Hassan¹, Imtiaz Khan¹; ¹North West Frontier Province, (NWFP) Agricultural University Peshawar Pakistan, Peshawar, NWFP, Pakistan

485. **Promotion by 5-Aminolevulinic Acid of Seedling Growth and Antioxidant System of Oilseed Rape (*Brassica napus*) under Herbicide Toxicity Stress.** Weijun Zhou¹, Wenfang Zhang¹, Fan Zhang¹, Zonglai Jin¹, Qing-fu Ye¹, R. Raziuddin¹; ¹Zhejiang University, Hangzhou, Zhejiang, China (Peoples Republic of)

486. **Prospects of Wheat as a Dual Purpose Crop.** Muhammad Arif¹, Muhammad Azim Khan¹, Muhammad Waqas¹, Fazal Munsif²; ¹NWFP Agricultural University Peshawar, Pakistan, Peshawar, NWFP, Pakistan; ²NWFP, Agricultural Research Institute, Tarnab, Peshawar, NWFP, Pakistan

487. **Pyroxsulam: A New Postemergence Herbicide for Wheat.** Roger Gast¹, James Breuninger¹, Monte Weimer¹, Dominique Larelle¹, Brett Oemichen¹; ¹Dow AgroSciences, Indianapolis, IN, United States of America
488. **Reducing Wild Mustard (*Sinapis arvensis* L.) Seed Bank in the Soil.** Himeira Salimi¹, Parviz Shimi¹, Saeed Samavat²; ¹Iranian Research Institute of Plant Protection, Tehran, Iran; ²Water and Soil Research Institute, Tehran, Iran
489. **Responses of Corn to Preemergence and Postemergence Applications of Saflufenacil.** Nader Soltani¹, Christy Shropshire¹, Peter Sikkema¹; ¹University of Guelph Ridgetown Campus, Ridgetown, Ontario, Canada
490. **Responses of Spring Cereals to Preemergence and Postemergence Applications of Saflufenacil.** Nader Soltani¹, Christy Shropshire¹, Peter Sikkema¹; ¹University of Guelph Ridgetown Campus, Ridgetown, Ontario, Canada
491. **Selection of Barley Breeding Lines and Varieties Tolerant to the Herbicide Imazamox.** Bianca Martins¹, Alejandro Perez-Jones², Elena Sanchez², Patrick Hayes², Pedro Christoffoleti¹, Carol Mallory-Smith²; ¹University of Sao Paulo, Piracicaba, Sao Paulo, Brazil; ²Oregon State University, Corvallis, Oregon, United States of America
492. **Soil Seed Incorporation and Management of *Brachiaria ruziziensis* and *Pennisetum glaucum* as Cover Crop in the Brazilian savannah Soils Cultivated with Soybean under no Till Cropping Systems.** Pedro Christoffoleti¹, Roberto Torres², Carlo Boer², Aroldo Marochi², Andre Figueiredo², Antonio Galli², Saul Carvalho¹, Marcelo Nicolai¹; ¹University of Sao Paulo, Piracicaba, Sao Paulo, Brazil; ²Monsanto, Sao Paulo, Sao Paulo, Brazil
493. **Studies on the Persistence of Propaquizafop 10% EC Formulation on Black Gram and Soil under W.B Field Condition.** Anjan Bhattacharyya¹, Dipak Hazra¹, M Sarkar²; ¹Bidhan Chandra Krshi Viswavidyalaya (BCKV), West Bengal, India; ²Indofil Chemicals Company, Mumbai, Maharashtra, India
494. **Study the Effect of Wild Oat on Wheat in Dry Land Farming.** Omid Massoudifar¹; ¹Agriculture and Environment Org., Tehran, Iran
495. **Sugar Beet Root Yield and Sugar Content in Response to Field Dodder Competition.** Joel Felix¹, Joey Ishida¹; ¹Oregon State University/Malheur Experiment Station, Ontario, Oregon, United States of America

496. **Susceptibility of *Hordeum vulgare* (Barley) to Sulfonylurea Herbicides.** Amalia Rios¹, Ana Ines Carriquiri, Alejandro García¹; ¹INIA Uruguay, Colonia, Uruguay
497. **Tausch's Goatgrass, a Worst Grass Weed, Is Spreading in Wheat Fields in Northern China.** Chao-xian Zhang¹, Hong Huang¹, Shou Wei¹, Xiang Li¹, Qui Wang², Di Liang³; ¹Institute of Plant Protection, CAAS, Beijing, China, China (Peoples Republic of); ²Institute of Oil Crop, Hebei Academy of Agricultural Sciences, Shijiazhuang, Hebei, China (Peoples Republic of); ³National Agricultural Technology Extension Service Centre, Ministry of Agriculture, Beijing, China (Peoples Republic of)
498. **Tebuthiuron Behavior in Sugar Cane Soil Using Modified Drainage Lysimeter.** Evandro Correa¹, Luiz Foloni¹, Pedro Christoffoleti², José Teixeira Filho¹; ¹University of Campinas, Campinas, Sao Paulo, Brazil; ²University of Sao Paulo, ESALQ, Piracicaba, Sao Paulo, Brazil
499. **The Impact of Planting Date and Crop Density of Common Dry Bean (*Phaseolus vulgaris*) on Weeds Growth Characteristics.** Reza Ghorbani¹, Zaynab Avarseji¹, Mohammad Rashed Mohasel¹, Ahmad Nezami¹; ¹Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran
500. **The Improvement of Oxyfluorfen Application Techniques.** Lou Yuanlai¹, Xue Guang¹; ¹Jiangsu Suke Agricultural Co, Ltd., Nanjing, Jiangsu, China (Peoples Republic of)
501. **The Safety of Mesotrione and Nicosulfuron to the Different Varieties of Maize.** Zhang Hongjun¹, Liu Xue¹, Cui Hailan²; ¹ICAMA, Beijing, China (Peoples Republic of); ²China Academy of Agricultural Science, Beijing, China (Peoples Republic of)
502. **Tolerance of Winter Wheat to Preplant and Preemergence Herbicide Tankmixes.** Nader Soltani¹, Christy Shropshire¹, Peter Sikkema¹; ¹University of Guelph Ridgetown Campus, Ridgetown, Ontario, Canada
503. **Weed Control Efficacy of Pre Emergence Herbicides in Maize.** Anees Amin¹; ¹NWFP Agricultural University Peshawar, Peshawar, NWFP, Pakistan
504. **Weed Control in Maize (*Zea mays* L.) using Triazolinone and Sulfonylurea Herbicides.** Eskandar Zand¹, Mohammad Ali Baghestani¹, Saeid Soufizadeh², Ali Eskandari³, Reza Deihimfard³, Reza Pourazar¹, Farrokh-din Ghezeli¹, Peyman Sabeti¹, Hekmat Esfandiari¹, Fatemeh Etemadi⁴; ¹Plant Protection Institute, Tehran, Iran; ²Shahid Beheshti University, Tehran, Iran; ³Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran; ⁴Tarbiat Modares University, Tehran, Iran

505. **Bio-Efficacy of some Promising Herbicides in Transplanted Kharif Rice and their Influence on Soil Micro Flora.** Ratikanta Ghosh¹; ¹Bidhan Chandra Krishi Viswavidyalaya, Kalyani, Calcutta, West Bengal, India

506. **Weed Management in Canola in Swat-Pakistan.** Muhammad Saeed¹, Muhammad Saeed¹, Khan Marwat¹; ¹Dept: of Weed Science NWFP Agricultural University Peshawar, Peshawar, NWFP, Pakistan

507. **Damages of Occurrence of Ruderal Weed Populations of Spring Rape Fields in Qinghai & Countermeasures to be Taken.** Qingyun Guo¹, Liangzhi Guo¹, Youhai Wei¹, Liang Cheng¹, Cunyue Xin¹, Hua Weng¹; ¹Qinghai Academy of Agriculture & Forestry, Xining, Qinghai, China (Peoples Republic of)

508. **Weed Communities Related to No-Tillage Systems in the Crop Belt on the North Coast of Uruguay.** Amalia Rios¹, Gabriela San Román, Virginia Mailhos, Alejandro García¹; ¹INIA Uruguay, Colonia, Uruguay

509. **Weed Communities Related to No-Tillage Systems in Agricultural Center Area of Uruguay.** Amalia Rios¹, Amalia Belgeri, Pia Caullin, Alejandro García¹; ¹INIA Uruguay, Colonia, Uruguay

510. **Evaluation Efficacy of some New Herbicide on Wheat and Broadleaf Weeds.** Mohammad Mehdi Khayami Rad¹; ¹Plant Protection Institute, Tehran, Iran

755. **Tolerance of *Asphodelus tenuifolius* to Different Herbicides at Various Growth Stages.** Gul Hassan¹, Muhammad Ishfaq¹; ¹NWFP Agricultural Univ, Peshawar, Pakistan

Section 20. Weed Management in Horticultural, Plantation and Other Crops

511. **Influence of *Alternanthera philoxeroides* on the Growth of Garlic and its Economic Threshold.** Wei Shouhui¹, Zhu Wenda², Zhang Chaoxian¹, Huang Hongjuan¹, Yu Dazhao²; ¹Chinese Academy of Agricultural Sciences, Haidian, Beijing, China (Peoples Republic of); ²Hubei Academy of Agricultural Sciences, Wuhan, Hubei, China (Peoples Republic of)

512. **Weed Interference on Transplanted and Direct Sowed Red Beet.** Robinson Pitelli¹, Leonardo Carvalho¹, Arthur Cecilio Filho¹, Silvano Bianco¹; ¹Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil

513. **Halosulfuron Tolerance of Four Melon (*Cucumis melo* L.) Types.** Robin Gomez¹, Franklin Herrera²; ¹Iowa State University, Ames, Iowa, United States of America; ²University of Costa Rica, San Jose, Costa Rica
514. **Economic Responses of Different Weed Management Practices on Yield and Quality of Ginger.** Apurba Bandyopadhyay¹, Muktar Sarker², Samir Samanta¹, Jayanta Tarafdar¹; ¹Bidhan Chandra Krishi Viswavidyalaya, Kalyani, West Bengal, India; ²Indofil Chemicals Company, Mumbai, Kolkata, West Bengal, India
515. **Cover Cropping as a Weed Control Measure in Orchards.** Mohammad Bazoobandi¹, Amir Abdollahzadeh Gonabadi, Alireza Koochaki², Mehdi Nassiri Mahalati¹; ¹Azad University of Mashhad-Golbahar, Mashhad, Khorasan Razavi, Iran; ²Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran
516. **Influence of Selected Environmental Factors on Seed Germination and Emergence of Major Weed Species in Coconut Plantations of Sri Lanka.** Sri Haren Sumith Senarathne¹, Ravi Sangakkara²; ¹Coconut Research Institute, Lunuwila, Sri Lanka, Lunuwila, North western, Sri Lanka; ²Faculty of Agriculture, University of Peradeniya, Sri Lanka, Peradeniya, Central, Sri Lanka
517. **Tolerance to Glyphosate in Leguminosae Used as Plant Covers in Citrus Orchards.** Hugo Enrique Cruz-Hipólito¹, Jose Alfredo Domínguez-Valenzuela², Juan Lorenzo Medina-Pitalúa², Maria Dolores Osuna³, Rafael De Prado¹; ¹Universidad de Córdoba, Córdoba, Spain; ²Universidad Autónoma Chapingo, Texcoco, Mexico; ³Finca La Orden, Badajoz, Spain
518. **Effects of Weedy Periods on Transplanted Onion Productivity.** Robinson Pitelli¹, Leonardo Carvalho¹, Cesar Scheide¹; ¹Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil
519. **Phenyl Isothiocyanate: A Potential Alternative of Methyl Bromide for Weed Control in Tomato and Bell Pepper Production Systems.** Sanjeev Bangarwa¹, Jason Norsworthy¹, Griff Griffith¹; ¹University of Arkansas, Fayetteville, Arkansas, United States of America
520. **Hexazinone and Hexazinone + Diuron for Weed Management in Tea in North Bengal.** Ratikanta Ghosh¹, Manab Roy¹; ¹Bidhan Chandra Krishi Viswavidyalaya, Kalyani, Calcutta, West Bengal, India
521. **Evaluation of Triasulfuron for Weed Management in Tea.** Ratikanta Ghosh¹; ¹Bidhan Chandra Krishi Viswavidyalaya, Kalyani, Calcutta, West Bengal, India

522. **Evaluation of Effective Weed Management Practices in Young Tea Plantation of Terai Climate of West Bengal, India.** Samir Kumar Samanta¹, Mukter Ahmed Sarkar²; ¹Bidhan Chandra Krishi Viswavidyalaya, Kalyani, West Bengal, India; ²Indofil Chemicals Company, Kolkata, West Bengal, India

523. **Soil Management Systems in Olive Orchards of Southern Italy: A Qualitative Evaluation of the Weed Flora.** Mariano Fracchiolla¹, Cesare Lasorella¹, Domenico Caramia¹, Pasquale Viggiani², Pasquale Montemurro¹; ¹Università di Bari, Bari, Italy; ²Università di Bologna, Bologna, Italy

524. **Differential Effect of Organic and Plastic Mulches on *Cyperus rotundus* Suppression and *Citrullus lanatus* (Watermelon) Fruit Yield.** Jose Pablo Morales-Payan¹, Pedro Marquez-Mendez¹, Yasser Shabana², Raghavan Charudattan², Erin Roskopf³, Waldemar Klassen⁴; ¹University of Puerto Rico-Mayaguez, Mayaguez, Puerto Rico, United States of America; ²University of Florida-Gainesville, Gainesville, FL, United States of America; ³USDA/ARS, Fort Pierce, FL, United States of America; ⁴University of Florida, Tropical REC, Homestead, FL, United States of America

Section 22. Synthetic Herbicides

525. **Preparation and Application of Isotopically Modified Compounds of a Novel Rape Herbicide, ZJ0273.** Tang Qinghong¹, Zhengmin Yang¹, Qingfu Ye², Long Lu¹; ¹Chinese Academy of Science, Shanghai, China (Peoples Republic of); ²Zhejiang University, Hangzhou, Zhejiang Province, China (Peoples Republic of)

526. **Dissipation of Pendimethalin in Water.** Indu Bainsla¹, Anil Duhan¹, Beena Kumari¹; ¹CCS Haryana Agricultural University Hisar (India), Hisar, Haryana, India

527. **Sensitivity of Soil Borne Plant Pathogenic and Beneficial Fungi to Two Formulations of Oxyfluorfen and its Impact on Chromosomal Behavior and Proteomics in Onion (*Allium cepa*) and Tomato (*Lycopersicon esculentum*).** Jayanta Tarafdar¹, Amrita Banerjee¹, Somnath Roy¹, Mukter Ahmed Sarkar², Samir Samanta¹; ¹Bidhan Chandra Krishi Viswavidyalaya (State Agricultural University), Kalyani, West Bengal, India; ²Indofil Chemicals Company, Mumbai, Maharashtra, India

528. **Families: Current Mistakes and Suggested Substitutes.** Abed Forouzesh¹, Eskandar Zand², Saeid Soufizadeh³, Sadegh Samadi Foroushani¹; ¹College of Aburaihan,

University of Tehran, Pakdasht, Tehran, Iran; ²Plant Protection Research Institute, Tehran, Iran; ³Environmental Sciences Research Institute Shahid Beheshti University, Tehran, Iran

529. **Dissipation of Pendimethalin in Soil.** Indu Bainsla¹, Beena Kumari¹; ¹CCS Haryana Agricultural University Hisar (India), Hisar, Haryana, India

530. **Simultaneous Estimation of Clodinafop and Metsulfuron Methyl in Soil, Wheat Grain and Straw by HPLC.** Ramesh Mehta¹, Beena Kumari¹, R Malik¹, Ashok Yadav¹; ¹CCS Haryana Agricultural University Hisar (India), Hisar, Haryana, India

11:00 - 11:30

Energy Break

Location: Salon DEF

MAIN TOPIC SESSIONS

Section 1. Biology, Dynamics and Ecology of Weeds; Population Dynamics

Location: Salon A

11:30 - 13:00

Organizer: Clarence Swanton, University of Guelph, Guelph, ON, Canada

Co-Organizer: Jon Marshall, Marshall Agroecology Ltd., Somerset, United Kingdom

11:30

664. **Spatial Weed Patterns and Relative Time of Emergence Profoundly Affect Weed Performance and Crop Yield.** Therese Berge¹, Are Aastveit², Haldor Fykse²; ¹BIO-FORSK - Norwegian Institute for Agricultural and Environmental Research, Aas, Norway; ²Norwegian University of Life Sciences, Aas, Norway

11:45

665. **Compositional Changes in Weed Flora as Influenced by Long-Term Saffron (*Crocus sativus*) and Black Zira (*Bunium persicum*) Intercropping.** Mohsen Mesgaran¹, Hamid Mashhadi¹, Mahmood Khosravi², Eskandar Zand³, Hassan Alizadeh¹; ¹University of Tehran, Karaj, Tehran, Iran; ²Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran; ³Plant Pathology Institute of Iran, Tehran, Iran

12:00

666. **Shifts in Weed Density over 14 Years in Nine Cropping Systems.** A Gordon Thomas¹, Julia Leeson¹; ¹Agriculture and Agri-Food Canada, Saskatoon, Saskatchewan, Canada

12:15

667. **Occurrence of Weed Species along a Climate Gradient in Europe.** Terho Hyvonen¹, Michael Glemnitz², Laszlo Radics³, Jorg Hoffmann⁴, Gyula Czimber⁵; ¹MTT Agrifood Research Finland, Jokioinen, Finland; ²Leibniz Centre for Agricultural Landscape Research, Munchenberg, Germany; ³Corvinus University, Budapest, Hungary; ⁴JKI, Federal Research Centre for Cultivated Plants, Braunschweig, Germany; ⁵West-Hungarian University, Masonmagyaróvár, Hungary

12:30 - 13:00

Poster Discussion

Section 4. Natural Products

Location: Salon C

11:30 - 13:00

Organizer: Franck Dayan, University of Mississippi, University, MS, USA

Co-Organizer: C.H. Kong, Chinese Academy of Sciences, Shenyang, China

11:30

668. **Birch Tar Oil: A Potential Herbicide from the Forests of Finland.** Jukka Salonen¹, Kari Tiilikkala¹, Pentti Ruuttunen¹, Isa Lindqvist¹, Bengt Lindqvist¹; ¹MTT Agrifood Research Finland, Jokioinen, Finland

11:45

669. **Characterization of Strigolactones, Plant Derived Signals for Symbiosis and Parasitism.** Koichi Yoneyama¹, Xionan Xie¹, Kaori Yoneyama¹, Yasutomo Takeuchi¹; ¹Utsunomiya University, Utsunomiya, Tochigi, Japan

12:00

670. **Phytotoxic Sesquiterpenes in Exudate of *Heterotheca subaxillaris* (Lam.) Britt. & Rusby.** Masanori Morimoto¹; ¹Kinki University, Nara, Nara, Japan

12:15

671. **Phytotoxic Eremophilanes from *Ligularia macrophylla*.** Stephen Duke¹, Charles Cantrell¹, Franck Dayan¹, Frank Fronczek², Leonid Mamonov, Juriy Vassilyev; ¹USDA, ARS, University, MS, United States of America; ²Louisiana State University, Baton Rouge, LA, United States of America

12:30 - 13:00

Poster Discussion

Section 11. Weed Management in Turf, Parks, Recreation Areas and Right-of-ways

Location: Salon 1

11:30 - 13:00

Organizer: Timothy Prather, University of Idaho, Moscow, ID, USA

Co-Organizer: Kai Umeda, Maricopa County Cooperative Extension, Phoenix, AZ, USA

11:30

672. Response of 3 Native Hawaiian Grasses to 5 Postemergence Grass Herbicides. Joseph DeFrank¹, Orville Baldos¹; ¹University of Hawaii at Manoa, Honolulu, Hawaii, United States of America

11:45

673. Chemical Control of Bermudagrass (*Cynodon dactylon* (L.) Pers) in Turf. Vahid Zabihollahi¹, Fariba Maighany², Mohammad Ali Baghestani², Mohammad Javad Mirhadi³; ¹M.Sc. of Weed Science, Tehran, Iran; ²Iranian Crop Protection Research Institute, Tehran, Iran; ³Science and Research Campus, Islamic Azad University, Tehran, Iran

12:00

674. Weed Suppression and Drought Tolerance of Multispecies Sod for Roadside Revegetation. Jennifer Stark¹, Lisa Rew¹, Catherine Zabinski¹, Tracy Dougher¹; ¹Montana State University, Bozeman, MT, United States of America

12:15

675. Experimental Tests of Physical Weed Control on Urban Hard Surfaces in Central Italy. Leonardo Lulli¹, Marco Fontanelli¹, Christian Frascioni¹, Marco Ginanni¹, Michele Raffaelli¹, Daniele Antichi², Federica Bigongiali², Stefano Carlesi², Andrea Peruzzi¹; ¹University of Pisa, Pisa, Italy; ²Scuola Superiore Sant'Anna, Pisa, Italy

12:30 - 13:00

Poster Discussion

Section 18. Weed Management in Field Crops

Location: Salon B

11:30 - 18:00

Organizer: Pedro Christoffoleti, Producao Vegetal ESALQ/USP, Piracicaba, Brazil

Co-Organizer: Mark VanGessel, University of Delaware, Georgetown, DE, USA

11:30

676. Impact of Tillage on *Commelina benghalensis* L. Management. Barry Brecke¹, Theodore Webster²; ¹Univer-

sity of Florida, Jay, Florida, United States of America;
²University of Georgia, Tifton, GA, United States of America

11:45

677. The Use of Glyphosate to Facilitate Field Preparation and Weed Management in Transplanted Sorghum Fields in Northern Cameroon. Bertrand Mathieu¹, Thierry Dore², Pascal Marnotte³; ¹Instituto de Agricultura Sostenible, Cordoba, Spain; ²INRA/INA-PG, Thiverval-Grignon, France; ³CIRAD-CA, Montpellier, France

12:00

678. Desiccation Timing in the Succession Roundup Ready Soybean/Wheat in the Southern Region of Brazil. Antonio Galli¹, Antonio Ferreira-Neto¹, Pedro Christoffoleti²; ¹Monsanto, Sao Paulo, Brazil; ²University of Sao Paulo - ESALQ, Piracicaba, Sao Paulo, Brazil

12:15

679. Effect of Tillage on Weed Seed Dispersal in Fields, in Interaction with Soil Structure and Tillage Depth. Hugues Busset¹, Jacques Caneill¹, Nathalie Colbach¹; ¹INRA, Dijon, France

12:30 - 13:00

Poster Discussion

13:00 - 14:30

LUNCH

Location: Salon 2, 3, & Cypress

14:30

680. Influence of Planting Date on Weed/Crop Competition in a Temperate Climate. Mark VanGessel¹; ¹University of Delaware, Georgetown, Delaware, Canada

15:00

681. Resource Exploitation and Chemical Interference between Soybean (*Glycine max* (L.) Merr.) Crop and Wormwood (*Artemisia annua* L.). Claudia Morvillo¹, Elba de la Fuente¹, Alejandra Gil¹, Alejandra Martínez-Ghersa¹; ¹Faculty of Agronomy, University of Buenos Aires, Ciudad Autónoma de Buenos Aires, Buenos Aires, Argentina

15:15

682. Harmfulness of the most Wide Spread Species of Weeds and their Control in Maize under Condition of the Ukraine. Viktor Zadorozhnyi¹, Vasyl Petrychenko¹; ¹Feed Research Institute, Vinnitsa, Ukraine

15:30

683. California Weedy (Red) Rice. Aida Ortiz¹, Albert Fischer², Chris Greer², Barbara Schaal³, James Eckert⁴, María Osuna², Emilio Laca²; ¹Universidad Central de

Venezuela, Maracay, Aragua, Venezuela; ²University of California-Davis, Davis, California, United States of America; ³Washington University in St. Louis, St Louis, Missouri, United States of America; ⁴University of California-Davis, Biggs, California, United States of America

15:45

684. Evaluation of Multispecies Weed Competition with Wheat using Regression Equations. Shahrzad Noroozi¹, Daryush Mazaheri¹; ¹University of Tehran, Karaj, Tehran, Iran

16:00 - 16:30

Energy Break

Location: Salon DEF

16:30

685. Effect of Reduced Herbicide Rates Based on Image Sampling and Weed Cover Thresholds. Marie-Josée Simard¹, Bernard Panneton¹, Louis Longchamps², Claudel Lemieux¹, Anne Légère¹, Gilles Leroux³; ¹Agriculture and Agri-Food Canada, Québec, Canada; ²Agriculture and Agri-Food Canada and Université Laval, Québec, Canada; ³Université Laval, Québec, Canada

16:45

686. Cover Crops during Winter Fallow as a Weed Management Strategy in Maize Hybrid Seed Production. Juan Alonso¹, Elba de la Fuente¹, Santiago Poggio¹, Tomás Jándula¹; ¹Faculty of Agronomy, University of Buenos Aires, Buenos Aires, Argentina

17:00

687. The Influence of Nitrogen Application on Critical Period for Weed Control in Corn (*Zea mays* L.). Reza Ghorbani¹, Seid Hussieni¹, Mohammad Rashed Mohasel¹, Mehdi Nassiri¹; ¹Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran

17:15

688. Effective Weed Management through Appropriate Rice Establishment Techniques. Azmi M.¹, David D. E.²; ¹Malaysian Agricultural Research and Development Institute (MARDI), Kepala Batas, Penang, Malaysia; ²International Rice Research Institute, Los Banos, Manila, Philippines

17:30 - 18:00

Poster Discussion

Section 1. Biology, Dynamics and Ecology of Weeds: Weed Seed Predation

Location: Salon A

14:30 - 18:00

Organizer: Clarence Swanton, University of Guelph, Guelph, ON, Canada

Co-Organizer: Jon Marshall, Marshall Agroecology Ltd., Somerset, United Kingdom

14:30

689. **The Role of Weeds in Arthropod Diversity and Relationship with Landscape Simplification in the Rolling Pampa.** Elba de la Fuente¹, Susana Perelman¹, Claudio Ghersa¹; ¹University of Buenos Aires, Buenos Aires, Argentina

15:00

690. **Differences in the Presence of Seed Feeders Between Thistles, *Cirsium arvense* and *C. heterophyllum*.** Stanislava Koprdoва¹, Jiri Skuhrovec¹; ¹Crop Research Institute, Prague 6-Ruzyne, Czech Republic

15:15

691. **Effect of Seed Covering Tissues on Post-dispersal Seed Predation of Wild Oat, Wild barley and Bitter dock.** Shahrzad Noroozi¹, Hamid Rahimian Mashhadi¹, Hassan Mohammad Alizadeh¹, Sara Ohadi¹; ¹University of Tehran, Karaj, Tehran, Iran

15:30

692. **The Effect of Tillage on Seed Predation in Cereal Fields.** Bàrbara Baraibar¹, Paula Westerman¹, Jordi Recasens¹; ¹Universitat de Lleida, Lleida, Spain

15:45

693. **Post-Dispersal Weed Seed Predation of *Amaranthus retroflexus*, *Chenopodium album* and *Echinochloa crus-galli* in Maize (*Zea mays* L.).** Federica Graziani¹, Euro Pannacci¹, Gino Covarelli¹, Francesco Tei¹; ¹University of Perugia, Perugia, Italy

16:00 - 16:30

Energy Break

Location: Salon DEF

16:30

694. **Dispersal and Post-Dispersal Predation of Italian Ryegrass Seed in Unimproved Pasture.** Robert Williams¹, Paul Bartholomew¹; ¹USDA-ARS-GRL, Langston, OK, United States of America

16:45

695. **Weed, Carabid Beetle, Earthworm and Microbial Communities Respond to Tillage and Residual Effects of**

Crop Rotation. Anne Légère¹, Craig Stevenson, Anne Vanasse², Michèle Roy³, Roger Lalande¹, Danielle Pré-vost¹, Joann Whalen⁴; ¹AAFC, Saskatoon, Saskatchewan, Canada; ²Université laval, Québec, Canada; ³MAPAQ, Québec, Canada; ⁴McGill University, Ste-Anne-de-Belle-vue, Québec, Canada

17:00

696. Weed Seed Predation in Spring Wheat and Adjacent Ecological Infrastructures. Daniel Daedlow¹, Baerbel Gerowitt¹, Lisa Dittmann¹; ¹University of Rostock, Rostock, Mecklenburg-Western Pomerania, Germany

17:15

697. Invertebrate Species in Organic and Conventional Wheat Fields in Central Italy. Federica Graziani¹, Euro Pannacci¹, Gino Covarelli¹, Francesco Tei¹; ¹University of Perugia, Perugia, Italy

17:30 - 18:00

Poster Discussion

Section 5. Formulation and Adjuvants

Location: Salon C

14:30 - 18:00

Organizer: Jerry Green, Pioneer Hi Bred International, Newark, DE, USA

Co-Organizer: Per Kudsk, University of Aarhus, Slagelse, Denmark

14:30

698. Compensation for Adverse Conditions on Foliar Applied Products by Means of Adjuvant and Formulation. Peter Baur¹; ¹Bayer CropScience AG, Frankfurt, Hesse, Germany

15:00

699. Emerging Regulatory Initiatives Affecting Formulations and Adjuvants. Bernalyn McGaughey¹; ¹Compliance Services International, Lakewood, Washington, United States of America

15:30

700. Herbicide Controlled Release Formulations based on Enhanced Solubilization in Micelles Adsorbed on Clay. Dana Ziv¹, Yael Mishael¹; ¹Faculty of Agricultural Food and Environmental Sciences, Hebrew University of Jerusalem, Israel, Rehovot, Israel

15:45

701. Future Trends in Glyphosate Adjuvant Formulation. Curtis Elsik¹, Howard Stridde¹, R. Scott Tann¹; ¹Huntsman Performance Products, The Woodlands, Texas, United States of America

16:00 - 16:30

Energy Break

Location: Salon DEF

16:30

702. Adjuvants for Single Drop Application of Glyphosate. Solvejg Mathiasen¹, Per Kudsk¹, Ivar Lund¹; ¹University of Aarhus, Slagelse, Denmark

16:45

703. Beneficial Effect of Adjuvants in Improving Glyphosate Efficacy. Megh Singh¹, Shiv Sharma²; ¹University of Florida, Lake Alfred, Florida, United States of America; ²University of South Florida, Bartow, Florida, United States of America

17:00

704. Influence of Additives and Water Conditioner on Efficacy of Glyphosate and Two Formulations of 2,4-D. Grzegorz Skrzypczak¹, Lukasz Sobiech¹; ¹Agricultural University of Poznan, Poznan, Poland

17:15

705. The Effect of New Polish Experimental Adjuvants on Herbicide Activity. Kazimierz Adamczewski¹, Krzysztof Heller²; ¹Institute of Plant Protection, Poznan, Wielkopolska, Poland; ²Institute of Natural Fibers, Poznan, Poland

17:30 - 18:00

Poster Discussion

Section 9. New and Emerging Technologies

Location: Salon 1

14:30 - 18:00

Organizer: David Horvath, USDA-ARS, Fargo, ND, USA

14:30

706. Transgenic Female Sterility: A Strategy Proposed for Control of Intractable Weeds. Brian Rector¹; ¹USDA-ARS-EBCL, Montpellier, France

15:00

707. The Emory Center for Parasitic Plant Research: Strategies and Innovations in the Control of *Striga asiatica*. Chad Brommer¹, Andrew Palmer¹, Yue Liu¹, David Lynn¹; ¹Emory University, Atlanta, GA, United States of America

15:30

708. Invasive Weed Management and Plantback Crop Response With The New Herbicide KJM-44. Philip Westra¹, Dale Shaner¹, Todd Gaines¹, Robert Wilson²; ¹Colorado State University, Fort Collins, Colorado, United States of

America; ²University of Nebraska, Scottsbluff, NE, United States of America

15:45

709. Current Trends of Biotechnology in Weed Management. Puja Ray¹, Durga Ray², Akhilesh Pandey²; ¹National Research Centre for Weed Science, Jabalpur, Madhya Pradesh, India; ²R.D. University, Jabalpur, Madhya Pradesh, India

16:00 - 16:30

Energy Break

Location: Salon DEF

16:30

710. PlantCollections – A Community Solution to Cultivated Plant Information. Tracy Mehlin¹, Boyce Tankersley Tankersley², Min Henderson², Christopher Dunn³, Dan Stark⁴, Pamela Allenstein⁴, David Vieglais⁵, Greg Riccardi⁶; ¹University of Washington Botanic Garden, Seattle, WA, United States of America; ²Chicago Botanic Garden, Chicago, IL, United States of America; ³University of Hawaii Lyon Arboretum, Honolulu, HI, United States of America; ⁴American Public Gardens Association, Wilmington, DE, United States of America; ⁵University of Kansas Natural History Museum and Biodiversity Research Center, Lawrence, KS, United States of America; ⁶Florida State University School of Computational Sciences, Tallahassee, FL, United States of America

16:45

711. AgroPhone® , a Novel Diagnostic Tool Optimizing Identification and Control of Noxious Weeds. Christian Andreasen¹, Elo Larsen²; ¹University of Copenhagen, Faculty of Life Sciences, Copenhagen, Denmark; ²AgroCom, Kommunikation og Rådgivning, plc, Stubbekøbing, Denmark

17:00

712. The Relationship between Swainsonine and Endophyte Content in Different Plant Parts of Two Species of Locoweeds. Daniel Cook¹, Dale Gardner¹, Jim Pfister¹, Jessie Roper¹, Mike Ralphs¹, Kevin Welch¹, Ben Green¹; ¹USDA ARS Poisonous Plant Research Laboratory, Logan, Utah, United States of America

17:15

713. Genome-Wide Analysis of the Nitrogen Stress Transcriptome of Red Rice (*Oryza sativa* L.). Marites Sales¹, Nilda Burgos¹, Benildo De Los Reyes², Vinod Shivrain¹, Kil Young Yun²; ¹University of Arkansas, Fayetteville, Arkansas, United States of America; ²University of Maine, Orono, Maine, United States of America

17:30 - 18:00

Poster Discussion

Section 19. Weed Management in Forestry

Location: Mackenzie

14:30 - 18:00

Organizer: Bruce Maxwell, Montana State University, Bozeman, MT, USA

Co-Organizer: Raj Prasad, Pacific Forest Research Centre, Victoria, BC, Canada

14:30

714. Effects of Competition Control and Fertilization in a *Pinus elliotii* Stand on a Deep Sand in the Coastal Plain of Georgia, U.S.A. Ernest Dickens¹, David Moorhead¹, Mike Hayes¹, Bryan McElvany¹; ¹University of Georgia, Statesboro, Georgia, United States of America

15:00

715. Effects of Vegetation Management and other Forestry Operations on Carbon Sequestration by Intensively Managed Boreal Jack Pine Plantations - Ontario Long-Term Soil Productivity (LTSP) Study. Phillip Reynolds¹, Gordon Brand¹, Thomas Weldon¹, Neil Foster¹; ¹Canadian Federal Government, Sault Ste. Marie, Ontario, Canada

15:30

716. Performance of *Eucalyptus dunnii* as Influenced by Vegetation Control when Felled at Nine Years, South Africa. Keith Little¹; ¹Institute for Commercial Forestry Research, Pietermaritzburg, KwaZulu-Natal, South Africa

16:00 - 16:30

Energy Break

Location: Salon DEF

16:30

717. Development of a Decision Support System to Optimise forest Vegetation Management Across an Environmental Gradient. Michael Watt¹, Brian Richardson¹, Wayne Schou¹, Mark Kimberley¹; ¹Scion, Christchurch, Canterbury, New Zealand

17:00

718. Ecology, Biology and Control of Some Exotic-Invasive Weeds on Federal Lands and Coastal Forests in British Columbia, Canada. Raj Prasad¹, J. Benner¹, S. Bundel¹; ¹Pacific Forestry Centre, Victoria, BC, Canada

17:15

719. Biological Control of Competing Forest Vegetation with Sheep and Goats in British Columbia, Canada. Jacob

Boateng¹; ¹BC Ministry of Forests and Range, Victoria, British Columbia, Canada

17:30

720. Empirical Characterization of Nonindigenous Species Metapopulation Dynamics In Forest Ecosystems. Bruce Maxwell¹, Jay Rotella¹, Patrick Lawrence¹, Lisa Rew¹; ¹Montana State University, Bozeman, Montana, United States of America

Congress Reception

Bayshore Ballroom Foyer

19:00 - 19:45

Congress Banquet

Salon ABC

19:45

FRIDAY, 27 June

PLENARY SESSION

Location: Salon ABC

8:30 - 9:15

Presiding: Bernal Valverde, President IWSS

Plenary Speaker: Hermann Stuebler, Bayer CropScience, Frankfurt, Germany

721. Global Changes in Crop Production and Impact Trends on Innovation In Weed Management - An Industry View. Hermann Stuebler¹, H Kraehmer¹, M Hess¹, A Schulz¹, C Rosinger¹; ¹Bayer CropScience AG, Frankfurt, Germany

MAIN TOPIC SESSIONS

Section 1. Biology, Dynamics and Ecology of Weeds: Genetics and Molecular Biology of Weeds

Location: Salon A

9:30 - 13:00

Organizer: Clarence Swanton, University of Guelph, Guelph, ON, Canada

Co-Organizer: Jon Marshall, Marshall Agroecology Ltd., Somerset, United Kingdom

9:30

722. Microarray Analysis of Bud Dormancy in Leafy Spurge. Dave Horvath¹, James Anderson¹, Wun Chao¹; ¹USDA-ARS, Fargo, ND, United States of America

10:00

723. Genetically and Morphological Differences of *Echino-*

***chloa crus-galli* (L.) P. Beauv. Collected From Different Rice Growing Areas of Turkey.** Husrev Mennan¹, Emine Kaya¹; ¹Ondokuz Mayıs University, Kurupelit, Samsun, Turkey

10:15

724. They Stand Among Equals: Descriptive Analysis on the New Biotypes of Weedy rice (*Oryza sativa* L.) in Malaysia. Muhamad Mispan¹, Baki Bakar¹; ¹University of Malaya, 50603 Kuala Lumpur, Federal Territory, Malaysia

10:30

725. Genetic Relationship and Diversity between Weedy Rice (*Oryza sativa* L.) and Cultivated Rice Varieties in Okayama Prefecture, Japan. Jun Ushiki¹, Maiko Akasaka¹, Hiroyoshi Iwata¹; ¹National Agricultural Research Center, Tsukuba, Ibaraki, Japan

10:45

726. Weedy Rice Complex in Costa Rica: Morphological and Molecular Characterization. Griselda Arrieta-Espinoza¹, Elena Sánchez-Olguín¹, Raul Trejos-Espinoza¹, Elena Tavares-Eiraldi¹, Ana M. Espinoza¹; ¹Universidad de Costa Rica, Sabanilla, San Jose, Costa Rica

11:00 - 11:30

Energy Break

Location: Salon DEF

11:30

727. Studies on Genetic Diversity at DNA Level Among Various Biotypes of Wild Oats (*Avena* species). Zahid Hanif¹, Zahoor Ahmad Swati¹; ¹Peshawar, NWFP, Pakistan

11:45

728. Molecular and Quantitative Genetic Diversity in *Taeniatherum caput-medusae* (Poaceae): Evidence for Multiple Introductions with Local Range Expansion. Stephen Novak¹, Joseph Rausch², Rene Sforza³; ¹Boise State University, Boise, Idaho, United States of America; ²Washington State University, Pullman, Washington, United States of America; ³USDA-ARS, Montferrier-sur-Lez, Languedoc Roussillon, France

12:00

729. Multiple Introductions and Post-Immigration Evolution in *Phyla canescens*: Phenotypic Differentiation under Divergent Selection Pressures in Invading Populations with High Genetic Diversity. Chengyuan Xu¹, Michael Julien¹, Mohammed Fatemi², Christophe Girod, Stephen Novak³; ¹CSIRO Entomology, Brisbane, Queensland, Australia; ²University of New England, Armidale, NSW, Australia; ³Boise State University, Boise, Idaho, United States of America

12:15

730. **Analysis of Genetic Diversity among Populations of Common Reed (*Phragmites australis*) in Iran.** Marjan Dianat¹, Ali-akbar Shahnejat-Booshehri¹, Hassan-Mohammad Alizadeh¹, Mohammad-Reza Naghavi¹, Hamid Rahimin-Mashhadi¹; ¹Tehran University, Karaj, Tehran, Iran

12:30 - 13:00

Poster Discussion

Section 15. Aquatic Weed Management

Location: Salon C

9:30 - 13:00

Organizer: Mike Netherland, USAE RDC, Gainesville, FL, USA

Co-Organizer: Kevin Murphy, University of Glasgow, Glasgow, United Kingdom

9:30

731. **Aquatic Macrophytes in Brazilian Reservoirs: A Synthesis with Emphasis on Long Term Trends at the Itaipu Reservoir.** Sidinei Thomaz¹; ¹Maringá State University, Maringá, PR, Brazil

10:00

732. **The Role of Biological Control in the Large-Scale Management of Water Hyacinth.** Mic Julien¹, Ted Center², Martin Hill³, John Wilson⁴; ¹CSIRO, Clapiers, Languedoc, France; ²USDA, Fort Lauderdale, Florida, United States of America; ³Rhodes University, Grahamstown, Eastern Cape, South Africa; ⁴Stellenbosch University, Stellenbosch, Western Cape, South Africa

10:15

733. **Global Diversity of Aquatic Macrophytes in Freshwater.** Patricia Chambers¹, Paresh Lacoul², Kevin Murphy³, Sidnei Thomaz⁴; ¹National Water Research Institute, Burlington, Ontario, Canada; ²Dalhousie University, Halifax, Nova Scotia, Canada; ³University of Glasgow, Glasgow, United Kingdom; ⁴Universidade Estadual de Maringá, Maringá, Ontario, Brazil

10:30

734. **Management of the Invasive *Lagarosiphon major* (Curly Leaved Waterweed) in Lough Corrib, Ireland.** Joe Caffrey¹, Silvana Acevedo¹; ¹Central Fisheries Board, Dublin, Dublin, Ireland

10:45

735. **Florida's Statewide Strategies for Successful Invasive Aquatic Plant Management.** Jeffrey Schardt¹; ¹State of Florida, Tallahassee, Florida, United States of America

11:00 - 11:30

Energy Break

Location: Salon DEF

11:30

736. ***Myriophyllum spicatum* Monitoring and Eradication Assessment in the Pend Oreille Lake and River System, Idaho.** John Madsen¹, Ryan Wersal¹, Thomas Woolf²; ¹Mississippi State University, Mississippi State, MS, United States of America; ²Idaho State Department of Agriculture, Boise, ID, United States of America

11:45

737. **ALS Inhibiting Herbicides for Aquatic Plant Management.** Robert Richardson¹, Andrew Gardner¹, Amanda West¹, Sarah True¹, Rory Roten¹; ¹North Carolina State Univ., Raleigh, NC, United States of America

12:00

738. **Does Eutrophication Increase Flood Risk? (Variability in Standing Crop of Aquatic Weeds in British Rivers and Associated Manning's n Values).** Matthew O'Hare¹, Claire Cailes¹, Paul Henville¹, Nicola Bisset¹; ¹Centre for Ecology & Hydrology, Edinburgh, Scotland, United Kingdom

12:15

739. **An Ecological Approach to Aquatic Plant Management.** Michael Smart¹, Michael Grodowitz¹; ¹US Army Corps of Engineers, Lewisville, TX, United States of America

12:30 - 13:00

Poster Discussion

Section 20. Weed Management in Horticultural, Plantation and Minor Crops

Location: Salon 1

9:30 - 13:00

Organizer: Robert Bulcke, Ghent University, Gent, Belgium

Co-Organizer: Robin Bellinder, Cornell University, Ithaca, NY, USA

9:30

740. **Integrated Weed Management Systems in Vegetables: Current Status and Perspectives.** Francesco Tei¹, Euro Pannacci¹; ¹University of Perugia, Perugia, Italy

10:00

741. **Autumn Vegetable Response to Residual Terbacil, Fomesafen, and Halosulfuron.** Timothy Grey¹, Stanley Culpepper¹; ¹University of Georgia, Tifton, GA, United States of America

10:15

742. Weed Management in Seed Production of Native Forbs Used for Restoration. Jessica Wiese¹, Fabain Menalled¹, Bruce Maxwell¹, James Jacobs², Susan Winslow²; ¹Montana State University, Bozeman, MT, United States of America; ²Natural Resources Conservation Service, Bozeman, MT, United States of America

10:30

743. Weed Control Options in *Silybum marianum* Gaertn. (Blessed Thistle). Edita Stefanic¹, Ivan Stefanic²; ¹Faculty of Agriculture Osijek, Osijek, Croatia; ²Technology Development Centre Osijek Ltd., Osijek, Croatia

10:45

744. Control of Difficult Weed for California Strawberry Production. Oleg Daugovich¹, Maren Mochizuki¹, Steve Fennimore²; ¹University of California Cooperative Extension, Ventura, California, United States of America; ²University of California, Salinas, California, United States of America

11:00 - 11:30

Energy Break

Location: Salon DEF

11:30

745. Weed Management Strategies to Reduce Costs and Amount of Herbicides in the Mauritian Sugar Cane Industry. Suman Seeruttun¹, Clency Barbe¹, Azaad Gaungoo¹; ¹MSIRI, Reduit, Mauritius

11:45

746. Phytotoxicity on Ornamental Plants Associated with Flumioxazin. Mario Lanthier¹, Sonja Peters¹; ¹CropHealth Advising & Research, Kelowna, British Columbia, Canada

12:00 - 13:00

Poster Discussion

Section 22. Synthetic Herbicides

Location: Salon B

9:30 - 13:00

Organizer: Clifford Gerwick, Dow AgroSciences, LLC, Indianapolis, IN, USA

Co-Organizer: Hiroshi Matsumoto, University of Tsukuba, Ibaraki, Japan

9:30

747. The Molecular Mode of Action of Picolinate Auxin Herbicides. Terence Walsh¹; ¹Dow AgroSciences, Indianapolis, IN, United States of America

10:00

748. Which Herbicides Affect Chlorophyll Fluorescence?

Jens Streibig¹, Kenneth Soebye¹, Peter Hvid¹, Mads Munkegaard¹; ¹University of Copenhagen, Taastrup, Denmark

10:15

749. The Role of Antioxidants in the Protection of Plants Against Inhibition of Protoporphyrinogen Oxidase.

Franck Dayan¹, Lauren Dayan²; ¹USDA-ARS NPUPU, Oxford, MS, United States of America; ²Oxford High School, Oxford, MS, United States of America

10:30

750. The Mode of Action of Napropamide in Comparison with other K3 Type Herbicides.

Tim Hawkes¹, Sophie Wood¹, Richard Wood¹, Eric Clarke¹, Kate Sharples¹, Russell Viner¹, Irina Guschina², Xueying Yang², John Harwood²; ¹Syngenta, Bracknell, Berkshire, United Kingdom; ²Cardiff University, Cardiff, Wales, United Kingdom

10:45

751. Ultrastructural Changes Induced in Chloroplast, Mitochondria and Nucleus in Crickweed (*Malachium aquaticum*) Leaves by Herbicide ZJ0273 and 5-Aminolevulinic Acid.

Weijun Zhou¹, Wenfang Zhang¹, Qing-fu Ye¹, Fan Zhang¹, Zonglai Jin¹, M.S. Naeem¹; ¹Zhejiang University, Hangzhou, Zhejiang, China (Peoples Republic of)

11:00 - 11:30

Energy Break

Location: Salon DEF

11:30

752. Using *Arabidopsis* to Understand How Safeners Induce the Expression of Herbicide Detoxification Systems.

Peter Goldsbrough¹, Nahla Amin el Sherif¹, Kana Takahashi², Amy Marshall-Colon¹, Anthony Qualley¹, Natalia Dudareva¹, Ben DeRidder³; ¹Purdue University, West Lafayette, Indiana, United States of America; ²Ochanomizu University, Tokyo, Japan; ³Grinnell College, Grinnell, Iowa, United States of America

12:00

753. Safening Activity of Stereoisomers of Dichloromethyl-[1,3]oxathiolane 3-oxide, a Chiral Safener.

Istvan Jablonkai¹, Julia Visy¹, Tunde Matola¹, Ian Cummins², David Dixon², Robert Edwards²; ¹Institute of Biomolecular Chemistry, Hungarian Academy of Sciences, Budapest, Hungary; ²University of Durham, Durham, United Kingdom

12:15

754. Comparative 3D Quantitative Structure-Activity Rela-

tionship Study of Acetal, Ketal and Amide Type Safeners.
Istvan Jablonkai¹, Tunde Matola¹, Tamas Komives²,
Barna Bordas²; ¹Institute of Biomolecular Chemistry,
Hungarian Academy of Sciences, Budapest, Hungary;
²Plant Protection Institute, Budapest, Hungary

LUNCH

13:00 - 14:30

Location: Salon 2, 3 & Cypress

**CLOSING SESSION
AND GENERAL ASSEMBLY**

14:30 - 15:30

Salon ABC

Presiding: Bernal Valverde, President IWSS

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IWSS Past Presidents

In its early development of the IWSS, Larry Burrill (International Plant Protection Center/Oregon State University, USA), one of its founding members, served as acting Secretary/Treasurer and Steering Committee member (1976–77) and then formally as elected Secretary for several terms (until 1986). John Fryer and Chris Parker of the Weed Research Organization (WRO) were important advisors in the formative years. Other members of the Steering Committee were the late Les. J. Matthews (New Zealand) and Marvin M. Schreiber (USA) who became the first and second presidents of IWSS, respectively. Other outstanding scientists who have occupied the presidency are: Schooichi Matsunaka (Japan, 1981–1983), Marcos R. Vega (Philippines, 1983–1985), Keith Moody (UK, 1985–1988), George Friesen (Canada, 1989–1990), Chester L. Foy (USA, 1991–1992), Leon Smith (Australia, 1993–1994), John Terry (UK, 1995–1996), Jonathan Gressel (Israel, 1997–1999), Ricardo Labrada (Cuba, 1999–2001) and Steve Duke (USA, 2001–2004).

NOTES

NOTES

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PERSONAL TIME SCHEDULE

Time	Monday	Tuesday	Thursday	Friday
7:30				
8:00				
8:15				
8:30	Opening Ceremony	Plenary Speaker	Plenary Speaker	Plenary Speaker
8:45				
9:00				
9:15				
9:30	Poster Session I		Poster Session II	
9:45				
10:00				
10:15				
10:30				
10:45				
11:00	Energy Break	Energy Break	Energy Break	Energy Break
11:15				
11:30				
11:45				
12:00				
12:15				
12:30				
12:45				
13:00	Lunch	Lunch	Lunch	Lunch
14:15				
14:30				Closing Ceremony
14:45				
15:00				
15:15				
15:30				
15:45				
16:00	Energy Break	Energy Break	Energy Break	
16:15				
16:30				
16:45				
17:00				
17:15				
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17:45				
18:00				