IWSS Newsletter
Sept. 2011

President's message

Dear friends,

I am very glad to inform you that the preparations for the 6th IWSC are progressing well. We are going to meet in Hangzhou, the capital of Zhejiang Province, a beautiful and historic city, near Shanghai. Hangzhou is well connected with both Beijing and Shanghai, offering wonderful natural landscape and modern technology.

As reported in the 2nd Circular, Per Kudsk and the Scientific Program Committee finalized the list of main topics and named the session organizers. We encourage you and your colleagues to register and submit your abstracts. The session organizers will be responsible for the selection of invited and contributed oral presentations and posters.

The Fund Raising Committee members (Dr. Marco Quadranti, Dr. Helmut Walter, Prof. CX Zhang, and Prof. Albert Fischer) are working hard to meet with sponsors and donors that will help us to make the 6th IWSC successful.

The Board of IWSS decided to continue its traditional support of young weed scientists and encourage them to participate in the congress.

We invite graduate students from all over the world to apply and compete for the "Graduate Student Award". Application packets are due on December 1, 2011. Details are available in the second circular of the International Weed Science Congress. The winners will receive a scholarship that will partially cover the registration, accommodation and travel expenses. We are grateful to the EWRS, WSSA and IWSS for their generous contributions that will allow us to support the participation of a large number of young weed scientists and graduate students in the congress. We encourage more institutions and companies to take active part in sponsoring young weed scientists to ensure the continued growth of our profession and its invaluable contribution to the betterment of agriculture and society in general.

In line with our previous decisions regarding the involvement of IWSS in the scientific activities of the regional weed science societies, the board of IWSS decided to award three graduate students with scholarships to help them participate in the next Asian Pacific Weed Science Conference (APWSS).

We are looking for nominations of candidates for the "IWSS Award" that will be given to four individuals for their meritorious contribution to the field of weed science. Please send your nomination to me (rubin@agri.huji.ac.il) along with three letters of support, no later than November 30, 2011.

I would like to take this opportunity to thank all members of the IWSS Board and committees for their commitment to the progress of IWSS, with the hope to see you all in Hangzhou in June 2012.

Baruch Rubin
President

VIth International Weed Science Congress

The majority of you may have already received a copy of the 2nd circular for the International Weed Science Congress in 2012. However, for those who have not yet seen this, please note the important deadlines and mark your calendar for June 17 to 22, 2012 to be at the New Century Grand Hotel in Hangzhou, China. Log on to http://www.iwss.info/ for more details.

Prof. Baruch Rubin, Organizing Committee Chair, Dr. Per Kudsk, Scientific Committee Chair, and Dr. Chaoxian Zhang, Local Organizing Committee Chair along with their teams are working overtime to make this event a memorable meeting of minds. The IWSS would be better able to serve with you on board of this organization. You can join as Individual (life or annual) or as an institute (Society).

How are we doing in terms of membership? As of today, we have: 167 current individual members, 2 current Associate members (organizations), 146 individual lifetime members, 9 affiliate lifetime members, and 16 charter lifetime members with the total current membership of 340. We encourage you and your colleagues to be a member of this organization.

We are in good standing. HOWEVER, we could be better. There are several individuals who had been members previously, but have not renewed their memberships. I encourage you to renew your membership for this year, onwards. We have made it easy to remember – the annual membership fee covers January 1 to December 31 of the year you paid. Advance payment for subsequent years can also be made. You can now pay electronically or via the WSSA, or other regional societies, which are collecting IWSS memberships for their members. If paying electronically, you will receive instantaneous receipt of your payment via the online processing system.

Where do our fees go? The majority of our fees are used to support the affiliated regional weed science societies. We have been granting travel scholarships to regional society meetings. In the past, we have also supported regional workshops/trainings related to weed science. We use minimal funds to maintain/operate our website. Our operating expense is minimal as our leaders are all volunteers.

If you change your e-mail address, please include the IWSS in your updates.

Thank you so much for your continued support and active participation in the IWSS affairs.

Yours sincerely,

NILDA R. BURGOS, Ph.D.
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International Weed Science Society
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The Israel Weed Science Society (WSSI) has joined the International Weed Science Society in June 2011.
Our Website: http://www.wssi.org.il

Yaakov Goldwasser, Ph.D
Weed Science Society of Israel- President

IWSS Students Awards

To further the cause of promoting young weed scientists, IWSS financially supported the following participants for presenting their research work at the 23rd Asian Pacific Weed Science Society Conference, being held on 25-30th September 2011 at the Sebel Cairns, Queensland, Australia.

Nguyen Thi Lan Thi, thi.mimosa@gmail.com
Lecturer, Department of Ecology – Evolution Biology, Faculty of Biology, University of Sciences – Ho Chi Minh National University, Vietnam, will be presenting two papers entitled, 'The distribution of the exotic weed *Mimosa pigra* on the Dong Nai River Basin, Vietnam' and 'The Parthenium weed (*Parthenium hysterophorus* L.) in Vietnam'.

Apaitia Macanawai, a.macanawai@uq.edu.au
Senior Research Officer, Weed Science, Dept. of Agriculture, Plant Protection Section, Ministry of Primary Industries, Koronivia Research Station, Nausori, Fiji will be making the following presentations: 'Impact of *Mikania micrantha* Kunth. ex. H.B.K. on crop production system in Viti Levu Fiji – farmers perspective'; 'Some environmental influence upon reproductive behaviour of *Mikania micrantha* in Viti Levu Fiji', and 'Vegetative growth and development of *Mikania micrantha* in taro and cassava production in Viti Levu Fiji'.

Zahid Hanif

Agricultural Officer – Extension, Khyber Pukhtun Khwa, Department of Agriculture, Peshawar, Pakistan will make a presentation on 'Characterization of the reproductive behaviors and invasive potential of Parthenium in Australia'.

United Kingdom

Resistance 2011, 5-7 September

THE INTERNATIONAL SCIENTIFIC COMMUNITY COMES TOGETHER TO DISCUSS RESISTANCE TO PESTICIDES

Globally, weeds, pests and diseases cause potential crop losses of 34%, 18% and 16%, respectively. In many countries where farmers have used pesticides, many weeds, pests and diseases have developed resistance.

Scientists from around the world came to Rothamsted Research in Hertfordshire, UK for a 3-day conference to collectively assess how to combat the resistance of weeds, pests and diseases to herbicides, insecticides, and fungicides.

The conference has major scientific, social, political and agronomic significance, with the Food and Agriculture Organization of the United Nations forecasting that global food production will need to increase by over 40% by 2030 and 70% by 2050. The protection of crops from this type of destructive attack would clearly have a significant impact on meeting these future food demands by reducing pre and post harvest crop losses.

The conference was the sixth in an ongoing series and ran from 5-7 September 2011. It included nearly 200 scientists from 25 countries and reviewed the latest research on the origins, nature, development and prevention and management of resistance to pesticides. It provided a forum for researchers, consultants, regulators and industrialists to present and discuss approaches to overcoming this increasingly important constraint to effective crop protection. Themes included: current status of resistance to pesticides; resistance mechanisms; population biology and modeling; applications of genomics; risk assessment and regulation; and transgenic crops.

Dr Stephen Moss, Rothamsted United Kingdom

CHINA

The 6th World Congress on Allelopathy

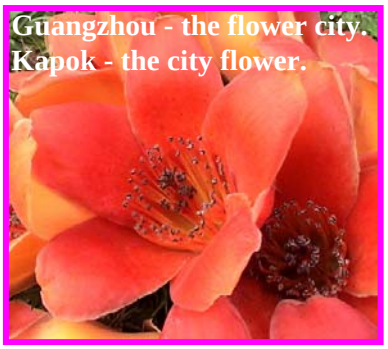
-- a conference related to natural weed control

The 6th World Congress on Allelopathy will be held in Guangzhou, China from December 15 to 19, 2011. The World Congress on Allelopathy (WCA) is a formal academic conference organized by the International Allelopathy Society (IAS) every three years. Because of the great need for sustainable methods of vegetation management and the advances in research methodology, allelopathy research is a rapidly growing research field. Indiscriminate use of synthetic herbicides has created environmental pollution and herbicide-resistant weeds. The exploitation of crop allelopathic potential in controlling weeds will be helpful in reducing reliance on herbicides. Allelopathy is a tool for sustainable weed management which could help reduce the negative impact of agriculture on the environment. The theme of the congress is "Allelopathy for Sustainable Development – from Theory to Practice".

The 6th WCA will provide a good opportunity for information exchange among scientists, students, businessmen, and government officials who are interested in allelopathy.

The city of Guangzhou is the southern gate of China with a subtropical climate. Because beautiful flowers can be grown year round in Guangzhou, it is called the "Flower City". The Canton Fair (China Import and Export Fair), the largest trade fair in China, is held in the spring and autumn seasons each year in Guangzhou. The 16th Asian Games were held

in this city in November, 2010. December is the most comfortable time of the year. It will be an enjoyable journey before the Christmas and New Year holidays. South China Agricultural University will host the congress. For further details on the academic program of the congress, please visit our congress website at http://www.international-allelopathy-society.org/main/WCA/index.html.


Guangzhou - the flower city.
Kapok - the city flower.

For enquiries regarding the congress, please don't hesitate to contact us at rszeng@scau.edu.cn or smluo@scau.edu.cn.

Looking forward to see you in December, 2011 in Guangzhou, China,
International Allelopathy Society (IAS)
http://www.international-allelopathy-society.org/main/home/main.php

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AUSTRALIA

Global Herbicide Resistance Challenge

www.herbicideresistanceconference.com.au

February 18-22, 2013, Perth, Australia

INVITATION

Global food production is one of the greatest challenges of the 21st Century. Sustaining world food production requires reliable control of yield reducing crop weeds. Herbicides are the principal tool for crop weed control yet their sustainability is threatened by the evolution of herbicide-resistant weed populations in many parts of the world. The latest episode in resistance evolution is the widespread appearance of glyphosate-resistant weeds threatening the success of glyphosate-resistant crops. Crops with new herbicide resistance gene traits, new herbicides and non-chemical methods to manage weeds are being introduced to counter the weed/resistance threats.

The **Global Resistance Challenge 2013** conference offers a multidisciplinary forum focused on all aspects of herbicide resistance in crops and weeds and their impact on global food production. Scientific sessions will range from the molecular basis of herbicide resistance evolution through agro-ecology and agronomy to on-farm resistance management.

The **Global Resistance Challenge 2013** conference will provide a stage for young and established private and public sector

researchers, crop consultants and others to present their work in front of a welcoming international audience in the beautiful portside city of **Fremantle, Perth, Western Australia**.
The Australian Herbicide Resistance Initiative, based at The University of Western Australia will host this conference. We welcome everyone who wishes to discover the latest advances in herbicide resistance to **Perth** in **February 2013**, to experience a magnificent Western Australian late summer.
The Organizing Committee headed by Prof. Stephen Powles is working hard to make it a memorable event. All weed scientists are requested to attend the meeting to find a just solution in managing herbicide-resistant weeds worldwide.

Sincerely

Stephen Powles, FTSE
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VIETNAM

Collaboration between CLRRI (Vietnam) and IRRI (Philippines) on weedy rice research

Rice is the most important crop in Vietnam. In 2009, the rice production area reached 8.24 million ha with a national average yield of 5.93 tons/ha and a total production of 48.83 million tons. There are two main regions for rice production in Vietnam: Mekong Delta in the South and Red River Delta in the North. Rice is established by direct seeding in the South by transplanting seedlings in the North. Recently, industrialization and urbanization has caused shortage of labor in rural areas and a shift from transplanting to direct seeding has occurred. However, weed infestation is higher in direct-seeded than in transplanted rice. There are four methods of direct seeding in Vietnam: wet seeding, zero-tillage seeding, water seeding and dry seeding after tillage. Wet seeding is the most popular method of crop establishment in the country.
Weeds are important pests in rice in Vietnam causing a substantial yield loss and quality reduction of milled rice. Recently, weedy rice has emerged as a major weed in rice in Vietnam. Weedy rice matures early; it is tall, but has weak culms; it has small seeds, with red pericarp, that dehisce easily. In 2006, the Cuulong Delta Rice Research Institute (CLRRI) conducted a survey on the weedy rice situation in three provinces namely Long An, Soc Trang and An Giang in the Mekong Delta. The results showed that in Long An, the population density of weedy rice in rice field in winter-spring season was 2.0 plants/m^2 and it caused 2.4% yield reduction, whereas in summer-autumn season the density was 11.4 plants/m^2 and caused 11.1% yield reduction. In Soc Trang, the density of weedy rice was more or less similar between both seasons (3.6 plants/m^2 and 4.3 plants/m^2) and the yield reductions were 5.6% in winter-spring season and 7.2% in summer-autumn season. An Giang is located at a high elevation near the hilly and mountainous region with limited water supply. Weedy rice infestation (31.4 plants/m^2 in winter-spring and 58.0 plants/m^2 in summer-autumn) in this area was higher than in the other areas. Yield losses due to weedy rice were 18.3% in winter-spring and 30.6% in the summer-autumn season.
To minimize yield losses due to weedy rice, Vietnam has collaborated with the International Rice Research Institute (IRRI) based in the Philippines to form a three-year project entitled, “Reducing crop losses due to weedy rice in lowland rice in South and Southeast Asia (2011-2013)”. The

collaborating lead scientists are Dr. Bhagirath Singh Chauhan from IRRI and Dr. Duong Van Chin from CLRRI. Some of the project activities in the first year include: (i) evaluation of weedy rice seed contamination in rice seeds, (ii) evaluation of the effect of crop rotation on weedy rice infestation, and (iii) determination of the effect of pretilachlor on weedy rice infestation in wet-seeded rice.

From: Duong Van Chin
Cuulong Delta Rice Research Institute – Vietnam
(duongchin@hotmail.com)

NEWZEALAND

New Zealand Plant Protection Society (Inc)

NZ Plant Protection Society

New Zealand Plant Protection Society headed by its President – Ms Karyn Froud (MAF Biosecurity NZ); Vice President – Mr George Follas (Syngenta); Immediate Past President – Dr Trevor James (AgResearch); Secretary – Ms J Swaminathan (AgResearch); Treasurer – Dr Anis Rahman (AgResearch); Editor – Dr Sue Zydenbos, plus six Committee members from both Government and AgChem sector organized 'the *Plant Protection conference 2011' at* Rotorua Hotel in the beautiful city of Rotorua from 9th – 11th August 2011. Papers presented at the Conference were published in the Plant Protection Journal. The conference was preceded by a Symposium entitled "Utilising plant defence for pest control" on 8th August at the same location. The Symposium papers were published in Symposium proceedings.

To encourage cutting edge research the Society has given *Scholarships and Awards for accomplished researchers and future weed scientists.*

During the year the NZ Plant Protection society awarded two Graduate student scholarships ($3,000 each); the Dan Watkins Scholarship in Weed Science ($5,000); and the NZ Plant Protection Medal, which was awarded to Dr. George Mason, a pesticide formulation specialist.

At the 17th Australasian Weeds Conference co-hosted by NZ Plant Protection Society in Christchurch (3 weeks after the first earthquake!!), two major awards were presented. One was the Council of Australasian Weed Societies (CAWS) Medal, given to Jack Craw of Auckland Regional Council, who has a distinguished career fighting weeds in NZ and Australia. The other was the CAWS Most Weed-Wise Nursery in New Zealand, which was awarded to Kerikeri Plant Production for their commitment to 'zero tolerance' of weeds.

Anis Rahman, AgResearch, Ruakura Research Centre, Hamilton, New Zealand

IRAQ

WATER HYACINTH: ALSO A SERIOUS PROBLEM IN IRAQ

Aquatic weeds can normally be tolerated in small numbers, but when they make excessive growth they become a nuisance. Water hyacinth, *Eichhornia crassipes*, has invaded water bodies of the southern part of Iraq in the last decades. The weed is reported to have appeared in this country during the early '80s, probably imported by the Egyptians as ornamental plant. The water hyacinth flowers were later commonly sold in the market and spread to other areas, mainly in the Tigris River, from Baghdad to Wassit. Water hyacinth is also found in water bodies of Thi Qar, Najaf, Ninewa and in drainage canals nearby Kerbala. Farmers' access to water has become very limited due to water hyacinth blocking the irrigation network, creating major difficulties for agriculture in the central and

southern parts of Iraq. Moreover, dense water hyacinth stand is seriously affecting the function of electrical power stations, a situation which brings about recurring electrical blackouts. Water intake for processing and domestic use is also hindered greatly. Some workers in the irrigation system and those involved in the manual removal of the weed suffer bilharziasis.

Due to these problems, the authorities of the country have been compelled to implement some control measures to prevent the spread of water hyacinth and damage to the irrigation network. Iraq depends on its irrigation systems for agricultural production; therefore water hyacinth infestation is one of the major constraints in stabilizing the economy of the country.

Mechanical and manual removal are among the main strategies adopted for combating water hyacinth, but these methods are not enough to contain the spread and proliferation of the plant. In addition, manual removal requires a lot of labour. Weed infestations are also contained through the use of physical barriers. For the time being the authorities and scientists in Iraq are looking for other feasible control options and possible integration to upgrade the control level of the weed. Rational chemical control is one of the options to replace physical removal, while biological control through rearing and release of host-specific insects as the weevils *Neochetina* spp. may also provide long-term suppression and effective reduction of the weed. Iraq needs technical assistance on aquatic weed control, mainly the implementation of biological control and improvement of mechanical removal. The best approach in this case is to train local personnel on these techniques through the organization of study tours and short fellowships. National technical workshops may be feasible in the near future once the country gets the required stabilization.

Ricardo Labrada
Ex. FAO Weed Research Officer

SPAIN

Agricultural Mediterranean Institute (IAM-CIHEAM) Course:

"WE**ED MANAGEMENT IN MODERN AGRICULTURE"**

Zaragoza (Spain), 16-21 April 2012

The Mediterranean region, characterized by intense sunlight and severe water shortage, is particularly vulnerable to weed problems. This is recently aggravated by the massive invasion of exotic weeds, the rapid evolution of herbicide-resistant weeds and the potential threat of global climatic changes.

In addition, the lack of new herbicide modes of action, the reduction in the number of registered herbicides, and the public concern for safer food, further complicate the situation and emphasize the need for advanced knowledge on sustainable weed management.

The **WEED MANAGEMENT IN MODERN AGRICULTURE** course, organized by the IAM-CIHEAM in Zaragoza, Spain (http://www.iamz.ciheam.org) will be held from 16-21 April 2012 with the support of different societies (IWSS, EWRS, SEMh), is designed for 25 professionals with a university degree. It is intended for professionals from public and private organizations involved in weed management, as well as for decision-makers, plant protection specialists, technical advisors and researchers.

This course will bring together participants to understand the concepts and to explore recent trends in advanced weed science to be applied in the Mediterranean cropping systems and solve current production and environmental issues. The course will emphasize weed management practices using modern tools and know-how.

The course aims to appreciate the rationale of integration of various disciplines to modern weed management systems and the potential of cultural and physical weed management techniques. It also aims to familiarize the

audience with new tools for weed identification and sustainable technologies for weed control.
At the end of the course participants will be in a position to apply weed biology and ecology concepts towards improved weed management, understand herbicide modes of action and understand herbicide behaviour in plant and soil. The participants will be acquainted with the implications of herbicide-resistant weeds evolution, and analyse case studies using integrated weed management approaches.
Given the diverse nationalities of the lecturers, knowledge of English and French will be valued in the selection of candidates. English, French and Spanish will be the languages used in the course. However, if necessary, the organization will provide simultaneous translation of lectures.
The course requires personal work and interaction among participants and lecturers. The international make-up of the course favours the exchange of experiences and points of view in a global perspective.
Formal lectures will be complemented with open discussions and presentation of case studies. Practical sessions will be devoted to weed identification software and training on the use of decision support system.
Two technical visits will be made to a weed collection site and farms with different cropping systems and weed management options.

Those interested on this course please contact Mr. Ramzi Belkodja (belkodja@iamz.ciheam.org) for more detailed information.

Baruch Rubin and Carlos Zaragoza

ISRAEL

The Weed Science Society of Israel (WSSI) was established in 1964 and its aim is to promote interest in, gather and spread information on weeds, in Israel. WSSI encompasses all those who are interested or involved in identification, research and control of weeds in Israel. Main activities include a bi-annual professional meeting, several specific conferences once or twice a year; and field days once or twice a year. The society promotes B.Sc. and M.Sc. students in the field of Weed Science. The WSSI has just joined the IWSS.

The weed science activities of the WSSI and other details appear on our English website: http://www.wssi.org.il/pws/page!2627

WSSI activities- 2011
January 17th-The 21st Conference of the Weed Science Society of Israel.
March 2nd- Field day in the South (Beit Kama to Zikim).
May 16th- Field day in the North (BeitShean and Jizrael Valleys).
Conference on Dodder (*Cuscuta* spp.) and Nutsedge (*Cyperus* spp.)- location and date to be announced.
Conference on broomrape (*Orobanche* and *Phelipanche* spp.) in memory of the late Dr. Reuven Jacobsohn- the Volcani Center. Date to be announced.

With best wishes,
Yaakov Goldwasser, Ph.D
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JONATHAN GRESSEL – an illustrious weed scientist

Dr. Gressel was born on 30 October, 1936 in Cleveland, Ohio, U.S.A. and immigrated to Israel in October, 1950. After Agricultural Secondary School (Pardess-Hanna, Israel) in 1955 he studied at the Ohio State University, USA to pursue B. Sc. in Plant Sciences and later joined Masters degree in Botany (Plant Physiology) at the University of Wisconsin under the guidance of distinguished Prof. F.K. Skoog in 1957 and completed PhD degree in 1962 under the able guidance of Profs. L. G. Holm, E. H. Newcomb and R.H. Burris.

Dr. Gressel then joined the Weizmann Institute of Science, Rehovot, Israel in 1962 as a Post-Doctoral Research Assistant in Biochemistry and then moved to the Plant Genetics Department in 1963; was promoted to Research Associate in 1967, Senior Scientist in 1970, Associate Professor in 1979 and served as Professor from 1985 to 2005 and is now an Emeritus Professor.

He availed Sabbatical leave/visiting scientist position to work in various institutes/advanced laboratories in the US, Australia, Italy and other countries for different durations. Dr. Gressel is a member of the American Society of Plant Biologists, International Weed Science Society, Weed Science Society of America (Honorary) and Sigma Xi.

Dr. Gressel supervised 8 Masters and 16 PhD students and published over 300 peer reviewed journal articles and book chapters. He has eight books to his credit, including editing the first book on 'Herbicide Resistance in Plants' with Homer LeBaron in 1982 and writing 'Genetic Glass Ceilings: Transgenics for Crop Biodiversity' published in 2007 and has 21 patents/applications.

He is a member of the Editorial board of several national and international journals; received research grants for many national and international collaborative projects; chaired/organized numerous scientific meetings and was President of IWSS from 1997-1999.

For his meritorious services and significant scientific contribution, he was awarded with 'Sarah Leedy' Award "Outstanding Young Scientist" by Weizmann Institute of Science in 1967, Cohen Award in Plant Protection of the Israel Agricultural Research Organization for work on cellular and mathematical models for studying herbicide effects (with Dr. S. Zilkah) in 1979, Honorary Fellow of Weed Science Society of America, 1992, Weed Science Society of Israel Honorary Award, 2007, International Weed Science Society "Outstanding International Achievement" award in 2008 and Israel Prize for Agricultural Science (quadrennially awarded) in 2010

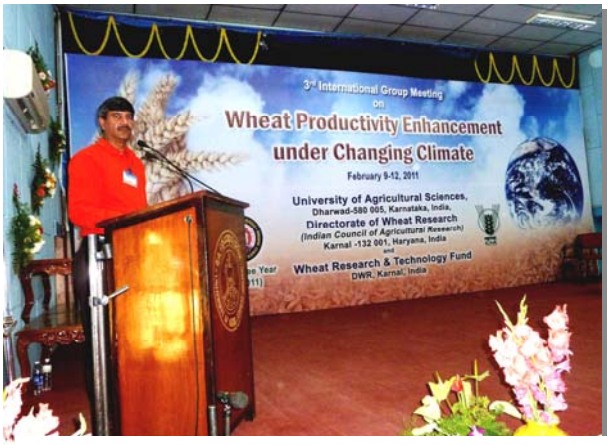
Until recently he was Chief Scientific Officer (and a co-founder, director) of TransAlgae Ltd.

International Weed Science Society wishes him well for his untiring (re-tired) efforts in fighting the weed menace!

INDIA

3rd International Group Meeting on Wheat Productivity Enhancement under Changing Climate was held from Feb. 9-12, 2011 at UAS Dharwad, Karnataka. More than 250 delegates participated from India, Iran, Syria, Mexico, USA, Australia, Nepal, China, Indonesia, France and Afghanistan.

Dr. Thomas Lumpkin, CIMMYT delivered a keynote lecture on food security, natural resources and climate change. Dr. Sanjay Rajaram, ICARDA, Syria (wheat breeder) discussed the strategies for enhancing wheat productivity to meet the challenges for India to produce 100 m. t. of wheat by 2030.



Dr. Samunder Singh delivering a lecture on IWM strategies for sustainable wheat production

Dr. Tim Setter (Australia) discussed wheat improvement strategies for waterlogged and saline soils. The Biotechnology and genomics applications session discussed the role of this new tool in breeding varieties for heat and drought tolerance. Fluctuations in climatic conditions during the reproductive stage of wheat severely reduce wheat yields.

Application of biotechnology to fight rust and other diseases in wheat was discussed in depth by several speakers. Dr. R. K. Sharma explained the importance of Resource Conservation Technology for sustainable wheat production. Dr. Samunder Singh and Dr. R. S. Chhokar made a presentation on evolving integrated weed management strategies for sustainable wheat production. Chemical weed control alone is not sustainable due to shifts in weed flora and evolution of resistant weed populations as has been observed in the last two decades in North West India. Though herbicides will be the main component of weed management programs, it needs to be complemented with all available resources to manage weeds sustainably.

Dr. R. R. Hanchinal, Vice Chancellor, University of Agricultural Sciences, Dharwad, Karnataka and Organizing Secretary, exhorted the role of international collaboration in meeting the challenge of global climate change for sustainable wheat production.

Farmer's Training on safe use of herbicides

Dr. Samunder Singh and Nilda Burgos imparting training to farmers in Uklana, Haryana

CCS Haryana Agricultural University, Hisar in association with the International Weed Science Society (IWSS); Indian Society of Weed Science (ISWS) and Indian Pesticide Industry conducted farmers' trainings at five locations in Haryana State.

Dr. Samunder Singh, Sr. Scientist, CCS HAU Hisar and Secretary, ISWS; Dr. Nilda Burgos, University of Arkansas and Secretary/Treasurer, IWSS and Dr. David Gealy, USDA-ARS imparted training to farmers on spraying techniques, efficient weed management using herbicides for different winter season crops, safe use of herbicides, use of surfactants and herbicide resistance management in Uklana (Fatehabad District) on 2nd Dec. 2010 where 550 farmers participated. Demonstration of spraying system was provided and 150 flat fan three-nozzle booms were distributed by Dr. Krishan Kumar, Senior Regional Manager, United Phosphorus Limited, Mumbai to farmers, free of cost.

Two similar trainings were organized at Shyamgarh (Karnal) and Masana (Kurukshetra Districts) which were attended by 175 and 135 farmers, respectively on 6th Dec. 2010. Besides the efficient use of herbicides and spraying techniques, Dr. Samar Singh from CCS HAU Regional Research Station, Karnal discussed the advantage of zero tillage and resource conservation technology. Dr. Rakesh Goel, Syngenta India Ltd. exhibited various sprayers, nozzles and pressure regulators. All the participating farmers were given wide angle (flood jet) nozzles by Syngenta and DuPont.

Prof. Baruch Rubin and Samunder Singh addressing a farmer's gathering at Tohana, Haryana

Prof. Baruch Rubin, President, IWSS and Dr. Samunder Singh taught some essential lessons to 350 farmers on 12 Dec. 2010 at Tohana (Fatehabad district) on water use efficiency, herbicides under drip and sprinkler system with special emphasis on horticultural crops, role of soil moisture on the efficiency of PPI/PRE herbicides, herbicide mixtures and surfactants to increase the spectrum of weed control, lower the environmental loading of herbicides, and delay the evolution of resistant weed species. Selection of wheat herbicides based on weed

Dr. Rubin interacting with female farmers engaged in cotton picking near Tohana

flora, nozzle types, and spray volume. A farmer's quiz was also organized and approximately one hundred multiple nozzle booms were awarded to innovative farmers thanks to United Phosphorus Limited, Mumbai. Prof. Rubin made a comparison of farming system in Israel and the lessons Indian farmers must take to improve their crop yields and financial health. Several queries of farmers were also addressed by Prof. Rubin. The Local farmers' club vehemently thanked Prof. Rubin for his wise counsel and desired more interactive meetings/trainings by experts from the International Weed Science Society.

Similar meeting was also organized by Indian Society of Weed Science at Adampur (Hisar district) in collaboration with United Phosphorus Limited on 19th Dec. 2010 which was attended by 250 farmers and 150 multiple nozzle booms fitted with flat fan nozzles were distributed free of cost to the farmers by the company. Officers from the department of Agriculture, Haryana also participated in the meeting to address many grievances of farmers on pesticides. Some farmers complained of poor weed control efficacy from herbicides which may be due to under-dosing, nozzle types or application methods.

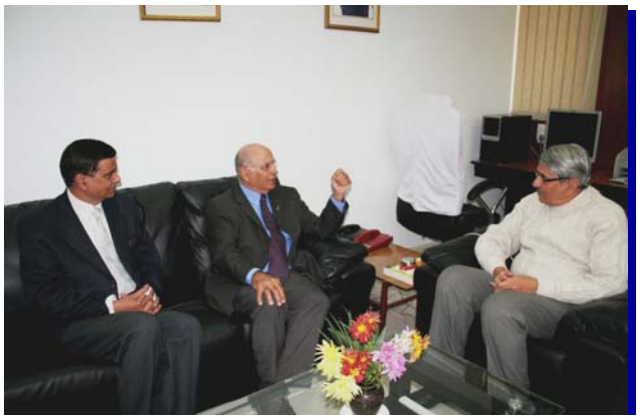
INVITED SEMINAR

Samunder Singh, Nilda Burgos, Vinod Shivrain, Baruch Rubin and R. K. Pannu

The Indian Society of Weed Science (ISWS) organized a one day seminar in collaboration with CCS Haryana Agricultural University, Hisar in the department of Agronomy on 13th Dec. 2010. Water is becoming a scarce commodity and shifting from puddled rice to upland/direct seeded rice poses several problems, one of which is weedy rice. Water not only affects herbicide efficacy, but also species composition. Several weeds which ere suppressed by flooding in rice are posing problems in direct-seeded rice.

Dr. Nilda Burgos, Secretary cum Treasurer of International Weed Science Society, and Weed Science Professor, Department of Crop, Soil, and Environmental Sciences, University of Arkansas, Fayetteville, USA, made a presentation on '**Escape of modified crop traits into wild or weedy relatives, with special emphasis on weedy rice**' to post-graduate students, teachers and research faculty of CCS HAU Hisar in Agronomy department. Prof. Baruch Rubin, President, International Weed Science Society and J & R Liss Professor of Agronomy & Weed Science, RH Smith Institute of Plant Science & Genetics in Agriculture, Faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem, Rehovot, Israel delivered another seminar on '**Herbicide-resistant weeds, a threat to the dryland farming in the Mediterranean'.**

Both talks were very informative and well received by students and faculty. Dr. R. K. Pannu, Professor of Agronomy, CCS HAU Hisar and Treasurer, Indian Society of Weed Science presented mementos to both speakers on behalf of the Society. The Head of the department thanked Prof. Rubin and Burgos for their thought provoking lectures which will be very useful in future research programs in lowering the menace of weeds in this part of the world.



Prof. Baruch Rubin with **Dr. K. S. Khokhar**, Vice Chancellor, and Dr. Surat S. Dahiya, Registrar (L) CCS HAU Hisar

Prof. Rubin called upon **Dr. K. S. Khokhar, Vice-Chancellor,** CCS Haryana Agricultural University, Hisar and thanked him for his invitation to this beautiful campus enabling an interactive session with students and faculty engaged in weed management. They discussed the possibility of students and faculty exchange program with The Hebrew University of Jerusalem. Israel is contributing a lot in the development of infrastructure and knowledge sharing in the dry land areas. Many farmers from Haryana state have visited Israel to have a first hand knowledge on raising horticultural crops with scarce irrigation facilities. Drip irrigation system and large greenhouse technologies are rapidly being adopted by Haryana farmers. A Center of excellence in horticulture/vegetables has also come up in the State with the collaboration of Israel to meet the needs of Indian farmers'.

Sh. Bhupindr Singh Hooda, Chief Minister of Haryana led a delegation of Agricultural Scientists and State officers under the leadership of Dr. Khokhar to explore more collaborative work with Israel.

3rd International Conference on Parthenium

The Third ICP was held at the Indian Agricultural Research Institute (IARI) New Delhi from Dec. 8-10, 2010.

Parthenium has been a major problem for last five decades or so, and continuously affecting human and animal health, flora and environment. In the last 3-4 decades, many research establishments inclusive of ICAR and SAUs endeavored on Parthenium research and substantial efforts were made on the management aspects of Parthenium. Still there is no room for complacency as maximum control of Parthenium is not yet achieved. Though eradication is not possible, effective containment is the immediate need. The carefully crafted Integrated Weed Management Programme (IWMP), named as Programme on Parthenium Elimination, PROPEL (1986-88) succeeded to make the general public realize, that 'Yes' it is possible to manage Parthenium effectively. Efforts to control Parthenium in and around Bangalore by PROPEL was based on botanical agent *Cassia sericea*, insect biocontrol with Mexican weevil, *Zygogramma bicolorata*, and need-based herbicidal treatments. Two previous International Conferences on Parthenium were organized at Dharwad (1988) and Bangalore (2005). The Third International Conference (ICP 2010) focused on the theme *"Integrated Management of Parthenium linked hazards to plant, human and animal health for Sustainable Biodiversity"*. The ICP 2010 had sessions *on* (1) Global view of Parthenium, (2)

its management strategies, (3) associated human and animal health hazards, diagnosis and management, (4) utility aspects of Parthenium; and (5) Awareness and Interface session – outlining future course of actions.

— Dr. R. D. Gautam, Org. Secretary, IARI, New Delhi

Dr. Steve W. Adkins from the University of Queensland, Australia delivered a key note address: **Towards the sustainable management of Parthenium weed (*Parthenium hysterophorus* L.) under a changing climate: an international collaborative approach.** Parthenium is a weed of global significance and has become a major weed in Australia, India, South Africa, Ethiopia and Pakistan as well as many other countries of the world. No single method has proven effective in its management. Through international collaboration aspects of the biology and ecology of this weed have been investigated to develop sustainable management strategies that can be used now and in the future under a changing climate. Initial work has assessed the reproductive potential of the weed, its seed bank size and persistence. The mode of spread both nationally and internationally, and how it affects plant community biodiversity, has been examined. New management strategies are based around preventing seed spread and reducing population size in heavily infested areas. These latter approaches are built around biological control using both introduced natural enemies (insects, pathogens), which contribute significantly to the reduction of the weed, and suppressive plants, and studying their interaction. Mapping approaches are being used to monitor spread, identify future locations that may be at risk, as well as determining effectiveness of the management approaches. On-going work is being conducted on the genetic make-up of Parthenium weed populations around the world, their likely susceptibility to biological control, and their mode of spread.

Studies have revealed that the plant owes its success, in part, to the very high seed production potential (c. 15,000 per plant). Seed production is maximized under warm (28-35°C) and wet (field capacity) conditions. A cooler condition (18-25°C) reduces seed production. The soil seed banks that build up in infested pastures can be very large (c. 5 to 30,000 viable seeds m^{-2}) and present management options do not seem to be able to reduce this below a threshold of c. 5,000 viable seeds m^{-2}. Even when Parthenium weed is present at low densities (2 plants m^{-2}) there is a considerable negative effect upon plant community biodiversity.

New management options may include sowing desirable, suppressive plant species into infested land. Such suppressive plants work well with the already released biological control agents and together can reduce Parthenium weed productivity by 47% and seed reduction to close to zero. However, climate change studies with elevated CO_2 levels indicated that this suppressive ability may be reduced in the future as the atmospheric CO_2 levels rise, giving Parthenium a greater competitive edge.

PANEL DISCUSSION

Dr. M. Mahadevappa presented a case study of Parthenium competition with *Cassia seracia* and other weed species in Karnataka. *Cassia* has recovered Parthenium-infested roadsides. Several other species that were found effective in displacing Parthenium were *Hyptis, Suavelons, Tephrosia, Croton* and *Sida* spp.

Dr. Baruch Rubin shared the experience of evolution of resistance due to continuous use of herbicides. He cited the example of glyphosate resistance in Columbia and advised not to use glyphosate indiscriminately to avoid future resistance evolution. Parthenium resistance to several herbicides of ALS group (chlorimuron-ethyl, cloransulam-methyl, foramsulfuron, imazethapyr, and iodosulfuron-methyl-sodium) was already reported from Brazil.

Panelists of 3rd ICP, New Delhi (L-R), Drs. Samunder Singh, Nilda Burgos, T. M. Manjunath, Steve Adkins, Baruch Rubin, M. Mahadevappa, K. R. Kaundal (Session Chair) and Dr. R. D. Gautam (Org. Secy)

Dr. Steve Adkins advocated better co-ordination for effective and economical control of Parthenium. He informed the house that 9 insects and two fungi were released in Australia to suppress Parthenium which is also found to spread tomato stump virus in mungbean, sunflower and other crops causing economic losses. He found that grasses were more effective than broadleaf (legume) weed in suppressing Parthenium.

Dr. T. M. Manjunath felt that a saturation point in Parthenium has been reached in India and henceforth it is bound to decline. Education/Awareness for the public and sensitizing and convincing politicians was required to formulate sound policies for effective control of Parthenium. Dr. Nilda Burgos cited the example of red rice spread and its containment in California. If the policies are sound and people are aware, the efforts are strengthened in the fight against Parthenium.

Dr. Samunder Singh made a presentation about weed species competing with Parthenium in north India. Biological control using *Zygogramma bicolorata* beetles is not very effective in this region due to high temperature in the summer. Beetles comes late in the season, when temperature lowers; by this time Parthenium is in flowering stage and the damage inflicted by beetles is minimal.

Parthenium is a preferred host for cotton mealy bug. In north India, large scale cotton damage by mealy bug in 2007 raised some hope of Parthenium control. However, cotton mealy bug was controlled by bioagents and Parthenium is still causing concerns in large swaths of the country. Local weed species are recovering and suppressing Parthenium. *Amaranthus hybridus, Helianthus annuus, Sida cordifolia, S. acuta, Tephrosia purpurea, Ipomoea carnea, Xanthium strumarium, Saccharum munjo* and *S. spontaneum, Abutilon bidentatum, Croton bonplandianum, Cannabis sativa, Setaria viridis* and *Panicum* species are competing with Parthenium in light soils. *Cassia tora* is better adapted than *C. sericea* on roadsides in northwest India. Similarly, *Chenopodium* sp. can grow 3-7 ft tall under heavy soils and can suppress Parthenium. *Suaeda fruticosa* and *Accacia spp.* are replacing Parthenium under saline conditions.

For effective control of Parthenium - a community approach is required. New uses need exploration. Although it can be used for manure/compost, but care should be taken that the seeds are fully decayed, otherwise his mode of utilization becomes an agent for spreading the weed.

Salient points for future action

1. Impetus for awareness program.
2. Form a National Parthenium Working Group.
3. Documentation of the success stories.
4. Evaluating more bio-agents to contain it.
5. Legislation to include Parthenium as an obnoxious weed under the “Agricultural and Pests Diseases Act”, GOI
6. Need to have a National Invasive Weeds Authority / Board
7. Strict quarantine to check the entry of alien invasive species (IAS).
8. Parthenium utility as green manure/compost.
9. Exploring other uses such as biopesticides, larvicidal effect and as mosquito repellent, antifungal activity against rust spores, feed additives to enhance the growth and development of silk worm, etc..

Other Major Upcoming Events

2011

September 11-16, 2011	XIIIth International Symposium on Biological Control of Weeds, Kohala Coast of the Big Island, Hawaii, http://uhhconferencecenter.com/xiii_isbcw.html
September 12-16, 2011	3rd Symposium on Environmental Weeds & Invasive Plants (Intractable Weeds and Plant Invaders) in Ticino, Switzerland. Contact: Christian Bohren, ACW Changins, P.O.Box1012, CH-1260 Nyon, mobile +41 79 659 47 04, Switzerlandchristian.bohren@acw.admin.ch
September 25–30, 2011	Asian-Pacific Weed Science Society Conference, Sebel Cairns North Queensland, Australia, www.apwss2011.com
September 27-28, 2011	Sustainable use of pesticides and IPM in Italy, Rome, ITALY. Info: ENDURE, www.endure-network.eu .
October 2-7., 2011	The 3rd Symposium on Environmental Weeds & Invasive Plants (Intractable Weeds and Plant Invaders) Venue: Ticino, Switzerland in Ascona (monte verità) http://www.ewrs.org/doc/invasive_meeting_Ticino.pdf
October 10-14, 2011	Potential Invasive Pests Workshop, Miami, FL, USA. Info: H. Paszko, PO Box 110750, Univ. of Florida, Gainesville, FL 32611-0750, USA. HPaszko@ufl.edu Fax: 1-352-392-9734, Voice: 1-352-392-5930. www.conference.ifas.ufl.edu/TSTAR/
October 14, 2011	Connecticut Invasive Plant Working Group Symposium, Storrs, CT, USA. Info: www.hort.uconn.edu
October 18-22, 2011	North American Plant Protection Organization Annual Meeting, Kelowna, ALB., CANADA. Info: L. Cree, nappocanada@inspection.gc.ca Fax: 1-613-228-6602. Voice: 1-613-221-4546.
October 25-29, 2011	2nd Invasive Species in Natural Areas Conference, Coeur d'Alene, ID, USA. Info: conference@nripc.com, www.**nripc.org**/conferences.html
November 17, 2011	Advances in Biological Control, Marston, Lincs, UK. Info: R. Morgan, AAB, Warwick Enterprise Park, Wellesbourne, Warwick CV35 9EF, UK. Rebecca@aab.org.uk Fax: 44-01-789-470234. Voice: 44-02-476-575195.
November, 24-25, 2011	Integrated Pest Management in Europe, Endure, Paris, FRANCE. Info: www.colloque.inra.fr
November 25, 2011	Innovative Ideas In Pest And Weed Control In Field Vegetables, Harpenden, Hertfordshire, UK. Info: R. Morgan, AAB, Warwick Enterprise Park, Wellesbourne, Warwick CV35 9EF, UK. Rebecca@aab.org.uk Fax: 44-01-789-470234. Voice: 44-02-476-575195.

December 13-14, 2011 — Operator and Resident Exposure and Risk Assessment, Mainz, GERMANY. Info: S. Mummenbrauer, Die Akademie Fresenius GmbH, Alter Hellweg 46, 44379 Dortmund, GERMANY. SMummenbrauer@akademie-fresenius.de Fax: 49-231-758-9653. Voice: 49-231-758-9682.

2012

January 23-25, 2012 — Southern Weed Science Society (U.S.) Annual Meeting, Charleston, SC, USA. Info: SWSS, 205 W. Boutz, Bldg. 4, Ste. 5, Las Cruces, NM 88005, USA. swss@marathonag.com, Voice: 1-575-527-1888. www.swss.sw

February 6–9, 2012 — WSSA Annual Meeting, Hilton Hotel, Waikoloa Village, Hawaii, Rod Lym, Program Chair, Tel: 701-231-8996, Rod.Lym@ndsu.edu

March 13-15, 2012 — **25th GERMAN CONFERENCE ON WEED BIOLOGY AND CONTROL**, Braunschweig, GERMANY. Info:www.unkrauttagung.de.

March 27-29, 2012 — The 7th International IPM Symposium, "IPM on the World Stage," Memphis, Tennessee USA, Memphis Cook Convention Center. Memphis Marriott Downtown, Tennessee. Margaret Appleby, margaret.appleby@ontario.ca, ipmsymposium@ad.uiuc.edu, website http://www.ipmcenters.org/ipmsymposium12/

June 17-22, 2012 — VI International Weed Science Congress, Dynamic Weeds, Diverse Solutions, Hangzhou, CHINA. Info: H.J. Huang, IPP, CAAS, No. 2 West Yuanmingyuan Rd., Beijing 100193, CHINA. iwsc2012local@wssc.org.cn Fax/voice: 86-10-628-15937. www.iwss.info/coming_events.asp

2013

Feb. 18-22, 2013 — International Herbicide Resistance Conference, Perth, Australia. Info: S. Powles, Stephen.Powles@uwa.edu.au AHRI, School of Plant Biol., Univ. of Western Australia, 35 Stirling Hwy., Crawley, Perth 6009, WA, AUSTRALIA. Fax: 61-8-6488-7834. Voice: 61-8-6488-7870. http://www.herbicideresistanceconference.com.au/

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The IWSS Newsletter is available on the Internet at:
http://www.iwss.info/newsletters.asp

The IWSS Newsletter is published twice a year to foster communication among and give information to our members and others around the globe interested in Weed Science.

Thanks to the contributors who helped with the present issue. We would love to hear activities in your areas; please contribute and share with all weed science fraternity.

Deadline for items for the next Newsletter is 15 April 2012

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