



# WEED SCIENCE NEWS LETTER



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## ISWS BIENNIAL CONFERENCE ON NEW AND EMERGING ISSUES IN WEED SCIENCE

### Indian Society of Weed Science New and Emerging Challenges



Coinciding with the green revolution, Indian Society of Weed Science (ISWS) was established at Hisar in 1968 with Dr M.K. Moolani of CCS Haryana Agricultural University as its founder president. The headquarter was shifted to Bangalore for slightly more than a decade. It was then again shifted to Hisar in 1992. ISWS

headquarter has now been shifted to Jabalpur from 2006. All of these have been our determined move towards our scientific goals. We have made solid accomplishments in turning around productivity of crops when ever new and emerging challenges emerged.

Our peers including Dr. M.K. Moolani, Dr S. Sankaran, Dr H.S. Gill, Dr V.S. Mani, Dr. K. Krishnamoorthy, Dr. S.K. Mukhopadhyay, Dr O.P. Gupta and Dr. V.M. Bhan brought forward the most convincing concept of chemical weed control. ISWS has participated in bringing out such concepts through its network supported by our peers and each member of the society. We have been able to tap into the enormous potential offered by different weed management methods and utilize this to generate recommendations for farmers. The society provided a unique chance for all of us for exchange of views and formulate strategic plan. The introduction of chemical weed control in the mid 1970s lead to an exciting performance of high yielding varieties of rice and wheat. It also provided an improvement in the input use efficiencies.

In the second phase, for the first time ever we faced the new challenge in the form "Herbicide Resistance". Weed scientists at that time and even now place greater priority on forums facilitating direct and thorough interactions with farmers, private sector, NARS and IARS. Combination of multi-institutional and multi-disciplinary approach sparks

imaginations and innovations. Successful research depends entirely on the people behind innovations and the approach they follow to do that research. With new ideas and their expertise, weed scientists, agronomists and engineers helped to establish the basis for future ideas to tackle the most serious problem by introducing zero tillage and early sowings. This again has been the pioneering achievement to create an ecological niche in flavor of crop like wheat.

The economic rate of returns on the recommendations of herbicides that we generated in the first phase 1975-1990 and integrated weed management including zero-tillage that we generated between 1990-2005 were much more than any other technology. The rate of returns were very high when ever we emerged out crisis of dominance of few weed species due to crop intensification in mid seventies or due to development of resistance in early 1990s. If we look back on four decades of weed science research, it appears that cost of depending only on herbicides and the rewards for ecology based integrated weed management have been much larger than we might think. The turn around story when we were hit by worst crisis of wheat productivity fall due to resistance in *Phalaris minor* is well known to all of us. We escaped this crisis through collaborative effort of scientists, private sector and policy makers by generating recommendations in a record time of three years.

### INDIAN SOCIETY OF WEED SCIENCE

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**Dr. Rm. Kathiresan**

Newsletter Editor

Dept. of Agronomy, Faculty of Agriculture  
Annamalai University

Past four decades have not answered every question and we have a crucial positive role to play by seizing new opportunities in multiple land use systems including intercrops, cover crops, parasitic weeds, invasive weed species, effect of herbicides on non-target species, training on spraying techniques, basic research on herbicide use efficiency, weed ecology and areas like global warming. The evidence of adoption of Herbicide Resistant Crops (HRCs) in more than 60 million hectares now is good enough to know that in addition to integrated weed management options, basic and strategic research based on biotechnology is likely to add value to our research. Although most solutions will still come from ecology but we may have to use biotechnology to find solutions for some parasitic weeds where synthetic herbicides are not effective. Next generation belongs to biotechnology. If that turns out to be the common place, we must optimize weed management solutions and train our next generation including students and young scientists. What ecological, social and economic condition will characterize our scientific virtues will depend on the approach that we follow in generating our recommendations. The search will remain on for creative ideas.

Indian agriculture is now in a transition phase where we may have to find a substitute for manual weeding because labor availability will be major problem especially in lead areas where further yield improvement depends solely on the input use efficiency. Innovations are triggered by exploring new areas of thought by identifying future needs of farmers. We must have necessary creativity and expertise to turn our knowledge into technologies which create volumes and which also have environmental protection at the same time. We must therefore see out of box to

conceptualize, articulate, and validate the concept of an integrated weed management. In the same context, sowing techniques like direct seeded rice or transplanting of rice with machines will have to be introduced. We can obtain weed management solutions for such options by cooperating with each other, private sector and by collaborating with International Agriculture Research systems.

Trends in the productivity growth in agriculture in last few years have slowed. To achieve high growth trends in both irrigated and rain fed agriculture, positive impact of efficiency enhancement measures like integrated weed management will not only lead to greater food security but will further enhance the profitability for our farmers. This opens up new opportunities for researchers: Before we embark on developing new technologies, we need a paradigm shift by



following a farmer's participatory approach which has the greatest probability of success. We must take into account local issues in the spirit of consultation with all Universities concerned and should endeavor to find alternate solutions where ever possible.

**R.K. Malik**  
President ISWS

The biennial conference of Indian Society of Weed Science is scheduled for 2<sup>nd</sup> and 3<sup>rd</sup> November 2007 at CCS Haryana Agricultural University, Hisar. Dr. R.K. Malik, President of the society will be organizing the conference and will be

assisted by his colleague Dr. Samundar Singh. Theme areas of the conference include

- Global Warming and Weeds, including Quarantine Issues.
- GM Crops and Biotechnology
- Direct Seeded Rice and Integrated Weed Management (IWM)
- Herbicide Resistance and Management
- New Herbicides and Herbicide Residues
- Weed Biology and Ecology
- Transfer of Technology

The Conference is structured in invited plenary papers and poster sessions. It is planned to organize special poster sessions for the students. There will be invited speakers for the theme areas and it will be followed by poster sessions

### FAO-Weed Risk Assessment Regional Workshop / Training for Asia

A Regional Training Workshop for Asia on Weed Risk Assessment is jointly organized by Food and Agriculture Organization of United Nations, Rome and Department of Agronomy, Faculty of Agriculture, Annamalai University during 25<sup>th</sup> to 28<sup>th</sup> September, 2007. The workshop was inaugurated by Dr.L.B.Venkatrangan, Vice-Chancellor, Annamalai University at the Senate Hall of the University at Annamalainagar on 25<sup>th</sup> September 2007, Tuesday by 11.00 a.m. Dr. Ricardo Labrada Romero, Weed Officer, FAO presided over the function and stressed upon the importance of Weed Risk Assessment. Dr.W.R.Reddy, Joint-Secretary (Plant Protection), Department of Agriculture and Co-operation, Ministry of Agriculture, Govt. of India, New Delhi delivered a special address and elaborated on the Weed Risk



Assessment Procedures adopted in India. Dr.N.T.Yaduraju, National Co-ordinator, National Agricultural Innovation Project, Indian Council of Agricultural Research, New Delhi spoke on the importance of predicting and preventing invasive alien weeds to conserve native biodiversity from alarming invasions such as Water hyacinth and Parthenium weeds. Dr. Rm.Kathiresan, Professor of Agronomy / Local Co-ordinator organized the Workshop / Training between 25<sup>th</sup> to 28<sup>th</sup> September 2007. Most of Asian Countries like Japan, China, Phillipines, Nepal, Vietnam nominated their representatives for training on Weed Risk Assessment Procedures. Dr. Stephen Johnson, Department of Primary Industries, Australia and Dr. Ricardo Labrada Romero, Weed Officer, FAO were the facilitators. Dr. J.G. Varshney and Dr. Naidu from NRCWS , Jabalpur participated in the training. Travel cost for international participants was sponsored by FAO-Rome and Annamalai University, Tamil Nadu, India sponsored the cost of their accommodation and food.

**WEED RISK ASSESSMENT  
GAINING IMPORTANCE IN INDIA'S  
PLANT QUARANTINE**

Dr. W.R. Reddy, I.A.S, Joint-Secretary (Plant Protection), Department of Agriculture and Co-operation, Ministry of

Agriculture, Government of India addressed a gathering of international experts, while inaugurating the Regional Training / Workshop on Weed Risk Assessment for Asia, jointly organized by FAO Rome and Annamalai University at Annamalainagar, Tamil Nadu, India during 25<sup>th</sup> to 28<sup>th</sup> September 2007. He pointed out that there are 975 serious weeds in other parts of the world that are not reported in India, where 6 per cent of loss in agricultural production amounting to Rs.20,000 crores is due to weeds. Some of the introduced exotic weeds such as *Phalaris minor*, *Argemone mexicana*, *Solanum elaeagnifolium*, *Parthenium hysterophorus* and *Eichhornia crassipes* do contribute significantly for this annual loss. Bulk import of food grains and introduction of alien species for aesthetic purposes by plant enthusiasts have been the principal routes of introduction for such invasive alien species. Taking note of the seriousness of the problem Government of India has notified 31 quarantine weeds in schedule VIII of plant quarantine (Regulation of import to India) order 2003 and for the purpose of bulk import of wheat (from countries like USA, Australia and Russia) 21 quarantine weeds have been short listed. The Department of Plant Protection has brought out a manual and posters for identification of quarantine

weeds. For an effective prevention of any possible introduction, the department has identified risk management options, suggested pre-shipment clearing and controlled milling.

(Excerpts from the Inaugural address of Dr.W.R.Reddy, Joint Secretary (Plant Protection), Department of Agriculture and Co-operation, Ministry of Agriculture, Government of India.)

**FAO International Workshop on  
Rice-Allelopathy, CHINA.**

Food and Agriculture Organisation of United Nations, Chinese Weed Science Society and Chinese Allelopathy Society jointly organized an international workshop on Rice Allelopathy during 9<sup>th</sup> and 10<sup>th</sup> of October 2007, at Huandotide Hotel, Haikou, Hainan province, China. FAO sponsored the travel of international experts from Korea, India, Japan and Vietnam and the local hospitality was extended by the Chinese Weed Science Society and Chinese Allelopathy Society. Bio-assay procedures and breeding techniques for incorporation of allelopathic traits from allelopathic rice cultivars were discussed and participants were given hands on training. Dr. Ricardo Labrada Romero, Weed Officer, FAO-Rome stressed on the importance and progress of research on Rice Allelopathy. Dr. K.U.Kim from Korea, Dr. D.V.Chin from Vietnam, Dr. Kato Naguchi from Japan and Dr. Rm.Kathiresan from India, the invited experts dealt on various bio-assay procedures in rice - allelopathy. Dr. Steve Duke and Dr. Frank Dayan of Natural Products Research Center, USDA-ARS, USA and Dr. Francisco Macias of Cadiz Allelopathy Group, Spain also participated. The workshop was followed by International Conference organized jointly by Weed Science Society on 11<sup>th</sup> and 12<sup>th</sup> of October 2007. Weed Science and Allelopathy experts from all over the world including Dr. Y. Fujii of Japan,



**Dr. Rm. Kathiresan with other invited experts in FAO Rice Allelopathy Workshop China**

Dr. Robert Blackshaw of Canada, Dr. Steve Duke and Frank Dayan of USA, Dr. Francisco Macias of Spain and Dr. Per Kudsk of Denmark presented lead papers.

#### **Indian Weed Scientists in Asian Pacific Weed Science Conference 2007, Srilanka**

Dr. J. G. Varshney, Director National Research Center for Weed Science and Secretary, ISWS delivered a oral research presentation at the Asian-Pacific Weed Science Conference held at Colombo, Srilanka during 2<sup>nd</sup> to 6<sup>th</sup> October, 2007. Dr. R.K.Ghosh of BCKVV, West Bengal delivered another presentation. Dr. Saravanane was awarded the support for young and deserving weed scientist by APWSS.

#### **INTERNATIONAL CONFERENCE IN ISRAEL, OCT. 2007**

Dr. Samunder Singh and Dr. Ashok Yadav of CCSHAU, Hisar participated in an International Conference on 'Novel and Sustainable Weed Management in Arid and Semi-Arid Agro Ecosystems' from October 7-12, 2007 at the Faculty of Agricultural, Food and Environmental

Quality Sciences, Rehovot, Israel, organized by the Hebrew University of Jerusalem under the patronage of Weed Science Society of Israel and European Weed Research Society. Dr. Samunder Singh presented platform paper on 'Integrated Weed Management in Cotton in India', and Dr. Yadav on 'Current status of herbicide resistance in Phalaris minor and management strategies in rice-wheat cropping system in India'. Prof. Baruch Rubin organized the event, with utmost care and efforts. The conference organizers also arranged a visit to the 'High-tech Agriculture in the Arava Valley of Israel (adjoining Jordan) to see wonderful crops in fields, green houses and screen houses which were irrigated with desalinated water using drip system. The fields were below sea level and had no source of irrigation (canal, rain or tube well), except brackish underground water.

#### **FUTURE EVENTS**

5<sup>th</sup> International Weed Science Conference "Weeds-local problems global challenge". June 23-27, 2008. Vancouver, Canada.

Website : <http://www.iws.ucdavis.edu>

16<sup>th</sup> Australian Weeds Conference Weed Management 2008 : "Hot Topics in the Tropics" May 18-22, 2008. Queensland, Australia.

Website : <http://www.16awc.com.au>

5<sup>th</sup> International Weed Science Conference is scheduled for 23<sup>rd</sup> to 27<sup>th</sup> June 2008 at Westin Bayshore Hotel, Vancouver, Canada. International Weed Science Society along with Weed Science Society of America and Canadian Weed Science Society will be the sponsors. Dr. Bernal Valverde, president IWSS and Dr. Robert Blackshaw, Organising Secretary are taking all efforts in organizing the event with due care. The theme of the conference is weeds-local problems global challenge. There are about 22 main topics organized by eminent experts in the field. The abstract submission is already open and deadline is 15<sup>th</sup> January 2008. The organizers encourage participation of graduate students (M.Sc and Ph. D.) and young scientist (up to five years after completion of Ph. D.) by providing limited number of graduate students and young scientist award.

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