ISWS NEWSLETTER

(A PUBLICATION OF INDIAN SOCIETY OF WEED SCIENCE)

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PRESIDENT'S MESSAGE

Weed Science in India has come a long way due to the sincere efforts of weed scientists of this country. Since weed management continues to be an important aspect of crop production in this country, challenges in weed research will always be demanding. Changes in the climate and weed flora will further throw greater challenges to the scientific community. Success of chemical weed management in the rice wheat cropping system has been challenged by an ever increasing trend of herbicide resistance. So weed management strategies will require reorientation to fit into this changing scenario. There has been an increasing emphasis on resource conservation in agriculture in India. Along with the increasing awareness about environmental pollution due to chemicals in agriculture, the focus of weed management should shift towards an integrated approach.

The Indian Society of Weed Science is all prepared to celebrate "**50 years of Weed Research in India**" through the "**Golden Jubilee Conference**" to be organized at the Directorate of Weed Research during 21-24 October, 2018. This will provide a platform for all the weed scientists of to interact with each other and pave the path forward for meeting new challenges in weed management. It is hoped that the weed scientists will participate enthusiastically in this conferene.

A society is a scientific family working towards a common cause. So burying aside personal differences, all members should work together towards advancement of the scientific society. There is a continuous effort on part of the ISWS to improve its functioning and bringing in greater transparency. Suggestion from the members are always welcome in this regad.

I once again thank all the members of the society for expressing their faith in me.

Dr. V.P. Singh
President, ISWS

Editorial

"Time and tide wait for none"- As time flies, if we are caught unaware, then goals can't be reached. This issue of newsletter finally sees the light of the day after a long incubation period. Nonetheless, it feels pleasant to refresh not-so-old memories. At the Indian Society of Weed Science, there is a continuous effort to improve all the activities. This issue particularly highlights the efforts of Weed Scientists of PAU, Ludhiana in creating a second "Parthenium free" village in the state of Punjab. It demonstrates a holistic approach in tackling a weed problem with social dimensions. It objectifies public participation through grampanchayats in achieving this difficult task. Hope this trend keeps on multiplying in Punjab and expecting other states to follow. While weed science has grown much bigger, the end user, our farmers, must benefit more from the research and technology generation in weed science. It requires that more news of extension activities in weed management is covered in the forthcoming issues of newsletter. This will be possible with active cooperation and contribution from the members as well as the whole fraternity of weed science.

Sincere thanks are due to all members who contributed for this issue of newsletter.

S.K. Guru
Editor

A tribute to departed soul:
Dr.T.V. Muniappa, Ex-President, ISWS

Indian Society of Weed Science is in deep sense of shock to learn about the sad demise of Dr. T.V. Muniappa, who remained the President of the Society during 2011-12. The guidance and leadership provided by him as President during critical period of the Society will remain his significant contribution forever. The scientific fraternity and the students taught by him shall be immensely missing him.

Dr. Muniappa served the society in various positions such as the Editorial member of Indian Journal of Weed Science during 1995-1998; Joint Secretary (1999-2001); Vice President (2002-2004 and 2010-11). He also instituted an award for the Young Weed Scientists by personally contributing a sum of rupees one lakh.

Dr. Muniappa was awarded the fellowship of ISWS (2002) and also the Special Appreciation Award- 2014) of the society. His dedication has helped the Society to achieve newer heights. His demise has created an irreparable loss to the Society.

We pray that his noble soul may rest in eternal peace and give inner strength to the members of bereaved family to bear this loss.

On behalf of the Indian Society of Weed Science

Dr. Sushil Kumar
Principal Scientist and Secretary, ISWS

PAU Creates 'GAJARBOOTI' (*Parthenium hysterophorus)* free village

The Punjab Agricultural University (PAU) has made Jonewal village of Ludhiana district as "*Gajarbooti* Free Village." Last year, PAU made 'Mansuran' as the first *gajarbooti* free village of the state, which the villagers have maintained till date. *Gajarbooti (Parthenium hysterophorus)* is the most feared weed species, which has invaded around 35 million hectares across the country. Its plant parts contain toxins which cause allergies and several diseases in human beings and livestock. Jonewal village was selected under the PAU and Bayer Crop Science (BCS) collaborative project.

Dr M.S. Bhullar, Senior Agronomist, and Project In-charge, informed that Jonewal village had heavy *gajarbooti* infestation at many locations. The project team including DrSimerjeetKaur, Assistant Agronomist, PAU and Mr Hitesh Sharma from BCS, organized*gajarbooti* awareness programs in which the villagers were sensitized about harmful effects of *gajarbooti* and its management. The team, with the active support from Jonewal *gram panchayat,* got all *gajarbooti* plants uprooted within and along the village premises mechanically and by using herbicides, alternatively. Now, students play sports and enjoy the clean playground of the school, which was earlier full of *gajarbooti*. It may be mentioned here that under Punjab conditions, *gajarbooti* germinates from February through November. As soon as its plants attain 3 to 5 leaf stage, before flowering, these need to be destroyed. At Jonewal, the new weed infestations are being regularly monitored, and uprooted/sprayed with herbicides to prevent seed production, which is a big step towards eradication of this noxious weed. The *gram panchayats* from adjoining villages Balliawal, Koomkalan, Maini, FatehgarhJattan and BhathaDhua have shown keen interest in initiating this campaign in their villages. The *gajarbooti* eradication work is also in progress in the villages Nagkhurd (Amritsar) and Sahari (Gurdaspur) under the project.

A view of Parthenium infestation and its eradication in Jonewal village of Ludhiana district, Punjab, India

INFESTED SITES	AFTER ERADICATION

BOOKS AND REVIEWS

Principles of Weed Science, 3rd Ed.

Dr. V.S. Rao (Affiliate Faculty Member, University of California, Davis, California, USA) has now come out with the third edition of "Principles of Weed Science" following the two earlier editions in 1983 and 2000. This comprehensive reference-cum-textbook deals with principles and practices of weed science in systematic manner. It begins with weed biology and ecology; dwells on various approaches in weed management; discusses various bioherbicides, allelo-chemicals/herbicides, organic synthetic and natural herbicides, safeners, etc. and their action mechanisms and interactions in plants, soils and environment; and deals with herbicide application as also the practical aspects of weed management in field and plantation crops, aquatics, forestry and non-cropping systems.

The highlights of the book include resistance of weeds to herbicides and their management; genetic engineering for crop resistance to herbicides; transgenic and non-transgenic herbicide-resistant crops; adoption, benefits, limitations and management of herbicide-resistant crops; and the role of omics and genomics in weed management. The range of topics covered in the book is very wide, rarely found in a book of this kind. The book is expected to serve well students of weed science at graduate, post-graduate and doctoral levels besides teachers, research scientists and extension personnel in weed science.

This 20-chapter, 834 twin-column page book has been published in September, 2017 by CBS Publishers & Distributors Pvt Ltd, 4819/XI, Prahlad Street, Daryaganj, New Delhi 110 002. Email: delhi@cbspd.com, cbspubs@airtelmail; Website: www.cbspd.com.

Book Review : Rao, V.S. 2018. Principles of Weed Science (3rd Edition, 834 p)

Weed Science has made tremendous progress since the discovery of 2,4 D in the 1940s, which virtually revolutionized chemical weed control in the cropped lands. This subject gained importance in Indian agriculture after the Green Revolution of 1960s with the introduction of high-yielding dwarf-statured varieties of wheat and rice. This also led to the establishment of Indian Society of Weed Science in 1968 and launching of the All India Coordinated Research Project on Weed Control in 1978. Dr. V.S. Rao was one of the first to bring out a book on 'Principles of Weed Science' in 1983, which became an important reference-cum-textbook for UG students in agricultural sciences, and PG students majoring in Agronomy (Weed Science) in the Indian Universities. In fact, Dr. Rao virtually became a household name in weed science and many of the present-day weed scientists in India have grown and benefitted from this book. The second edition of this book, published after 17 years in 2000, provided further updated information on weed science. Now again after 18 years, Dr. Rao has brought out a more

comprehensive 3rd edition which is the most updated publication as it contains the latest and emerging issues in the field of weed science.

This present edition of 'Principles of Weed Science' is a voluminous compilation presenting virtually every aspect of basic, applied and strategic significance from the pen of one of the most experienced and dedicated weed scientists of international repute. There are 20 chapters, beginning with introduction (Chapter 1), and biology and ecology of weeds (Chapter 2), followed by weed management through mechanical and ecophysiological approaches (Chapter 4), allelopathy (Chapter 5), and biological control agents (Chapter 5). The issues related to herbicides are covered in detail in 8 chapters, involving herbicides and safeners (Chapter 6), absorption and translocation (Chapter 7), mechanism of action (Chapter 8), biotransformation in plants (Chapter 9), degradation and persistence in soil and environment (Chapter 10), interaction with other agrochemicals (Chapter 11), formulation and application (Chapter 12), and weed resistance (Chapter 13). The next 4 chapters deal with biotechnological approaches involving genetic engineering (Chapter 14), herbicide-resistant crops (Chapters 15 and 16), besides omics and genomics (Chapter 17). The last 3 chapters deal with weed management in cropped lands (Chapter 18), aquatic systems (Chapter 19) and non-cropped lands (Chapter 20). Each chapter covers the related information in a systematic and easily understandable manner, followed by 100+ references in most chapters. Acronyms and appendices at the end provide useful information on weeds, herbicides, units and measurement.

This reference-cum-textbook deals with principles and practices of weed science in a systematic and comprehensive manner. Besides providing the most updated information on the conventional aspects of weed science, the novelty of the present edition lies in the inclusion of chapters on herbicide resistance in weeds and crops involving the latest developments in the field of plant biotechnology related to weed management. There is no doubt that this book is a wonderful contribution dealing with all related aspects of weed science, which are not found in any other book. All stakeholders including students, teachers, researchers and extension personnel associated with weed science will be immensely benefitted through this noble contribution. Dr. Rao deserves appreciation for bringing out this 3rd edition by putting in his over five decades of wide experience as a scientist, teacher, research manager, advisor and consultant in various organizations in India and abroad.

Reviewed by: Dr. A R Sharma, Ex-Director, ICAR-Directorate of Weed Research, Jabalpur, India **,** (Presently: Principal Scientist (Agronomy), Division of Agronomy, ICAR-Indian Agricultural Research Institute, New Delhi, India)

5th International Rice Congress (IRC2018) and travel grant support for young scientists

(by A.N. Rao, anraojaya1@gmail.com)

5th International Rice Congress (IRC2018) is to be held in Marina Bay Sands, Singapore during 14-17 October 2018. The deadline for Abstract Submission is 31 March 2018. Details of IRC2018 may be obtained at: http://ricecongress2018.irri.org/.

The CGIAR Research Program on rice (RICE) offers support to undergraduate and graduate (B.Sc., M.Sc, Ph.D.) students to attend IRC2018. The grant will help students link with global rice researchers and contribute to building a network among young scientists from around the world who can contribute to society through rice research. Up to 40 travel grants of 1,000 US$ each are made available to students associated with any of the six lead centers of RICE (Africa Rice, CIAT, IRRI, Cirad, IRD, JIRCAS) and conducting their research in the RICE program. Award recipients will receive the award in cash in person at the IRC2018 upon presentation of a valid student identity card (issued by the university at which they are enrolled) and of their registration documents for the IRC2018. For further information on eligibility criteria for application and application process, please see: http://ricecrp.org/5th-international_rice-congress-irc2018-support-grants-rice-crp-students/ or please send inquiries to: riceirc2018grants@irri.org.

Upcoming Events

1. 18th EWRS International Symposium "New approaches for smarter weed management
   Date- 17 – 21 June 2018;
   Venue: Ljubljana, Slovenia
   Link- http://www.ewrs2018.org/

2. 21st Australasian Weeds Conference"
   Date- 9-12 September 2018;
   Venue: Sydney, NSW, Australia
   Link- https://www.21awc.org.au/

3. Neobiota 2018 (10th International Conference on Biological Invasions)
   Date- 4 – 7 September 2018;
   Venue: Dublin, Ireland
   Link- http://www.neobiota2018.org/ehome/index.php?eventid=166837&

4. 1st International Conference on Biological Control
   Date- 27 to 29 September 2018;
   Venue: Le Méridien, Bangalore
   Link- http://www.icbc2018bengaluru.com/

5. ISWS Golden Jubilee International Conference
   Date- 21-24 November, 2018;
   Venue: ICAR-Directorate of Weed Research, Jabalpur, INDIA
   Link- http://www.isws.org.in/Conference/Default.aspx

6. 14th IUPAC International Congress of Crop Protection Chemistry"
   Date- 19 – 24 May 2019;
   Venue: Ghent, Belgium
   Link-https://www.iupac2019.be/

7. XIX International Plant Protection Congress - 2019
   Date- 10 – 14 November 2019;
   Venue: Hyderabad, India
   Link-
https://www.plantprotection.org/Meetings/InternationalCongress%28IPPC%29/XIXIPPC,Hyderabad,1014November2019.aspx

Participation of ISWS members at International Conferences/Workshops/Training programmes

Members of ISWS along with the Indian delegation at the 26th Asian –Pacific Weed Science Society Conference, Kyoto, Japan (September19-22, 2017) (V.P. Singh, B.S. Chauhan, S.S. Punia, V.C. Dhyani, S. Chaturvedi, Chinuswamy C, Samunder Singh, M Madhavi, U.P. Singh among others)

Prof. V. Pratap Singh (President, ISWS) presented a paper titled- "Effect of rice establishment methods on weed shifts" at the conference

DR. P. Saravanane attended **5th International Symposium on Weeds and Invasive Plants** organized by **European Weed Research Society** which was held from October 10—14, 2017 at **Chios, Greece** where he presented a paper on "Biology and Management of Parthenium (*Parthenium hysterophorus* L.)". The symposium paper dealt with the distribution, biology and management strategies of Parthenium in coastal regions of Puducherry, India

Dr. Saravanane (Right) with Professor Steve Adkins at the European Weed Research Society Conference, Chios, Greece

Dr. S. K. Guru, Professor (Plant Physiology) visited **France** during 3 -12 December, 2017 to participate in a training tour programme organized by DEFIAA, France under the Pantnagar-France Exchange programme. He visited professional and vocational institutes at Rodez, Perpignan as well as the Montpellier Sup Agro and interacted with the faculty and students there.

Dr. S. K. Guru at Rodez in France during 3 -12 December, 2017 along with Prof. Christophe Yegri, (Coordinator, DEFIAA) and other members of the delegation from Pantnagar

Honours/ Awards and Recognitions received by ISWS members

- **Dr Guriqbal Singh, Senior Agronomist (Pulses),** Department of Plant Breeding & Genetics, Punjab Agricultural University, Ludhiana received **ISPRD Excellence Award 2017** from the Indian Society of Pulses Research and Development (ISPRD) for his outstanding contributions in the field of natural resource management in pulses. He also received **Dr. H. S. Sandhu Memorial Award** from the Punjab Agricultural University, Ludhiana for his outstanding contributions in agronomic research on pulses.

Theses submitted in Weed Science

Ph. D. :

Malay Kumar Bhowmick: Studies on varietal performance and weed management under different methods of rice establishment in the alluvial zone of West Bengal. Ph. D. (Agronomy) thesis, 2017. Supervisors: Dr. B. Duary, Visva-Bharati, West Bengal and Dr. P. Bhattacharyya, Ex- Director of Agriculture & E.O. Secretary, Agriculture Department, Government of West Bengal.

Arunima Paliwal: Weed dynamics and management in rice-wheat system under conservation agriculture practices. PhD (Agronomy) thesis, 2017, Supervisor: DR. V.Pratap Singh, GBPUA&T, Pantnagar, Uttarakhand

Neeshu Joshi: Weed Management in direct seeded rice and brahmi intercropping system in rotation with zero-till wheat. PhD. (Agronomy) thesis, 2017. Supervisor: Dr. V Pratap Singh, GBPUA&T, Pantnagar, Uttarakhand.

M. Sc. :

Priyanka Ghanghria: Biology and Management of *Argemone maxicana*, *Solanum nigrum* and *Polygonum plebeium.* Supervisor: Dr. S. K. Guru, Professor , Dept of Plant Physiology., G.B. Pant University of Agriculture and Technology, Pantnagar

The ISWS Newsletter is published by the Indian Society of Weed Science (ISWS) and distributed to members and other subscribers. The ISWS Newsletter welcomes news, letters, and other items of interest from individuals and organizations.

ISWS also publishes the **'Indian Journal of Weed Science'** ,its official Journal which contains original research and review articles

Mail your articles for publication in the newsletter to:

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