



MESSAGE FROM THE PRESIDENT - N.T. YADURAJU



Inter-disciplinary research – key for solving problems

The days have gone when people used to work in isolation and achieved successes. We scientists are basically introverts and would hesitate to reach out to others. But times are changing. The challenges are becoming complex requiring people often from different backgrounds and experiences to solve them. Unlike many other disciplines in agriculture, weed science is truly interdisciplinary. In fact, besides the usual disciplines in agriculture such as botany, physiology, biochemistry, entomology, plant pathology s, the weed science goes beyond agriculture to aquaculture, forestry, amenity areas, non-cropped waste lands etc. Thanks to the loose definition of weed- *a plant out of place*, our sphere of work has indeed quite wide. Given this canvas, let us introspect and see where we stand. Honestly we don't see a Team belonging to different disciplines working together to solve a problem. The problem is not with the scientists as such but with a lack of a strategy adopted by the research organizations. Instead of letting their scientists work as per their whims and fancies, the organizations must engage in identifying research areas/issues and put a team for solving the same in a given time frame. We seldom see them happening even in institutes under ICAR. In weed science, we have a strong inter-disciplinary group of scientists in place both at DWSR and the AICRP on weed control. We need to identify the problems and researchable issues and formulate a Team for solving them. Such an approach will also lead to better impact- both societal and economic.

ISWS wishes all its readers a very Happy and Prosperous New Year 2014

25th Asian Pacific Weed Science Society Conference is to be held in Hyderabad, India

The 24th Asian Pacific Weed Science Society (APWSS) Conference was held at Bandung, West Java, Indonesia during October 22-25, 2013. It was attended by over 200 participants from different countries of Asia Pacific region viz. Australia, Bangladesh, China, India, Indonesia, Japan,

Malaysia, Pakistan, Philippines, New Zealand, South Korea, Sri Lanka and Thailand. Various aspects of weed management in Asia Pacific region were discussed and strategies for dealing with the weed problems encountered were chalked out.

Twenty scientists from India attended the conference. During the General Body meeting of APWSS, it was announced that 25th APWSS will be held at Hyderabad tentatively during October 2015. The flag of APWSS was given to Dr. N.T. Yaduraju (President, Indian Weed Science Society and incoming President, APWSS) by Dr. Steve

Adkins (outgoing president, APWSS). Dr. Yaduraju with the co-authorship of Dr. A. N. Rao (Visiting Scientist, ICRISAT), presented an invitational paper on “Implications of weeds and weed management for food security and safety in the Asia Pacific region”.

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



WEED WATCH



Lantana camara is poisonous and counted among the top 10 invasive weeds worldwide. Despite sustained efforts to eradicate it, *Lantana* remains a major concern in Australia, India and South Africa. The plant is highly allergic and causes health hazards to humans and animals alike. Instead of being eradicated, it's being planted along the length of the Calcutta city by The Kolkata

Municipal Corporation (KMC) as per a news paper report by Saikat Ray and Krishnendu Bandyopadhyay *Lantana camara* can now be seen on all major thoroughfares like JL Nehru Road, Bhowanipore, Kidderpore Road and Sarat Bose Road. Colourful flowering plants that would look pretty and also absorb the toxic fumes of vehicles are advised to be planted in the cities of India for beautification. But KMC chose a shrub that invades the natural and agricultural ecosystem.

It is now high time for the weed scientist colleagues in West Bengal to approach KMC and advise them correctly, while informing them the negative impact of *lantana* on human, other biological entities and the environment.

Source: (http://articles.timesofindia.indiatimes.com/2013-11-03/kolkata/43627888_1_kmc-weeds-lantana).

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

NEWS IN BRIEF

'Parthenium Awareness Week' organized throughout India

In view of the seriousness as well as the magnitude of the threat posed by the *Parthenium*, the Directorate of Weed Science Research (DWSR) has been organizing mass awareness programmes since 2004 to educate the farmers and general public about the ill effect of *Parthenium* and ways to manage it. In this continuation DWSR has organized a country-wide "*Parthenium* Awareness Week" from 16th to 22nd August, 2013 involving State Agricultural Universities (SAUs), Krishi Vigyan Kendra (KVKs), State Agricultural Departments, institutes of ICAR, AICRP centres of Weed control, NGOs, municipalities, schools and

colleges. To facilitate the organizers, posters and extension materials, especially developed for this occasion, were distributed to about 1100 stakeholders with the appeal to multiply and develop more material in regional languages for further distribution among people.

Activities like awareness, lectures, photo exhibitions, farmer meetings, students' rallies, uprooting, and demonstrations on *Parthenium* management were done throughout India by involved institutes. These events were covered by print and electronic resulted more awareness among people about the *Parthenium*.



A glimpse of this mega event can be seen by clicking following links

Posters and extension folders on *Parthenium*
Parthenium awareness programmes organised in different states

Parthenium awareness week in newspapers

(Contributed by Sushilkumar, DWSR, Jabalpur)

Parthenium Awareness Programme in DRR

The Directorate of Rice Research (DRR), Rajendranagar, Hyderabad, for the first time organized "*Parthenium* Awareness Week" during 16-22 August 2013. On 16/08/2013, Dr. N.T. Yaduraju, Former Director of Directorate of Weed Science Research and President, ISWS delivered inaugural lecture on "*Parthenium* - Have We Learnt our Lessons?" which was attended by the scientists of Directorate of Rice Research,

Directorate of Sorghum Research, Directorate of Oilseeds Research and AICRP-Weed Control Unit, ANGRAU, Hyderabad.

(Contributed by MBB Prasad Babu, mbbprasadbabu@gmail.com).



Weed Management in Conservation Agriculture – a major initiative taken at DWSR

A major research programme on conservation agriculture-based technologies has been undertaken at the Directorate of Weed Science Research (DWSR), Jabalpur. Several research and extension programmes in conservation agriculture have been taken up in diversified cropping systems. A network programme on weed management in conservation agriculture systems has also been initiated at the 22 centers of AICRP on Weed Control, which are located in different agro-climatic regions of the country. The entire research farm (60 ha) of the Directorate was covered under zero-till sown crops during Rabi 2012-13, and burning of any residue including weeds has been completely stopped. Demonstrations on zero-till wheat and zero-till greengram were undertaken on a large scale on the farmers' fields in 6 locations, about 50-80 km away from Jabalpur. The programme has been further

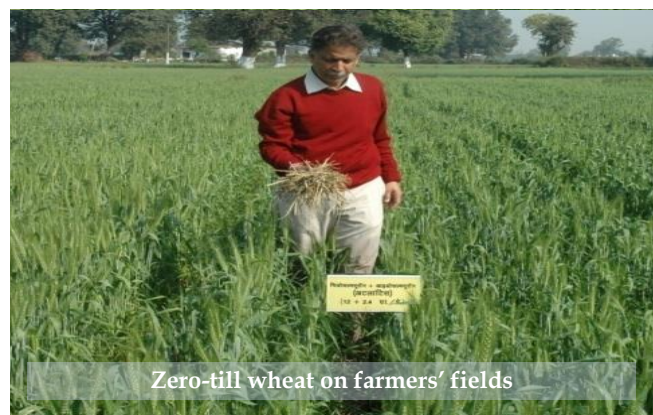
strengthened and extended during the current year (2013-14), when even most *Kharif* season crops were grown under zero-till condition, besides all *Rabi* crops including wheat, chickpea, mustard, linseed, field peas and maize (winter) under exclusively zero-till with residue conditions. Results obtained during the first cycle showed significant advantages of improved technologies compared with the farmers' practice. Additional returns over the farmer's practice also increased substantially, and the farmers were highly satisfied with the demonstrated technologies. The programme was highly successful and led to greater awareness among the farmers about the low-cost weed management practices. It is proposed to launch more such programmes in the coming season / years on a wider scale.



Wheat sowing with happy Seeder



Zero-till wheat at the DWSR farm



Zero-till wheat on farmers' fields



Farmers visiting zero-till summer greengram after wheat

(Contributed by V.P. Singh and A.R. Sharma, India, vpsinghdwsr@yahoo.in).

RESEARCH NOTES

Herbicides cause depression – results of a study

Pesticides are ubiquitous neurotoxicants, and several lines of evidence suggest that exposure may be associated with depression. Epidemiologic evidence has focused largely on organophosphate exposures, while research on other pesticides is limited. A study conducted in France during 1998 to 2000, using 567 farmers aged 37–78 years revealed that 83 (14.6%) of those farmers self-reported treatment or hospitalization for depression. The hazard ratio for depression among those who used herbicides was 1.93 (95% confidence interval (CI): 0.95, 3.91); there was no association with insecticides or fungicides. Compared with nonusers, those who used herbicides for <19 years and ≥19 years (median for all herbicide users, 19 years) had hazard ratios of 1.51 (95% CI: 0.62, 3.67) and 2.31 (95% CI: 1.05,

5.10), respectively. Similar results were found for total hours of use. Results were stronger when adjusted for insecticides and fungicides. There is widespread use of herbicides by the general public, although likely at lower levels than in agriculture. Thus, determining whether similar associations are seen at lower levels of exposure should be explored.

Probably, such studies are needed in India too as the use of herbicides is increasing year after year. Scientific studies on available and used herbicides in India would enable researchers to recommend only those herbicides that are not harmful to the herbicide users.

Source: Weisskopf, M.G., Moisan, F., Tzourio, C., Rathouz, P.J. and Elbaz, A. 2013. Pesticide Exposure and Depression among Agricultural Workers in France. *American Journal of Epidemiology*. (<http://aje.oxfordjournals.org/content/early/2013/07/11/aje.kwt089>) (Contributed by: A.N. Rao, India. anraojaya1@gmail.com)

Suppressive fodder plants as part of an integrated management programme for *Parthenium hysterophorus* L.

Parthenium, an alien invasive weed, infesting rangelands reducing fodder biomass and causing significant livestock production losses. Results of the study conducted in Australia and Pakistan revealed that the fodder grasses, viz. *Setaria incrassata*, *Cenchrus ciliaris*, *Clitoria ternatea*, *Themeda triandra*, *Astrebala squarrosa*, *Chloris gayana*, *Dichanthium sericeum*, *Clitoria ternatea* and *Bothriochloa insculpta* suppresses *Parthenium* growth by 62-73% and produced at least 329-622 g

m⁻² of dry fodder biomass. Some species such as *S. incrassata* performed well at just one field site, while others (*C. ciliaris* and *C. gayana*) performed well at all the four field sites, indicating that such plants could be considered as part of a new integrated weed management system for *P. hysterophorus* in both Australia and Pakistan.

Source: Naeem Khan, Asad Shabbir, Doug George, Gul Hassan, Steve W. Adkins. 2014. *Field Crops Research*, 156: 172-179. (Contributed by: J.S. Mishra, India. jsmishra31@gmail.com)

New Positions

Dr. A.N. Rao, a Senior Weed Scientist, who got over thirty five years of research experience gained at International Rice Research institute (IRRI) (IRRI/Egypt; IRRI/Philippines; IRRI/India); International



Crops Research Institute (ICRISAT); Andhra Pradesh Agricultural University (ANGRAU) and several other organizations, has joined ICRISAT as a Visiting Scientist, Resilient Dryland Systems – ICRISAT and IRRI. Dr. Rao will be based at ICRISAT and transferring the available IRRI rice technologies to the farming community of Karnataka, where direct-seeding is becoming popular. ISWS wishes him all the best for his new position at ICRISAT.

Dr. C. Chinnusamy, Professor, Weed Science, AICRP-WC, TNAU, Coimbatore joined the post of Dean, Agricultural College and Research Institute, TNAU, Madurai on 1-8-2013. Dr. Chinnusamy is a very



distinguished and dynamic weed scientist and also Joint Secretary of ISWS. Indian Society of Weed Science feel elated for his promotion and wishes him well for his new assignment.

Recognitions and Awards



Dr. N.T. Yaduraju, has been elected as the president, Asian Pacific Weed Science Society for 2014-15. Dr. Yaduraju is a very distinguished and dynamic weed scientist and also President of ISWS. Indian Society of Weed Science feels proud and wishes him

all the best for his new assignment.

Dr. K.C. Gautam, Ex-project Coordinator, AICRPWC was honored with Bharat Jyoti Award by India International Friendship Society, New Delhi for his meritorious services, outstanding performance and remarkable role. The award was conferred to him by Dr. Bhishma Narain Singh, former Governor of Tamil Nadu & Assam at a seminar on "Economic Growth & National Integration at new Delhi on 3rd October, 2013.



Dr. Chandrabhanu, Scientist, PDFSR Modipuram and **Dr. V.S.G.R. Naidu**, Programme Coordinator, KVK, CTRI, Rajahmundry received the prestigious

"Dr. Rajendra Prasad Puraskar" of the ICAR for Technical Book "Aushadhiya Kharpatwar" (ISBN 818399068-1) in Hindi during ICAR Foundation Day on 16th July 2013 in New Delhi.

Dr. Narendra Kumar, Senior Scientist (Agronomy) was honoured with Institute Best Scientist Award 2013 by Indian Institute of Pulses Research, Kanpur on the occasion of IIPR foundation day during 5th September, 2013



DWSR got ISO 9001:2008

It is an honour and moment of celebration for Directorate of Weed Science Research (DWSR), Jabalpur obtaining the certification by implementing the Quality Management System in the organization as per the ISO 9001:2008 standards. Acquiring ISO 9001:2008 certification is one of the performance monitoring indicators to be complied with by all Government Departments in the country as per the Result Framework

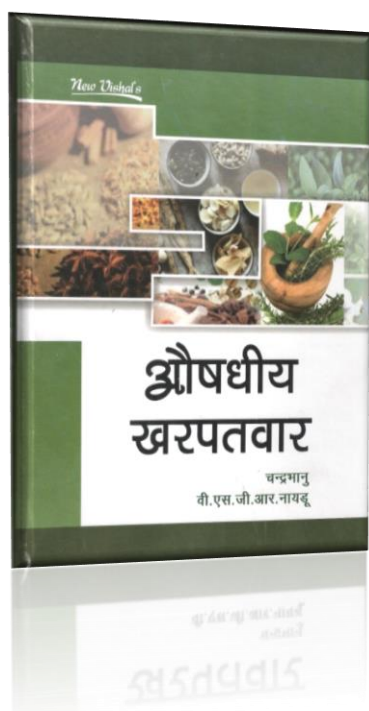
Document (RFD) requirement by Performance Management Division, Cabinet Secretariat, Government of India.

(Thanks to Dr. Sushilkumar for sending this news).



NEW PUBLICATIONS

Aushadhiya Kharpatwar (Medicinal Weeds)



Authors: **Dr. Chandrabhanu**, Scientist (Plant Pathology), Project Director for Farming System Research, Modipuram, Meerut, and **Dr. VSGR Naidu**, Programme Coordinator, Krishi Vigyan Kendra, CTRL, Rajahmundry.

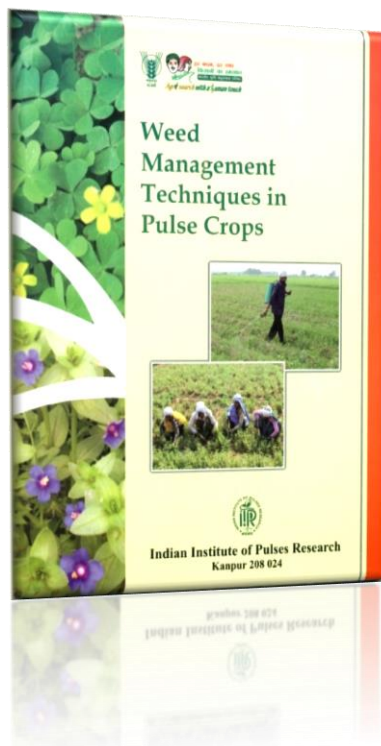
In the present book, an attempt has been made to make available the

medicinal uses of more than

250 weeds in a systematic way. By this effort, it is hoped that people would value and conserve such plants for posterity. It is also hoped that

Agronomists would make efforts in fitting these useful weeds in cropping system as intercrops, cover crops, alley crops, relay crops etc. so that it would add more income to the farmers and conserve biodiversity. This will pave the way for commercial exploitation of these weeds, which are otherwise painstakingly collected from the wild habitats. In this book the weeds, along with photographs, have been quoted family wise and arranged alphabetically (by botanical names). Common English name and known vernacular names have also been given. Colored images of most important weeds have been given at one place. This book will definitely help in protection and preservation of indigenous technical knowledge about herbal therapy and exploitation, conservation and rational management of weed biodiversity.

Weed Management Techniques in Pulse Crops



Authors: **Drs. Narendra Kumar**, **K.K. Hazra**, **M.K. Singh**, **M.S. Venkatesh**, **Lalit Kumar**, **Jagdish Singh** and **N. Nadarajan**, Indian Institute of Pulses Research, Kanpur.

This is first bulletin published by Indian Institute of Pulses Research, Kanpur on weed management in pulses. It includes 13

chapters on different aspects like

weed control methods, herbicides recommended in pulses, allelopathic approach of weed management, weed control efficiency indices, types of spraying equipments and calibration of spraying equipments. The special feature of this publication is photographs of major weeds, which help the users to identify the weed flora present in their fields and developing weed management strategies. We hope that this bulletin, a compilation of different aspects of weed management and results of weed research programme carried out at IIPR will serve as a useful material for upgradation of the knowledge level of researchers and extension personnel.

This book can be obtained on payment (price yet to be decided) by writing request letter to Director, IIPR Kanpur.

Ph.D. (Ag) Theses in Weed Science

Vijaymahantesh: "Effect of tillage and integrated nutrient management in pigeonpea (*Cajanus cajan* L.) and Finger millet (*Eleusine coracana* L.) cropping system in relation to weed dynamics" Ph.D. (Ag). Thesis. 2012. UAS, Bangalore.

Advisor- **Dr. H.V. Nanjappa**

Monika Soni: "Effect of day time application of post-emergence herbicides on weeds, crop growth and yield of transplanted rice (*Oryza sativa* L.)" Ph.D. (Ag). Thesis. 2012. JNKVV, Jabalpur.

Advisor- **Dr. K.K. Jain**

K. Sivagamy: "Evaluation of weed management options in transgenic stacked and non-transgenic maize hybrids" Ph.D. (Ag). Thesis. 2012. TNAU, Madurai.

Advisor- **Dr. C. Chinnusamy**

Y.S. Parameswari: "Influence of rice crop establishment methods and weed management practices on succeeding zero-tillmaize" Ph.D. (Ag). Thesis. 2013. ANGRAU, Hyderabad.

Advisor- **Dr. A. Srinivas**

Masoumeh Younesabadi: "Weed management effects on non-target toxicity and seed bank dynamics in soybean (*Glycine max*) - wheat (*triticum aestivum*) cropping system" Ph.D. (Ag). Thesis. 2013. IARI, New Delhi.

Advisor- **Dr. D.K. Das**

M.Sc. (Ag) Theses in Weed Science

Sagarika Malik: "Chemical weed management in groundnut (*Arachis hypogaea* L.) and its residual effect on succeeding yellow sarson ". M.Sc. (Ag). Thesis. 2013. Visva-Bharati, Sriniketan.

Advisor: **Dr. B. Duary**

Souvik Dalal: "Chemical weed management in jute (*Corchorus olitorius* L.) and its residual effect on succeeding black gram". M.Sc.(Ag) Thesis. 2013. Visva-Bharati, Sriniketan.

Advisor- **Dr. B. Duary**

Coming Events

Biennial Conference of Indian Society of Weed Science on Emerging Challenges in Weed Management

15-17 February 2014

Venue: Directorate of Weed Science Research, Jabalpur,
Madhya Pradesh, India

Go to <http://www.isws.org.in/> for more details

13th IUPAC International Congress of Pesticide Chemistry

Venue: San Francisco, US

Go to <http://www.iupac2014.org> for more details.

18th International Plant Protection Congress, "Mission Possible: Food for All through Adequate Plant Protection"

24 - 27 August 2015,

Venue: Berlin, Germany

Go to <http://www.ipcc2015.de> for more details.

26th German Conference on Weed Biology and Weed Control

11 - 14 March 2014

Venue: Braunschweig, Germany

Go to <http://www.unkrauttagung.de/> for more details.

13th World Congress on Parasitic Plants,

Venue: Kunming, China

June/July, 2015

Dates to be confirmed and other details will be available on the IPPS web-site in due course.

4th International Symposium on Weeds and Invasive Plants

18 - 23 May 2014

Venue: Montpellier, France

Go to <http://invasive.weeds.montpellier.ewrs.org/default.asp> for more details.
You can view or download the first circular using the link below:
[1st_Announcement_Invasive_Plant_Montpellier_2014.pdf](#) (237 kb)

25th Asian Pacific Weed Science Society Conference

Venue: Hyderabad, India

Dates to be confirmed and other details will be available on the ISWS web-site in due course.

Send Newsletter material to:

Dr. J.S. Mishra,

Principal Scientist (Agronomy),

ISWS Newsletter Editor,

Directorate of Sorghum Research, Rajendranagar, Hyderabad 500 030, India

Cell: +91 9494240904

Email: jsmishra31@gmail.com

Design by:

Gyanendra Pratap Singh