



Message from President

Dear colleagues,

Please accept my heartiest congratulations for entering in the New Year 2021 after facing a lot of problems and worries during the year 2020, which has been registered in the history a 'Worst Year' due to a threat to almighty human by a tiny, but powerful microorganism. I am sure, this New Year for all of us and India as well will be the year to overcome the past agonies posed by COVID-19. Now, many types of vaccines have been developed and vaccination process has already started world over to fight against this dominant enemy. India was not behind in the race and has done remarkable scientific work to develop the vaccines for which scientists and workers deserve big kudos.



Among various biotic factors, which limit crop productivity, the crop losses due to weeds are most significant. Based on large sample data, Directorate of Weed Research (ICAR-DWR), Jabalpur estimated yield loss by weeds ranging from 14 to 30 per cent depending on the crop and type of management, which amounts more than US\$ 11 billion. Efficient weed management is, therefore, vital for any crop production. Use of herbicides has become unavoidable due to increasing cost on labor and other constraints. However, indiscriminate use of herbicides has triggered herbicides resistance, residues, environmental problems and even health issues. Under this scenario, Government of India has proposed the ban on many pesticides including some of the herbicides and floated the notification for public opinion. EC of Indian Society of Weed Science also discussed the issue in detail and made representation to Govt. of India to consider to lift the proposed ban on some of the herbicides, which are cheap and effective and still require sufficient scientific data on their deleterious effect in context to Indian situations. In my opinion, we weed scientists should also be judicious to give recommendations of integrated weed management rather of the sole herbicides to overcome the problem of weed resistance, residues and other issues.

Almost two years have passed since present EC took the charge of the Society. The whole EC worked in cohesive way, which has led to overall progress of the society. Publication of Indian Journal of Weed Science and ISWS News Letter are almost in time. Even during this 'Worst Year' about 50 scientists have joined the society as life member, which name can be seen in the current News Letter. The term of present EC will be over by March 2021; therefore, we are committed to finish the election process before March so that rein of the ISWS could be handed over to new EC in April 2021 positively.

I again wish you all a happy and prosperous New Year.

Happy reading.

Sushil Kumar

A virtual meeting on “Stakeholders Dialogue on Strategies for Safe and Sustainable Weed Management: A Way Forward”

The virtual meeting on “Stakeholders Dialogue on Strategies for Safe and Sustainable Weed Management: A Way Forward” was jointly organized by the Trust for Advancement in Agricultural Science (TAAS), Indian Council of Agricultural Research (ICAR), ICAR-Directorate of Weed Research (DWR) and Indian Society of Weed Science (ISWS) on 9th December, 2020 with the objectives to discuss possible ways to avoid losses due to weeds and their efficient management, to suggest strategy for safe and sustainable uses of herbicides and weed management, and to discuss policies on herbicide use and regulatory systems including proposed ban of certain herbicides.

A total of 124 participants from Government of India, ICAR Headquarters, other ICAR Institutes, International Organization, Pesticide Industries, State Agricultural Universities *etc.* attended the meeting. Dr JS Mishra, Director, ICAR-DWR in his brief welcome address highlighted the basic and strategic research activities being undertaken by the Directorate. Dr SK Choudhury, Deputy Director General (DDG), Natural Resource Management (NRM), ICAR, New Delhi, while setting the context of the meeting stressed on the need of conducting research on climate change and weed flora shift, herbicide resistance, breeding for competitive variety for gaining advantage over weed-crop competition, developing good agricultural practices for combating weed problems, creating awareness on safe use of herbicides, monitoring and mapping of alien invasive weeds *etc.* Dr Trilochan Mohapatra, Director General of ICAR and Secretary of DARE, New Delhi, in his inaugural address emphasized on creating awareness on safe use of chemicals and also on adoption of integrated weed management for controlling weeds. He reiterated the exploration of chemical induced mutation and Non-GM technologies to develop herbicide tolerant crop. He also emphasized to utilize the beneficial aspects of weeds in terms of soil conservation, breaking soil hard pan *etc.* Dr R S Paroda, Chairman of TAAS, Former Secretary DARE & DG ICAR, gave an overview on consumption of



insecticide, fungicide and herbicide in the world as well as in India. He emphasized the weed management issues in rain-fed crops and suggested to give special focus on weed management in rain-fed agriculture. He also pointed out the issue of recent proposed ban on few herbicides and suggested that banning may be proposed based on colour triangle and magnitude of toxicity on the environment. Dr AK Singh, Director, ICAR-Indian Agricultural Research Institute (IARI) briefly described about the development of herbicide tolerant (Imazethapyr) basmati rice varieties (PB1121HT-NIL and PB1509-NILs). Dr Sushil Kumar, President of ISWS, made presentation on “*Research and Development on Weed Management-Status and Challenges*” and highlighted the crop losses due to weed, data on weed research publication, evolution of weed management, chemical management, development of herbicide resistance, herbicide residue research, climate change on weed-crop interaction, progress made in research on weed *etc.* Dr Anil Kakkar, Bayer Crop Science delivered his presentation on “*Herbicides for Sustaining Farm Productivity-An Industry Perspective*”. He briefly discussed about the ‘*Saguna Rice Establishment Technique*’ which involve zero tillage and intervention of broad-spectrum herbicide resulting in more yield and better soil fertility. He also highlighted the global regulatory status, classification of International Agency for Research on Cancer (IARC) on glyphosate and global discussion on glyphosate. Dr S K Chaudhari, DDG (NRM), ICAR made a presentation on “*Herbicide Regulations and Enabling Policies*”. He presented

an overview on herbicide use pattern in India. He briefly discussed about the proposed ban and restricted use of the herbicides and highlighted the important issues in herbicides regulation and risk assessment like outline measures along with herbicide formulations to mitigate any identified risks, use of seven herbicides proposed to be banned and prohibitive use of glyphosate may be regulated through certified pest control operators until safe alternatives are available, alternative recommendation in the state package of practices, safety guidelines for herbicide application may be made stringent by enacting law, development of 'Quick Test Kits' for rapid testing of herbicides to minimize spurious herbicide malpractice and policy guidelines like introducing new product should be aligned to '*New mode of action of herbicides*' instead of '*new molecules*' etc. Dr SK Malhotra, Agriculture Commissioner, Government of India, Dr S Bhaskar, ADG (Agronomy), ICAR, Dr Samunder Singh, President, International Society of Weed Science, Dr AR Sharma, Director Research, RLBCAU, Dr Rajvir Rathi, Bayer Crop Science and Dr Gita Kulshreshtha, Ex Principal Scientist, Agriculture Chemicals, IARI, and Dr ML Jat, Principal Scientist, CIMMYT participated in panel discussion. Dr Praveen Rao Velchala, Vice Chancellor, PJTSAU, Dr NT Yaduraju, Former Director, ICAR-DWR, Dr Ajay Kumar, Corteva Agriscience and Dr Anupama Singh, Head, Division of Agricultural Chemicals, IARI also took part in the discussion. The important issues like plan and strategies of Government of India for management of invasive weeds, current use and safer use of herbicides, time lag of new herbicide development, regulatory mechanism which will become win-win situation and promotion of business model, new management strategies in organic agriculture and natural farming, weed management under climate change scenario, new approaches of weed management, potential of integrated weed management, potential environmental impact of spurious herbicide, research on new molecules were discussed in panel discussion. The key points emerged from the discussion are as 1. ICAR-DWR should be included in all policy making decision related to herbicide use in the country, 2. for ensuring quality of herbicides State Government will collect the samples of herbicides, however, Central Government will also randomly check the quality of herbicides, 3. Registration of

new molecule can be done on fast track basis in order to fulfill the objective of 'Make in India', 4. Concern for off-label claiming of different herbicides, 5. Requirement of waiting period data and use of non-toxic solvent for herbicide registration, 6. Concern of development of new molecules outside India, 7. Need for extending herbicide tolerant technology to cotton and oil seeds, 8. Need to revisit the herbicide availability, 9. Combination of mode of action for resistant management, 10. Promotion of startup programme and capacity building so as to support business model, 11. Promotion of organic farming for quality food and export purpose whereas natural farming for household consumption and chemical farming for bulk marketing, 12. Development of season based weeding tools, 13. Long term seed bank study for conservation agriculture, 14. Capacity building on spraying of herbicides in terms of proper calibration, use of appropriate nozzle etc., 15. Advocate the recommendation of preventive measures and non-chemical method of weed control like use of smother crop, selective crop stimulation etc. for controlling weeds, 16. Need to harness the capacity of ICT modules and Artificial Intelligence (AI) in the field of weed science, 17. Efforts need to be taken to establish collaborative linkage with non-agricultural institutes, 18. Concern of environmental impact of spurious herbicide, 19. Need to revisit the proposed ban on herbicides, 20. Adoption of public private partnership mode for research on new herbicide molecules, 21. Need to formulate permanent persistent policy on GM crop, 22. Explore the possibilities to extend the label claim in other crops, 23. Adoption of proper application technology of herbicide is very important as most of the herbicide gets failed due to adoption of faulty application technique 24. Need to work out the practical difficulties faced by the farmers on herbicide related matters, 25. Proposed ban of seven herbicides could lead to the ban of twelve ready mix herbicides, 26. Need to give the emphasis on ready mix herbicide research, 27. As development of new herbicide is a costly affair, therefore, priority setting, policy formulation and partnership development with industries could be the important steps on herbicide research, 28. Harnessing benefits of allelopathy, allelochemical for eco-friendly agriculture, 29. Development of new molecules with new mode of action needs to be geared up in mission mode.

What is in the scientific name of weeds?

Dr Iswar Chandra Barua
AAU, Jorhat, Assam

When we communicate with farmers to discuss something about weed, we use the local or vernacular name, the name which has a strict geographical limitation. The local/ vernacular name of a species varied from place to place, many a times within the same language and same community of people. Despite of that we feel rather comfortable in using these names of the weed, as it leads to better understanding of the targeted species and its related problems by the farming community. If the issue is regional or national, the common English name is preferred, instead of the scientific name in order to overcome the barrier of regional or local language. For scientific writing and discussions and for consultation of literature we use scientific name of weeds.

What is a scientific name of species?

The scientific name of any recognized species is a 'binomial nomenclature' which is universally accepted. It allows people to communicate unambiguously about the species throughout the world by overcoming regional, cultural and linguistic barriers. To achieve this advantage, these names are framed through sets of International Rules, for the common macrophytic weeds, these rules have the International Code of Botanical Nomenclature (ICBN). Framing the binomial nomenclature for a species means making every scientific name unique in the World. In this method two words are connected together to express the name of the species, where the first word, the first letter of which is always capitalized, is the genus name to which the species belongs, and the second word is the species epithet, that is always written with small alphabets. The word used as species epithets bears its own meaning, but clubbing with the genus name together express the name of a species – the unique identity of a plant (or any organism too). As an example, the meaning of the word "*Zeylanica*" is Ceilonius or Sri-Lankan, when this word is used as species epithet of the genus *Spenoclea* (*Spenoclea zeylanica*), it designates the weed which is called 'Wedgewort' or 'Chickenspike' in English. On the other hand, when the word is used as species epithet of the genus *Pouzolzia* (*Pouzolzia zeylanica*) it

designates the weed which is known as 'Graceful Pouzolzia's Bushes' (English).

The binomial plant name is not complete unless the name of the authority means the name of the Botanist(s) who gave the species epithet, is added. Many a times the author name(s) is abbreviated, like 'L.' or 'Linn.' for Carolus Linneus, 'Roxb.' for William Roburgh or 'Hook.f' for Hooker *filius* (Sir Joseph Delton Hooker, son of Sir William Hooker), and so on. Sometimes, some author's names are written in parenthesis, followed by the name of another author(s) in plant nomenclature. It indicates that the species epithet is transferred from another genus, and the name of the author in parenthesis is the name of the author of the original species before recombination. The name of the author followed by the parenthesis is the name of the Botanist who recombines the same. The original name from which the species epithet has been transferred is cited as synonym (basionym) of the new name after recombination.

The uniqueness of botanical names prevents us from confusing with different species of plants, as it develops by using common name or vernacular names. Sometimes some confusion arises because of popularity of synonyms. However, that confusion is also diminished when the name of the authority is used. For example, R S Rao has renamed *Ludwigia hyssopifolia* as *Ludwigia linifolia* in 1985, which got much popularity at least in Indian context as this species is a very common as rice-weed. But it is seen that there is already a species with this name in America (*Ludwigia linifolia*) named by Poiret in 1814, and hence, Rao's proposal had not been accepted as it was not in accordance with the rules.

The major difficulty in usefulness of botanical name is the use of Latin or Latinized words, which are difficult to memorize, because of unfamiliarity. Another difficulty is the change of some scientific name of the plants, despite of having popular uses. In contrary, out of universal acceptance and uniqueness, the botanical name indicates the relationship of a species with other plant groups in certain evolutionary sequences, and definite characteristics of the plant, as well as helps to communicate unambiguously about the species. If the species possesses more than one scientific

name, the ICBN screened out only one acceptable name and rests are referred to as synonym(s) of the accepted name. When the accepted name is changed, it creates great difficulty and puzzle amongst the weed activists.

Why the scientific name changes?

In short, changes of scientific names are done mostly when the nomenclature does not fulfil the clauses of ICBN, and secondly, when our understanding about the species and their relationships change. With advancement of science and technology, several reliable evidences are discovered to consider in determining phylogenetic relationships amongst the plant groups and arranging these in evolutionary sequences. Considering the newer evidences as Taxonomic tools, relationships amongst the many plant groups are reshuffled, leading to recombination of species names. How do you find out the accepted names easily? Several leading taxonomic institutions are making the latest information about the accepted names available through e-searching. By investigating the scientific name in “Google Search” typing the correct spelling of the genus or species name followed by “*the plant list*”, anyone can easily find out the accepted name of the species and its synonyms.

As the scientific name reflects the Taxonomic status of the species along with its characteristic features and phylogenetic relationships, and as this name is accepted worldwide unambiguously, weed activists should keep themselves updated with the changes and use the accepted name, rather than its old synonyms.

Weeds as a potential natural antioxidant source

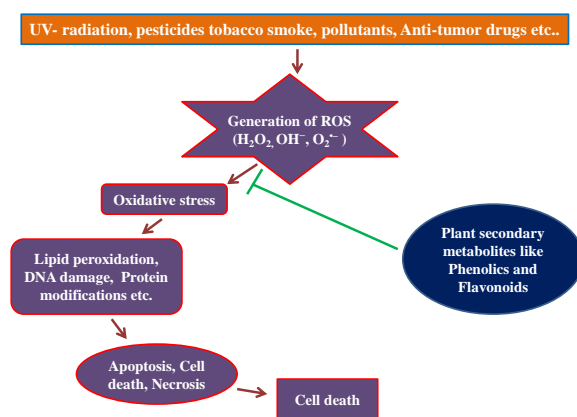
Dasari Sreekanth, Pawar Deepak Vishwanath, Subhash Chander, ICAR-DWR, Jabalpur

Excess production of ROS in humans, by endogenous or external sources, e.g. tobacco smoke, certain pollutants, organic solvents or pesticides, leads to oxidative stress. It is understood that commonly available synthetic antioxidants such as butylhydroxyanisole and butylhydroxytoluene demonstrate significant animal toxicity and tumors. Efforts are now being made to look for safe, affordable, and efficient antioxidants. Weeds are inexpensive material sources; a method of choice for the

management of weeds might be to produce cost-effective goods from weeds. It will also contribute to decrease weed damage to other commercial crops.

The medicinal weeds like *Aerva lanata*, *Acalypha india*, *Amaranthus spinosus*, *Argemone mexicana*, *Bacopa monnieri*, *Cannabis sativa*, *Chenopodium album*, *Tinospora cordifolia*, *Withania somnifera* etc., can be an alternate source for naturally occurring antioxidants especially phenolic and flavonoids. Consequently, a significant way to reduce free radicals and oxidative damage is to increase antioxidant intake in humans through diet. Free radicals are the unpaired electron molecules usually referred as reactive oxygen species (ROS). Upon excess production of free radicals or the failure of an antioxidant defense system, these radicals causes tissue injury, numerous physiological disorders in the body, viz. Cancer, Parkinson’s disease, Alzheimer’s disease, Myocardial infarction and Diabetes.

Therefore, in recent years, in view of their therapeutic advantages, the subject of attention has been on antioxidants obtained from herbal medicines. In order to minimize the hazard of a wide variety of ROS, phyto-antioxidants those are widely available, less harmful, having food and medicinal components are recommended. In weeds, antioxidants are made predominantly of phenolic acids, flavonoids and catechins. Some phenolic compounds in weeds could quench lipid peroxidation, prevent DNA oxidative damage, and scavenge reactive oxygen species (ROS).



Mode of action of antioxidants defense pathway

Herbicide Tolerant Crops: Safety Aspects and Current Status

Pawar Deepak Vishwanath, Dasari Sreekanth and Subhash Singhariya, ICAR-DWR, Jabalpur

Herbicide tolerant (HT) crops offer farmers an essential tool for combating weeds and are also compatible with no-till/zero tillage methods, which help in preservation of topsoil. They also make farmers flexible in application of herbicides only when it is actually required and therefore, help the farmers to manage total input of herbicides.

Safety aspects of HT crops

Government regulatory agencies in several countries have ruled that crops possessing herbicide tolerance conferring proteins do not pose any environmental and health risks, as like their non-GM counterparts. Guidelines have been developed by the relevant international organizations to assess the potential toxicity and allergenicity of the introduced proteins. It is also assessed whether the expression of these proteins damages the plant's growth or result in poorer agronomic performance compared to parental crop. Except for expression of an additional enzyme for herbicide tolerance or the alteration of an already existing enzyme, there should be no other metabolic changes that should occur inside the plant system.

A major environmental apprehension associated with HT crops is their possibility to give rise to new weeds by outcrossing with their wild relatives or simply by their own persistence in the wild biotypes. This possibility,

however, is evaluated prior to their release and is also monitored after the crop is planted. Recent scientific studies indicate that, in the absence of herbicide applications, genetically modified HT crops are not likely to be invasive in agricultural fields or in natural habitats as like their non-GM counterparts. American Soybean Association (ASA) conducted a study on tillage frequency on soybean farms, and observed that many farmers adopted the 'reduced tillage' or 'no-tillage' practice after growing HT soybean varieties. This simple weed management strategy saved over 234 million gallons of fuel and left 247 million tons of irreplaceable topsoil undisturbed.

Current status of HT crops worldwide

As of 1996 to 2018, HT crops have steadily occupied the growing area among the transgenic crops. In the year 2018 alone, HT crops occupied 45% (87.5 million hectares) of the total 191.7 million hectares area of transgenic crops grown worldwide. Among these the most common were glyphosate and glufosinate HT varieties. It has been observed that in USA, zero-tillage soybean growing area has increased by 35% since the introduction of HT soybean varieties. A similar development is also seen in Argentina where 98% of the soybean growing area is under HT varieties. For the first 21 years (1996-2016) since commercialization of transgenic crops, profits solely arising from HT crops are valued at US\$ 89.02 billion (47.8% of global biotech crop value of US\$ 186.1 billion), and for 2016 alone it was US\$ 8.44 billion or 46.4% of global value of US\$ 18.2 billion. As far as India is concerned, the only transgenic crop approved for commercial cultivation is Bt cotton that contributes about 93 percent of the total cotton production.

Papers published in Indian Journal of Weed Science

Volume 52(2) 2019

Effect of different weed management options on weed flora, rice grain yield and economics in dry direct-seeded rice

P. Saravanane

Long-term weed management effect on weed dynamics, weed shift and productivity of direct-seeded rice-chickpea cropping system

Nitish Tiwari, Shrikant Chitale and Tapas Choudhary

Herbicide combinations effect on weeds and yield of wheat in North-Eastern plain

Dhiman Mukherjee

Endozoochorous dissemination of *Rumex dentatus* and its impact on wheat productivity

Pijush Kanti Mukherjee

Tillage and weed management effect on productivity of wheat in North-West Rajasthan

H. Shivran, R.S. Yadav, S.P. Singh, A.S. Godara, A.L. Bijarniya and S.R. Samota

Tillage and weed control effect on weeds and wheat productivity
Arunima Paliwal, V. Pratap Singh, Tej Pratap, S.P. Singh, S.K. Guru,
Neeshu Joshi, Sirazuddin and A. Kumar

Control of mixed weed flora with different herbicides in barley
Hari Ram, Gurbrinder Singh, Neha Gupta and S.S. Dhaliwal

Efficacy of pre- and post-emergence herbicides in maize
S.U. Kakade, J.P. Deshmukh, S.S. Thakare and M.S. Solanke

Weed management effect in blackgram under acidic soils of Manipur
K.S. Shashidhar, Samuel Jeberson, M. Premaradhya, N. Amit Kumar Singh
and S. Bhuvanewari

Intercrops and weed management effect on productivity and competition indices of cotton
A. Sathishkumar, G. Srinivasan, E. Subramanian and P. Rajesh

Efficacy of herbicides on weed control, rhizospheric micro-organisms, soil properties and leaf qualities in tea plantation
Rajib Kundu, Mousumi Mondal, Sourav Garai, Hiral Banerjee, Dibakar Ghosh, Aparajita Majumder and Ratneswar Poddar

Weed management in dry direct-seeded rice: Assessing the impacts on weeds and crop
Suman Sen, Ramanjit Kaur and T.K. Das

Crop establishment method and planting density effects on weeds, insects and productivity of rice
Bura Singh Dhillon, Makhan S. Bhullar and Preetinder S. Sarao

Bio-efficacy of pre-and post-emergence herbicides on weed control and yield of rainfed lowland rice
G. Gangireddy and D. Subramanyam

Effect of live mulches and herbicides on weeds and yield of direct-seeded rice under irrigated conditions
Lovejeet Singh and Santosh Kumar

Weed dynamics in wheat as affected by weed management practices under Doon valley conditions
Naziya Khan, Roop Kishore, Gaurav Verma, Afjal Ahmad, Ramakant Mishra and Sanjay Kumar

Management of herbicide resistant Phalaris minor through sequential application of pre- and post-emergence herbicides in wheat
Abdull Raseed, S.S. Punia, Manjeet, Kumarsein and Sushil Punia

On farm assessment of ready-mix herbicide combinations for broad-spectrum weed control in wheat
Shailendra Singh Kushwah

Weed management in sunflower through sequential application of herbicides in Western Odisha
S. Mohapatra, S.K. Tripathy and A.K. Mohanty

Volume 52(3) 2020

Parthenium weed spread in Andaman & Nicobar and Lakshadweep Islands of India: Lurking invasion needs attention for its eradication

B. Gangaiah, T. Subramani, Sanjeev Kumar Singh, A.K.O. Ratheesh and Sushilkumar

Diversity is the key for successful agroecological weed management
Stéphane Cordeau, Guillaume Adeux and Violaine Deytieux

Herbicides and herbicide combinations for management of *Leptochloa chinensis* in wet-seeded rice
Lekshmi Sekhar, M. Ameena and Nimmy Jose

Crop establishment and weed management effect on weed parameters and rice yield under temperate zone of Kashmir
Aijaz Nazir, M. Anwar Bhat, Tauseef A. Bhat, Zahida Rashid, Rehana Mohi-ud-din, Suhail Fayaz and Sheraz Ahmad Wani

Efficacy of herbicides in managing weeds in direct-seeded rice
R.K. Satyaraj Guru, Sanjay K. Dwivedi, S.N. Khajanji and S.K. Jha

Efficacy of pyribenzoxim herbicide in dry direct-seeded rice
Rajul Soni, Triptesh Mondal, Shobha Sondhia, Rajendra Prasad Sahu and Hradesh Patel

Assessing bio-efficacy potential of herbicide combinations for broad-spectrum weed control in late-sown wheat
Vasudev Meena, M.K. Kaushik, M.L. Dotaniya and H. Das

Management of herbicide resistant *Phalaris minor* in wheat
S.S. Punia, Jitender Soni, Manjeet, Sushil Kumar Singh and Paras Kamboj

Effect of nitrogen levels and weed control methods on yield and economics of wheat under zero-tillage conditions
Manoj Kumar, Ram Pratap Singh, Deepak Pandey and Gajendra Singh

Effect of organic weed management practices on weed control and yield of soybean-gram cropping system under irrigated condition
A.A. Chavan, W.N. Narkhede and A.S. Karle

Effectiveness of herbicide mixture on weeds and yield of summer groundnut
B.D. Patel, D.D. Chaudhari, V.B. Mor, V.J. Patel, and H.K. Patel

Weed flora dynamics and yield of mustard as influenced by tillage and weed management in pearl millet-mustard-cowpea cropping system
Varsha Gupta, D.S. Sasode, Ekta Joshi, Sushma Tiwari and Y.K. Singh

Herbicide resistance in *Rumex dentatus* against metsulfuron herbicide in Punjab and Haryana, India
Sachin Dhanda, Ankur Chaudhary, Simerjeet Kaur and Makhan S. Bhullar

Evaluation of multiple herbicide resistance in littleseed canarygrass (*Phalaris minor*) populations from Haryana in India
Maninder Kaur, Satbir Singh Punia, Jagdev Singh and Samunder Singh

Physiological response of rice to herbicide application
C. Linu and T. Girija

Integrated weed management with brown manuring and herbicides in dry-seeded rice
Sneha Kumari, Tarundeep Kaur and Makhan S. Bhullar

Biochar and herbicide application effect on weed dynamics and yield of dry direct-seeded rice
Suprava Nath, V.C. Dhyani, V. Pratap Singh, Sumit Chaturvedi, Subhashisa Prahara and Arya Kumar Sarvadamana

Crop-weed competition in blackgram in coastal deltaic eco-system
P. Saravanane, R. Poonguzhalan, S. Vijayakumar and K. Pooja

Management of *Trianthema portulacastrum* through herbicides in greengram
T. Ramesh and S. Rathika

Integrated weed management in blackgram
R.P.S. Shaktawat

Effect of plant extracts and rice straw mulch on weed growth and yield of groundnut

N. Sai Geethika, D. Subramanyam, S. Tirumala Reddy and V. Umamahesh

Integrated weed management impact on soil biological indicators in cowpea
J.K. Sinchana and Sheeja K Raj

As a life member, you are welcome to the Indian Society of Weed Science (July-December, 2020)

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ICAR-DWR, Jabalpur Madhya Pradesh
3. **Mr. Chandan Sharma** (LM-1287)
Department of Agronomy, VNMKV, Parbhani, Maharashtra
4. **Dr. YS Parameswari** (LM-1288)
PJTSAU, Hyderabad Telangana
5. **Dr. Biman De** (LM-1289)
College of Agriculture Tripura
6. **Miss. K. Chijina** (LM-1290)
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7. **Dr. Rajib Kundu** (LM-1291)
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8. **Dr. G. Manjulatha** (LM-1292)
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12. **Dr. R.M. Solanki** (LM-1296)
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13. **Dr. Thirupathi Islavath** (LM-1297)
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16. **Mr. Sunil Soni** (LM-1300)
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17. **Miss. Sneha Kumari** (LM-1301)
BHU, Varanasi, Uttar Pradesh
18. **Dr. P. Gayathri Karthikeyan** (LM-1302)
KAU, Thiruvananthapuram, Kerala
19. **Dr. Ravindra Pal Singh Shaktawat** (LM-1303)
Krishi Vigyan Kendra, Agar Malwa, Madhya Pradesh
20. **Dr. Niranjan Barod** (LM-1304)
ARS, Navgaon, Alwar, Rajasthan
21. **Mr. Samardi Ganapathi** (LM-1305)
UAS, Bangalore, Karnataka
22. **Dr. Marimuthu Subramanian** (LM-1306)
TNAU, Coimbatore, Tamil Nadu
23. **Miss. SV Varshini** (LM-1311)
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25. **Dr. Yashbir Shivay** (LM-1313)
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26. **Mr. Anurag Kumar Singh** (LM-1314)
BHU, Varanasi, Uttar Pradesh
27. **Mr. Danabhai Jadav** (LM-1315)
JAU, Junagadh, Gujarat

News and upcoming events

Dr JS Mishra, Chief Editor of Indian Journal of Weed Science and Eminent Scientist in the Field of Weed Science has joined as a Director of ICAR-Directorate of Weed Research

Dr JS Mishra joined ICAR as ARS scientist on 5th August 1991. He served ICAR-DWR, Jabalpur (1992-2008), ICAR-IIMR, Hyderabad (2008-2014) and ICAR Research Complex for Eastern Region, Patna (2014-2020) in various capacities before joining as Director, ICAR-DWR, Jabalpur on 27th November, 2020. He has made



outstanding contributions in the field of weed management research. His pioneering contributions are in the area of biology of parasitic weed *Cuscuta campestris* and its management, conservation tillage and weed management in rice/soybean/sorghum-based cropping systems, weed seedbank dynamics, popularization of resource conservation technologies in rice-fallows, and development & popularization of CA-based crop management practices in rice-based cropping systems in Eastern region. He has been honored with ISA PS Deshmukh Young Agronomist Award (1999), DWR Best Scientist Award (2007), Fellow of Indian Society of Weed Science (2007), Indian Society of Agronomy (2010) and Society for Upliftment of Rural Economy (2015), ISWS Gold Medal (2014) and ISA Gold Medal (2016) for his significant contributions.

TNAU-AICRP on Weed Management centre bestowed as Best Centre Award 2020

Agricultural Scientific Tamil Society, New Delhi has bestowed TNAU All India Coordinated Research Project on Weed Management as Best Weed Science Unit Award, 2020. The award was presented during 6th National Conference on Agricultural Scientific Tamil held at World Tamil Research Institute, Chennai on 21st December, 2020. Dr. P Murali Arthanari, Associate Professor (Agronomy) and Principal Investigator has received the award from Dr G Sugumar, Vice Chancellor, Tamil Nadu Dr J Jayalalitha Fishery University, Nagapattinam in the presence of Dr N Kumar, Vice Chancellor, Tamil Nadu Agricultural University, Coimbatore and Dr G Vijayaragavan, Director, World Tamil Research Institute, Chennai. Honourable Her Excellency Dr Tamizhisai Soundararjan, Governor of Telangana State and Dr



Sowmiya Swaminathan, Principal Scientist, World Health Organization, Geneva have graced the occasion through video conferencing.

“Late Professor Anjan Bhattacharyya Memorial Lecture” delivered by Dr. Shobha Sondhia, Secretary, ISWS, ICAR-Directorate of Weed Research (DWR) on 01.10.2020

Dr Shobha Sondhia delivered an invited Prof. A. Bhattacharyya Memorial Lecture on ‘Ecosafe Green pesticide use in Sustainable Agriculture’ on October 1, 2020 during the Annual Conference of Crop and Weed Science Society, Bidhan Chandra Krishi Viswavidyalaya (BCKV), West Bengal.



Dr Ram Pratap Singh, born on 15th August 1947, got his M.Sc. in Agronomy from Banaras Hindu University and Ph.D. in Agronomy from 'Indian Agricultural Research Institute, New Delhi in 1972. He started his career as Assistant Professor in Banaras Hindu University and served the University as Head of Agronomy, Dean of Faculty and Director of Institute. His 43 years of teaching career has been fully devoted to teaching and research in weed Science. He is well known weed scientist for his contribution in identifying herbicides for varying soil moistures and levels of nitrogen application in rice and wheat. His contribution in relation to phenological behavior of chickpea in relation to weed management in rice and chickpea is well accomplished. Dr. Singh handled many national and international projects funded by large number of organizations. His greatest contribution is to develop a school of weed scientists at Banaras who are serving across the country. He received many awards, *viz.* Fellow of Indian Society of Weed Science, Indian Society of Agronomy, Bioved Research Society, Gold Medal of Indian Society of Weed Science, Lifetime Achievement Award of Indian Society of Weed Science, Raj Bhasha Puruskar of Banaras Hindu University, and Slow Food Award for excellence in Agriculture on Terra Madre Day. He published more than 80 research papers in national and international Journals. Dr. Singh has served the Indian Society of Weed Science on all the positions and has been instrumental in establishing the society's head quarter at DWR, Jabalpur. He also worked as a Director of Pratap Shiksha Niketan for the upliftment of economically poor children at Varanasi.



Condolence message

We are saddened by the sudden and unfortunate demise of Dr RP Singh during this time. In this tragic moment, the entire ISWS family stands together in offering our heartfelt condolences to his family. His loss is irreplaceable and his memory shall always remain with us. We pray to God to give strength to his family to overcome this tragedy.



Dr OP Singh, Ph.D. in Entomology served Jawaharlal Nehru Krishi Viswa Vidyalaya, Jabalpur, Madhya Pradesh for 28 years in various capacities. His research on 'Soybean Insect Pests and their Management' got National as well as International recognition. He was also invited to U.S.A. for a presentation on 'Soybean Insect Pests' in the World Soybean Conference. He has published over 250 research papers in prestigious International and National journals and elected President, Vice President, Counselor of several Professional Societies and also authored 5 books which are being frequently referred to by students, teachers and researchers. Dr. Singh is working since 18 years in Dhanuka and has introduced number of new pesticides in India in technical collaboration with foreign collaborators.

Condolence message

We are saddened by the sudden and unfortunate demise of Dr OP Singh during this time. In this tragic moment, the entire ISWS family stands together in offering our heartfelt condolences to his family. His loss is irreplaceable and his memory shall always remain with us. We pray to God to give strength to his family to overcome this tragedy.



Dear Esteemed Members,

It is being a wonderful experience to work for our esteemed society and therefore, I am in privilege to request you to bring your untiring efforts as news item/short article in the field of weed science. I am sure that your unflinching zeal in the form of developing efficient weed management practices, monitoring weeds under climate change scenario, invasion of alien weeds, aquatic and parasitic weeds, innovation or improvisation of mechanical tools/machines for weed control, degree awarded in the field of weed science under your supervision, events conducted (webinar) on Weed Science, research activities on new herbicides etc. has made significant contribution to the weed science community as well as farming communities to save their crops from the menace of weeds. In order to glorify our Newsletter which will embrace all your untiring efforts, your contribution for the upcoming issues of ISWS Newsletter is highly essential.



Therefore, I am very much looking forward for your generous help in providing news item/short article so that upcoming issues of the Newsletter could be published in time. Stay safe and healthy against COVID-19.

Pijush Kanti Mukherjee
Editor

ISWS members are requested to contribute any major research finding as a news, awards obtained, Ph.D. obtained, forthcoming events on weed Science etc. to:

Dr. Pijush Kanti Mukherjee

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