ISWS News Letter

A publication of Indian Society of Weed Science

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ISWS HOME PAGE ACCESSED AT: www.isws.org.in

Message from President

More than 60% population of India is depending on agriculture sector; therefore, Indian agriculture plays a major role in the country's economy. India may require at least 20 million tons of additional food every year to meet the minimum food and nutritional demands of the growing population, which is expected to be 1.7 billion by 2050. The greatest challenge of the 21st century is to meet the rising food demand while maintaining the sustainability of the natural resources. Hon'ble Prime Minister of India, Shri Narendra Modi has repeatedly urged agricultural scientists for doubling the income of farmers by 2022. Weeds are one of the major limitations to reduce the yield hence income of farmers too. Therefore, in order to address the emerging challenges and for doubling farmers' income over the next two years, Indian Society of Weed Science kept the theme of recently held conference as '*Weed management for enhancing farmers' income and food security*'. The beginning of New Year 2020 was pleasant for all of us with full of activities and lot of zeal to prepare for the Conference of Goa from 5-7 February 2020. Although the news of entry of COVID-19 in India started to appear, but we could conduct the Conference because of negligible threat by that time. We are happy that the conference was conducted in a grand way amidst the nice weather of Goa. The major highlights of the conference were (i) Distribution of various awards , (ii) About 274 delegates from all over the India and overseas including members of the Society, scientists, students from agricultural research institutions and State Agricultural Universities (SAUs), representatives from concerned government departments and industries, (iii)There was General Body Meeting of ISWS on 5 February, 2020 , (iv) Nine technical sessions were organized, (v) One Keynote lecture, 3 Plenary presentations, 14 lead papers, 71 oral papers and 170 posters were presented,(vi) Gala Dinner on 5th February 2020 on the cruise (vii) Field visit of the delegates on 7, February 2020. The conference abstract book proceedings were provided to all the delegates in the digital form in pen drive and which is also available on ISWS websites. I would like to thank all the speakers, participants, sponsors and the members of various committees for making this event a memorable one. I trust that young scientists and students were benefitted the most by attending some excellent presentations by world renowned scientists and interacting with them.

The last week of March 2020 was not so pleasant for all of us due to imposing of country wide lockdown in India, which compelled us to remain in house up to substantial time. With the opening of Unlock-1 process on June first 2020, our life again started to meet the challenges ahead. We all should appreciate our farmers' courage that they did cultivation and harvesting during that tough time and contributed significantly for food security. I am sure in due course; we shall defeat the COVID-19 virus due to advancement in medical science and our will to sustain the life for better future. But certainly, we need to plan to maximise the use of digital and online platforms to tackle the situation till COVID-19 pandemic is over. Please take utmost care of yourself and your family amidst this worst catastrophe of the world. I wish you and your family a Happy and Healthy life ahead.

Happy reading.

Sushil Kumar

Biennial Conference of Indian Society of Weed Science on

"Weed management for enhancing farmers' income and food security"

Indian agriculture plays a major role in the country's economy. Despite adoption of developed technologies, the weed problems are virtually increasing and it offsets the potential benefits of the technologies in achieving higher production and quality. Less adoption of certain traditional practices like intercropping, mulching and crop rotations involving legumes and continuous adoption of a few cropping systems significantly contributes the weed menace in many folds in several agro-ecosystems. Further, emerging concerns like herbicide resistance development in weeds, growing menace of weedy rice, *Parthenium, Orobanche* and other alien invasive weeds due to several factors including globalization and liberalization are also responsible for increasing weed infestations. It is estimated that loses of agricultural produce due to weeds is worth over $11 billion in India.

The Indian Society of Weed Science (ISWS), a non-profit professional society, established in 1968 hold responsibility to promote research, education, and extension outreach activities related to weeds; provides science-based information to the public and policy makers; create awareness of weeds and their impacts on managed and natural ecosystems in the country besides organizing conferences and seminars. While organizing conferences and seminars ISWS creates an excellent environment to bring all the stakeholders under a single umbrella for sharing their knowledge and ideas on the different aspects of weeds, and also arrange in-length discussion on the emerging issues of agriculture. Besides, these events also give an opportunity for reunion of members of ISWS from India and abroad as well.

In order to address the emerging challenges and for doubling farmers' income that has been envisaged by Hon'ble Prime Minister of India, Shri Narendra Modi, Indian Society of Weed Science has organized ISWS Conference on the theme of '***Weed management for enhancing farmers' income and food security'*** during 5-7 February, 2020 at ICAR- ICAR-Central Coastal Agricultural Research Institute. The conference was inaugurated by Advocate Mr Narendra Sawaikar, Ex MP of Goa and he also graced this conference as the chief guest. The other dignitaries on the dais were: Dr. Sushil Kumar President, ISWS; Dr. P.K. Singh, Director, DWR, Jabalpur; Dr M. Thangam, In-charge Director, ICAR-CCARI; Dr. Shobha Sondhia, Organizing Secretary of Conference and Secretary of ISWS and Dr V. Parmesha, Local Organizing Secretary, CCARI, Goa. Other dignitaries in the session were: Dr. N.T. Yaduraju, Ex-President, ISWS; Dr. L.S. Brar, Former Presidents, ISWS; Dr. G.S. Rao, Director, TFRI, Jabalpur; Dr M. Thangam, In-charge Director, ICAR-CCARI; General Manager, NABARD, Dr. V.P. Singh, Ex-President, ISWS, Dr Govindra Singh; Dr T.V.R. Shetty, Dr J.C. Majumdar, Dr P.C. Bhowmick, Dr Mayank Yadav from Corteva Agriscience™, and many other from India and abroad. Dr Stephane Cordeau of INRAE, Agro-ecology Lab, Dijon, France also participated. In the inaugural address, Chief Guest highlighted the importance of weed management in agro-ecosystems and cited the examples of getting advantages by the farmers in terms of higher production and quality by leveraging weed management technologies in their crops. He urged the scientists to leverage the key weed management technology for the benefit of the farmers of Goa and other States of India. Hoped that this Conference will be useful for the delegates and students to know about the emerging challenges in weed management in different parts of the country and the world. Dr Sushilkumar, President of ISWS, in his welcome address mentioned continuous insurgence of weeds in aquatic systems, parasitic and alien invasive weeds in several agro-ecosystems. He also highlighted the importance of developing and implementing weed management technology for climate smart agriculture. Dr Shobha Sondhia, Organizing Secretary of Conference and Secretary of ISWS welcomed the participants representing almost every state of India. She explained the challenges posed by weeds and the importance of their management. Dr P.K. Singh, Director, ICAR-Directorate of Weed Research, Jabalpur, welcomed all the participants and wished active deliberation and fruitful discussion on the presentations. He discussed the yield losses caused by the weeds in various crops in the country.





The major highlights of the conference were: (i) About 274 delegates from all over the India and overseas including members of the Society, scientists, students from agricultural research institutions and State Agricultural Universities (SAUs), representatives from concerned government departments and industries, (ii) There was General Body Meeting of ISWS on 5 February, 2020, (iii) Nine technical sessions were organized, (iv) One Keynote lecture, 3 Plenary presentations, 14 lead papers, 71 oral papers and 170 posters were presented, (v) Gala Dinner on 5Th February 2020 (viii) Field visit of the delegates to On-Station and On-Farm trials and aquatic weed problem in aquatic bodies on 7, February 2020.

Distribution of Awards and Fellowships: Dr. Shobha Sondhia, Organizing Secretary, announced the names of awardees in various categories of awards. In glittering inaugural function, the following scientists were honoured for their outstanding contributions in weed science:

Awardees list	
Life Time Achievement Award	1. Dr Govindra Singh, (2018-19) 2. Dr N.T. Yaduraju, (2018-19)
ISWS Special Recognition Award	1. Dr S.V.R. Shetty, (2018-19) 2. Dr C.M. Singh, (2018-19) 3. Dr J.C. Majumdar, (2018-19)
ISWS Gold Medal	1. Dr C. Chinnusamy, (2018) 2. Dr Ratikanta Ghosh, (2019)
ISWS Fellow	1. Dr Makhan S. Bhullar, (2018) 2. Dr Parvender Sheoran, (2018) 3. Dr Basudev Behera, (2018) 4. Dr Manoj Kumar Singh, (2019) 5. Dr Malay K. Bhowmick, (2019)
ISWS Young Scientist Award	1. Dr Dibakar Ghosh, (2018) 2. Dr Chaitanya P. Nath (2019)
ISWS Best Ph.D. Thesis Award	1. Dr K. Brindha, (2018) 2. Dr Amandeep Kaur (2019)
ISWS Best Book Award	1. Dr V.S. Rao, USA for the book "*Principles of Weed Science*" (2018)
IJWS Best Paper Award	1. **Authors: Veeresh Hatti, B.K. Ramachandrappa and Mudalagiriyappa** "*Weed dynamics in conservation agricultural systems as influenced by conservation tillage and nutrient management practices under rainfed finger millet*" Volume: **50**(4): 355-364 DOI: http://dx.doi.org/10.5958/0974-8164.2018.00076.X 2. **Authors: Neeraj Kumar Dubey, Pawan Yadav, Nisha Gupta, K. Gupta, J. Panigrahi, Aditya K. Gupta** "*Suppression of seed setting and viability in phytoplasma-infected Parthenium weed in nature through differential gene expression*" Volume: **51**(2): 188-197 DOI: http://dx.doi.org/10.5958/0974-8164.2019.00040.6
ISWS Student Travel Grant Award	1. Ms Stuti Debapriya Behera 2. Ms Y. Lavanya 3. Mr Bheru Lal Kumhar 4. Ms Sunita Meher 5. Mrs Pujari Shobha Rani 6. Mr Muni Pratap Sahu
Best poster awards	Six best poster awards were also distributed

Site-specific weed management

C.R. Chethan, Scientist
ICAR-DWR, Jabalpur

Weed management through herbicide is a widely accepted method because of easy to apply, provide quick result and long phytotoxic effect on weeds. However, it has already raised several issues on the backdrop to herbicide resistant weeds, less selectivity due to overdose, lack of proper understanding about herbicides, herbicide load in food chain etc. Moreover, it becomes a tradeoff in between workload, quality of produce and ecological consequences. Repercussions of these issues related to herbicide; it is being accentuated to find environment friendly alternate weed management strategies. The mechanical management includes physical removal of weeds by using different mechanical tools and equipments. The operation of weeders within the inter-row is easier, however, when it comes to removal of weeds in intra-row becomes complex and inbuilt special system mechanism for discriminating weeds from crop plants, instant decision taking capacity and actuation of weeding tool are needed. Concern of ecological consequences and carry over effect in food chain, stringent regulation mechanism will provide the basis for herbicide use for economic, effective and environment friendly weed control. While outline the issues of herbicides, different agencies have recommended using economic weed threshold values. Some of them are for wheat crop is 0.1–2 plants/m^2 for *Galium aparine*, 1–2 plants/m^2 for *Cirsium arvense* and *Polygonum aviculare*, and 40–90 plants/m^2 for most of the broad-leaved weeds. These threshold values are not adjusted according to the weed controlling cost and crop yield price, instead they have used as an approximate value for deciding the weed controlling method. By using these threshold data as well as data on weed seed bank in soil, biological relationship between weed and crop, herbicide performance in different crops, a several computerized decision models useful to farmers have developed; however, none of them were included spatial variability of weeds within the crop fields.

Heterogeneous strength of weed seed bank within the crop field, the weeds appear in aggregated patches with heavily dense at one place and leanly dense or absent at other places. Variation of weed distribution in agro-ecosystems is often ignored while adopting weed management practices. The common practice, being adopted widely, to use fixed dose of herbicide throughout the field or using of normal weeding tool. This lead to under estimation of crop yield loss due to weeds, over or under dose of application of herbicide, loss of costly agri-inputs and increase input cost, wrong use of weeding tools and tractor energy etc. Comparative assessment between adoption of weed management through identification of weeds and application of herbicides in fallow land revealed 19-60% reduction in herbicide consumption.

The Site-specific weed management (SSWM) is sensor-based machinery embedded precision weed management technique; it observes, records and execute the controlling operations according to the predefined factors such as economics, heterogeneous presence of weeds and/ or weed species within the crop fields etc. The main purpose of SSWM is to apply the right dose of herbicide at right place and at right time, if it is chemical control and/ or physical removal of weeds through robotic arms. The SSWM mainly has four components such as,

1. Real-time or GPS based map generation/ weed sensing in real time
2. Decision on treatment to be conducted – either varied dose of herbicide application and/ or weeding
3. Treatment execution – spraying of herbicides through nozzles/ weeding by robotic arm
4. Documentation of the process – recording of the data

The SSWM can be distinguished into two different approaches: one approach is real-time detection of weeds, decision taking to adjust the dose of herbicides or weeding operation based on weed presence and execution of controlling operations; other approach is offline method, where, prior information on the location is loaded to the system and controlling operations are executed based on the pre-defined programmes. The identification of location and positioning plays pivotal role in SSWM. The different Global positioning systems (GPS) such as static-GPS or RTK-GPS are used in SSWM embedded systems to determine absolute position of the location. Some studies reported that, after adoption of SSWM technologies for herbicide application based on weed density and/ or weed biomass saves 40-60% spraying volume. Thus, the SSWM techniques were not only economic operations to the

farmers but also an environment friendly crop production system. A schematic view of the SSWM system developed by "University of Nebraska – Lincoln" (Young and Meyer, 2012) is given below for easy understanding of the system.

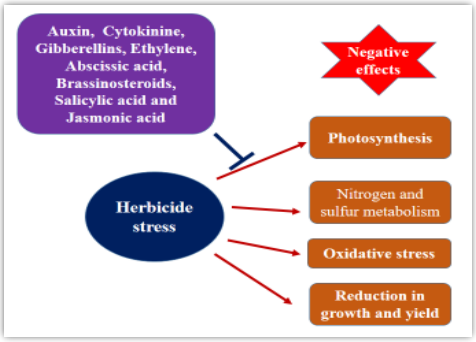
(Source: Young, Stephen L. and Meyer, George, "Precision and automation weed control technology" (2012). *West Central Research and Extension Center, North Platte.* 74)

Figure: Schematic view of the SSWM system

Role of plant growth regulators in herbicide stress mitigation

Dasari Sreekanth, Scientist
Plant Physiology, ICAR-DWR, Jabalpur

In modern agriculture, the use of herbicides is being considered as an important tool to combat recurring weed problems in several ecosystems. However, over reliance on herbicides and its indiscriminate usage has led to the series of negative effects on the morphological, physiological and biochemical characteristics of crops. Herbicides control weeds not only by altering their metabolic reactions but also stimulating stressful circumstances causing non-target plants to be affected. Depending on the dose and extent of the damage, the plants may or may not recover from the damage caused by herbicide. Production of crop plant biomass is negatively affected by impaired photosynthetic activity generated by herbicide-induced toxicity. Herbicides have a detrimental impact on various physiological events in crops such as photosynthesis, assimilation of nitrogen and sulfur, antioxidant system, growth and yield. Plant growth regulators such as auxin, cytokinine, gibberellins, ethylene, abscissic acid, brassinosteroids, salicylic acid and jasmonic acid are active in alleviating harmful herbicide effects in plants while conferring an important role in antioxidant metabolism and metabolite synthesis providing the basis of stress tolerance against herbicide stress. They induce expression of stress related genes for maintaining photosynthetic activity, antioxidant enzymes activation and osmoprotectants accumulation against oxidative stress induced by herbicides.



Plant growth regulators are one of the major components coordinating metabolic and developmental events throughout the plant system, and are necessary for many processes happening during life cycle of plant, finally affecting crop yield and quality. More research should also concentrate on unraveling the interaction between various plant hormones and other molecules in controlling herbicide induced toxicity.

Chocolate weed (*Melochia corchorifolia* L.) – an emerging weed in uplands of Kerala

P. Prameela and Meera V. Menon,
AICRPWM, Thrissur Center

Chocolate weed or red weed (*Melochia corchorifolia* L.) is an emerging important weed which is gaining status of problematic weed in upland crops in tropical climates. It is a perennial woody shrub, erect to spreading in nature, which can grow even up to 1-1.5 meter tall. It can also produce herbaceous stems from a woody rootstock, if it is left undisturbed. Though seed germination requires aerobic soil condition, the plant can tolerate long periods of submergence. The weed has short lifecycle producing flowers and fruits throughout the year. In Kerala, it is a common weed in banana, sesame, pulses and upland rice. A state wide survey reveals that *M. corchorifolia*, which was present only in localized patches a decade ago, has invaded to large areas and has become a problematic weed in rice and sesame. Efforts have been made by College of Horticulture, Kerala Agricultural University to develop

appropriate weed management strategies encompassing physical, mechanical and chemical methods. A study on *Melochia* control in upland rice revealed that highest rice grain yield (4.30 t/ha) was obtained with the application of carfentrazone-ethyl at the rate of 20 g/ha applied at 20-25 days after sowing, which was on par with oxyfluorfen (4.15 t/ha) applied at the rate of 150 g/ha within 6 days after sowing. However, economic assessment revealed that pre-emergence application of oxyfluorfen can be considered effective in controlling *M. corchorifolia* and other weeds in rice and can prevent invasion of chocolate weed in rice agro-ecosystems.

New Ph.D. in Weed Science

Mr. Manohar Lal has successfully completed ***Degree of Doctor of Philosophy*** in the thesis entitled *"Effect of Atrazine on Cluster bean and Pearl millet as Replacement Crops Following Pearl millet Stand Failure in Light Textured Soils"* under the chairmanship of Dr. R. S. Yadav, Swami Keshwanand Rajasthan Agricultural University, Bikaner, Rajasthan

New Publication in Indian Journal of Weed Science

Volume 51(4) 2019

Occurrence and distribution of *Sacciolepis interrupta*, a potential problematic weed in the rice tracts of Kerala
Pujari Shobha Rani and Meera V. Menon

Penoxsulam + butachlor: A new ready-mix herbicide for control of complex weed flora in transplanted rice
Dharam Bir Yadav, Narender Singh, Jitender Kumar and Ashok Yadav

Weed management in Kharif rice established by different methods
G.B. Shendage, L.S. Chavan and V.N. Game

Role of submergence tolerant rice cultivar and herbicides in managing invasive alien weeds
R.M. Kathiresan, S. Vishnudevi, M. Sarathkumar, Sudhanshu Singh and Uma S. Singh

Impact of diversification of rice-wheat cropping system on weed dynamics under irrigated condition of eastern Uttar Pradesh
Tej Ram Banjara, J.S. Bohra and M.K. Singh

Bio-efficacy of readi-mix herbicides on weeds and productivity in late-sown wheat
Vasudev Meena, M.K. Kaushik, M.L. Dotaniya, B.P. Meena and H. Das

Effect of sub-lethal doses of 2,4-D sodium salt on physiology and seed production potential of wheat and associated dicotyledonous weeds
Avneet Kaur and Navjyot Kaur

Effect of herbicides and their combinations on weeds, productivity and profitability of maize in rainfed sub-tropics of Jammu
Sapna Bhagat, Anil Kumar and R. Puniya

Phytotoxic effects of glufosinate ammonium on cotton and soil micro-flora
S. Biswas and D. Dutta

Integrated weed management in fennel production system and its residual effect on succeeding summer greengram
B.D. Patel, D.D. Chaudhari, V.J. Patel and H.K. Patel

Effects of environmental factors and ageing on germination of golden crownbeard (*Verbesina encelioides*) - A wide spread weed of Northern India
Dimple Goyal, Navjyot Kaur and Bhagirath Chauhan

Phyto-sociological attributes of weed flora in brown mustard growing areas of temperate Kashmir valley
Intikhab Aalum Jehangir, Ashaq Hussain, Manzoor A. Ganai, M. Anwar Bhat, S. Sheraz Mahdi and S.H. Wani

Effect of herbicides on weed control and potato tuber yield under different tuber eye orientations
C.R. Chethan, V.K. Tewari, A.K. Srivastava, Satya Prakash Kumar, Brajesh Nare, Abhishek Chauhan and P.K. Singh

Allelopathic effect of sorghum and sunflower on Phalaris minor and wheat
Arya Kumar Sarvadamana, V. Pratap. Singh, S.K. Guru, S.P. Singh, Tej Pratap, Sirazuddin and Suprava Nath

Effects of brown manure species, seed rate and time of application of 2,4-D on weed control efficiency, productivity and profitability in maize
Biswaranjan Behera, T.K. Das, Sourav Ghosh, Rajender Parsad and Neelmani Rathi

Seed germination response of an invasive weed Alternanthera ficoidea to temperature and salinity stress
Reshma B. Patil and Basavaraj A. Kore

Degradation of pyrazosulfuron-ethyl in the agricultural soil by Alternaria alternata
Shobha Sondhia and Uzma Waseem

Volume 52(1) 2020

Weed management approaches in direct-seeded rice in eastern Indian ecologies – A critical and updated review
Narayan Chandra Banik, Ashok Kumar, Bidhan K. Mohapatra, Vivek Kumar Chilamkurthi Sreenivas, Sudhanshu Singh, Peramaiyan Panneerselvam and Virender Kumar

Weed management in greengram: A review
Rukinderpreet Singh and Guriqbal Singh

Temperature, pH and light effect on germination and growth behavior of grassy weeds of direct-seeded rice
Kuldeep Singh, Samunder Singh and R.K. Pannu

Novel wiper device for the management of weedy rice
Nimmy Jose, C.T. Abraham, Reena Mathew and Leena S. Kumari

Herbicide options for weed management in sugarcane + wheat intercropping system in Indo-Gangetic Plains
Dharam Bir Yadav, Mehar Chand, B.R. Kamboj, Ashok Yadav and S.S. Punia

Tillage and weed management influence on physico-chemical and biological characteristics of soil under cotton-greengram cropping system
D.D. Chaudhari, V.J. Patel, H.K. Patel, Aakash Mishra and B.D. Patel

Effectiveness of different methods for controlling Orobanche in mustard
S.S. Punia, Vinod maun, Dharam Bir Yadav, Manjeet and Todarmal Punia

Land configurations and mulches influence weed suppression, productivity and economics in ginger
V.K. Choudhary

Comparative efficacy of herbicides and hand weeding to control weeds in onion
Dechen Angmo and Sandeep Chopra

Appraisal of different floor management practices for weed management in ber (*Zizyphus mauritiana* Lamk.) orchards
J.S. Brar, K.S. Gill, Tarundeep Kaur and Kirandeep Kaur

Adoption level and impact of weed management technologies in rice and wheat: Evidence from farmers of India
P.K. Singh and Yogita Gharde

Integrated weed management in elephant foot yam
J. Suresh Kumar, S. Sunitha, J. Sreekumar M. Nedunchezhiyan, K. Mamatha, Biswajith Das, S. Sengupta, P.R. Kamalkumaran, Surajit Mitra, Jayanta Tarafdar, V. Damodaran, R.S. Singh, Ashish Narayan, Rabindra Prasad, Pradnya Gudadhe, Ravinder Singh, K. Desai and B. Srikanth

Bio-efficacy of bentazone 48% SL as post-emergence against weeds in direct-seeded rice
Aparna Sharma, K.K. Agrawal, J.K. Sharma and A.K. Jha

Biology and phenology of predominant weed species in lowland rice ecosystems
M. Jayakumar, M. Rajavel and U. Surendran

Weed management through rice straw mulching and herbicide use in maize
Ramandeep Kaur, Charanjeet Kaur and Tarundeep Kaur

On-farm assessment of conservation tillage for wheat planting in rice-wheat cropping system
Shailendra Singh Kushwah, B.S. Kasana and S.S. Bhadauria

Integrated weed management in altered crop geometry of irrigated maize and residual effects on succeeding Bengal gram
K. Sathyapriya and C. Chinnusamy

Screening of herbicides for broomrape (Orobanche) control in mustard
S.P. Singh, R.S. Yadav, A.S. Godara and R.C. Bairwa

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

1. **Dr. Eligeti Rajanikanth**
   PJTSAU, Hyderabad, Telangana
2. **Mr. D. Anil**
   PJTSAU, Hyderabad, Telangana
3. **Dr. Revathi Marimuthu**
   TNAU, Thiruvannamalai, Tamil Nadu
4. **Dr. Sapna Bhagat**
   Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu
5. **Dr. Pritam Ghosh**
   Institute of Agriculture, Visva-Bharati, Bolpur, West Bengal
6. **Dr. Kalipada Pramanik**
   Institute of Agriculture, Visva-Bharati, Bolpur, West Bengal
7. **Dr. Veeresh Hatti**
   Sardarkrushinagar D. Agricultural University, Sardarkrushinagar, Gujarat
8. **Dr. Arun Tripathi**
   Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh
9. **Dr. M.P. Kavitha**
   Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu
10. **Miss. Sunita Meher**
    Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh
11. **Miss. Subhra Sahoo**
    Dr. Rajendra Prasad Central Agricultural University, Bihar
12. **Miss. Banashri Lodh**
    Orissa University of Agri. and Technology, Bhubaneswar, Odisha
13. **Dr. T. Kiran Kumar**
    ICAR- Central Tobacco Research Institute, Rajahmundry, AP
14. **Dr. Lalita Rana**
    Dr Rajendra Prasad Central Agricultural University
15. **Dr. Akhilesh Kumar Patel**
    ICAR--Directorate of Weed Research, Jabalpur, Madhya Pradesh
16. **Dr. Teekam Singh**
    ICAR-Indian Agricultural Research Institute, New Delhi
17. **Dr. K. Sreelakshmi**
    Assistant Professor AICRP on Weed Control, Thrissur, Kerala
18. **Miss. Meshenji Apon**
    Nagaland university, Medziphema, Nagaland
19. **Miss. Sibino Dolie**
    Medziphema Town, Dimapur, Nagaland
20. **Mr. Koushik Sar**
    Visva-Bharati, Bolpur, West Bengal
21. **Dr. Uday Kumar**
    Veer Kunwar Singh College of Agriculture, BAU, Sabour, Buxar Bihar
22. **Dr. Ramesh Chand Bairwa**
    Swami Keshwanand Rajasthan Agri. University, Bikaner, Rajasthan

News and upcoming events

Ministry of Agriculture and Farmers Welfare proposed 27 insecticides and herbicides ban in India

(http://agricoop.nic.in/sites/default/files/Notification.pdf)

The Central Government in the erstwhile Ministry of Agriculture, Department of Agriculture and Cooperation constituted an Expert Committee on 8th July, 2013 to examine the continued use of or otherwise of neo-nicotinoid insecticides registered in India. The mandate of the Committee, on 19th August, 2013, was further expanded to review Sixty-Six insecticides which are banned or restricted or withdrawn in other countries but continue to be registered for domestic use in India. The committee after detailed examination submitted its report to the Central Government on the 9th December, 2015. The said Expert Committee has recommended continuing the use of the twenty-seven insecticides as specified in the schedule to this notification and the same to be reviewed after completion of the recommended studies; this was considered by Registration Committee and submitted recommendations to the Government. The Department had issued order dated 14th October 2016, conveying the approval for implementation of the recommendations of the Registration Committee. The Central Government, after consultation with the Registration Committee and duly considering their report with regards to status of submission of recommended studies, data and safety concerns, is satisfied that the use of twenty seven insecticides and herbicides as specified in the schedule to this notification are likely to involve risk to human being and animals as to render it expedient or necessary to take immediate action. The Draft Order shall be taken into consideration after the expiry of a period of forty-five days from the date on which the copies of the Gazette of India containing this Order are made available to the public. Any objection or suggestion which may be received from any person in respect of the said draft Order before the expiry of the aforesaid period of forty-five days will be considered by the Central Government. If the draft becomes order, it will ban the use of the following insecticides and herbicides.

Acephate, Atrazine, Benfuracarb, Butachlor, Captan, Carbendazim, Carbofuran, Chlorpyriphos, 2,4-D, Deltamethrin, Dicofol, Dimethoate, Dinocap, Diuron, Malathion, Mancozeb, Methomyl, Monocrotophos, Oxyfluorfen, Pendimethalin, Quinalphos, Sulfosulfuron, Thiodicarb, Thiophanat emethyl, Thiram, Zineb, Ziram.

Draft order for restriction on use of glyphosate

(http://egazette.nic.in/WriteReadData/2020/220420.pdf)

The Central Government, after considering the report of the State Government of Kerala and after consultation with the Registration Committee set up under the Insecticides Act, 1968 (46 of 1968), proposes to make, the Draft Order, in exercise of the powers conferred by sub-section 2 of Section 27 of the Insecticides Act, 1968 (46 of 1968) and is hereby published for information of all persons likely to be affected thereby and notice is hereby given that the said draft order shall be taken into consideration after the expiry of a period of thirty days from the date on which the copies of the Gazette of India containing this Order are make available to the public. Any objection or suggestion which may be received from any person in respect of the said draft Order before the expiry of the aforesaid period of thirty days will be considered by the Central Government.

The important clause in the draft order

- No person shall use Glyphosate except through Pest Control Operators.
- All the holders of certificate of registration granted for Glyphosate and its derivatives shall return the certificate of registration to the Registration Committee for incorporation of the warning in bold letters "THE USE OF GLYPHOSATE FORMULATION TO BE ALLOWED THROUGH PEST CONTROL OPERATORS (PCOs)" on the label and leaflets.

Net farm income would drop with glyphosate ban

Speaking at the 71st Annual Crop Protection School in Smithfield, N.C., on December 4, 2019, Travis Gannon, Associate Professor of Pesticide Fate and Behavior at North Carolina State University, stressed that he expects the herbicide to remain available to farmers. But glyphosate has received a great deal of attention lately due to lawsuits in California, where juries have awarded damages to plaintiffs who claim exposure to the herbicide caused their non-Hodgkin's lymphoma. At issue is a 2015 finding by the International Association for Research on Cancer (IARC), a subsidiary of the World Health Organization that released a study which found glyphosate to be a "2a possible carcinogen". Gannon said the IARC finding flies in the face of those by the U.S. EPA, European Food Safety Authority and other pesticide regulatory agencies worldwide that say glyphosate is not a cancer risk to humans at the levels which they are

currently exposed. He also said it is important to remember that the EPA and European Food Safety Authority both use a risk assessment of field relevant doses or field relevant concentrations of pesticide levels that people may be exposed. IARC, on the other hand, uses a hazard assessment where a compound may be considered a probable carcinogen if there is any concentration that may cause a possible concern. No pesticide regulatory authority in the world currently considers glyphosate to be carcinogenic to humans at field relevant doses. IARC finding is an outlier from all other findings by regulatory bodies that show glyphosate is safe when used according to the label. Gannon said the best way to mitigate risks associated with pesticide use is to always follow the label. (http://wssa.net/2019/12/net-farm-income-would-drop-with-glyphosate-ban/).

Thailand bans use of paraquat, farm chemicals

Thailand's government has agreed to ban the use of three farming chemicals widely regarded as dangerous to human health. The government's National Hazardous Substances Committee voted to put the herbicides paraquat and glyphosate and the insecticide chlorpyrifos in the category of banned chemicals, automatically barring their use under existing law. The ban, proposed by the Agriculture Ministry, had met with strong opposition from some farmers groups and academics, who argued that the chemicals were not unacceptably dangerous and banning their use would drive up farmers' costs significantly. Deputy Prime Minister and Minister of Public Health said that he would resign if the chemicals are not banned. The European Union has banned its use, but it is still popular in many countries. In Southeast Asia, paraquat was banned by Vietnam in 2017, and Malaysia in March, 2019 announced a total ban on paraquat starting January 1, 2020. (http://wssa.net/2019/10/thailand-bans-use-of-paraquat-farm-chemicals/)

8th International Weed Science Congress (IWSC 2020)

In view of declaration of World Health Organization COVID-19 as a Global Pandemic, 8th International Weed Science Congress (IWSC 2020) has been postponed to December 5-10, 2021)

8th International Weed Science Congress (IWSC 2020) will be hosted by the Weed Science Society of Thailand (WSST) and the International Weed Science Society (IWSS) in **Bangkok, from 5-10 December 2021**. The theme of the IWSC 2020 will be "***Weed Science in a Climate of change***". The congress will consist of outstanding plenary lectures, concurrent lecture and poster sessions on 14 main topics, namely, herbicide resistance, weed biology and ecology, integrated weed management, climate aspects of weed science, non-chemical weed control, application technology, economic and social aspects of weed management, invasive and parasitic plant species, environmental fate of herbicides, physiology of plants and herbicide interaction, weed issues in Asia, new technology of weed management, weed "omics" and modeling. Besides the scientific program, five different excursions are also provided according to personal interest of participants. (https://www.iwsc2020.com/iwsc-2020-main-topics).

10th International IPM Symposium

15-18 March, 2021; Venue: Sheraton Denver Downtown Hotel, Denver, CO, USA. **(https://ipmsymposium.org/2021/)**

Paasitorni Conference Centre, Helsinki, Finland, 28/06/2021 01/07/2021

The first International Plant Health Conference will be convened in Helsinki on 28 June - 1 July 2021 on the theme "Protecting Plant Health in a Changing World". Hosted by the government of Finland, the Conference will be one of the key events of the International Year of Plant Health.

For the first time, a forum will discuss global scientific, technical and regulatory plant health issues and at the same time advocate plant health issues to the media and public.

The following four themes will be discussed in a series of workshops, scientific and regulatory symposia and side events:

- Plant health and international trade
- The potential of plant health to contribute to a hunger-free world
- Plant health's contribution to climate action and the preservation of life on land
- Plant health and development

The conference aims to attract participants at a scientific, technical and regulatory level, in addition to a general audience of concerned citizens. Registration will open soon.

(http://www.fao.org/plant-health-2020/IPHC)
(http://www.fao.org/plant-health-2020/)

22nd Australasian Weeds Conference (22AWC)

The Weed Management Society of South Australia (WMSSA) with the support of Council of Australasian Weeds Societies Inc. (CAWS) have decided to postpone the 22nd Australasian Weeds Conference (22AWC) due to the COVID-19 Coronavirus pandemic.

The WMSSA and CAWS look forward to co-hosting the event next year and are excited to announce a new date at our venue Adelaide Oval on 10-13 October 2021.

(https://wmssa.org.au/22awc/)

Editorial

Dear Reader,

Greetings to you

We have all fully realized the publications made by our esteemed society as wealth in which efforts of every member are being unlocked while projecting their research achievements in public domain. Besides main publication of our journal, newsletter in nutshell highlights the emerging issues and current challenges in the field of weed science. It is my privilege to reach out to all the members as well as whole fraternity of weed science for their contribution which could embrace our newsletter into new horizons. Suggestions from the members are always welcome in this regard.

For you, hard work has been executed to bring up an exhilarating flashback of the ISWS biennial conference on the theme of '*Weed management for enhancing farmers' income and food security'* held during 5-7 February, 2020 at ICAR-Central Coastal Agricultural Research Institute, Goa.

Though the year has started with full of enjoyment, commitment and dedication, the latter half has thrown enormous challenges for the entire human race. We are hit hard by the COVID-19 pandemic and though our backs are to the walls, we have found the ways to adapt and are progressing steadily towards building New India-self-reliant India, which has been envisaged by Hon'ble Prime Minister. Stay safe and healthy.

Last but not least I express my immense pleasure and lovable thanks to all the members who contributed for the issue of newsletter.

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:

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