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Azadi Ka  
Amrit Mahotsav

# PROGRAMME

## 3<sup>rd</sup> International Weed Conference

Anand Agricultural University, Anand, Gujarat, INDIA

20-23 December, 2022



Supported by



## Organizers

Indian Society of Weed Science  
Anand Agricultural University  
ICAR - Directorate of Weed Research





## 3<sup>rd</sup> International Weed Conference

(December 21: Day 2)

	Main Hall	Conference Hall 1	Conference Hall 2	Exhibition Hall	Food area	Reception		
	8:30							
9:00					Breakfast	8:30-9:30 Registration	9:00	
9:30	Plenary Presentation	<b>9:30-10:10</b> Plenary Lecture 3 <b>Dr RK Malik</b>					9:30	
10:00		<b>10:10-10:50</b> Plenary Lecture 4 <b>Dr Shoumo Mitra</b>					10:00	
10:30							10:30	
11:00				Poster Session Tea			11:00	
11:15	Technical Sessions 4	Technical Sessions 5	Technical Sessions 6				11:15	
12:00								12:00
12:30								12:30
13:00							13:00	
13:15				Poster Session	Lunch		13:15	
14:00	Plenary Presentation	<b>14:00-14:40</b> Plenary Lecture 5: <b>Dr RM Kathiresan</b>					14:00	
14:30		<b>14:40-15:20</b> Plenary Lecture 6: <b>Dr BS Chauhan</b>					14:30	
15:00							15:00	
15:30				Poster Session Tea			15:30	
15:45	Technical Sessions 7	Technical Sessions 8	Technical Sessions 9				15:45	
16:00								16:00
16:30								16:30
17:00							17:00	
17:30							17:30	
18:00				Poster Session Tea			18:00	
18:30	Cultural Programme						18:30	
19:00							19:00	
19:30					Dinner		19:30	
20:00						20:00		
20:30						20:30		

## 3<sup>rd</sup> International Weed Conference

(December 22: Day 3)

	Main Hall		Exhibition Hall	Food area	Reception			
	Conference Hall 1	Conference Hall 2						
8:30					8:30			
9:00	<div style="border: 2px solid orange; border-radius: 15px; padding: 10px; margin: 0 auto; width: 80%;"> <p style="text-align: center;"><b>9:30-10:15</b> Plenary Lecture 7 <b>Dr NT Yaduraju</b></p> <p style="text-align: center;"><b>10:15-11:00</b> Plenary Lecture 8 <b>Dr Samunder Singh</b></p> </div>			Breakfast	9:00			
9:30			Plenary Presentation			9:30		
10:00						10:00		
10:30					10:30			
11:00			Poster Session Tea		11:00			
11:15	<b>Technical Sessions 10</b>	<b>Technical Sessions 11</b>	<b>Technical Sessions 12</b>		11:30			
12:00						12:00		
12:30							12:30	
13:00						Poster Session Tea	Lunch	13:00
13:30							13:30	
14:00							14:00	
14:30					14:30			
15:00					15:30			
15:15	Mahesh K. Upadhaya Award Lecture	<div style="border: 2px solid orange; border-radius: 15px; padding: 10px; margin: 0 auto; width: 80%;"> <p style="text-align: center;"><b>11:30-12:00</b> <b>Mahesh K. Upadhaya Award Lecture</b> by Dr <b>Martin P Hill</b></p> </div>		Certificate distribution	15:15			
16:00			Poster Session Tea		16:00			
16:30	Closing ceremony Vote of Thanks				16:30			
17:00					17:00			
17:30				High Tea	Certificate distribution	17:30		
18:00					18:00			
19:00					19:00			
20:00				Dinner	20:00			
21:00					21:00			

# Programme

## 3<sup>rd</sup> International Weed Conference

“Weed problems and management challenges: Future perspectives”  
20-23 December, 2022, Anand Agriculture University, Anand, Gujarat, India

**TUESDAY, DECEMBER 20, 2022**

**Venue: Main Hall**

**Date/(time): 20/12/2022 (9:30-11:00)**

### INAUGURAL SESSION

Welcome address:

Presidential address: **Convenor, 3rd IWC**

Release of books by dignitaries:

ISWS Award announcement by **Secretary, ISWS**

Address by **Local Organizing Chairman, 3rd IWC**

Address by: **Guest of Honour**

Address by **Chief Guests**

Vote of thanks: **Local organizing Secretary, 3rd IWC**

### High Tea and Poster Sessions

**Date/(time): 20/12/2022 (11:00-11:30)**

**Venue: Main Hall**

**Date/(time): 20/12/2022 (11:30-13:45)**

Chair: **Dr KB Kathiria**

Co-chairman: **Dr C Chinnamuthu**

Rapporteur: **Dr VK Choudhary & Dr P Murali Arthanari**

*Ensuring food security at global Level: Role of weed science*

**Dr T Mohapatra**

*Keynote lecture*

*Allelopathy utilization for weed control: Challenges and perspectives*

**Dr Prasanta Bhowmik**

*Plenary lecture*

*Bioavailability of allelochemicals in soil environment under climate change: Challenges and Perspectives*

**Dr Yoshiharu FUJII**

*Plenary lecture*

Discussion and concluding remarks by Chair

### Lunch/Posters

**Date/(time): 20/12/2022 (13:45-14:30)**

## TECHNICAL SESSIONS

(Concurrent Sessions in Main Hall, Hall 1 and Hall 2)

Venue: Main Hall

Date/(time): 20/12/2022 (14:30-17:30)

**TECHNICAL SESSION 1:** New ways to deal with weeds, *i.e.* new technologies

Chair: **Dr BS Chauhan**

Rapporteur: **Dr Todar Mal Poonia & Dr Fayaz Ahmed Bahar**

*Application of digital technologies for weed detection and precision management*

**Dr Muthu Bagavathiannan**

**Lead lecture**

*Monitoring of water hyacinth spread using remote sensing techniques:  
Challenges and future developments*

**Dr Aviraj Datta**

**Lead lecture**

*Plant water extracts for organic weed management in groundnut*

**Dr Doddaga Subramanyam**

**Invited oral lecture**

*Robotic concept derived fuzzy logic based inter cum intra row weeder for wider row crops*

**Dr Satya Prakash Kumar**

*Sensor based pre-emergence herbicide application system for seed drills and planters*

**Dr CR Chethan**

**Tea break (15 minutes)**

*WEEDS: A Decision Support System (DSS) for guiding integrated weed management across multiple regions*

**Mr Purushottam Gyawali**

*Allelopathy-based biosynthesized silver nanoparticles for the management of water hyacinth*

**Dr VS Susha**

*A high-clearance self-propelled machine for simultaneous intra-chemical and inter-mechanical weeding in tall field crops: Development and evaluation*

**Dr Ajay Kumar Roul**

*Nano Atrazine synthesis and application for ecofriendly weed control in maize*

**Dr Nitin Gudadhe**

*Microencapsulation of pyrazosulfuron-ethyl and diclosulam in polymeric systems for prolonged and improved weed control efficiency*

**Dr Marimuthu Subramanian**

*Artificial intelligence based WeedBot for weed identification and removal in dense fields*

**Mrs Justina Michael**

*Nanof ormulation of Eucalyptus citriodora essential oil for the control of weeds*

**Miss N Swathika**

Discussion and concluding remarks by Chair

**TECHNICAL SESSION 2: Weed management in cereals-based cropping system**

Chair: **Dr Virender Kumar**

Rapporteur: **Dr Debika Nongmaithem & Dr Ramphool Puniya**

*Weed management in conservation agriculture: Challenges and perspective*

**Dr TK Das**

**Lead lecture**

*Can conservation agriculture practices help in sustainable weed management??*

**Dr Udai Pratap Singh**

**Lead lecture**

*Bio-efficacy of Carfentrazone-ethyl 40% DF against broad leaved weeds in wheat and their residual effect on succeeding soybean*

**Dr Mewa Lal Kewat**

*Drip irrigation and mulching reduces weed interference in spring maize*

**Dr Simerjeet Kaur**

*Response of weed management on growth, yield and yield attributes of Kharif maize*

**Dr Kiran Jadhav**

*Weed indices and yield of maize as influenced by different weed management practices*

**Dr B Sandhya Rani**

**Tea break (15 minutes)**

*Effect of pre- and post-emergence herbicides on control of weeds in irrigated maize*

**Dr Prabu Kumar Ganasekaran**

*Optimizing pre-emergence herbicide dose, methods and time of post-emergence weed management practices for maximizing irrigated maize productivity*

**Dr Senthivelu Muniyandi**

*Evaluation of different weed management practices on yield attributes and yield of maize*

**Dr S Manimaran**

*Mateno Duo TM – A novel herbicide for wheat growers of India to manage hard to kill weeds*

**Mr N Prem Kumar**

*Impact of drought stress on herbicide efficacy and biochemical traits of wheat*

**Dr Dasari Sreekanth**

*Weed interference and crop yield under a conservation agriculture-based maize-wheat-mungbean system*

**Dr Sonaka Ghosh**

*Ensuing economic benefits through use of different weed management treatments in Rabi sorghum-green gram*

**Dr Swapnil Deshmukh**

*Tillage and weed management practices on weed prevalence, crop productivity and economics in maize under maize-chickpea-green gram cropping system*

**Dr Muni Pratap Sahu**

*Effect of herbicide mixtures and nano-urea on weeds and productivity of wheat*

**Mr Ayan Sarkar**

*Weed dynamics and management in wheat in relation with different sowing times and rice residue management systems*

**Dr Ramanpreet Kaur**

*Integrated weed management in wheat*

**Mr Deepak Loura**

Discussion and concluding remarks by Chair

**Venue: Hall 2**

**Date/(time): 20/12/2022 (14:30-17:30)**

**TECHNICAL SESSION 3: Weed management in oilseeds and vegetable crops**

Chair: **Dr TV Ramchandra Prasad**

Rapporteur: **Dr Rakesh Kumar & Dr Deepak Pawar**

*Weed management in Vegetable crops: problems and perspectives*

**Dr DD Patel**

**Lead lecture**

*Efficacy of different weed management practices on weed control and yield of Kharif groundnut*

**Dr Arvind Verma**

**Invited oral lecture**

*Long term effect of tillage and weed management on weed dynamics and productivity of yellow sarson and greengram under direct seeded rice-yellow sarson -greengram cropping system*

**Dr B Duary**

**Invited oral lecture**

*Post-emergence application of Imazethapyr 10 SL on soybean and its residual toxicity effect on performance of succeeding crops in transitional tract of Dharwad, Karnataka*

**Dr JA Hosmath**

*Integrated Weed management in Indian mustard*

**Dr Rabiratna Dash**

**Tea break (15 minutes)**

*Effect of integrated weed management practices on growth and yield of mustard*

**Dr Tushar Thorat**

*Effect of Different Weed Management Practices on Yield and Economics of Mustard*

**Dr Samatha Parameswari Yasa**

*Evaluation of chemical cum mechanical weed Management – A way to reduce chemical usage in sunflower*

**Dr Selvakumar Thambiyannan**

*Effect of integrated weed management and organic manures in sunflower*

**Miss Kimdeiting Haokip**

*Evaluation of bio-efficacy of different herbicides on weeds and their impact on fresh fruit bunch (FFB) yield of oil palm*

**Dr Sanjeevraddi Reddi**

*Management of complex weed flora in onion*

**Dr VJ Patel**

*Effect of different weed management options in vegetable pea*

**Dr Ramanjit Kaur**

*Weed management under conservation agriculture in vegetable-based cropping system*

**Dr. Raghwendra Singh**

Discussion and concluding remarks by Chair

**POSTERS/Tea**      **Date/(time): 20/12/2022 (17:30-18:00)**

**General Body Meeting of ISWS**      **Date/(time): 20/12/2022 (18:00-19:00)**

**Gala Dinner (Sponsored by AAU, Anand)**      **Date/(time): 20/12/2022 (19:00-21:00)**

## **Wednesday, December 21, 2022**

**Venue: Main Hall**      **Date/(time): 21/12/2022 (9:30-11:00)**

**Chair: Dr NT Yaduraju**

**Co-Chair: Dr TK Das**

**Rapporteur: Dr PK Mukherjee & Dr Malay K Bhowmick**

*Sustainable weed management in rice-wheat systems: Myth and reality*

**Dr RK Malik**

*Plenary lecture*

*Current herbicide development scenario: Need to launch reduced risk herbicides*

**Dr Shoumo Mitra**

*Plenary lecture*

Discussion and concluding remarks by Chair

**POSTERS/Tea**      **Date/(time): 21/12/2022 (11:00-11:15)**

## TECHNICAL SESSIONS

(Concurrent Sessions in Main Hall, Hall 1 and Hall 2)

Venue: Main Hall

Date/(time): 21/12/2022 (11:15-13:15)

**TECHNICAL SESSION 4:** Herbicide residues, monitoring, mitigation and effect on non-target organisms in weed management

Chair: **Dr Samunder Singh**

Rapporteurs: **Dr Yogita Gharde & Dr Mini Abraham**

*Herbicides residues in soil, water and plants: Mitigation challenges and the future perspectives*

**Dr A Ramesh**

**Lead lecture**

*Pesticide residue analysis challenges: An overview*

**Dr Neelam Sharma**

**Invited oral lecture**

*Determination of ready-mix herbicides residue in soybean cultivated tropical inceptisol*

**Dr P Janaki**

**Invited oral lecture**

*Impact of post-emergence herbicides on soil micro flora In transplanted rice*

**Dr P Sudhakar**

*Bioremediation of Pretilachlor by bacterial consortia from polluted soils of Assam*

**Dr Kaberi Mahanta**

*Residues and persistence of pendimethalin 38.7% CS in chickpea*

**Dr Kaushikkumar Parmar**

*Effect of herbicide on soil biochemical properties under varying level of crop, nutrient and herbicide dose in wheat under vertisols of Central India*

**Dr Dibakar Roy**

*Residue status of diclosulam 84% WG in soybean*

**Dr Nitesh Litoriya**

*Cereal rye residue effects on the germination of troublesome weeds in the Southern United States*

**Miss Annu Kumari**

*Weed dynamics and atraine residue in green fodder and silage of spring maize (Zea mays L.) grown under different cropping systems in north-west India*

**Mr Navjot Brar**

*Residue status of pre-emergence application of pendimethalin in cumin and soil of bhal region of middle Gujarat*

**Mr NR Chauhan**

Discussion and concluding remarks by Chair

Venue: Hall 1

Date/(time): 21/12/2022 (11:15-13:15)

**TECHNICAL SESSION 5:** Non-chemical weed management including biological control

Chair: **Dr Mahesh K Upadhayaya**

Rapporteur: **Dr CR Chethan & Dr Rishi Raj**

*Botanical herbicides for eco-friendly weed management and sustainability of smallholder farming*

**Dr RK Ghosh**

**Lead lecture**

*Bio efficacy of mycoherbicides against alien invasive weeds Parthenium, Lantana and Water hyacinth: Commercialization perspectives*

**Dr Ajay Kumar Singh**

**Lead lecture**

*Weed management in organic farming – A review*

**Dr Ravikant R Upasani**

**Invited oral lecture**

*Weed management under organic production system of rice-vegetable pea-sweet corn cropping system*

**Dr Shailendra Pratap Singh**

*Mulch based weed management strategies in organic baby Corn-Cabbage cropping system*

**Dr Bhimireddy Padmaja**

*Weed management in soybean-gram sequence in organic production under irrigated condition*

**Dr Asha Chavan**

*Evaluation of phyto-extracts for weed management in sweet corn under organic production*

**Mr Kiran Emmiganur**

*The mycobiota associated with the weed water hyacinth *Pontederia crassipes* in Kolkata, India, with prominence on biological control of the macrophyte*

**Dr Writuparna Dutta**

Discussion and concluding remarks by Chair

**Venue: Hall 2**

**Date/(time): 21/12/2022 (11:15-13:15)**

#### **TECHNICAL SESSION 6: Weed management in pulses**

Chair: **Dr LS Brar**

Rapporteur: **Dr Simerjeet Kaur & Dr Sheela Barla**

*Weed management in pulse crops: challenges and opportunities*

**Dr Narendra Kumar**

**Lead lecture**

*Weed dynamics, weed control efficiency, yield attributes and yields of chickpea in response to pre- and post- emergence application of herbicides*

**Dr Dinesh Sah**

**Invited oral lecture**

*Post-emergence herbicides for weed management in greengram*

**Dr Tej Pratap**

**Invited oral lecture**

*Response of weed dynamics, growth and yield of mungbean to different post-emergence herbicides*

**Dr ML Mehriya**

*Effect of integrated weed management on weed dynamics in blackgram*

**Dr Lanunola Tzudir**

*Effect of integrated weed management practices on weed dynamics and productivity of long duration pigeonpea*

**Dr Indubhushan Pandey**

*Weed management in pigeonpea + greengram cropping system*

**Dr N Ananda**

*Weed Management for major rabi crops (Wheat, chickpea and coriander) of Saurashtra Region-Gujarat*

**Dr BS Gohil**

*Selection of herbicides on weed control in greengram cultivation in Bangladesh*

**Dr Md. Omar Ali**

Discussion and concluding remarks by Chair

**Lunch/Posters**

**Date/(time): 21/12/2022 (13:15-14:00)**

**Venue: Main Hall**

**Date/(time): 21/12/2022 (14:00-15:30)**

Chair: **Dr RK Malik**

Co-Chair: **Dr RK Ghosh**

Rapporteur: **Dr Mukesh Kumar & Dr P Saravanane**

*Increasing problems of alien invasive weeds in the world: Management challenges and future perspectives*

**Dr RM Kathiresan**

*Plenary lecture*

*Weed biology and ecology: an important science to make strategies for weed management*

**Dr BS Chauhan**

*Plenary lecture*

Discussion and concluding remarks by Chair

**High Tea and Poster Sessions**

**Date/(time): 21/12/2022 (15:30-15:45)**

## **TECHNICAL SESSIONS**

**(Concurrent Sessions in Main Hall, Hall 1 and Hall 2)**

**Venue: Main Hall**

**Date/(time): 21/12/2022 (15:45-18:00)**

**TECHNICAL SESSION 7: Weed management in rice-based cropping system**

Chair: **Dr AN Rao**

Rapporteur: **Dr Bhimireddy Padmaja & Dr Kaberi Mahanta**

*Weed Management in smallholder rice production in Asia: Challenges and Opportunities*

**Dr Virender Kumar**

**Lead lecture**

*Sustainability in rice ecosystem with Direct-Seeded Rice and emerging opportunity of carbon farming*

**Dr Pardeep Kumar**

**Lead lecture**

*Herbicide mixtures in rice*

**Dr Atluri S Rao**

**Invited oral lecture**

*Crop diversification and residue mulching for weed management in rice-wheat cropping system*

**Dr Manoj Kumar Singh**

**Invited oral lecture**

*Weed management in direct seeded rice*

**Dr MT Sanjay**

*Managing weeds with competitive varieties in upland direct seeded autumn rice in Assam*

**Dr Iswar Chandra Barua**

*Impact of tillage and weed management options on soil quality in rice-maize-Sesbania cropping system under conservation agriculture*

**Dr Ramprakash Tata**

*Harnessing potentials of weed-competitive rice cultivars under direct-seeded conditions*

**Dr Malay K Bhowmick**

*Weed competitive ability and crop productivity of rice cultivars as influenced by weed management practices under transplanted condition*

**Dr Rakesh Kumar**

*Tillage, residue and herbicides effects on weed and nematode dynamics, herbicide residue and productivity in a long-term CA-based direct-seeded rice*

**Dr Rishi Raj**

*Response of black rice to date of transplanting and integrated weed management under SRI*

**Dr Debika Nongmaithem**

*Bio-efficacy of tank mixed herbicides with urea in wet seeded rice*

**Dr Thumu Venkateswara Reddy**

*Evaluation of suitable weed management practices for semi-dry rice*

**Dr Y Sreeja**

*Influence of integrated nutrient and weed management on yield and weed dynamics of semi dry rice*

**Dr Kesipeddy Naganjali**

*Management of complex weed flora of dry direct-seeded rice with sequential use of herbicides under different tillage practices in eastern India*

**Mr Deepak Kumar Jaiswal**

Discussion and concluding remarks by Chair

**TECHNICAL SESSION 8:** Herbicide resistance in weeds, herbicide tolerant crops and weed utilizationChair: **Dr RM Kathiresan**Rapporteur: **Dr Dasari Sreekanth & Dr Sonaka Ghosh**

*Pollen-mediated gene flow and transfer of herbicide-resistant alleles from herbicide-resistant to susceptible weeds*

**Dr Amit J Jhala****Lead lecture**

*Pros and Cons of Herbicide Tolerant Crops in Indian Agriculture*

**Dr C Chinnusamy****Lead lecture**

*People Participatory Model for Value Addition & Utilization of Invasive Aquatic Weeds, with special reference to Water Hyacinth*

**Dr G Nagendra Prabhu****Lead lecture**

*Performance of weedy plants in decentralized constructed wetland systems and their potential of post-harvest biomass utilization for bio-energy production*

**Dr PJ Khankhane****Invited oral lecture**

*Performance of imazethapyr doses and sequences against weeds in imidazolinone-tolerant dry direct seeded rice*

**Dr Dharam Bir Yadav****Invited oral lecture**

*Studies on the molecular basis of Imazethapyr resistance in Commelina spp. and Echinochloa colona*

**Dr Deepak Pawar**

*Management of resistant Phalaris minor in wheat in north-western Indo-Gangetic Plains of India*

**Dr Todar Mal Poonia**

*Impact of various Depth of planting and Salvinia molesta compost on rice*

**Dr P Anandan**

*Investigations on herbicide resistance in Echinochloa colona and their management strategies under direct seeded rice*

**Mr Kommireddy Poojitha**

*Decontamination of heavy metal polluted environment utilizing a wide spread invasive taxa Prosopis juliflora in Southern India*

**Mr Akil Prasath RV**

Discussion and concluding remarks by Chair

**Venue: Hall 2**

**Date/(time): 21/12/2022 (15:45-18:00)**

**TECHNICAL SESSION 9:** An industry perspective on weed management strategies for sustainable agriculture

Chair: **Dr JS Mishra**, Director, ICAR-DWR

Rapporteur: **Partha Baruah & Sunil Kumar**

**Dr Mayank Yadav**, Convenor, Introduction to the session (verbal)

*Drone Application Technology: A new paradigm and opportunities for Weed Management*

**Mr Rajvir Rathi**, (Director, Public Affairs, Science and Sustainability, Bayer CropScience Ltd.)

Remarks from the experts on Drone Application Technology and its scope in Weed Management (verbal input only- no presentations)

**Dr Anil Kakkar** (Sumitomo)

**Dr Pardeep Kulkarni** (ADAMA)

**Dr N Muthukumar**

**Dr NT Yaduraju**

*Emerging challenges with Herbicide usage in India: Current status and future prospects*

**Mr Rahul Dhanuka** (COO, Dhanuka Agritech Ltd)

Remarks from the experts on current status of herbicide usage in India and future prospects (Verbal input only- no presentations)

**Dr Ajit Kumar** (UPL)

**Dr Chakrdadhar Pal** (PI Industries)

**Dr RK Malik**

**Dr Samunder Singh**

**Dr Shobha Sondhia**

**Brainstorming interaction and Conclusion**

All participants/ Coordinated by Convener

Remarks from the Chair: **Dr JS Mishra**

**POSTERS/Tea**

**Date/(time): 21/12/2022 (18:00-18:30)**

**Cultural programme organized by AAU**

**Date/(time): 21/12/2022 (18:30-19:30)**

**Dinner**

**Date/(time): 21/12/2022 (19:30-21:00)**

## Thursday, December 22, 2022

Venue: Main Hall Date/(time): 22/12/2022 (9:30-11:00)

Chair: Dr Prashant Bhowmick

Co-Chair: Dr Muthu Bagavathiannan

Rapporteur: Dr Doddaga Subramanyam & Dr Manoj Kumar Singh

*GM and non-GM herbicide tolerant crops: current status, challenges and perspectives*

**Dr NT Yaduraju**

*Plenary lecture*

*Do we see the end of chemical weed control soon?*

**Dr Samunder Singh**

*Plenary lecture*

Tea and Poster Sessions

Date/(time): 22/12/2022 (11:00-11:15)

## TECHNICAL SESSIONS

(Concurrent Sessions in Main Hall, Hall 1 and Hall 2)

Venue: Main Hall Date/(time): 22/12/2022 (11:15-15:00)

**TECHNICAL SESSION 10:** Weed biology, ecology and climate change

Chair: Dr C Chinnusamy

Rapporteur: Dr BR Bazaya & Dr Sheeja K Raj

Ecology and management of wild oats under Australian conditions

**Dr Gulshan Mahajan**

**Lead lecture**

Stealing the secrets of weeds: The stress tolerance mechanism and implication for climate resilient agriculture

**Dr Mirza Hasanuzzaman**

**Lead lecture**

*Biology, invasiveness and management of panicum repens Linn. (Family: Poaceae)*

**Dr Jayanta Deka**

**Invited oral lecture**

*Study on emergence pattern of Physalis minima L. under different tillage systems*

**Dr Pijush Kanti Mukherjee**

**Invited oral lecture**

*Ecology of weeds in rice fields: A prerequisite for weed management*

**13:00-14:00 Lunch / Posters**

**Dr Veenapani Dubey**

*Ecology and biology of nutsedge*

**Dr Tushar Patel**

*Comparative study of soil weed seed bank under different cropping systems of northwestern India*

**Dr Fayaz Ahmed Bahar**

*Weed dynamics as affected by different cropping systems in the irrigated midlands of Eastern Region*

**Dr Sanjeev Kumar**

*Effect of irrigation methods and herbicides on weed flora dynamics in direct-seeded rice*

**Dr Ramphool Puniya**

*Correlation and regression analysis of Rabi maize - weed ecosystem*

**Dr GN Motaka**

*Restriction of *Cyperus rotundus* population in turf (*Cynodon dactylon*)*

**Dr Gaurang Patel**

*Germination ecology and influence of length and orientation of stolon fragments on invasiveness of *Alternanthera bettzickiana**

**Mrs Teresa Alex**

*Study on biology of *Echinochloa colona* (L.) Link under direct-seeded rice*

**Miss Sonali Singh**

*Allelopathic effect of aqueous root leachates of *Echinochloa colonum* (L.) Link on seed germination and seedling growth of rice*

**Mrs Pooja Pandey**

*Weed flora shift and wheat competitiveness under nitrogen levels*

**Mrs Shanti Devi Bamboriya**

Discussion and concluding remarks by Chair

**Venue: Hall 1**

**Date/(time): 22/12/2022 (11:15-15:00)**

**TECHNICAL SESSION 11:** Weed management in cash crops and minor crops

Chair: **Dr AS Rao**

Rapporteur: **Dr Amit Kuamr Jha & Dr Veeresh Hatti**

*Weed management in millets: Challenges and perspectives*

**Dr RP Dubey**

**Lead lecture**

*Weed control efficacy of herbicide mixtures on major weed flora of cotton in Cauvery Command Area of Karnataka*

**Dr SB Yogananda**

**Invited oral lecture**

*Integrated Weed Management in Bt Cotton*

**Dr Vrajdas Usadadia**

*Evaluation of post-emergence herbicide in foxtail millet*

**Dr Kamala Bai**

*Influence of herbicides and agri-horti systems on growth and yield of finger millet under semi-arid condition of eastern Uttar Pradesh*

**Dr Manoj Kumar Singh**

### 13:00-14:00 Lunch / Posters

*Evaluation of bio-efficacy of herbicide, Atrazine 50% WP against major weed species in sugarcane with its phytotoxicity effect on sugarcane and residual effect on the succeeding Cowpea crop*

**Dr Rajendra Hasure**

*Tank mix application of Halosulfuron-methyl and Metribuzin against major weed flora of Sugarcane in Cauvery Command Area of Karnataka*

**Dr P Thimmegowda**

*Non- chemical weed management in fenugreek*

**Dr Roshan Choudhary**

*Effect of herbicides on weed dynamics and yield of finger millet*

**Dr Sheela Barla**

*Weed management in sugarcane through ready-mix post-emergence herbicides*

**Dr Sunilkumar Nooli**

*Integrated Weed Management in Taro*

**Dr Suresh Kumar J**

*Integrated weed management in coriander and residual effect of herbicides on succeeding greengram crop*

**Dr Shaileshbhai Mulchandbhai Patel**

*Weed flora of cotton – A review*

**Dr K Nalini**

*Effect of various weed control treatments on different weed species of Mentha under Punjab Conditions*

**Miss Gurleen Kaur**

*Efficacy of different weed management practices on weed density and seed yield of dill*

**Miss Ruchika Choudhary**

*Weed management in foxtail millet with pre-and post-emergence herbicides*

**Mrs Pokala Sravani**

Discussion and concluding remarks by Chair

**Venue: Hall 2**

**Date/(time): 22/12/2022 (11:15-15:00)**

**TECHNICAL SESSION 12:** Weed threat to biodiversity in forest, wasteland and aquatic ecosystem and socio-economic implications

Chair: **Dr CT Abraham**

Rapporteur: **Dr Tej Pratap & Mr Navjot Brar**

*Need of South Asia Regional Network for Invasive Alien Species (SARNIAS)*

**Dr Bharat B Shrestha**

**Lead lecture**

Weed mediated bioremediation of contaminants of environmental concern using a circular bioeconomy

**Dr Kishore Kumar Krishnani**

**Invited oral lecture**

Management of salvinia (*Salvinia molesta* Mitch.) in rice ecosystem

**Dr P Prameela**

**Invited oral lecture**

**13:00-14:00 Lunch / Posters**

Florpyrauxifen-benzyl for the Management of Aquatic Weeds in Wetland Rice

**Dr Nimmy Jose**

Dragon scale fern (*Pyrrossia* sp.), a problematic epiphyte fern in plantations of Periyar river basin in Kerala

**Dr Mini Abraham**

Does change in carbon dioxide level influence salinity tolerance to *Parthenium*?

**Dr P Saravanane**

Predicting the potential risk of littleseed canarygrass (*Phalaris minor*) in India under future climatic scenarios

**Dr Yogita Gharde**

Evaluating the impact of *Lantana camara* removal on native biodiversity, regeneration status and soil quality in three agro-climatic zones of Chhattisgarh, India

**Mr Ajin Sekhar**

Approaches for Integrated Weed Management System

**Dr Archana Sharma**

Impact of invasive shrub, *Lantana camara*, removal on biological properties of soil in Chhattisgarh Forest

**Dr Himanshu Mahawar**

Trend analysis of production and consumption of key herbicides in India

**Mr A Jamaludheen**

Weed Management Aspects of the United States Turfgrass Industry: Current Scenario and Future Outlook

**Mr Navdeep Godara**

Mapping and habitat affinity of greater club rush in wetland rice fields of Vellayani lake watershed

**P. Gayathri Karthikeyan**

Discussion and concluding remarks by Chair

**Tea and Poster Sessions**

**Date/(time): 22/12/2022 (15:00-15:15)**

**Venue: Main Hall**

**Date/(time): 22/12/2022 (15:15-16:00)**

Chair: **Dr Yoshiharu FUJII**

Co-Chair: **Dr Pratap Singh**

Rapporteur: **Dr MT Sanjay & Dr Amit Jhala**

*Current status of biological control of weeds and future perspectives*

**Dr Martin P Hill** (Mahesh K Upadhaya Award Lecture)

**Plenary lecture**

Discussion and concluding remarks by Chair

**Closing ceremony****Date/(time): 22/12/2022 (16:00-17:00)**

- Presentation of Technical session Reports: Rapporteurs
- Award Certificate to Student Travel Grant by **Dr VK Choudhary**
- Declaration of poster session Awards: **Dr JS Mishra**, Organizing Secretary 3rd IWC
- Remarks: by **Dr Sushilkumar**, Convenor, 3rd IWC
- Address: **Chief Guest**
- Vote of thanks: **Dr JS Mishra**, Organizing Secretary 3rd IWC

**High Tea****Date/(time): 22/12/2022 (17:00-17:30)****Friday, December 23, 2022****Breakfast****Date/(time): 23/12/2022 (8:00-9:00)****FIELD AND 'STATUE OF UNITY' VISITS****Date/(time): 23/12/2022 (9:00-19:00)**

## Poster Presentations

Day/Date	Poster numbers
Day 1: 20 <sup>th</sup> December 2022	P-01-86
Day 2: 21 <sup>st</sup> December 2022	P-87-162
Day 3: 22 <sup>nd</sup> December 2022	P-163-220

Posters should be displayed in the designated area from 9.00 AM to 6.30 PM on the scheduled days only. Kindly note your poster number from the list given in the following pages.

### Guidelines for poster presentations

- 1) Please use the designed 3<sup>rd</sup> International Weed Conference poster template. Make your title short to summarize the message of the research. Keep references to a minimum
- 2) Prepare your poster to fit in dimensions of Width: 75 cm, Height: 100 cm. It is recommended that the poster be printed on one continuous sheet. The dimensions of the poster should not exceed size.
- 3) Make sure to keep a blank circular space to mention the poster number at the upper right corner of your printed poster.
- 4) Poster number has been given in the 'Technical Program' booklet.
- 5) Allocate the top of the poster for the title and authors as stated on the submitted abstract.
- 6) The text, illustrations, *etc.* should be big enough to be read from a distance of two meters. Use just one or two colours on a plain coloured background. Avoid capital letters, except at the beginning of sentences and for proper nouns. Avoid underlining; this implies it is a link to the subject. Use bolder, larger typeface for the main titles and headings. It can be effective to use a different typeface for headings and subheadings. To emphasize body text, use a bold font. Put the conclusions at the bottom of the poster before recreation. Do not use even justification of the column text if there are few words to a line. Be selective in your use of bullet points, perhaps only in the conclusion.
- 7) Materials (such as double-sided tape) will be available for mounting posters.

## TECHNICAL SESSION 1

### New ways to deal with weeds, *i.e.* new technologies

- P-1 Weed interference, wheat productivity, and soil properties under a conservation agriculture-based pigeon pea-wheat system  
*–Tarun Sharma, T.K. Das, Susama Sudhishri, Prabhu Govindasamy, Sunanda Biswas, Pragati Pramanik Maity, Rishi Raj, Suman Sen and Arkaprava Roy*
- P-2 Phytotoxic activity of essential oils and aqueous extract of medicinal and aromatic plants on *Phalaris minor*  
*–Pooja Maurya, Iffat Zareen Ahmad, Priyanka Suryavanshi*
- P-3 CRISPR/Cas9-mediated genome editing: An important tool for development of herbicide resistant crops  
*–Paras, Samunder Singh and Sunil*
- P-4 Nanotechnology in weed science  
*–Bhavik J. Prajapati, K.C. Patel, V.J. Patel and Dileepkumar*
- P-5 Weed management in intensive cropping systems - A review  
*–S.M. Bambhaneeya, Vaishali Surve and S.P. Deshmukh*
- P-6 Mycoherbicides: An ecological and sustainable approach to weed management  
*–Gourav Chahal*
- P-7 Weed preservation technique  
*–S.K. Parmar, B.B. Tandel, R.M. Pankhaniya and V.P. Usadadiya*
- P-8 Deciphering plant growth promotion potential of native atrazine degrading bacteria  
*–H.K. Patel, T.M. Patel, Y.K. Jhala and D.D. Chaudhary*
- P-9 Using nanoparticles to improve the absorption and translocation of glyphosate in purple nutsedge tubers  
*–K. Srimathi and C.R. Chinnamuthu*
- P-10 Nanoencapsulation of herbicide: A new window for protected application  
*–Pooja A. Patel and P.P. Chaudhari*
- P-11 Encapsulated herbicides: A novel approach for efficient and environmentally friendly weed management  
*–P.P. Chaudhari, Pooja A. Patel, Veeresh Hatti*
- P-12 Sustainable approach to weed management: The role of precision weed management  
*–Anju Bijarnia*
- P-13 Nano encapsulated herbicide formulations as a novel method to manage weeds in the rainfed groundnut  
*–S. Swetha, C.R. Chinnamuthu, P. Murali Arthanari, S. Marimuthu, A. Senthil*
- P-14 Multilanguage mobile app (HerbCal) for herbicide calculations  
*–Sandeep Dhagat, V.K. Choudhary, P.K. Singh and Daud Raza Khan*

- P-15 Herbicide resistant crops: significance and future perspectives in innovative agriculture age  
*–Sunita Meher, Sanjoy Saha, Nitish Tiwari, Ashirbachan Mahapatra and Debasis Das*
- P-16 A LC-MS/MS based single laboratory validated method for extraction, clean up and quantification of monomer/cross linker of hydrogel in soil matrix  
*–Harshang Talaviya, Tirthankar Banerjee, Anupama Singh, Neera Singh, Suman Manna*
- P-17 Power Harrow: One of the best alternatives for control of *Commelina spp* infected Soybean field of Malwa region of MP  
*–Jitendra Patidar, M.L. Kewat, Shobha Sondhia, D.S. Sasode and Varsha Gupta*

## TECHNICAL SESSION 2

### Weed management in cereals-based cropping system

- P-18 A review of weed management in India: The need of sustainable weed management  
*–Vaishali Surve, A.D. Raj, Suresh Bambhaneeya and Swapnil Deshmukh*
- P-19 Comparison of the production and weed control efficiency in different rice residue management technologies for wheat  
*–Raminder Kaur Hundal and Bikramjit Singh*
- P-20 Effect of sorghum extract and herbicide on weed dynamics and yield of wheat  
*–Devi Lal Kikraliya, U.N. Shukla and K.K. Bijarnia*
- P-21 Integrated weed management in *Rabi* maize under zero tillage condition  
*–D.K. Roy*
- P-22 Critical period of weed control in *Rabi* maize on heavy black soil of south Gujarat  
*–H.M. Virdia and J.D. Thanki*
- P-23 Influence of spray fluid quality on weed control efficiency of different post-emergence herbicides and growth parameters in *Rabi* maize  
*–K. Bhavitha, K. Suresh, T. Ram Prakash and M. Madhavi*
- P-24 Unified weed management in *Rabi* pop corn  
*–P. Patel and H. N. Chaudhary*
- P-25 Effect of crop establishment methods and weed management practices on weed dynamics, productivity, energy budgeting and soil health in maize-wheat-greengram cropping system  
*–Narendra Kumar, V.K. Choudhary, M.P. Sahu and A.K. Patel*
- P-26 Integrated weed management practices on quality and economics of wheat  
*–Kalyani S Raut, P.P. Pawar, Shubhangi N. Powar and S. M. Dhadge*
- P-27 Tillage and mulch load influences weed severity, system productivity, and root and soil cracks behaviour in rice-wheat-greengram cropping system  
*–V.K. Choudhary, R.P. Dubey, P.K. Singh and J.S. Mishra*

- P-28 Integrated weed management in *Rabi* popcorn with new generation herbicides  
–*H.N. Chaudhary, A.P. Patel, A.N. Chaudhary and R.H. Patel*
- P-29 Organic weed management in major field crops  
–*Narendra Kumar Bhinda and Adarsh Sharma*
- P-30 Bio-efficacy of pinoxaden on weeds and yield of wheat  
–*Raghav Patel, A.K. Jha, Rahul Kumbhare, Badal Verma, Sourabh Raghuwanshi and Indra Raj Yadav*
- P-31 Impact of sustainable weed management practices under varied nutrient management practices in maize  
–*Kadiri Saimaheswari, G. Karuna Sagar, V. Chandrika and P. Sudhakar*
- P-32 Efficacy of herbicides and their combinations on weeds and effect on growth and yield of maize in North-Western Himalayan region of Himachal Pradesh  
–*Gurudev Singh, Vinod Sharma, Sandeep Manuja, and Akashdeep Singh*
- P-33 Organic weed management in sweet corn  
–*Ashish Raja Jangid*
- P-34 Effect of irrigation scheduling on weeds under different sowing dates in wheat in vertisol  
–*Mrinali Gajbhiye, Manish Bhan, K.K. Agrawal*
- P-35 Chemical weed control in barley  
–*Anchal Karol, Ashish Kumar Sharma and Meenakshi Meena*
- P-36 Sole and sequential application of herbicides on weeds and productivity of *Kharif* maize  
–*Gharsiram, Mukesh Kumar, Pradeep Kumar*
- P-37 Weed assessment under different fertilizer and irrigation levels among sowing dates in wheat  
–*K.K. Agrawal, Princy Jain, Manish Bhan*
- P-38 Efficacy of herbicides against complex weed flora in maize  
–*Vikash Kumar, D.R. Patel, Veeresh Hatti, J.R. Patel, D.M. Patel and M.G. Chaudhary*
- P-39 Maize productivity as affected by different crop establishment methods and weed control options in maize-wheat cropping system  
–*Sunil Kumar and Ramanjit Kaur*
- P-40 Effect of integrated weed management on winter season maize  
–*V.G. Bavalgave, V.P. Usdadia, N.N. Gudadhe and M.S. Dudhat*
- P-41 Influence of sustainable weed management practices on growth and yield of maize  
–*R. Chethan, G. Karuna Sagar, B. Sandhya Rani and CH. Bharghava Rami Reddy*
- P-42 Weed management approaches for rice–wheat system  
–*Kajal Verma, U.P. Singh, Anurag Upadhyay and Sitesh Jha*

- P-43 Enhancement of productivity and profitability of wheat with integrated weed management  
*–T. Sudha*
- P-44 Residual herbicidal effect of diuron on succeeding chickpea in maize–chickpea sequence cropping  
*–S. Rajkumara*
- P-45 Effect of 2,4-D Sodium salt 80% WP on weeds, productivity and economics of *Rabi* hybrid maize  
*–Shivam Kumar, Pratik Sanodiya and Sudhir Kumar Rajpoot*
- P-46 Chemical weed management practices on growth and yield of sweet corn  
*–S.C. Wadile, Prashant P. Pawar, B.S. Gunjal, S.M. Dhadge and P.P. Girase*
- P-47 Effect of different herbicides on growth and yield of wheat  
*–Parthendu Poddar, Pratonu Bandyopadhyay and Subhankar Saha*
- P-48 Nutrient uptake by weed and wheat as influenced by different weed management practices  
*–Utkarsh Singh, Anil Kumar Singh, Sudhir Kumar Rajpoot, Tejbal Singh and Vishwa Vijay Raghuvanshi*
- P-49 Chemical weed management in maize and its residual effect of herbicides on succeeding mustard  
*–Sapna Bhagat, Anil Kumar, R. Puniya and Ashu Sharma*

### TECHNICAL SESSION 3

#### Weed management in oilseeds and vegetable crops

- P-50 Effect of herbicides on soil microflora of soybean on vertisol soil under south eastern Rajasthan  
*–Uditi Dhakad, D.L. Yadav, Baldev Ram, R.K. Yadav, Chaman K. Jadon and Pratap Singh*
- P-51 Efficacy of ethalfluralin against weeds in soybean grown in Rajasthan  
*–Pratap Singh, Chaman Kumari Jadon, S.L. Yadav, S.N. Meena and Uditi Dhakad*
- P-52 Effect of weed management practices in soybean-pigeonpea intercropping system and its residual effect on succeeding crops  
*–R.V. Hajari, G.J. Patel and R.G. Machhar*
- P-53 Potential of weed seedbank dynamics and evaluation of some new post-emergence herbicides and their mixtures for weed control in soybean and their residual effect on wheat  
*–V.V. Rupareliya, Y.H. Ghelani, B.S. Gohil and S.R. Asalaliya*
- P-54 Evaluation of herbicides along with bio-stimulant on weed occurrence and economics of soybean under vertisols of Chhattisgarh  
*–Harendra Kumar, Rama Mohan Savu and Nitish Tiwari*

- P-55 Efficacy of various herbicides to manage weeds in soybean  
*–G. Vanisree, V.S. Khawale, Jakku Prasanna, N.D. Parlawar and D.J. Jiotode*
- P-56 Major weeds of soybean and their management in Kota region of Rajasthan  
*–Bharat Lal Meena, D.S. Meena and Gajendra Nagar*
- P-57 Weed dynamics, yield and economics of soybean as affected by integrated nutrient and weed management practices  
*–Meshenji Apon and D. Nongmaithem*
- P-58 Influence of weed management on productivity of soybean in northern India  
*–Rakesh Dawar, Subham Birla and Ramswoop Bana*
- P-59 Effect of ethalfluralin % EC on growth parameters and yield of soybean  
*–Parita, Suresh Kumar, S.S. Rana, Neelam Sharma and Sandeep Manuja*
- P-60 Determining pendimethalin residues in irrigated wheat mulched with soybean residue  
*–Gugulothu Sumitra, S. Rajkumara and Kumar D. Lamani*
- P-61 Bio-efficacy of newer ready-mix herbicides on weed dynamics, soil enzymes, microflora, nodulation activities, nutrient depletion, yield and economics of soybean and their residual effect on succeeding coriander, chickpea and wheat  
*–Uditi Dhakad, Baldev Ram, Chaman K. Jadon, R.K. Yadav, D.L. Yadav, S.L. Yadav and B.K. Patidar*
- P-62 Weed flora in soybean as influenced by weather parameters and weed management practices  
*–S.U. Pawar, R.O. Padre, J.D. Gaikwad and B.V. Asewar*
- P-63 Bio-efficacy of herbicides on weed management in groundnut under rice-groundnut system in coastal zone of Karnataka  
*–Kunal Narwal*
- P-64 Effect of pre- and post-emergence herbicides on weeds and yield of summer groundnut  
*–T.G. Lakshmidivi, V.J. Patel, S.N. Shah and D.D. Chaudhari*
- P-65 Evaluation of suitable herbicides for efficient weed control in irrigated groundnut at Puducherry Region  
*–S. Ravi R. Narasimman and H. Jakir Hussain*
- P-66 Efficacy of pre- and post-emergence herbicides on weed management in groundnut  
*–Priyanka and M.L. Mehriya*
- P-67 Integrated weed management in groundnut  
*–Praveen Kumar Nitharwal, Sunita and Ashish Kumar Sharma, Sarita*
- P-68 Effect of weed management on weed, yield attributes and yield of groundnut  
*–D.M. Patel, J.R. Patel, M.G. Chaudhary, Veeresh Hatti and Vikash Kumar*
- P-69 Efficacy of new herbicide molecules for weed management in groundnut  
*–Veeresh Hatti, Prakash Rabari, V. Kumar, J.R. Patel, D.M. Patel and M.G. Chaudhary*
- P-70 Effect of different weed management practices and fertility levels on weed dynamics in groundnut  
*–Swapnashree Sahoo, Satyananda Jena, Manoranjan Satapathy and J. Mishra*

- P-71 Effect of integrated weed management in linseed under South Gujarat condition  
–*L.J. Desai and P.H. Kalal*
- P-72 Management of chocolate weed (*Melochia corchorifolia* L.) in sesame  
–*Sheeja K Raj, Dhanu Unnikrishnan, D. Jacob and P. Shalini Pillai*
- P-73 Growth, yield and quality of sesame as influenced by nitrogen levels and weed management practices under south Gujarat condition  
–*Harsh A. Kamani, V.G. Bavalgave and Vikram N. Shiyaal*
- P-74 Effect of weed management practices on weed dynamics and yield performance of castor  
–*A.L. Jat, S.K. Shah, F.K. Chaudhary and L.D. Parmar*
- P-74 Enhancing productivity and profitability through integrated weed management in summer  
–*B. Navyashika, D. Jacob and Sheeja K Raj*
- P-76 Effect of weed competition period on growth and yield of grain Amaranth  
–*R.H. Kotadiya and D.J. Patel*
- P-77 Yield, economics and quality of grain amaranth (*Amaranthus hypochondriacus* L.) influenced by integrated weed management  
–*J.S. Desai, A.N. Chaudhary, C.K. Desai and M.H. Chavda*
- P-78 Integrated weed management in summer sesame  
–*D.D. Patel, C.P. Patel, T.U. Patel and H.H. Patel*
- P-79 Evaluation of pre- and post-emergence herbicides for weed management in sesame  
–*K.R. Chavhan, H.H. Mahajan and K.B. Patil*
- P-80 Effect of pre-emergence herbicide, pendimethalin, on the management of *Cuscuta* in Niger (*Guizotia abyssinica*)  
–*Suryakant Nagre, Anil Kurmi, S.K. Pandey, S.K. Rathour and Anita Thakur*
- P-81 Productivity and profitability of clusterbean as influenced by weed management practices  
–*B.L. Dudwal, A.C. Shivran, B.R. Meena and S.K. Dudwal*
- P-82 Effect of pre-plant application of post-emergence herbicide glyphosate formulations on weeds and crops in the tomato-blackgram cropping sequence  
–*M. Keerthana, C.R. Chinnamuthu, P. Murali Arthanari and N. Sakthivel*
- P-83 Effect of herbicides applied with and without FYM for weed management in onion  
–*Sagar P. Kadu, B.D. Patel, V.J. Patel and D.D. Chaudhari*
- P-84 Weed management strategy for onion nursery  
–*D.D. Chaudhari, V.J. Patel, H.K. Patel and B.D. Patel*
- P-85 Effect of weed management and phosphorus fertilization practices on productivity of cowpea  
–*Kashinath Gurusiddappa Teli, M.N. Harish*
- P-86 Efficacy of herbicides for weed management in summer cowpea  
–*P.V. Parmar, T.U. Patel, C.S. Chaudhary, A.M. Rathod, S.N. Makwana and B.K. Patel*

## TECHNICAL SESSION 4

### Herbicide residues, monitoring, mitigation and effect on non-target organisms in weed management

- P-87 Screening and monitoring of herbicide residues in rice ecosystem by a new thin layer chromatography (TLC) method  
*–Shobha Sondhia*
- P-88 Long-term effect of conservation agriculture and weed management practices on soil carbon fractions in a vertisol  
*–K.K. Barman, R.K. Sharma, Dibakar Roy, H.K. Rai and V.K. Chaudhary*
- P-89 Harvest time residue of clomazone in soybean  
*–R. L. Kalasariya, S.H. Patel, K.D. Parmar, N.S. Litoriya, N.N. Chaudhary and P.G. Shah*
- P-90 Dissipation of triafamone+ethoxysulfuron in soil under direct seeded and transplanted rice field  
*–Rajandeep Kaur, Pervinder Kaur and Makhan Singh Bhullar*
- P-91 Degradation of mesosulfuron-methyl + iodosulfuron methyl and their transformation products in soil  
*–Harshdeep Kaur, Pervinder Kaur and Makhan Singh Bhullar*
- P-92 Degradation of pyroxasulfone in soils of Punjab  
*–Akshdeep Kaur, Pervinder Kaur and Makhan Singh Bhullar*
- P-93 Effect of herbicide on soil biochemical properties under varying level of crop, nutrient and herbicide dose in wheat under vertisols of Central India  
*–Dibakar Roy, Vinodh Gaur, Amit Kumar Upadhdai, Himanshu Mahawar and Kamal Kanti Barman*
- P-94 Degradation and persistence of herbicides in soil and consequent residues in rice-rice cropping system  
*–C. Bharathi P. Murali Arthanari and S. Panneerselvam*

## TECHNICAL SESSION 5

### Non-chemical weed management including biological control

- P-95 Expanding invasion of invasive alien aquatic weed *Salvinia molesta* in other parts of India and its successful biological control in Central India  
*–Sushilkumar*
- P-96 Effect of weed management practices in organic production on weed control, yield and economics of soybean-chickpea sequence under irrigated condition  
*–S.P. Chennaiwad, W.N. Narkhde, S.T. Shirale, and S.N. Sable*
- P-97 Non-chemical weed and nutrient management in brinjal  
*–R.K. Sathe, B.S. Raskar, A.G. Durgude and M.N. Bhalekar*

- P-98 Control of *Parthenium hysterophorus* for sustainable farming practices  
–*M.G. Chaudhary, Y.B. Vala and M.H. Chavda*
- P-99 Herbicidal activity of mustard essential oil against *Avena ludoviciana* and *Phalaris minor* Retz  
–*Poornima and Pervinder Kaur*
- P-100 Intrusion of *Parthenium* and its eco-friendly management: The world most offensive weed  
–*Ravi Verma, A.K. Singh, Ekta Singh and Divya Singh*
- P-101 Organic weed management  
–*Monika Choudhary and Swati Kunjam*
- P-102 Weed management through mulching: Boon for chickpea production  
–*Pradeep Kumar, V.P. Usadadiya, R.K. Mahanta and U.J. Patel*
- P-103 Weed management in organic farming  
–*Sunita, Praveen Kumar Nitharwal, Ashish Kumar Sharma, Sarita*
- P-104 Non-chemical weed management in *Rabi* fennel under organic farming conditions  
–*M.M. Chaudhary, C.K. Patel and J.D. Bawa*
- P-105 Number dependent population dynamics and damage potential of bioagent *Cyrtobagous salviniae* on water fern *Salvinia molesta*  
–*Mukesh Kumar Meena, Sushilkumar and Yogita Gharde*
- P-106 Bio efficacy of mycoherbicides against alien invasive weeds *Parthenium*, *Lantana* and *Water hyacinth*: Commercialization perspectives  
–*Ajay Kumar Singh and Praharaju Laxminarayana*
- P-107 Non-chemical weed management in bhendi (*Abelmoschus esculentus* L.)  
–*S. Dhivya, R. Kalpana, M.V. Priya and V. Vasumathi*

## TECHNICAL SESSION 6

### Weed management in pulses

- P-108 Weed management in lentil with mulching and herbicide  
–*D.K. Mohanta, B. Duary, K. Naveen Yadav and D.K. Jaiswal*
- P-109 Herbicide-based weed management in urdbean and its carry over effect on succeeding *Rabi* crop  
–*Kiran V. Rabari, K.I. Patel, Piyus Saras and Neha V. Patel*
- P-110 Bio-efficacy of new generation herbicides in chickpea  
–*G.D. Sanketh, K. Bhanu Rekha, T. Ram Prakash and K.S. Sudhakar*
- P-111 Bioefficacy of new generation herbicides in *Rabi* greengram  
–*Y. Chaithanya, B. Padmaja, M. Malla Reddy and T. Srijaya*
- P-112 Effect of pre- and post-emergence herbicides on weeds and yield of summer greengram  
–*Pramod Kumar, V.J. Patel, R.A. Patel and D.D. Chaudhari*

- P-113 Bioefficacy of toperamezone on weeds, growth and productivity of chickpea  
*–Harpreet Kaur Virk and Guriqbal Singh*
- P-114 Response of gram to different pre- and post-emergence herbicides under South Gujarat conditions  
*–V.M. Patel and L.B. Kalasariya*
- P-115 Optimum dose and time of application of topramezone for weed management in chickpea  
*–Gajanand, Sunil Kumar, Devilal Birla, Devendra Singh and R.S. Singh*
- P-116 Effect of weed management practices and nitrogen levels on productivity of chickpea  
*–Adarsh Sharma*
- P-117 Effect of tillage and weed management practices on weed dynamics and yield of lentil  
*–Devilal Birla, I.B. Pandey, Subhra Sahoo, Gajanand, R.S. Singh and S.N. Makwana*
- P-118 Integrated weed management in *Kharif* blackgram  
*–R.G. Machhar, R.V. Hajari and A.K. Mahida*
- P-119 Efficacy of pre- and post-emergence herbicides on weed control in blackgram under vertisol  
*–Suman Dhayal and S.L. Yadav*
- P-120 Chemical weed management in pigeonpea  
*–Ashish Kumar Sharma, Praveen Kumar Nitharwal Sunita, Anju Kanwar Khangarot and Anchal Karol*
- P-121 Weed management in blackgram  
*–H.H. Patel, V.M. Kapadiya, T.U. Patel, and D.D. Patel*
- P-122 Efficacy of combined herbicides in summer blackgram  
*–R.R. Pisal, J.O. Kamaliya and A.P. Patel*
- P-123 Evaluation of post-emergence herbicides in greengram  
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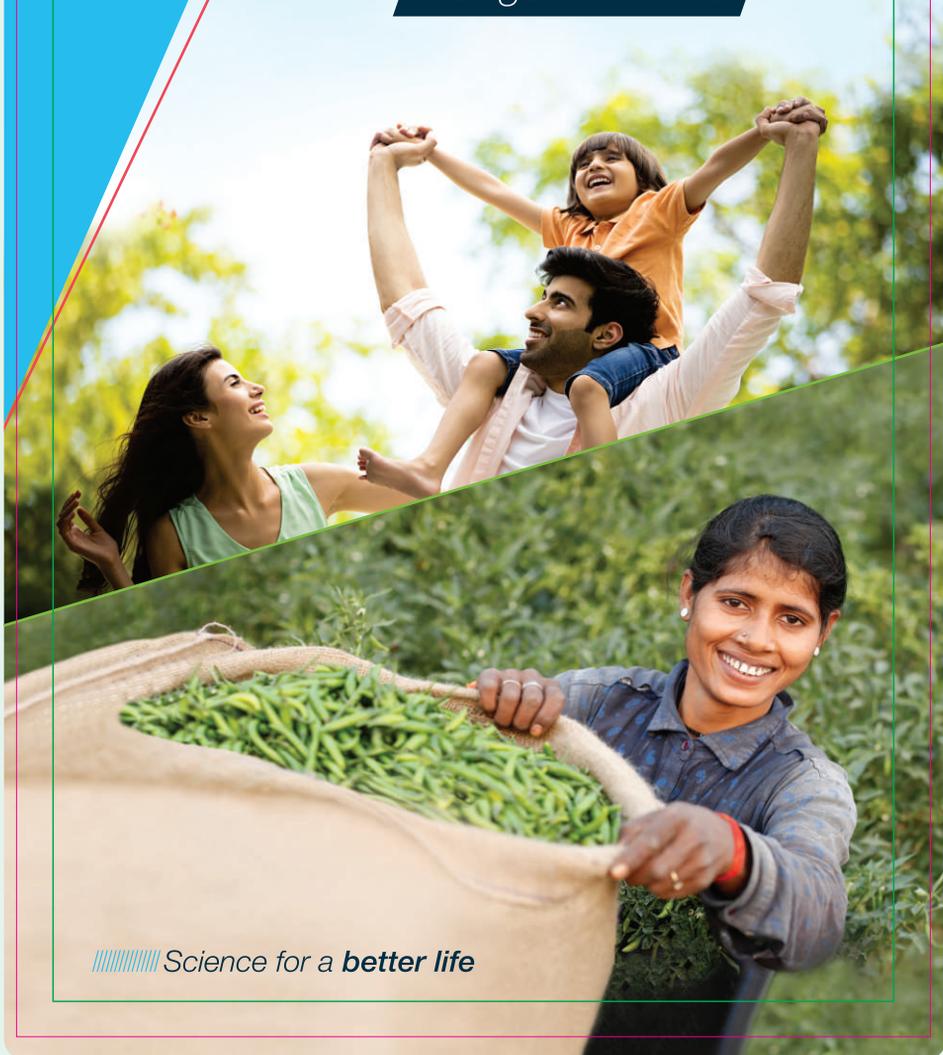


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