

ISSN Online: 2349 9400

Print: 0974 6315

# JOURNAL OF CROP AND WEED

Volume 16

Number 1

April, 2020



<http://cwssbckv.org>  
[www.cropandweed.com](http://www.cropandweed.com)

**CROP AND WEED SCIENCE SOCIETY**  
**SECRETARIAT: DEPARTMENT OF AGRONOMY**  
**Bidhan Chandra Krishi Viswavidyalaya**  
**MOHANPUR, NADIA, WEST BENGAL - 741252**



## CROP AND WEED SCIENCE SOCIETY (CWSS)

Registered under Society Registration Act, 2004 (S/IL/24559)

Website : <http://cwssbckv.org> and [www.cropandweed.com](http://www.cropandweed.com)

Executive Council (2018-19 to 2020-21)

### PATRONS

|   |                                      |                                  |
|---|--------------------------------------|----------------------------------|
| Prof. P. C. Bhowmik, Massachusetts, USA | Prof. B. Valverde, Costa Rica        | Prof. Mrs. Nilda. R. Burgos, USA |
| Prof. Norman Uphoff, CIIFAD, USA        | Prof. Judy Fisher, Western Australia | Prof. Irabanta Singh, Manipur    |
| Prof. Albert Fischer, IWSS              | Prof. Khan Bahadur Marwat, Pakistan  | Prof. B. Rubin, Israel           |
| Prof. Sarah Brunel, France              | Prof. Iswandi Anas, Indonesia        | Dr. S. Adkins, Australia         |
| Prof. S. K. T Nasar, Former DR, BCKV    | Dr. John. R. Leeper, USA             | Dr. N. T. Yaduraju, ISWS, India  |
| Prof. R. C. Samui, Tripura              | Dr. S. Dutta, VC, Visva Bharati      | Dr. J. C. Majumdar, CLC, India   |
|   | Prof. S K Sanyal, Former VC, BCKV    |                                  |

|                   |                              |                   |                             |
|-------------------|------------------------------|-------------------|-----------------------------|
| President         | Prof. Rati Kanta Ghosh, BCKV | General Secretary | Prof. Pradip Kumar Sahu     |
| Working President | Prof. Asit Kumar Basu        | Joint Secretary   | Prof. Aniruddha Pramanik    |
| Vice President    | Dr. Debesh Pal               |                   | Prof. Anupam Pariari        |
|                   | Prof. Abhijit Kumar Nandi    | Treasurer         | Prof. Narayan Chattopadhyay |
|                   | Prof. Pintoo Bandyopadhyay   |                   |                             |
|                   | Mr. Sajal Biswas (Corporate) |                   |                             |

### MEMBERS

|                       |                           |                         |                          |
|-----------------------|---------------------------|-------------------------|--------------------------|
| Prof. Umesh Thapa     | Prof. Gautam Saha         | Dr. Tapas Biswas        | Prof. Manas Kumar Pandit |
| Dr. Kusal Roy         | Dr. Malay Kumar Bhowmik   | Prof. Fatik Kumar Bauri | Dr. Kironmoy Barui       |
| Prof. Dhananjoy Dutta | Prof. Champak Kumar Kundu | Dr. Sanjoy Bordolui     | Dr. Asim Kumar Dolai     |
| Prof. Arun Kumar Pal  | Dr. Md. Nasim Ali         | Prof. Kajal Sengupta    | Prof. T. N. Roy          |
|                       | Dr. Samimul Islam         |                         |                          |

### CORPORATE MEMBERS

|                                       |                            |  |
|---------------------------------------|----------------------------|--|
| Dr. A. V. Dhuri, Excel Crop Care Ltd. | Dr. O.P. Singh, Dhanuka    | Dr. A. Roy, Maktishim Agan India       |
| Dr. S. Mallikarjunappa, Rallis India  | Dr.V.D.V.N.H. Kumar, FMC   | Dr. S. Biswas, Indofil Industries Ltd. |
| Mr. B. H. Grimmig, Bayer Crop Science | Dr. V. Gade, PI Industries | Dr. R. Goel, Crystal Crop Protection   |
| Mr. P. K. Ghosh, Krishi Rashayan      | Dr. A. Jha UPL, India      | Dr. RBL Bhaskar, Parijat Industry      |
| Dr. Manojit Ghosh, Syngenta India     | Dr. B. Pathak, PCI         | Dr. S. Chaudhary, Sinochem India       |

### EDITORIAL BOARD

#### International Advisory Board

|                            |                             |                                   |                                |
|----------------------------|-----------------------------|-----------------------------------|--------------------------------|
| Dr. P C Bhowmik, USA       | Dr. A L Ranawake, Sri Lanka | Dr. Nirmal Chandrasena, Australia | Dr. Baki Bakar, Malaysia       |
| Dr. Y. Fuzi, Japan         | Dr. U R Sinniah, Malaysia   | Dr. C. Zhang, China               | Dr. R. C. Joshi, Philippines   |
| Dr. Asad Shabbir, Pakistan | Dr. Duong Van Chin, Vietnam | Dr. Mirza Musayev, Azerbaijan     | Dr. Muazzam Husain, Bangladesh |
| Dr. Kil-Ung Kim, Korea     | Dr. C T Abraham, India      | Dr. S. Subasinghe, Sri Lanka      | Dr. T. V. R. Prasad, India     |
| Dr. C Chinusammi, India    |                             |                                   |                                |

### JOURNAL OF CROP AND WEED (ISSN 09746315 ISSN Online: 23499400)

### CROP AND WEED SCIENCE NEWS

|              |                 |        |                    |
|--------------|-----------------|--------|--------------------|
| Chief Editor | Dr Kusal Roy    | Editor | Dr. K Brahamachari |
| Editors      | Dr Md Nasim Ali | Member | Dr. A. B. Sharangi |
|              | Dr Soumen Bera  |        |                    |

### MEMBERS

|                       |                       |                         |                          |
|-----------------------|-----------------------|-------------------------|--------------------------|
| Prof Susanta Pal      | Prof N Chattopadhyay  | Prof Arup Chattopadhyay | Prof Raghunath Sadhukhan |
| Prof D Basu           | Dr Hirak Banerjee     | Dr Sanjoy Bordolui      | Dr Sanjoy Sil            |
| Dr Sunita Mahapatra   | Dr Prankrishna Thakur | Dr Jayati Sarkar        | Dr Jajati Mandal         |
| Dr Kaushik Pradhan    | Dr Biplab Mitra       | Dr Sutanu Maji          | Dr B Duary               |
| Dr C Jayanthi         | Prof D K Bastia       | Prof Tuhin Narayan Roy  | Dr D Barman              |
| Dr S S Roy            | Dr Sujit Adhikary     | Dr K Nandini Devi       | Dr K M Durga Devi        |
| Dr Vasant Suryabanshi | Dr L Girijadevi       | Dr R B Hille            |                          |

### Membership fee

### Advertisement Fee

### Mode of payment

|  |  |                                       |  |
|--|--|---------------------------------------|--|
| Life Membership: Rs. 5000/-<br>(for SAARC countries),<br>US\$100 (Other countries) | CWSS Journal<br>Full page – Rs. 15000/-<br>Half Page –Rs. 10000/-<br>Quarter Page – Rs. 5000/- | CWSS News<br>Rs. 3000/-<br>Rs. 2500/- | By Cash/Multi city Cheques/Demand Draft in<br>favour of the Secretary/ Treasurer, CWSS,<br>payable at SBI, Kalyani Branch (Code -01082);<br>IFSC Code- SBIN0001082; MICR No. 700002319;<br>Swift Code - SBINBB106 West Bengal, India |
| Farmer Membership: Rs1000=00   |  |                                       |  |
| Annual Membership: Rs. 1000/-  |  |                                       |  |
| Institution (Annual): Rs. 2500/-   |  |                                       |  |

*Opinion expressed / comment given and results discussed in the articles are the views of the author (s).*

*The Crop and Weed Science Society is in no way responsible for the same.*

All correspondence with respect to the Society may please be addressed to The Secretary, Crop and Weed Science Society (CWSS),  
Secretariat : Department of Agronomy, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur – 741252, Nadia, West Bengal, India  
Published by: Prof. P. K. Sahu, General Secretary, CWSS on 30.04.2020 (Electronic), 30.04.2020 (Print), Printed at : UNiMAGE, 2533 2956 (O)