

ISSN Online: 2349 9400
Print: 0974 6315

JOURNAL OF CROP AND WEED

Volume 17

Number 1

April, 2021



unimage2000@gmail.com



<http://cwssbckv.org>
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
Executive Council (2018-19 to 2020-21)

PATRONS			
Prof. P. C. Bhowmik, Massachusetts, USA Prof. Norman Uphoff, CIIFAD, USA Prof. Albert Fischer, IWSS Prof. Sarah Brunel, France Prof. S. K. T Nasar, Former DR, BCKV Prof. R. C. Samui, Tripura	Prof. B. Valverde, Costarica Prof. Judy Fisher, Western Australia Prof. Khan Bahadur Marwat, Pakistan Prof. Iswandi Anas, Indonesia Dr. John. R. Leeper, USA Dr. S. Dutta, VC, Visva Bharati Prof. S K Sanyal, Former VC, BCKV	Prof. Mrs. Nilda. R. Burgos, USA Prof. Irabanta Singh, Manipur Prof. B. Rubin, Israel Dr. S. Adkins, Australia Dr. N. T. Yaduraju, ISWS, India Dr. J. C. Majumdar, CLC, India	
President Working President Vice President	Prof. Rati Kanta Ghosh, BCKV Prof. Asit Kumar Basu Dr. Debesh Pal Prof. Abhijit Kumar Nandi Prof. Pintoo Bandyopadhyay Mr. Sajal Biswas (Corporate)	General Secretary Joint Secretary Treasurer	Prof. Pradip Kumar Sahu Prof. Aniruddha Pramanik Prof. Anupam Pariari Prof. Dhananjoy Dutta
MEMBERS			
Prof. Umesh Thapa Dr. Kusal Roy Prof. Narayan Chattopadhyay Prof. Arun Kumar Pal Dr. Samimul Islam	Prof. Gautam Saha Dr. Malay Kumar Bhowmik Prof. Champak Kumar Kundu Dr. Md. Nasim Ali	Dr. Tapas Biswas Prof. Fatik Kumar Bauri Dr. Sanjoy Bordolui Prof. Kajal Sengupta	Prof. Manas Kumar Pandit Dr. Kironmoy Barui Dr. Asim Kumar Dolai Prof. T. N. Roy
CORPORATE MEMBERS			
Dr. A. V. Dhuri, Excel Crop Care Ltd. Dr. S. Mallikarjunappa, Rallis India Mr. B. H. Grimmig, Bayer Crop Science Mr. P. K. Ghosh, Krishi Rashayan Dr. Manojit Ghosh, Syngenta India	Dr. O.P. Singh, Dhanuka Dr.VD.V.N.H. Kumar, FMC Dr. V. Gade, PI Industries Dr. A. Jha UPL, India Dr. B. Pathak, PCI	Dr. A. Roy, Maktishim Agan India Dr. S. Biswas, Indofil Industries Ltd. Dr. R. Goel, Crystal Crop Protection Dr. RBL Bhaskar, Parijat Industry Mr. S. Chaudhary, Sinochem India	
EDITORIAL BOARD International Advisory Board			
Dr. P C Bhowmik, USA Dr. Y. Fuzi, Japan Dr. Asad Shabbin, Pakistan Dr. Kil-Ung Kim, Korea Dr. C Chinusammi, India	Dr. A L Ranawake, Sri Lanka Dr. U R Sinniah, Malayasia Dr. Duong Van Chin,Vietnam Dr. C T Abraham, India Dr. Tapas K Biswas, Australia	Dr. Nirmal Chandrasena, Australia Dr. C. Zhang, China Dr. Mirza Musayev, Azerbaijan Dr. S. Subasinghe, Sri Lanka	Dr. Baki Bakar, Malaysia Dr. R. C. Joshi, Philippines Dr. Muazzam Husain, Bangladesh Dr. T. V. R. Prasad, India
JOURNAL OF CROP AND WEED (ISSN 09746315 ISSN Online: 23499400)		CROP AND WEED SCIENCE NEWS	
Chief Editor Editors	Dr Kusal Roy Dr Md Nasim Ali Dr Soumen Bera	Associate Editor: Dr. S. Bordolui	Editor Member Dr. K Brahamachari Dr. A. B. Sharangi
MEMBERS			
Prof Susanta Pal Prof D Basu Dr Sunita Mahaptra Dr Kaushik Pradhan Dr C Jayanthi Dr S S Roy Dr Vasant Suryabanshi	Prof N Chattopadhyay Dr Hirak Banerjee Dr Prankrishna Thakur Dr Biplab Mitra Prof D K Bastia Dr Sujit Adhikary Dr L Girijadevi	Prof Arup Chattopadhyay Dr Jayati Sarkar Dr Sutanu Maji Prof Tuhin Narayan Roy Dr K Nandini Devi Dr R B Hille Prof Raghunath Sadhukhan	Dr Sanjoy Sil Dr Jajati Mandal Dr B Duary Dr D Barman Dr K M Durga Devi
Membership fee	Advertisement Fee	Mode of payment	
Life Membership: Rs. 5000/- (for SAARC countries), US\$100 (Other countries) Farmer Membership: Rs1000=00 Annual Membership: Rs. 1000/- Institution (Annual): Rs. 2500/-	CWSS Journal Full page – Rs. 15000/- Half Page –Rs. 10000/- Quarter Page – Rs. 5000/-	CWSS News Rs. 3000/- Rs. 2500/-	By Cash/Multi city Cheques/Demand Draft in favour of the Secretary/ Treasurer, CWSS, payable at SBI, Kalyani Branch (Code -01082); IFSC Code- SBIN0001082; MICR No. 700002319; Swift Code - SBINBB106 West Bengal, India
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 August, 2021 (Electronic), August, 2021 (Print), Printed at : UNiMAGE, 2533 2956

JOURNAL OF CROP AND WEED



GUIDELINES TO AUTHORS

General:

- The Journal of Crop and Weed is a NAAS ranked (5.46), indexed (by Index Copernicus International with ICV 74.54) official publication of Crop and Weed Science Society.
- Three issues per year of this journal publish original research works in the form of full paper, review article and short communication relating to following topics but not limited to: the study of crops, weed and forestry, soil and microbiology, biotechnology, tissue culture, nano technology, biodiversity of plants and animals, animal husbandry, dairy, fishery, sericulture, socio-economic analysis and other agriculture and allied topics. Review articles are received by invitation only.
- Manuscript with significant findings are welcome with the declaration from the authors that the contents have not been simultaneously submitted or published in any other technical and scientific journal.
- The article should preferably be relating to the research work carried out during the last five years. Research articles based on one season agronomic trials are generally considered as Short Communication.
- All the authors must be the member of the Society.
- The manuscript should conform to the S.I. system for numerical data and data should be subjected to appropriate statistical analysis. All the articles will be subjected to peer reviewing. These will be sent back to the authors along with referee's comments for revision.
- Decision of the Editorial Board is final.
- Authors are solely responsible for the scientific contents of the article.
- All communications relating to the publications in journal should be addressed to the Chief Editor, Journal of Crop and Weed, Department of Agronomy, Faculty of Agriculture, BCKV, Mohanpur-741252 or Email at editor@cwssbckv.org
- Authors should provide the names and full address along with telephone and E-mail ID of two experts from outside the state/province and two from outside the country in the relevant field of research.
- Reprints: No reprints of the published article will be supplied by post to the authors. However, the corresponding author will get soft copies of the journal using user ID and password.
- Processing fee: Along with the manuscript, processing fee of Rs. 500/- be sent in the form of M.O./Bank Draft/Money transfer on SBI Kalyani, Code No. 1082, A/C 11151098081 in favor of the Secretary/Treasurer, Crop and Weed Science Society.
- Book review: The Editorial Board of the "Journal of Crop and Weed" invites recently published books for review. The books will be reviewed by the eminent teachers/scientists of the respective discipline. Authors and Publishers are requested to send the book for review to the Chief Editor, Journal of Crop and Weed, Department of Agronomy, Faculty of Agriculture, BCKV, PO. Krishi Viswavidyalaya, Mohanpur-741252, West Bengal, India.

Manuscript:

Manuscript should be typed in double space with 2.5 cm margin on all sides and in clean and concise English using TIMES NEW ROMAN FONT of 12 point. The length should not exceed 15 and 5 pages for full length paper and short communication respectively. **Manuscript should directly be uploaded in www.cropandweed.com/submission_form.html or <http://cwssbckv.org/journal/author.aspx>.** No other forms of Manuscript submission will be entertained.

Title : It should be short, specific and informative

Name of author(s): Indicate corresponding author with superscript numerals along with e-mail address (must).

Address: Address of the institution(s) where the research was undertaken.

Key words: 5-6 keywords suitable for indexing, should be given in alphabetical order.

Abstract: It should be brief (not exceeding 150 words) informative and should highlights finding of the work done. Abbreviation should be avoided in the abstract.

Introduction: A brief introductory paragraph explaining the objective of the paper with pertinent review of research work should be provided.

Materials and methods: It should provide adequate information on the materials used, techniques followed, year and location of experiment and design and statistical methods employed for the collection and analysis of data.

Results and discussion: It should be combined to avoid repetitions. The significance of the results in relation to other relevant published works should be highlighted in the discussion. Same data should not be presented in table and figure simultaneously. The article should end with definite conclusion drawn from the results obtained.

Table: Each table should be concise and typed on separate page. Horizontal and vertical lines should not be marked within the table.

Acknowledgement: If any, should be brief.

References: An article should not be referred as "in press" unless it has been accepted for publication. The reference should be cited in alphabetical order. The following examples may be followed.

- Journal :** Ziv, M., Helevy, A. H. and Shilo, R. 1970. Organ and plantlet regeneration of gladiolus through tissue culture. *Ann. Bot.*, **34** : 671-676.
- Book :** Jeswani, L.M. and Baldev, B. 1997. Advances in Pulse Production Technology. ICAR. New Delhi, pp. 190-195.
- Chapter in a book :** Kozai, T. 1991. Micropopagation under photo autotropic conditions. In. *Micropopagation : Technology and Application (Eds.)*, Kluwer Academic Pub., Dordrecht, pp. 447-469.
- Thesis :** Jeyalakshi, C. 1998. Studies on fruit rot of chillied (*Capsicum annum*). M.Sc (Ag) Thesis, Tamil Nadu Agricultural University, Coimbatore, pp. 120-125.
- Proceedings :** Von Uexkul, H.R. 1985. Potassium nutrition of some tropical plantation crops. *Proc. Int. Symp. on Potassium in April*. 7-10 July, 1985, Atlanta. pp. 929-1024.