FORM IV

(See Rule 8)

Statement about the ownership and other particulars of the Journal of Cotton Research and Development

Place of publication : Hisar

Periodicity of its publication : Half yearly

Publisher's name : Dr. R. K. Saini

Nationality : Indian

Address : Former Head

Department of Entomology

CCS Haryana Agricultural University,

Hisar 125 004

Printer's name and address : Ridhi Sidhi Offset Press,

Katla Ramlila Ground

Hisar 125 001

Editor's name : Dr. R. K. Saini

Nationality : Indian

Address : Former Head

Department of Entomology

CCS Haryana Agricultural University,

Hisar-125 004

Name and address of individuals who : Dr. R. K. Saini own the newspapers and partners or Former Head

shareholders holding more than one Department of Entomology

per cent of the total capital CCS Haryana Agricultural University,

Hisar 125 004

I, Dr. R. K. Saini, hereby declare that the particulars given above are true to the best of my knowledge and belief.

1 January, 2020

Sd/-(**R. K. Saini**) Signature of Publisher

PATRONS OF THE ASSOCIATION

- Sh. V. P. Ahuja GTM, Synthetics Ltd., 33, Additional Anaj Mandi, Sirsa-I25 055.
- Sh. Babubhai S. Patel
 Vikram Seeds Pvt. Ltd., 209, Ashwa Megh Avenue,
 Near Mithakhali Under Bridge, Mayur Colony,
 Navrangpura, Ahmedabad-380 009.
- Sh. Salil Singhal
 Pesticide India Ltd., 503-505, Tower-A,
 Millennium Plaza, Sector-27
 Gurgaon-I22 002.
- Mr. R. D. Shroff
 M/s United Phosphorus Ltd.
 Uni Phos House, Madhu Park
 C. D. Marg, 11th Road, Khar (W)
 Mumbai-400 052.
- Sh. R. G Agarwal
 Dhanuka Agritech. Limited
 14th Floor Building 5A
 DLF Cyber Terrace, Ciber City
 DLF Phase -III, Gurugram 122 002
- M/s Indofil Industries (P) Ltd.
 Kalpatru Square 4th Floor, Condivila Road,
 Off Andheri Kurla Road Andheri East, Mumbai
- M/s. Ankur Seeds Pvt. Ltd.
 New Cotton Market Layout, Nagpur-440 018.
- M/s Monsanto India Ltd.
 Ahura Centre, 5th Floor, 96, Mahakali Caves Road,
 Andheri(E), Mumbai-400 093.
- Sh. N. P. Patel
 Western Agri Seeds Pvt. Ltd.
 802/11, Western Road, GIDC
 (Engg. Estate) Sector-28, Gandhi Nagar,
 Ahmedabad-382 028.
- M/s Bayer Crop Science Limited
 Bayer House, Central Avenve, Hiranandani Gardens,
 P. B. No. 8420, Powal, Mumbai-400 076.
- Dr. G S. Raju
 Vijay Laxshmi Insecticides and Pesticides Ltd.
 Plot No. 61, 1st floor, Nagarjuna Hills,
 Punjagatta, Hyderabad- 500 082.
- M/s Syngenta Crop Protection Ltd.
 Amar Paradigm, Survey No. 110-11/3, Baner Road,
 Baner, PUNE- 411 045
- M/s Meghmani Industries
 H. NO. 279/2, Sector-45-A, Chandigarh-I60 047

JOURNAL OF COTTON RESEARCH AND DEVELOPMENT (Founded 1986, Regd. No. 1967 of 2016)

An international journal, official organ of Cotton Research and Development Association, devoted to original research in cotton related agriculture and technology, its by products and allied products. It is published twice a year in January and July. Matters of general policy are the responsibilities of the Executive Council. The authors are solely responsible for the contents of the papers compiled in this volume. The publishers or editors do not take any responsibility for the same in any manner.

EXECUTIVE COUNCIL (2018-2020)

President
Vice Presidents
D. Monga
R. K. Malhotra
Secretary
Joint Secretary
Treasurer
P. P. Shastry
Ashish Jain

CORPORATE ADVISORS

M. Ramasami R. D. Shroff H. V. S. Chauhan

EDITORIAL BOARD

R. K. Saini O. P. Tuteja K. Sankaranarayana Editor-in-Chief Editor Editor (Crop Improvement) (Crop Production) Rishi Kumar Anita Beniwal M. S. Chauhan Editor Editor Secretary (Social Sciences) (Crop Protection)

MEMBERS

Dharminder Pathak, Plant Breeding
I. S. Katageri, Biotechnology
Kulvir Singh, Agronomy
Vijay Kumar, Entomology
Suneet Pandher, Entomology
Vandana Gupta, Social Science
Devraj, Soil Science
B. Sree Lakshmi, Plant Pathology

COUNCILLORS

Arun Janu, Dehi

Paramjit Singh, Bhatinda

Hemant R. Desai, Surat

Ajit Kumar, Mumbai

Man Mohan, Hisar

B. D. Patel, Anand

G. K. Kataria, Junagarh

D. P. Saini, Banswara

V. S. Dagaonkar, Hyderabad

S. Ratna Kumari, Guntur

TECHNICAL ADVISORS

M. S. Kairon, Nagpur

Sheoraj, Nagpur

B. M. Khadi, Dharwad

C. D. Mayee, Nagpur

R. D. Kapoor, Gurugram
O. P. Singh, New Delhi
Anil J. Kakkar, Mumbai
S. S. Mehetre, Rahuri

Category	University/Govt. Scientists/Officers (Rs.)	Companies/Firms and their Scientists/Officers (Rs.)	Other Countries (US \$)
Ordinary member	500	800	100
Life member	5,000	8,000	800
Institutional member/librarie	es 2,000	3,000	400
Patron	50,000	50,000	5000

Payments: Membership fee/subscription should be sent online through website www.crdaindia.com

CRDA JOURNAL NAAS RATINGS: 4.69

JOURNAL

OF

COTTON RESEARCH AND DEVELOPMENT

Vol. 34	January, 2020	No. 1
	Crop Improvement	
Assessment of strength of	attachment of cotton fibre to seed	
- V. G. Arude, S. P. Deshmukh, S. K. Shukla and P. G. Patil		
Combining ability, heteros	sis studies for yield, its component traits and fibre	
properties through	Line x Tester mating design in upland cotton	
- M. Gnanasekaran, M. Gunasekaran and K. Thiyagu		
Combining ability studies	in CMS based and conventional hybrids of cotton	
(Gossypium hirsutu	mL.)	
- G. R. Gopal, D. B.	Deosarkar and V. N. Chinchane	27
Combining ability analysis	s for seed cotton yield and its attributing traits in	
upland cotton (Gos	sypium hirsutum L.)	
- A. H. Bankar, O.	Sangwan, K. S. Nirania, Ankit Kumar and Sagar	37
GMS-CISG 20 - A new gen	etic male sterile line of diploid cotton (Gossypium arboreum L.)	
with marker trait		
- S. K. Verma, O.P.	. Tuteja, D. Monga and V.N. Waghmare	46
Identification of desirable	genotypes by multivariate analysis in cotton	
(Gossypium hirsutu	m L.)	
- K. V. Siva Reddy,	, B. Balakrishna and V. Chenga Reddy	50
Association studies between	en seed cotton yield and its component traits	
- Suman Sangwan,	, Omender Sangwan, S.R. Pundir and Kuldeep Jangid	57
	Crop Production	
Effect of growth regulators	and de-topping on productivity of cotton	
- Ashok S. Jadhav	, D.P.Waskar and G.P.Bhosale	62
Effect of time of growth ret	ardant application on growth of cotton plant under high	
density planting sy	ystem	
- R. Veeraputhirar	n and M.Gunasekaran	67
Effect of sowing dates on y	rield of cotton genotypes under Hisar conditions	
- Renu Bala, Shwe	eta, Karmal Malik, Meena Sewhag and Priyanka	72

Printed and Published by Dr. R. K. Saini, Editor-in-Chief, on behalf of Cotton Research and Development Association, CCS Haryana Agricultural University, Hisar-125 004 and printed by Ridhi Sidhi Offset Printers, Katla Ramlila Ground, Hisar - 125 001

Ph.: 92157-31663 (Date of Publication: 1st January, 2020)

Website: www. crdaindia.com e-mail: crda1987india@gmail.com

Effect of glyphosate and other herbicides on management of weeds in rainfed cotton	
(Gossypium hirsutum L.) grown under high density planting system	
- B. S. Nayak, R. K. Patnaik, and N. Mandi	78
Crop Protection	
Virulence of native entomopathogenic nematodes to manage cotton insect	
pests Helicoverpa armigera, Earias vittella and Spodoptera litura	
- N. Seenivasan	84
Occurrence and distribution of tobacco streak virus (TSV) in the germplasm of ELS cotton	
Gossypium barbadense	
- P. Valarmathi and K.P.M. Dhamayanthi	92
Field efficacy of various insecticides against pink bollworm Pectinophora gossypiella	
(Saunders) in cotton	
- K. Sasikumar and R. Vimala	99
Management of diseases of cotton under high density planting system	
- R. Vimala	105
Effect of date of sowing on cotton leaf curl virus disease severity in cotton in Punjab	
- Rupesh Kumar Arora and Paramjit Singh	109
Population dynamics of insect pests of cotton in scarce rainfall zone of Andhra Pradesh	
- A. S. R. Sarma, S. Jaffar Basha, Y. Rama Reddy and B. Gopal Reddy	114
Miscellaneous	
Market status and performance analysis of Bt cotton seed brands in Nanded	
district of Maharashtra	
- K. P. Kulkarni, Sarman Lal Chaudhary, Suvarna S. Patil and D. R. Seema	121
Knowledge level of ELS cotton growers in Vellore district – An analysis	
- M. Deepika, M. Asokhan and S. Usha Rani	129
Effect of substrates (cotton stalks and cotton seed hulls) on growth, yield and nutritional	
composition of two oyster mushrooms (Pleurotus ostreatus and Pleurotus florida)	
- Ashtashila Sardar, Varsha Satankar, P Jagajanantha and V. Mageshwaran	135
Comparing predictive accuracy through price forecasting models in cotton	
- Isabella Agarwal and Anuradha Narala	146
Development of antibacterial finish for cotton with neem leaves extract and assessment	
of wash durability	
- Saroj Yadav, Neelam M. Rose, Sunita Devi and Aman Kumar	158