

*An International Journal of Floriculture Science & Landscaping*  
**THE JOURNAL OF THE GREENS AND GARDENS**



*Official Journal of*  
**ROY'S GREENS & GARDENS FOUNDATION**

**Head Office:** 1/342, Vijayant Khand Gomtinagar,  
Lucknow - 226 010, Uttar Pradesh, India.

**Branch Office:** House No.1201, Tower 'G',  
Sector - 37C, Gurgaon, Haryana.

**Web Site:** [www.rggf.in](http://www.rggf.in)

**E-mail:** [editorgreensgardens@gmail.com](mailto:editorgreensgardens@gmail.com); [roygreengarden@gmail.com](mailto:roygreengarden@gmail.com)

**Mobile:** 7388886222

---

**Disclaimer:**

*Views, opinions, data, explanations given by the authors in their respective papers are exclusively their own. Any plagiarisms found subsequently in the published papers are sole responsibility of the authors. Editorial Board including Chief Editor is no way should be held responsible for any direct, indirect or consequential error / damage caused to any body / party by the views expressed by the authors.*

*All disputes are to be subjected to Lucknow jurisdiction only.*

**- Chief Editor**

---

**Formerly:** The Journal of '*Floriculture Science*' (2017)

Volume: 03 Number : 02

**Cover page image:** *Brownea grandiceps* inflorescences



*An International Journal of Floriculture Science & Landscaping*  
**THE JOURNAL OF THE GREENS AND GARDENS**

**ADVISORY BOARD**

- Prof. T.K. Bose, Former Professor & Dean, Faculty of Horticulture, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, West Bengal, India.
- Prof. A. Prasad, Former Professor & Dean, Faculty of Horticulture, CSAUA&T, Kanpur, India.
- Prof. S.K. Mitra, Former Professor & Dean, Faculty of Horticulture, BCKV, Mohanpur, West Bengal, India & Board member, International Society for Horticultural Science, Belgium.
- Dr. Judith Taylor, MD, Freelance writer on Floriculture, San Francisco CA 94115, USA.
- Dr. Nigel Taylor, Group Director, Botany Department, Singapore Botanic Garden, Singapore.
- Prof. S. K. Barik, Director, CSIR-National Botanical Research Institute, Lucknow, India.
- Prof. Niu Junhai, Deputy Director of Tropical Ornamental Research Division, Tropical Crops Genetic Resources Institute (TCGRI) of Chinese Academy of Tropical Agricultural Sciences (CATAS), Hainan, China.

**EXECUTIVE BODY**

- Dr. T. Janakiram, Asstt. Director General (Hort. Sci. - I), Indian Council of Agricultural Research, Pusa, New Delhi, India.
- Dr. K.V. Prasad, Director, Directorate of Floricultural Research, ICAR, Pune, Maharashtra, India.
- Dr. R.L. Misra, Ex-Coordinator, All India Coordinated Research Project on Floriculture, IARI, New Delhi, India.
- S.K.Datta, Scientist - 'G', Former Head, Floriculture Division, National Botanical Research Institute, Lucknow, India.
- Dr. S.S. Sindhu, Professor & Head, Floriculture Division, Indian Agricultural Research Institute, New Delhi, India.
- Dr. B.K. Banerji, Former Head, Floriculture Division, National Botanical Research Institute, Lucknow, India.

**EDITORIAL BOARD**

- Dr. Y.C. Gupta, Dean, YS Parmar Univ. of Agril. & Technology, Himachal Pradesh, India.
- Prof. R.S. Dhua, Former Professor of Floriculture, Faculty of Horticulture, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, West Bengal, India.
- Dr. Anil K. Goel, Former Head, Botanic Garden & Floriculture Division, CSIR-NBRI, Lucknow, India.
- Dr. M. Kannan, Professor & Head, Floriculture & Landscaping Division, Tamil Nadu Agril. University, Coimbatore, India.
- Prof. R.B. Ram, Registrar, B.B. Agricultural University, Lucknow, India.
- Dr. B. K. Singh, Professor & Head, Institute of Agriculture Science, Department of Horticulture / Floriculture, Banaras Hindu University, Uttar Pradesh, India.
- Dr. S.S. Yadav, Professor & Head, Department of Horticulture, CSA Univ. of Agriculture & Technology, Kanpur, Uttar Pradesh, India.

**COORDINATING EDITORS/REVIEWERS**

- Dr. Kanwar Pal Singh, Professor & Principal Scientist, Indian Agricultural Research Institute, New Delhi, India.
- Dr. Alka Singh, Professor & Head, Floriculture & Landscape Architecture, Navsari Agriculture University, Gujarat, India.
- Dr. Manjunatha Rao, T., Head, Division of Floriculture and Medicinal Crops, Indian Institute of Horticultural Research, Bangalore, India.
- Dr. L.C. De, Principal Scientist, National Research Centre for Orchids, Sikkim, India.
- Dr. Arun K. Pal, Professor & Former Head, Division of Floriculture & Landscape Architecture, B.C.K.V., Mohanpur, India.

---

## CHIEF EDITOR

**Dr. R.K. Roy**

Former Head, Botanic Garden, Floriculture & Landscaping Division  
CSIR-National Botanical Research Institute, Lucknow

**Mobile:** 07388886222

**E-mail:**

**For Paper Submission :** editorgreensgardens@gmail.com

**For Correspondence :** edtflorisci@gmail.com / roygreengarden@gmail.com

**Web Site :** www.rggf.in

---

## ASSOCIATE EDITORS

**Dr. Khuraijam Jiban K. Singh**

*Scientist Fellow*

CSIR-NBRI, Lucknow, India

**Dr. K.S. Tomar**

*Associate Professor*

Banda University of Agriculture & Technology, U.P., India

---

### PUBLISHED AND OWNED BY

**Dr. R.K. Roy, Executive Director,**

Roy's Greens & Gardens Foundation (Regd.)

Head Office: 1/342, Vijayant Khand, Gomtinagar,

Lucknow - 226 010, Uttar Pradesh, India

### BRANCH OFFICE

Corona Optus, Tower 'G', Flat No. 1201,

Sector - 37C, Gurgaon, Haryana, India

### PRINTED BY

Army Printing Press, 33, Nehru Road

Sadar, Cantonment, Lucknow - 226 002

Uttar Pradesh, India

Ph.: 0522-2481164

### Subscription (Per year, including postage)

#### INDIA

Students/Research Scholars : INR 1,000.00

Individual/General Member : INR 2,000.00

Library/Institution : INR 3,500.00

Life Member : INR 4,000.00

Single Copy (in India) : INR 350.00

#### OVERSEAS

Life Member : US \$ 200.00

Single Copy : US \$ 100.00

**Frequency of Publication** : 04

(Quarterly: April, July, October and January)

*Note : All correspondence should be addressed to Chief Editor*

## *From the Desk of Chief Editor*

Greetings from Roy's Greens and Gardens Foundation, Lucknow, India.

The revised journal in its new format has got an official name - "*The Journal of Greens & Gardens*". This is now registered with Registrar of Newspapers for India (RNI). It has been assigned with International Standard Serial Number (IISN) print as well as online. By that way, the journal is now fully recognized from respective authorities from India and abroad. Therefore, all contribution made by authors are citable and shall be abstracted in respective sites / domains.

It is my pleasure to write editorial comments for this issue, as it is in new format and fully recognized. Floriculture and landscape gardening have been progressing steadily across the globe. New dimensions have been added to research by diversifying areas to meet the issues and challenges of climate change besides changing taste and liking of the people. The rapid urbanization has virtually transformed the landscape industry in to a massive venture to solve the problem of space for gardening. Moreover, scarcity of water for gardening is another important issue. The system of landscaping, judicious water utilization, shortage of gardening space, rising of average temperature are some of the issues to be dealt effectively in order to make the landscape gardening successful in the years to come.

There is urgent need for the development of new varieties of floricultural crops including other ornamentals, as the demand of new plant varieties has been increasing day by day. Further, new technologies / agrotechnological practices, gardening techniques are needed to meet the various challenges faced by the floriculture and landscaping sectors.

This issue of the journal contains two special research papers on rose, being one of the leading commercial floricultural crops. Another paper highlights ornamental and medicinal importance of *Brownea* sp., a very attractive ornamental tree. Bougainvillea is another important flowering plant for tropical gardens. The paper by Mr. Larry Chen from Taiwan highlights some issues and challenges of breeding of Bougainvillea. Salinity of irrigational water is another important issue. The paper on salinity of ornamentals is a new area and needs further investigation. Research highlights on breeding and development of new varieties of floricultural crops of Indian Agricultural Research Institute (IARI), New Delhi has been included in this issue. Therefore, this issue of the journal contains important research work done in various institutes in India and abroad.

I, on behalf of the editorial team and board members, wish a very fruitful reading of the journal. I like to record my sincere thankfulness to the contributors for their papers and the support rendered by members, well-wishers.

All the best to all readers of the Journal - "*The Journal of Greens & Gardens*".

**Place:** Lucknow  
**Date :** April 30, 2019

**Dr. R. K. Roy**  
*Chief Editor*





**INDEX**

<i>Papers</i>	<i>Page No.</i>
<b>REVIEW PAPER</b>	
1. Studies on Bougainvillea breeding: issues and challenges <i>Chen, En-Chung (Larry Chen)</i>	01
<b>RESEARCH PAPERS</b>	
1. Disease resistance breeding in rose: current status and potential of biotechnological tools <i>Varun M Hiremath, T. Janakiram and Pavan Kumar, P.</i>	07
2. Salinity tolerance studies of ornamentals <i>D. Dhanasekaran and C.T. Sathappan</i>	13
3. Path coefficient analysis in floribunda rose genotypes <i>Kiran Singh</i>	16
4. <i>Brownea</i> Jacq. (Leguminosae-Caesalpinioideae): a plant of high horticulture and medicinal value <i>Anu Verma, Shivaraman Pandey, V. N. Pandey and L.B. Choudhary</i>	20
<b>SHORT COMMUNICATIONS</b>	
1. Bamboo: a versatile plant <i>Anurag Bajpay and Kulveer Singh Yadav</i>	24
2. Nursery pro-trays and its importance in horticulture <i>Kulveer Singh Yadav and Anurag Bajpay</i>	27
<b>RESEARCH HIGHLIGHTS</b>	
1. Floricultural research and development of new varieties of flowers <i>S.S. Sindhu</i>	29
<i>News and Views</i>	33
<i>Book Review</i>	35
<i>Guidelines to Authors</i>	36

