ISSN 0973-354X
eISSN 2582-4899

JOURNAL OF HORTICULTURAL SCIENCES

Volume 15 December 2020 Number 2

Conserving Honey Bees with Forage Plant Mexican Creeper - *Antigonon leptopus*

Society for Promotion of Horticulture
ICAR - Indian Institute of Horticultural Research, Bengaluru - 560 089

JOURNAL OF HORTICULTURAL SCIENCES

(Founded in 2005 by the Society for Promotion of Horticulture, Bengaluru, India)

Email : chiefeditor.jhs@gmail.com Webpage : https://jhs.iihr.res.in/index.php/jhs

SOCIETY FOR PROMOTION OF HORTICULTURE (REGD.)

Email : sphiihr2005@gmail.com Website : www.sphindia.org

This Journal is abstracted in CABI, Current Contents, AGRIS, Indian Science Abstracts, Scopus, DOAJ and Redalyc. It is a participant of AmeliCA.

Request for membership subscriptions along with cheque/DD drawn in favour of **Society for Promotion of Horticulture, Bengaluru** may be sent to General Secretary, Society for Promotion of Horticulture, Indian Institute of Horticultural Research, Hessaraghatta Lake Post, Bengaluru - 560 089, India. All members except student members and subscribers get all publications of SPH free of cost. Any correspondence other than editorial may be addressed to General Secretary, Society for Promotion of Horticulture, Indian Institute of Horticultural Research, Hessaraghatta Lake Post, Bengaluru - 560 089, India.

Advertising space in the journal is available. For information and rates, please contact General Secretary, SPH, IIHR, Bengaluru - 560 089, India. Advertising material should cater to the interest of researchers, subscribers, etc. who are involved in promotion of horticulture. Publication of advertisement is not an endorsement or approval, expressed or implied by the SPH or the editors of any service, product or claim made by the manufacturer.

Coverpage Courtesy : **Rami Reddy P.V.**, P.No. 225

SUBSCRIPTION RATES

Patron	₹ 20,000
Life member	₹ 5,000
Annual Member	₹ 1,000 / US $ 100 (US $ 50 for SAARC countries)
Student Member	₹ 500
Student Life Memeber	₹ 3,000
Annual Subscription	₹ 1,500 / US $ 100 (US $ 60 for SAARC countries) (for institutions)
Enrolment Fee	₹ 200 / US $ 5 (Additional for all types of Membership)

NAAS rating of this journal is 3.43. JHS is now available online.
Authors have to submit manuscripts using the link : https://jhs.iihr.res.in/index.php/jhs

*Technical Assistance : **Dr. Sridhar Gutam, Thippeswamy S. and Pramida A.***

JOURNAL OF HORTICULTURAL SCIENCES

Volume 15 **Number 2** **December 2020**

CONTENTS

Short Communications

In this issue…

Hearty New Year Greetings from our Editorial Team to all the readers of JHS!

As the world is slowly coming out of glitches of pandemic, there is no other better way than celebrating 2021 as Year of Fruits and Vegetables as announced by United Nations Assembly to welcome the new year and recognize the importance of nutrition for better health. Fruits and Vegetables ensure the Nutritional Security to humankind. They play key role in addressing the malnutrition that is a major concern. We are proud that JHS creatins awareness of importance of fruits and vegetables by publishing the recent developments in research with respect to these crops.

Diversity of fruit crops and genetic resources available with respect to fruit crops are important for developing better fruit crop varieties. ***Sankaran and Dinesh*** *have reviewed the "Biodiveristy of Fruit Crops in India" in a very comprehensive way. There is diversity in Jasmine species.* ***Ganga et al.*** *carried out the palynological investigations and recorded the variability in pollen morphology in different species of Jasmine by documentating images using scanning electron microscope. Biodiversity can be linked to livelihood also. One such success story with tamarind selection 'Lakhamna' is being reported by* ***Kanupriya et al.*** *This tamarind selection has been identified from participatory breeding programme. It has a better pod characters and more preferred by consumers.*

Protected cultivation has seen greater momentum in last two decades. ***Adeniji et al.*** *identified the best varieties of tomato for polyhouse cultivation in Nigeria.* ***Rao et al.*** *selected two gladiolus hybrid selections IIHRG-7 and IIHRG-11 with red purple and red coloured flowers respectively. These hybrids have resistance to Fusarium wilt and suitable for cut flower and flower arrangement purposes.* ***Sankaran et al.*** *analysed the variance for 6 quantitative and 30 qualitative traits in mango in 400 genotypes and identified 18 clusters. Selected genotypes from specific clusters can be used in hybridization programme.*

The production aspects are important in perennial crops. It is crop management that needs to be prioritized for enhanced yield. ***Adiga et al.*** *have reviewed the research work carried in "Canopy Management in Cashew", providing the wholistic view of cultural operations to have a better crop. Use of soilless medium in nursery industry is gaining importance. Best suited potting mixture for mango stone graft of cv. Alphonso has been identified by* ***Lad et al.*** *They found that cocopeat + leaf manure + compost (1:1:2) as pot mixture provided better plant growth.*

Growing Chrysanthemum in pots is practiced in home and terrace gardens. The cultivar Kikiobiory is well suited for this purpose. ***Thakur*** *has studied the nitrogen requirement for this cultivar and has come out with the recommendation of 300 mg of N per pot applied*

twice in September and October in Punjab for best results. In another study, ***Singh and Bala*** *confirmed that use of benzyl adenine at 200 ppm helped in extended vase life of Chrysanthemum morifolium flowers.* ***Nair et al.*** *recorded that foliar spray of 30:20:20 NPK at weekly interval recorded more number of flowers of Dendrobium cv. Singapore White with significantly longer spikes.*

Crop production is directly influenced by pollinators. Decline in honey bee population is a serious concern and to conserve the pollinators community approach through ecosystem services is required. ***Rami Reddy*** *reports the benefits of having ornamental plant Mexican Creeper (Antigonon leptopus) as forage plant. This creeper attracted all the four species of honey bees studied. This creeper can be used as bioindicator of honey bee population.*

Aravindaraj et al. *have reported the honey dew secretion by Thrips palmi and analysed the composition of it. They had identified different sugars present in the honey dew secretion of Thrips. Thrips not only cause direct damage but act as vectors of many plant viruses. Management of diseases in perennial crops is a challenge. Phytophthora incited root infection in citrus needs concerted efforts.* ***Ingle et al.*** *have demonstrated that use of potassium salt of phosphonic acid could help in management of Phytophthora root rot in Nagpur Mandarin.*

Mushrooms can fill the gaps in nutritional security as they are rich in nutritive value. Iron deficiency is important issue to be addressed. Iron fortified oyster mushroom products have been developed by ***Pandey et al.*** *The bioavailability of iron from Arka Mushroom Fe-Fortified Rasam Powder has been confirmed. In another study, the amino acid profile of 18 isolates of oyster mushroom species belonging to 4 species have been documented by* ***Azeez et al.*** *Quantification of essential and non-essential amino acids has been reported. Nutritionally superior isolates can be selected from these isolates.*

The editorial team of JHS expresses the sincere efforts of reviewers who really complement the publication processes. All scientists and scholars can utilize the open access of JHS. Recently FAO has made JHS available through AGRIS. It is indexed by Redalyc, CABI_Hort and Scopus. All subscribers, scientists and scholars are requested to continue their support in publishing quality information in ***Journal of Horticultural Sciences****.*

S. Sriram
Editor in Chief

J. Hortl. Sci.
Vol. 15(2) 221-224 : 2020

Short Communication

A promising new tamarind selection - Lakshamana : Linking biodiversity and livilihood

Kanupriya C.[a*], Karunakaran G.[a] and Singh P.[b]
[a] Division of Fruit Crops, [b] Division of Basic Sciences
ICAR-Indian Institute of Horticultural research, Hessarghatta, Bengaluru- 560089
*Corresponding author Email : kp.kanu@gmail.com

ABSTRACT

Tamarind is a well-known commodity of Indian cuisine having medicinal and industrial uses. It is a nutritious tree crop of widespread occurrence growing on marginal lands in semi-arid and sub-humid tropical climates of India, making it highly valuable in ensuring food security for rural poor. Given the great potential of this neglected and underutilized species to address global challenges such as hunger, poverty and climate change adaptation, there is a need to revisit research and development priorities in its favor and to develop strategies together with stakeholders to increase its utilization. In the present study, a survey was undertaken in Tumkur district of Karnataka to characterize the variability available in tamarind for pod and tree characters and identify superior trees using horticultural traits. A farmer's tamarind selection "Lakshamana**" emerged from participatory breeding having significantly better traits compared to local tamarind.**

Key words: Tamarind, Selection, Pulp recovery and Yield

Tamarind (*Tamarindus indica*) is an evergreen tree legume, distributed all over the world in tropical and sub-tropical countries. The tree produces fruits in pods which consist of a brittle outer shell encapsulating the pulp and enclosed seeds. Once established, the tree develops a large tap root which protects it from strong winds and cyclones, making it well suited to the region prone to such weather phenomena. It is also considered to be a suitable tree for inter-planting with other commercial forest species. Tamarind starts bearing from 6-8 years and has productive life of 50-70 years after which it declines. The normal life span of the tree is 150 years. A typical established tree yields between 50-100Kg of fruit which is harvested during multiple picks over an 8-10-week period between February and April. Apart from tamarind pulp other by-products such as seed, shell, fiber is also useful for various purposes. Tamarind comes in two main types; sweet and sour. Sweet tamarind is harvested ripe and usually consumed fresh, while the sour tamarind is processed into a range of value-added products. Some of the most common products prepared from tamarind include juice, pulp, powder, chutney, pickles, sauces, sugar coated candies and Tamarind Kernel Powder (TKP). TKP is an important sizing material for the jute and textile industry and tamarind seeds are gaining importance as a rich source of proteins and valuable amino acids. India is the world's largest producer of tamarind; it is estimated that 300,000 tons are produced annually. It is also an exporter of tamarind, mainly to Europe and Arab countries (Spice Board, 2018)

Recently, there has been an increased interest in ûnding alternative, potentially high-value cash crops to improve the income of small farmers who are currently depending upon growing and selling traditional cereal crops. Tamarind has a wide range of genetic variation in India, according to the phenotype and genetic characteristics which could facilitate identification of superior and desirable types. Being a highly cross-pollinated crop, and propagated from time immemorial by seeds, considerable amount of variability exists in the trees growing in different regions. Selection is the crop improvement method widely adopted in tamarind and varieties are being released using this method. The consumer preference is for traits such as broad, brown pulp with good pulp recovery which is currently not being met by the few released varieties. The present study was undertaken keeping in view the emerging

importance of the crop with the objective of identifying superior quality combined with high pulp recovery. In this context, a survey was undertaken in Tumkur district of Karnataka to characterize the variability available for pod and tree characters and identify superior trees using horticultural traits. *In situ* analysis of the samples collected from this region was carried out at ICAR-Indian Institute of Horticulture Research, Bengaluru and an elite tamarind variety was identified having broad pods with good pulp colour and recovery. Farmer's tamarind selection "**Lakshamana**" emerged from participatory breeding having significantly better traits compared to local tamarind.

Lakshamana -A promising tamarind selection

This is an accession identified from Nandihalli village of Tumkur district Karnataka, having passport data: latitude 13.52° N, Longitude-76.74° E and 860 m MSL growing in field of Shri Laxmannappa. It was found to be superior with better yield and pod characters compared to local and registered mean annual yield (4 years from 2016-2020) of 251.4 kg/ tree as against 165.0 kg/tree in local trees (Table 1).

Table 1. Economic traits of promising selection Lakshamana in comparison to local check

Sl.No.	Traits	Lakshamana	Local
1.	Fruiting season	Feb-March	Feb-March
2.	Fruit bearing position	Terminal	Terminal
3.	Fruit clustering habit	Cluster of 2-3 or solitary	Clusters or solitary
4.	Fruit shape	Long, curved	Small, straight
5.	Pod length (cm)	25.4	13.5
6.	Pod breadth (cm)	3.8	2.36
7.	Number of pods/kg	24	49
8.	Number of seeds/pod	8.2	14.5
9.	Shell wt. (g/kg fruits)	250 (25%)	302 (30%)
10.	Pulp wt. (g/kg fruits)	430 (43%)	280 (28%)
11.	Seed wt. (g/kg fruits)	270 (27%)	380 (38%)
12.	Fiber wt. (g/kg fruits)	50 (5%)	47 (4.7%)
13	Yield per plant (kg per tree)	251.4	165.0

Fig. 1. Close view of tamarind tree and grower

Lakshamana is a 40-year-old tree and regular bearer (Fig.1). It commences flowering in May-June, matures in February-March and harvesting can be done in March-April under Tumkur conditions. This is a lean period in this region when there is less agricultural activity. The farmers can use this time to process and pack the tamarind to get better price in market. The pulp of "Lakshamana" is of superior quality having light brown colour, it is broader in shape which is desirable for marketing and has less fiber content (Fig.2). The inner cavity is silvery and this encloses the seeds. The pulp recovery is high (43%) as against 28% in local tamarind trees.

Fig.2. Pods, pulp and seed of tamarind Lakshamana

The pulp of Lakshamana has been characterized for nutritional traits (acidity and sugars) and total acidity and total sugar was found to be 20% and 29.78%, respectively. It was also profiled for sugar through liquid chromatography with tandem mass spectrometry (LC-MS/MS) and organic acid by high-performance liquid chromatography (HPLC) (Table 2). Glucose and fructose are the major sugars and accounted for 96.8% of the total sugar content. Beside that small amount (<1%) of mannose, ribose, arabinose, rhamnose, *myo*-inositol, sucrose and maltose were also found. Among organic acid tartaric acid content was highest (18.61%). Although tartaric acid occurs in other sour fruits, but tamarind fruits are reported to be the richest natural source of tartaric acid. Tamarind is known to be simultaneously the most acidic fruit with the sweetest taste because of presence of high levels of reducing sugars (glucose and fructose) and tartaric acid. Combination of organic acid and reducing sugar gives sweet-sour taste to this fruit.

Table 2. Sugar and organic acid profile of Lakshamana with local check

Nutritional traits	Lakshamana (g/100g)	Local (g/100g)
Glucose	20.53	14.5
Fructose	10.64	7.66
Mannose	0.66	0.55
Ribose	0.06	0.06
Arabinose	0.05	0.06
Rhamnose	0.02	0.01
myo-Inositol	0.06	0.02
Sucrose	0.004	0.002
Maltose	0.006	0.013
Tartaric acid	18.61	17.62
Malic acid	2.88	2.65

Harvesting and processing of Lakshamana pods starts from February and lasts up to mid-June. The pods fall down on own or the branches are shaken with help of long poles or a person climbs and shakes the branch to break free the pods. The pods are collected and left out to dry in sun for a few days. Processing which involves breaking the shell and removing seeds is carried out to secure better market value. One person can process 15-20Kg pods per day and earn around Rs 400/day. The whole family of Shri Laxmannappa gets involved during this period for processing thus employment is generated. After the shell is removed, the pulp is inverted to discard the seeds. It is stacked in ring shape in bamboo basket with capacity of 50kg. Each basket fetches 1500 Rs. The seed is also sold at rate of 17 Rs/kg and the shell chips at 2.50 Rs/kg. The seeds of "Lakshamana" tamarind are bold type and 1 quintal of pulp produces approximately 40 kg seeds. Thus, primary processing and value addition activities have potential of improving livelihood. Collective marketing and little primary processing can significantly improve family income from this accession.

In recent years several community-based strategies that focus on documenting local diversity, raising awareness of its status and improving its performance through participatory breeding and selection have been developed. Another way to strengthen on farm conservation is to recognize and support individual farmers who make contribution

to on-farm conservation (Gruberg *et al*. 2013). This strategy coupled with emerging scientific and economic interest to promote and commercialize the tamarind products will be helpful in increasing its value through market-based interventions. Tamarind is well suited for the backyard, dry and waste land farming. Hence, identification of this potential accession besides increasing the area and production could also address the issue of sustainability as the crop is climate resilient and profitable. Further, it also contributes towards rural livelihood security and employment for women during lean periods when there is less agricultural activity. There exists ample scope for area expansion under tamarind with superior fruit types all over India.

REFERENCES

Bioversity International, Rome and Fundación PROINPA, La Paz https://www.indianspices.com/export/major-itemwise-export.html

Gruberg, H., Meldrum, G., Padulosi, S., Rojas, W., Pinto, M. and Crane, T. 2013. Towards a better understanding of custodian farmers and their roles: insights from a case study in Cachilaya, Bolivia.

(Received on 11.12.2020 and Accepted on 25.12.2020)

INFORMATION TO CONTRIBUTORS

Journal of Horticultural Sciences, an international journal, is the official publication of **Society for Promotion of Horticulture (SPH).** It covers basic and applied aspect of original research on all branches of horticulture and other cognate disciplines, which promotes horticulture in its broadest sense. Its goals are to apprise horticultural scientists and others interested in horticulture of scientific and industrial developments and extension findings. The area of research include evaluation of germplasm, breeding, agronomic practices, physiology, biochemistry, biotechnology, soils and plant nutrition, plant protection, weed control, pesticide residue, post harvest technology, economics, extension, farm machinery and mechanization, etc. which facilitate in the growth and expansion of horticulture. The journal is published twice a year, in June and December.

The *Journal of Horticultural Sciences* (JHS) publishes critical reviews, research papers and short communications. Three copies of the manuscript and an electronic form (CD, MS Word) should be submitted to the Chief Editor, JHS, SPH, Indian Institute of Horticultural Research, Hessaraghatta Lake Post, Bangalore-560 089. The manuscript should preferably pertain to the research work carried out during the last five years. Author(s) must certify that the manuscript (s) has/have not been sent elsewhere for publication. All the authors have to become the members of SPH when a paper is accepted for publication. All papers will be refereed. Short communications on significant research findings, new record / technology are welcome. Besides invited review papers, scientists with vast experience on a particular field of research can also submit review papers which will be refereed. Decision of the Chief Editor / Editorial board is final. Authors are permitted to photocopy their article for non-commercial and scientific purpose. No reprints shall be provided *gratis*.Acceptance of manuscript for publication in JHS shall automatically mean transfer of copyright to the SPH. The chief editor/ Editorial board assumes no responsibility for the statements, opinion or facts expressed in the journal, which rests entirely with the author(s) thereof. Mention of a pesticide or a commercial or proprietary product does not constitute an endorsement or recommendation for the use.

Title: The title of the article should be bold and in running form. Use the font Times New Roman (14 point).Botanical / scientific names should be italicized. Author name(s) should be in running and bold with full address of the first author including e-mail address (it is mandatory as future correspondence will be only through e-mail). The address of other author(s), if different from the first author, should be given as footnotes and indicated by consecutive superscript numbers. A brief running title should be provided on a separate sheet.

Abstract: The abstract should not exceed 200 words. It should be suitable for indexing and publication in abstracting journal. Very pertinent keywords may be furnished.

Text: The text should be typed in double space on one side of good quality paper (21 x 29 cm) with 3cm margin on all sides **without justifying the text** and in clear and concise English. Use the font Times New Roman (12 point). The paper should be divided into subheadings (placed on the left margin and in upper case) such as Introduction, Material and Methods, Results and Discussion, Acknowledgements, and References. Units and abbreviations should be in metric (SI) system. It is desirable that authors take due care on clarity and brevity of the paper. The length of the paper should not exceed 2500 words.

Tables/ Illustrations/ Photographs: Each table should be on a separate sheet with a short title at the end of the paper, numbered in the order in which it appears in the text. The data reported must be subjected to appropriate statistical analysis. The illustrations should be relevant to the research findings and should not be repeating of data presented in the table. Only very good photographs, mounted on hard paper to avoid folding, given on a separate sheet of paper with title, which are reproducible, will be accepted. Data to be presented in graphical form should be sent on quality glossy contrast paper without folding.

References: References should be cited in the text in the form of (Anon., 1999; Prakash, 2002; Krishnamoorthy and Mani, 2004). The term *et al* should be used when there are more than two authors. The letters, a,b,c,… should be used following the year, to distinguish between two or more papers by the same author(s) in one year. References at the end of the text should be given in the following form:

Shikhamany, S. D. and Satyanarayana, G. 1973. A study on the association of leaf nutrient contents with poor yields in Anab. E.shahi grape (*Vitis vinifera* L.). *Ind. J. Hort.,* **30**: 376 - 380

Panse, V. G. and Sukhatme, P. V. 1978. Statistical methods for Agricultural workers. ICAR, New Delhi, p 108.

Srinivas, K. 1987. Response of watermelon (*Citrullus lanatus* Thunb. Musf) to drip and furrow irrigation under different nitrogen and plant population levels. Ph.D thesis, UAS, Bangalore

Mehta, N. K. and Sharma, S. D. 1986. Studies on flowering and fruit retention in some cultivars of peach (*Prunus persica* Batch). In: Advances in Research on Temperate Fruits. *Proc. Nat'l. Symp. Temp. Fruits,* Solan (India), Dr. Y. S. Parmar Univ. Hort. and Forestry, pp 37-42

Krishnamoorthy, A. and Mani, M. 2000. Biological Control of Pests of Vegetable Crops.p367-78. In: Biocontrol Potential and its exploitation in sustainable Agriculture. Vol. 2: Insect Pests. Upadhyaay, R. K. Mukerji, K. G. and Chamola, B.P. (ed.). Kluwer Academic / Plenum Publishers, New York

Cover photo (s) shall be included at the discretion of Editor. Authors may submit photographs/figures/diagrams for cover page while submitting the manuscript.

AUTHOR INDEX - VOL. 15 (1&2) 2020

SUBJECT INDEX - VOL. 15 (1&2) 2020

STATEMENT OF OWNERSHIP AND OTHER PARTICULARS ABOUT

JOURNAL OF HORTICULTURAL SCIENCES

(Form IV)

Place of Publication	:	Bengaluru
Periodicity of publication	:	Half-yearly
Printer's Name	:	Mr. Ravikumar, B.A.
Nationality	:	Indian
Address	:	Resolution Print Media #131, 6th Main, Meenakshinagar Kamakshipalya, Bengaluru - 560 079.
Publisher's Name	:	Society for Promotion of Horticulture
Address	:	ICAR-Indian Institute of Horticultural Research Hessaraghatta Lake P.O. Bengaluru - 560 089
Editor-in-Chief	:	Dr. S. Sriram
Nationality	:	Indian
Address	:	ICAR-Indian Institute of Horticultural Research Hessaraghatta Lake P.O. Bengaluru - 560 089.
Name and addresses of individuals who own the journal and partners or are share-holders holding more than one per cent of the total capital	:	Society for Promotion of Horticulture ICAR-Indian Institute of Horticultural Research Hessaraghatta Lake P.O. Bengaluru - 560 089.

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

Sd/-

June 30, 2020

(S. Sriram)

Editor-in-Chief

SOCIETY FOR PROMOTION OF HORTICULTURE

ICAR-Indian Institute of Horticultural Research
Hessaraghatta Lake Post, Bengaluru-560 089, India
sphiihr2005@gmail.com / chiefeditor.jhs@gmail.com
Website : https://sphindia.org

ENROLMENT FORM

Name in full (in block letters) Dr./Mrs./Mr./Ms. :

Designation :

Address for communication :

Phone No. :

E-mail ID :

Type of membership : Patron / Life member / Annual member / Student member*

Payment :

Demand Draft No. / Date :

Bank :

Place :

Date : SIGNATURE

Membership fee structure :

Type of membership	Membership amount	Enrolment fee	Total membership amount payable by Demand Draft (₹)
Patron	20,000/-	200/-	20,200/-
Life Member	5,000/-	200/-	5,200/-
Annual Member (India)	1,000/-	200/-	1,200/-
i. For SAARC authors	US $ 100	US $ 5	US $ 105
ii. For SAARC countries	US $ 50	US $ 5	US $ 55
Student member*	500/-	200/-	700/-

*The application of student members must be certified by their Head of dept. or equivalent and the student member shall not receive a copy of the journal.

Please send the duly filled-in enrolment form along with Demand Draft drawn in favour of Society for Promotion of Horticulture, by post to General Secretary, Society for Promotion of Horticulture ICAR-Indian Institute of Horticultural Research, Hessaraghatta Lake Post, Bengaluru - 560 089.

ACKNOWLEDGEMENTS

The editorial team acknowledges the services of the following reviewers

Dr. Shylesha A.N.
Principal Scientist, ICAR-NBAIR, Bengaluru

Dr. Ashwath Narayan
Assoiciate Professor, UAS, Raichur

Dr. Mohan C.
Principal Scientist, ICAR-CTCRI, Trivandrum

Dr. Chavalli Sarada
Associate Professor, YSRHU, Guntur

Dr. Dinesh R.
Principal Scientist, ICAR-IISR, Calicut

Dr. Kalaivanan D.
Scientist, ICAR-IIHR, Bengaluru

Dr. Sudhakar Rao D.V.
Principal Scientist, ICAR-IIHR, Bengaluru

Dr. Fakrudin B.
Professor, College of Horticulture, UHS, Bengaluru

Dr. Hebbar K.B.
Principal Scientist, ICAR-CPCRI, Kasaragod

Dr. Hima Bindu
Principal Scientist, ICAR-IIHR, Bengaluru

Dr. Satisha J.
Principal Scientist, ICAR-IIHR, Bengaluru

Dr. Krishnamurthy K.S.
Principal Scientist, ICAR-CPCRI, Kasaragod

Dr. Kundan Kishore
Principal Scientist, CHES (ICAR-IIHR), Bhubaneswar

Dr. Sankaran M.
Principal Scientist, ICAR-IIHR, Bengaluru

Dr. Madhu Bala
Associate Professor, PAU, Ludhiana

Dr. Nandeesha P.
Senior Scientist, ICAR-IIHR, Bengaluru

Dr. Venkatarami Reddy P.
Principal Scientist, ICAR-IIHR, Bengaluru

Dr. Prakash Tripathi
Principal Scientist, ICAR-IIHR, Bengaluru

Dr. Prasad R.D.
Principal Scientist, ICAR-IIOR, Hyderabad

Dr. Rajashekaran P.E.
Principal Scientist, ICAR-IIHR, Bengaluru

Dr. Rajiv Kumar
Principal Scientist, ICAR-IIHR, Bengaluru

Dr. Ravindran Chandran
Horticulturist, TNAU, Coimbatore

Dr. Ramani S.
Former Project Coordinator, AICRP on Honey Bees and Pollinator, Bengaluru

Dr. Veena S.S.
Principal Scientist, ICAR-CTCRI, Trivandrum

Dr. Smaranika Mishra
Scientist, ICAR-IIHR, Bengaluru

Dr. Sujatha A. Nair
Principal Scientist, ICAR-IIHR, Bengaluru

Dr. Tejaswini Prakash
Principal Scientist, ICAR-IIHR, Bengaluru

Dr. Usha Bharathi T.
Scientist, ICAR-IIHR, Bengaluru

Dr. Sridhar V.
Principal Scientist, ICAR-IIHR, Bengaluru

Dr. Srinivasan V.
Principal Scientist, ICAR-IISR, Calicut

Sd/-
(**S. Sriram**)
Editor-in-Chief

New Varieties/ Technologies of ICAR-IIHR

New Water Melon - Arka Shyama variety

Arka Red - New Gerbera variety

Leaf curl resistant chilli varieties Arka Tejaswi, Arka Saanvi and Arka Tanvi

Arka Abhi

Arka Shuba

New Varieties/ Technologies of ICAR-IIHR

Arka Herbiwash - Safe way of removing pesticide residues

Arka Bharath - New teasel gourd variety

Journal of Horticultural Sciences is indexed by the following abstracting and indexing services


SOCIETY FOR PROMOTION OF HORTICULTURE