

# Inventory of Registered Horticultural Germplasm from ICAR-IIHR, Bengaluru



**Germplasm Advisory Committee**  
**ICAR-Indian Institute of Horticultural Research**

Hesaraghatta Lake Post, Bengaluru 560089, Karnataka



# Inventory of Registered Horticultural Germplasm from ICAR-IIHR, Bengaluru



**Germplasm Advisory Committee**  
**ICAR-Indian Institute of Horticultural Research**  
Hesaraghatta Lake Post, Bengaluru 560089, Karnataka



## **ICAR-Indian Institute of Horticultural Research**

Hesaraghatta Lake Post, Bengaluru-560089, Karnataka, India

Tel. No. : +91-80-23086100

E mail : Director.IIHR@icar.gov.in

website : <http://www.iihr.res.in>

## **Inventory of Registered Horticultural Germplasm from ICAR-IIHR, Bengaluru**

January 2022

ISBN 978-93-5508-006-6

### **Published by**

Dr. B.N.S. Murthy

Director

### **Compiled and Technical Editing**

Dr. Rajiv Kumar, Dr. P.E. Rajasekharan, Dr. M. Pitchaimuthu, Dr. Anuradha Sane, Dr. M.R. Rohini and Dr. V. Radhika

### **Correct Citation**

Rajiv Kumar, Rajasekharan P.E., Pitchaimuthu M., Anuradha Sane, Rohini M.R. and Radhika, V. (2022) Inventory of Registered Horticultural Germplasm from ICAR-IIHR, Bengaluru. Published by Director, ICAR-IIHR, Bengaluru- 560 089, pp. 1-82.

**Disclaimer:** While all the care has been taken by the editors and the publishers to ensure that the information in the publication is true and correct. ICAR-IIHR gives no assurance as to the exactness of any information contained in the publication or their suitability across all situations.

### **Copyright © 2022 ICAR-IIHR. All rights reserved.**

Unless otherwise indicated, all materials on these pages are copyrighted by ICAR-IIHR. All rights reserved. No part of these pages, either text or images may be used for any purpose other than personal use. Therefore, reproduction, modification, storage in a retrieved system or retransmission, in any form or by any means, electronic, mechanical or otherwise, for reasons other than personal use, is strictly prohibited without prior written permission.

### **Design and Page Setting**

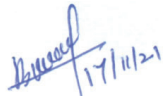
Shreya Printers & Publishers, Bengaluru-86, Mobile: 9538186800, E mail: [shreyaprint.bangalore@gmail.com](mailto:shreyaprint.bangalore@gmail.com)

## FOREWARD

Plant genetic resources (PGR) are the building blocks for genetic improvement of cultivated crops to develop new varieties. To meet the food requirement of ever-increasing population, the plant breeders are continuously making the efforts by developing the new varieties through crop improvement programmes.

During the process of germplasm manipulations, research and experimentation to develop superior genotypes for specific or multiple traits, many useful materials are developed. Due to presence of specific or a combination of traits the performance of such material is good, but may not show yield superiority over the existing varieties, therefore, do not qualify for their release and notification. In addition, there are raw germplasm which are identified and developed by scientists (landraces/traditional cultivars, genetic stocks) which have resistance/tolerance to biotic and abiotic stresses, and other useful traits but do not qualify to get released and notified because of poor agronomic performance. These materials belonging to the above categories are novel, unique and distinct with academic, scientific and applied value but may not have a direct commercial value. With an important rationale to recognize the efforts of researchers for developing the potentially valuable germplasm and to get the information in public domain for their efficient use by the breeders and researchers, ICAR entrusted the responsibility of registration of plant germplasm to National Bureau of Plant Genetic Resources (NBPGR), New Delhi.

The breeders working in different crop divisions of ICAR-IIHR have been in the forefront in registering this unique germplasm with ICAR-NBPGR. The Germplasm Advisory Committee of ICAR-IIHR made an attempt to compile all the registered germplasm of ICAR-IIHR in various horticultural crops. I congratulate the breeders who took interest to register their unique germplasm with ICAR-NBPGR and I hope the horticultural fraternity of our country will be able to utilise these germplasm in their breeding programmes. I also take this opportunity to congratulate the team GAC for taking efforts to compile the same.

  
Dr. BNS Murthy  
Director

## PREFACE

Plant Genetic Resources for Food and Agriculture (PGRFA) form the basis for genetic improvement of crop species in development of new varieties. Hence, it was realized that due recognition should be accorded to the persons/institutions who are associated with the development and identification of improved or unique potentially valuable germplasm and genetic stocks. It is also desirable from the point of changed world scenario of Intellectual Property Rights (IPR) regimes to inventorize, document and bring all the important genetic resources into public domain, facilitating their safe and accelerated use in research and crop improvement.

Recognizing the importance of the issue, a mechanism for “Registration of Plant Germplasm” was instituted in 1996 at the ICAR-National Bureau of Plant Genetic Resources (NBPGR), New Delhi by the ICAR. This mechanism is envisaged to serve as a recognized tool for registration of PGRFA at national level. This would also provide facilitated access to the developed or identified potentially valuable germplasm for utilization in crop improvement programmes. Since, the institution of this mechanism, 46 meetings have been held and a total of 1,885 germplasm belonging to 209 crop species have been registered. The present revision of the guidelines is an effort towards simplification and inclusion of provision required as per the changing scenario for submission of application and seed/genetic material, recommended by Plant Germplasm Registration Committee (PGRC) (<http://www.nbpgr.ernet.in:8080/registration/AboutUs.aspx>).

In 1996, the detailed guidelines and the profoma for the registration of plant germplasm were formalised for major food crops and approved in 1999. Registered germplasm will be useful to search the new genes for incorporation in existing cultivars to ensure the food and nutritional security.

ICAR-NBPGR is a nodal agency having responsibility to assign the registration number through Plant Germplasm Registration Committee (PGRC). Germplasm or genetic stock of agri-horticultural and other economic crops, including agro-forestry species, spices, medicinal & aromatic plants, ornamental plants contains unique, uniform, stable and potential attributes of academic, scientific or commercial value registered.

ICAR-IIHR a premier institute and nodal agency for basic, strategic, anticipatory and applied research on various aspects of horticulture such as fruits, vegetable, ornamental, medicinal and aromatic plants and mushrooms in India. ICAR-IIHR also declared as NAGS for several horticultural crops. Over the years, IIHR registered more than 76 unique germplasm with ICAR-NBPGR. An attempt has been made to compile this to help the users.

**Dr. Rajiv Kumar, Dr. P.E. Rajasekharan  
Dr. M. Pitchaimuthu, Dr. Anuradha Sane  
Dr. M.R. Rohini, Dr. V. Radhika**

## Contents

<b>Sl. No.</b>	<b>Particulars</b>	<b>Page</b>
1	Fruit Crops	1
2	Vegetable Crops	13
3	Flower Crops	38
4	Medicinal Crops	78

# FRUIT CROPS

## Avocado (*Persea americana*)

1	<b>National Identity</b>	:	IC0612469
2	<b>Donor identity</b>	:	CHES-PA-III-1
3	<b>INGR No.</b>	:	21072
4	<b>Year</b>	:	2021
5	<b>Pedigree</b>	:	Seedling selection from local collection
6	<b>Novel features</b>	:	Regular bearing, high yielding seedling selection and improved fruit quality.
7	<b>Developers</b>	:	T Sakhivel, G Karunakaran, PC Tripathi, R Senthil Kumar, A. C. Madhav, LK Bharathi, GK Pillai, DK Samuel and Shamina Azeez





## Banana (*Musa* sp.)

1	<b>National Identity</b>	:	IC0395101
2	<b>Donor identity</b>	:	IIHR Musa hybrid (Cal 4 x <i>M. rubra</i> )
3	<b>INGR No.</b>	:	17058
4	<b>Year</b>	:	2017
5	<b>Pedigree</b>	:	<i>M. acuminata</i> ssp. <i>Burmannica</i> (Calcutta 4) x <i>M. rubra</i>
6	<b>Novel features</b>	:	Inter-specific hybrid with intermediate characters, flowers (Inflorescence) bright and semi-erect. Intermediate height with broad leaves (can be used for leaf production).
7	<b>Developers</b>	:	A Rekha, KV Ravishankar and M Siddppa



## Gauva (*Psidium guajava*)

1	<b>National Identity</b>	:	IC0395191
2	<b>Donor identity</b>	:	Allahabad Safeda
3	<b>INGR No.</b>	:	14022
4	<b>Year</b>	:	2014
5	<b>Pedigree</b>	:	Germplasm from Naini Allahabad
6	<b>Novel features</b>	:	Medium sized fruits, white coloured pulp, high TSS, good keeping quality and soft.
7	<b>Developers</b>	:	MD Subramanyam, CPA Iyer and MR Dinesh



1	<b>National Identity</b>	:	IC0395190
2	<b>Donor identity</b>	:	Arka Mridula
3	<b>INGR No.</b>	:	14023
4	<b>Year</b>	:	2014
5	<b>Pedigree</b>	:	Selection from open pollinated seeds of Allahabad Safeda
6	<b>Novel features</b>	:	Medium sized fruits, white coloured pulp, high TSS, good keeping quality and high pectin.
7	<b>Developers</b>	:	CPA Iyer, MD Subramanyam and MR Dinesh



1	<b>National Identity</b>	:	IC0395219
2	<b>Donor identity</b>	:	Red Flesh
3	<b>INGR No.</b>	:	14024
4	<b>Year</b>	:	2014
5	<b>Pedigree</b>	:	N/A
6	<b>Novel features</b>	:	Medium sized fruits, pink coloured pulp, high TSS, good keeping quality.
7	<b>Developers</b>	:	MD Subramanyam, CPA Iyer and MR Dinesh



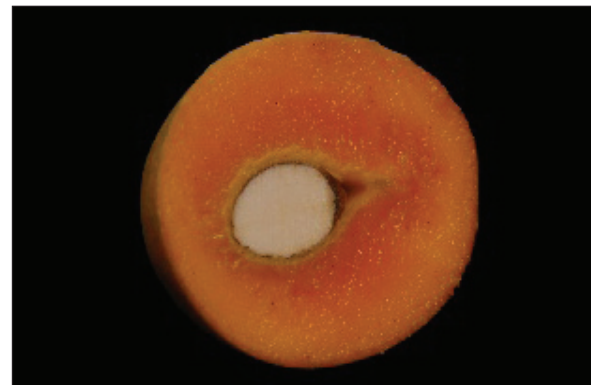
## Jamun (*Syzygium cuminii*)

1	<b>National Identity</b>	:	IC0635379
2	<b>Donor identity</b>	:	IIHR-III-4-5
3	<b>INGR No.</b>	:	21168
4	<b>Year</b>	:	2021
5	<b>Pedigree</b>	:	Identified from the collections made from Western Ghats
6	<b>Novel features</b>	:	Seedless.
7	<b>Developers</b>	:	PC Tripathi, A Rekha, Anuradha Sane, VK Rao and M Arivalagan



## Mango (*Mangifera indica*)

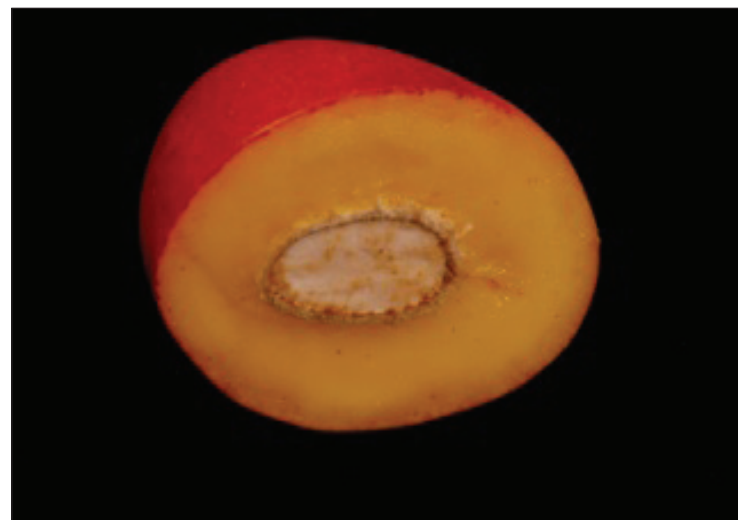
1	<b>National Identity</b>	:	IC0391661
2	<b>Donor identity</b>	:	Creeping
3	<b>INGR No.</b>	:	14017
4	<b>Year</b>	:	2014
5	<b>Pedigree</b>	:	Chance seedling from Trichur, Kerala
6	<b>Novel features</b>	:	Medium size fruits, yellow coloured fibreless pulp, good sugar acid blend, good keeping quality for processing, fruits have excellent red blush on the skin.
7	<b>Developers</b>	:	CPA Iyer, MD Subramanyam and MR Dinesh



1	<b>National Identity</b>	:	IC0391736
2	<b>Donor identity</b>	:	Kalapadi
3	<b>INGR No.</b>	:	14018
4	<b>Year</b>	:	2014
5	<b>Pedigree</b>	:	Chance seedling from Sangareddy, Medak, A.P.
6	<b>Novel features</b>	:	Tree dwarf in stature, produces medium sized fruits having deep yellow coloured pulp, high TSS, good keeping quality.
7	<b>Developers</b>	:	CPA Iyer, MD Subramanyam and MR Dinesh



- 1 **National Identity** : IC0391715
- 2 **Donor identity** : Janardhan Pasand
- 3 **INGR No.** : 14019
- 4 **Year** : 2014
- 5 **Pedigree** : Chance seedling from Kadiyam, East Godavari A.P.
- 6 **Novel features** : Tree dwarf in stature, produces medium sized fruits having yellow coloured pulp, high TSS, good keeping quality, fruits have attractive red blush all over.
- 7 **Developers** : CPA Iyer, MD Subramanyam and MR Dinesh





- 1 **National Identity** : IC0391622
- 2 **Donor identity** : Ati Madhuram
- 3 **INGR No.** : 14020
- 4 **Year** : 2014
- 5 **Pedigree** : Chance seedling from Fruit Research Station, Kodur
- 6 **Novel features** : Medium sized round shaped fruits, yellow coloured fibreless pulp, fruits sweet to taste, it is a dwarf tree.
- 7 **Developers** : CPA Iyer, MD Subramanyam and MR Dinesh



- 1 **National Identity** : IC0391747
- 2 **Donor identity** : Kerala Dwarf
- 3 **INGR No.** : 14021
- 4 **Year** : 2014
- 5 **Pedigree** : Chance seedling from Trichur, Kerala
- 6 **Novel features** : Tree dwarf in stature, produces medium sized round shaped fruits having yellow coloured pulp.
- 7 **Developers** : CPA Iyer, MD Subramanyam and MR Dinesh



# VEGETABLE CROPS

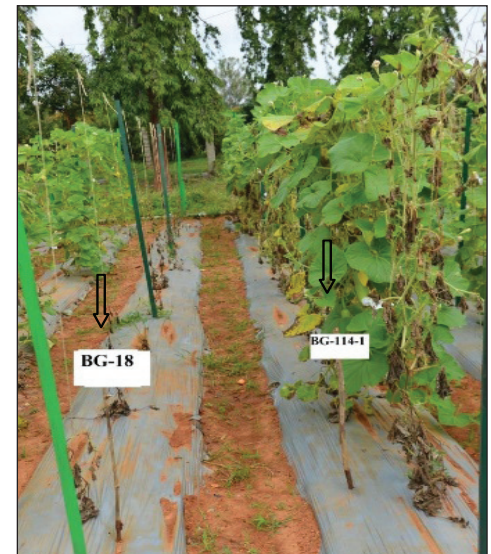
## ***Amaranthus (Amaranthus sp.)***

- |   |                          |   |  |
|---|--------------------------|---|--|
| 1 | <b>National Identity</b> | : | IC395324                                   |
| 2 | <b>Donor identity</b>    | : | AV-31 (IIHR-31)                            |
| 3 | <b>INGR No.</b>          | : | 3059                                       |
| 4 | <b>Year</b>              | : | 2003                                       |
| 5 | <b>Pedigree</b>          | : | IIHR-31                                    |
| 6 | <b>Novel features</b>    | : | Dantu type (pulling type with thick stem). |
| 7 | <b>Developers</b>        | : | B Varalakshmi                              |

1	<b>National Identity</b>	:	IC395327
2	<b>Donor identity</b>	:	AV-50 (IIHR-50)
3	<b>INGR No.</b>	:	3060
4	<b>Year</b>	:	2003
5	<b>Pedigree</b>	:	IIHR-50
6	<b>Novel features</b>	:	Resistance to white rust.
7	<b>Developers</b>	:	B Varalakshmi

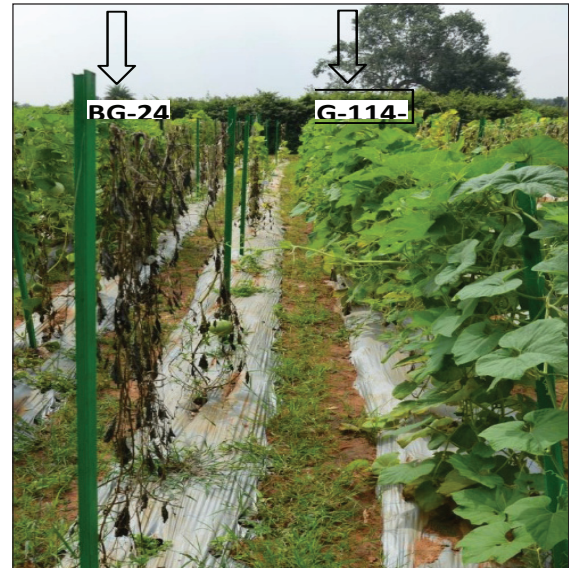
## Bottle gourd (*Lagenaria siceraria*)

1	<b>National Identity</b>	:	IC0635410
2	<b>Donor identity</b>	:	0635410
3	<b>INGR No.</b>	:	21145
4	<b>Year</b>	:	2021
5	<b>Pedigree</b>	:	Selection from open pollinated population BG-114
6	<b>Novel features</b>	:	Resistant to gummy stem blight, short cylindrical fruit.
7	<b>Developers</b>	:	MV Dhananjaya, GM Sandeep Kumar, B Varalakshmi and B Mahesh



BG-114-1 along with susceptible check BG-18

1	<b>National Identity</b>	:	IC0635411
2	<b>Donor identity</b>	:	0635411
3	<b>INGR No.</b>	:	21146
4	<b>Year</b>	:	2021
5	<b>Pedigree</b>	:	Selection from an open pollinated population maintained in the germplasm
6	<b>Novel features</b>	:	Resistant to gummy stem blight, medium cylindrical fruit.
7	<b>Developers</b>	:	MV Dhananjaya, GM Sandeep Kumar, B Varalakshmi and B Mahesh

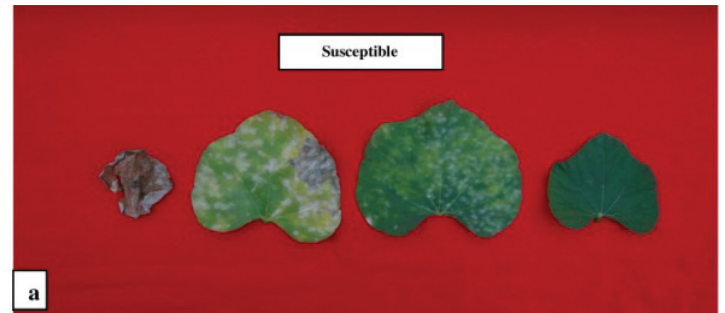


1	<b>National Identity</b>	: IC0635413
2	<b>Donor identity</b>	: 0635413
3	<b>INGR No.</b>	: 21147
4	<b>Year</b>	: 2021
5	<b>Pedigree</b>	: Selection from open pollinated population BG-6
6	<b>Novel features</b>	: Resistant to powdery mildew, elongated straight fruit.
7	<b>Developers</b>	: MV Dhananjaya, GM Sandeep Kumar, B Varalakshmi and B Mahesh



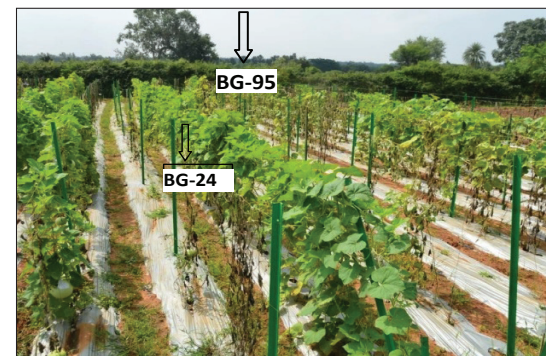


1	National Identity	:	IC0635414
2	Donor identity	:	0635414
3	INGR No.	:	21215
4	Year	:	2021
5	Pedigree	:	Selection from open pollinated population of BG-8
6	Novel features	:	Resistant to powdery mildew, fruits elongated straight with stripes.
7	Developers	:	MV Dhananjaya, GM Sandeep Kumar, B Varalakshmi and B Mahesh



Powdery mildew disease reaction on bottle gourd genotypes under *in vivo* screening with artificial inoculation, four leaves from left to right shows disease progress starting from basal leaf to young leaf a) Susceptible b) Resistant

1	<b>National Identity</b>	:	IC0635412
2	<b>Donor identity</b>	:	0635412
3	<b>INGR No.</b>	:	21148
4	<b>Year</b>	:	2021
5	<b>Pedigree</b>	:	Selection from an open pollinated population maintained in the germplasm
6	<b>Novel features</b>	:	Resistant to gummy stem blight, round shaped fruit.
7	<b>Developers</b>	:	MV Dhananjaya, GM Sandeep Kumar, B Varalakshmi and B Mahesh



## Brinjal (*Solanum melongena*)

1	<b>National Identity</b>	:	IC395333
2	<b>Donor identity</b>	:	IIHR-3 (96-2-1)
3	<b>INGR No.</b>	:	03074
4	<b>Year</b>	:	2003
5	<b>Pedigree</b>	:	IIHR-124 x Arka Keshav
6	<b>Novel features</b>	:	Resistance to bacterial wilt.
7	<b>Developers</b>	:	AT Sadashiva, TH Singh, KM Reddy, MK Reddy, MV Balaram, BC Narasimha Prasad, KM Prasanna, LR Naveen and SG Joshi



1	<b>National Identity</b>	:	IC526796
2	<b>Donor identity</b>	:	BWBH-3
3	<b>INGR No.</b>	:	05025
4	<b>Year</b>	:	2005
5	<b>Pedigree</b>	:	IIHR-3 x IIHR-322
6	<b>Novel features</b>	:	Combined resistant to bacterial wilt.
7	<b>Developers</b>	:	AT Sadashiva and TH Singh



## Chilli/Hot pepper (*Capsicum annuum* L.)

1	<b>National Identity</b>	:	IC395318 / IC395319
2	<b>Donor identity</b>	:	IHR 3226/IHR3227 (MS2A/2B)
3	<b>INGR No.</b>	:	03077
4	<b>Year</b>	:	2003
5	<b>Pedigree</b>	:	Male sterile plant was a natural mutant observed in germplasm and the corresponding maintainer line developed through back crossing
6	<b>Novel features</b>	:	Cytoplasmic genic male sterility (CGMS).
7	<b>Developers</b>	:	K Madhavi Reddy, AA Deshpande



- 1 **National Identity** : IC296662/ IC296663
- 2 **Donor identity** : MS1A/1B
- 3 **INGR No.** : 04052
- 4 **Year** : 2004
- 5 **Pedigree** : CGMS system transferred to Arka Lohit background
- 6 **Novel features** : Stable CGMS line with good general combining ability (GCA).
- 7 **Developers** : K Madhavi Reddy



- 1 **National Identity** : IC296664/IC296665
- 2 **Donor identity** : IHR 3287 (MS3A/3B)
- 3 **INGR No.** : 04053
- 4 **Year** : 2004
- 5 **Pedigree** : Male sterile line is a natural mutant observed in the experimental plot of PMR line (PMR64) at ICAR-IIHR and subsequently corresponding & stable maintainer line was developed through back crossing method.
- 6 **Novel features** : Stable CGMS line with powdery mildew and ChiVMV resistance.
- 7 **Developers** : K Madhavi Reddy

**MS3 (A line)**



1	<b>National Identity</b>	:	IC296666
2	<b>Donor identity</b>	:	IHR 3289 (PMR -14)
3	<b>INGR No.</b>	:	04054
4	<b>Year</b>	:	2004
5	<b>Pedigree</b>	:	Pedigree method of selection of Pant C1 x IHR 517B {IHR 517 (a line derived from <i>C.microcarpon</i> )}
6	<b>Novel features</b>	:	Restorer line with good combining ability for yield, fruit quality and powdery mildew resistance.
7	<b>Developers</b>	:	K Madhavi Reddy





1	<b>National Identity</b>	:	IC 296667
2	<b>Donor identity</b>	:	IHR 3310 (IHR 11#2)
3	<b>INGR No.</b>	:	04055
4	<b>Year</b>	:	2004
5	<b>Pedigree</b>	:	A pure line selection of line received from AVRDC, Taiwan
6	<b>Novel features</b>	:	Fertility restorer line with good combining ability for earliness, yield and fruit quality.
7	<b>Developers</b>	:	K Madhavi Reddy



1	<b>National Identity</b>	: IC526794
2	<b>Donor identity</b>	: IHR3315
3	<b>INGR No.</b>	: 05024
4	<b>Year</b>	: 2005
5	<b>Pedigree</b>	: Pure line selection of ICPN 11#7 received from AVRDC, Taiwan
6	<b>Novel features</b>	: Fertility restorer line of chilli with good general combining ability for earliness, yield and fruit quality.
7	<b>Developers</b>	: K Madhavi Reddy



1	<b>National Identity</b>	:	IC 553688
2	<b>Donor identity</b>	:	-
3	<b>INGR No.</b>	:	13068
4	<b>Year</b>	:	2013
5	<b>Pedigree</b>	:	Locally grown chilli landrace, was collected from a place known as '47 Kilometre Point', south of Indira Point (6.75°N, 93.83°E) of Andaman & Nicobar Islands.
6	<b>Novel features</b>	:	High capsaicin adapted to the tropical humid climate.
7	<b>Developers</b>	:	LK Bharathi and HS Singh



## Ivy gourd (*Coccinia grandis*)

- 1 **National Identity** : IC553244
- 2 **Donor identity** : CHIG 15
- 3 **INGR No.** : 09126
- 4 **Year** : 2009
- 5 **Pedigree** : Selection from a collection of twenty ivy gourd genotypes
- 6 **Novel features** : Germplasm with fruit length (8.5-9 cm) and uniform cylindrical shape. A single plant of CHIG-15 produces 20 kg fruits/year.
- 7 **Developers** : LK Bharathi, G Naik, S Mandal and HS Singh



## Okra (*Abelmoschus esculentus*)

1	<b>National Identity</b>	:	IC0523737
2	<b>Donor identity</b>	:	IIHR-234 (MS-1)
3	<b>INGR No.</b>	:	10156
4	<b>Year</b>	:	2010
5	<b>Pedigree</b>	:	IIHR-20-30 x Arka Anamika
6	<b>Novel features</b>	:	Geneic male sterile line (GMS line).
7	<b>Developers</b>	:	M Pitchaimuthu and OP Dutta



1	<b>National Identity</b>	:	IC0189926
2	<b>Donor identity</b>	:	IIHR-31-1-2 (Selection-1)
3	<b>INGR No.</b>	:	10157
4	<b>Year</b>	:	2010
5	<b>Pedigree</b>	:	IIHR-31-1-2 x Arka Anamika
6	<b>Novel features</b>	:	Completely ridgeless fruit, long stalk easy to snap, shorter inter-node length, suitable for both fresh market and processing.
7	<b>Developers</b>	:	M Pitchaimuthu, OP Dutta, VSR Krishna Prasad and KRM Swamy



## Tomato (*Lycopersicon esculentum*)

1	<b>National Identity</b>	:	IC395328
2	<b>Donor identity</b>	:	TLBR-1
3	<b>INGR No.</b>	:	03075
4	<b>Year</b>	:	2003
5	<b>Pedigree</b>	:	15 SBSB x H-24
6	<b>Novel features</b>	:	Resistant to tomato leaf curl virus (TLCV) and bacterial wilt.
7	<b>Developers</b>	:	AT Sadashiva, KM Reddy, MK Reddy, TH Singh, MV Balaram, BC Narasimha Prasad, KM Prasanna, LR Naveen and SG Joshi

1	<b>National Identity</b>	:	IC395457
2	<b>Donor identity</b>	:	IIHR-2195
3	<b>INGR No.</b>	:	03076
4	<b>Year</b>	:	2003
5	<b>Pedigree</b>	:	CLN 2114 Dc 1F1-50-2-16-8-2-17-0
6	<b>Novel features</b>	:	Resistant to TLCV and bacterial wilt in different genetic background.
7	<b>Developers</b>	:	AT Sadashiva, KM Reddy, MK Reddy, TH Singh, MV Balaram, BC Narasimha Prasad, KM Prasanna, LR Naveen and SG Josh



## Water melon (*Citrullus lanatus*)

- |   |                          |   |                                 |
|---|--------------------------|---|---------------------------------|
| 1 | <b>National Identity</b> | : | IC0584139                       |
| 2 | <b>Donor identity</b>    | : | IIHR-81-1-3-4-6                 |
| 3 | <b>INGR No.</b>          | : | 10158                           |
| 4 | <b>Year</b>              | : | 2010                            |
| 5 | <b>Pedigree</b>          | : | IIHR-81 Selection               |
| 6 | <b>Novel features</b>    | : | Bushy plant type.               |
| 7 | <b>Developers</b>        | : | M Pitchaimuthu and<br>KRM Swamy |



1	<b>National Identity</b>	:	IC631247
2	<b>Donor identity</b>	:	BIL-53
3	<b>INGR No.</b>	:	20033
4	<b>Year</b>	:	2020
5	<b>Pedigree</b>	:	BC <sub>1</sub> F <sub>6</sub> generation derivative of an interspecific cross between <i>Citrullus lanatus</i> var. <i>citroides</i> x <i>Citrullus lanatus</i>
6	<b>Novel features</b>	:	Advanced pre-breeding line derived from the cross <i>C. lanatus</i> var. <i>citroides</i> x Arka Manik possessing resistance to WBNV disease.
7	<b>Developers</b>	:	E Sreenivasa Rao



1	<b>National Identity</b>	:	IC0523059
2	<b>Donor identity</b>	:	RS-11
3	<b>INGR No.</b>	:	20036
4	<b>Year</b>	:	2020
5	<b>Pedigree</b>	:	Single plant selection from IC0523059
6	<b>Novel features</b>	:	Resistant to <i>Fusarium oxysporum</i> f. sp. niveum race 1 and race 2. Performed good as a rootstock with respect to different yield and quality traits of a susceptible scion grafted onto it.
7	<b>Developers</b>	:	E Sreenivasa Rao



RS11 (R) resistant to Fusarium wilt upon artificial inoculation



Top row: Grafted plants of NS-295 on RS-11  
 Middle Row: Grafted plants NS-295 on RS-10  
 Bottom Row: Ungrafted Grafted plants of NS-295

# FLOWER CROPS

## ***Anthurium (Anthurium ornatum)***

1	<b>National Identity</b>	:	IC556922
2	<b>Donor identity</b>	:	IIHR A1
3	<b>INGR No.</b>	:	08047
4	<b>Year</b>	:	2008
5	<b>Pedigree</b>	:	Selection
6	<b>Novel features</b>	:	Emits fragrance during stigma receptivity, easy to grow.
7	<b>Developers</b>	:	C Aswath, D Prakash, KV Prasad and ML Choudhary



## Carnation (*Dianthus sp.*)

- |   |                          |   |   |
|---|--------------------------|---|---|
| 1 | <b>National Identity</b> | : | IC561244                                      |
| 2 | <b>Donor identity</b>    | : | IIHRIS-1                                      |
| 3 | <b>INGR No.</b>          | : | 08102   |
| 4 | <b>Year</b>              | : | 2008  |
| 5 | <b>Pedigree</b>          | : | <i>D. chinensis</i> x <i>D. caryophyllus</i>  |
| 6 | <b>Novel features</b>    | : | Inter specific hybrid, good for potted plant. |
| 7 | <b>Developers</b>        | : | Tejaswini, MV Dhananjaya and RN Bhat          |



- 1 **National Identity** : IC561245
- 2 **Donor identity** : IHRIS-2
- 3 **INGR No.** : 08010
- 4 **Year** : 2008
- 5 **Pedigree** : *Dianthus caryophyllus* x *Dianthus chinensis*
- 6 **Novel features** : Inter specific hybrid with mass bloom effect, good spray type.
- 7 **Developers** : Tejaswini, MV Dhananjaya and RN Bhat



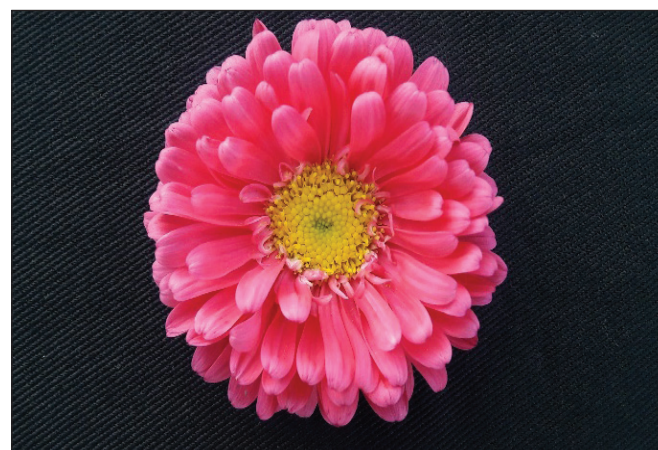
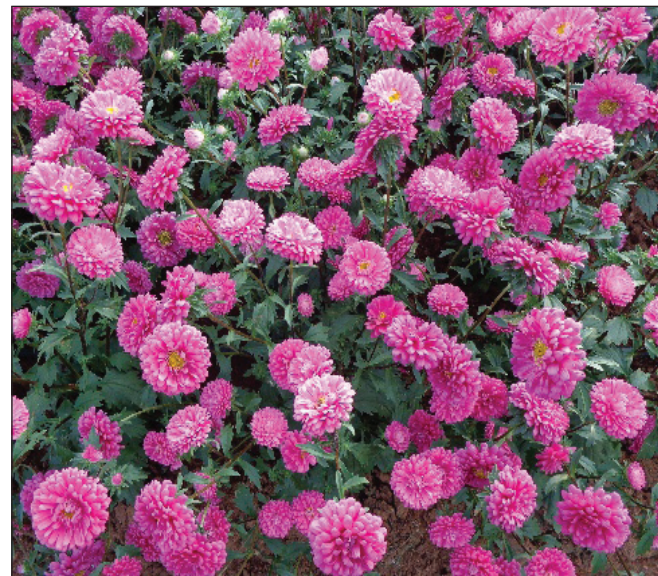
1	<b>National Identity</b>	:	IC548347
2	<b>Donor identity</b>	:	IIHRC 1
3	<b>INGR No.</b>	:	08065
4	<b>Year</b>	:	2008
5	<b>Pedigree</b>	:	<i>Dianthus caryophyllus</i> x <i>Dianthus chinensis</i>
6	<b>Novel features</b>	:	Micro-carnation genotype.
7	<b>Developers</b>	:	Tejaswini, MV Dhananjaya and RN Bhat





## China aster (*Callistephus Chinensis* (L.) Nees)

1	<b>National Identity</b>	:	IC0610420
2	<b>Donor identity</b>	:	IIHRCA H13A
3	<b>INGR No.</b>	:	14048
4	<b>Year</b>	:	2014
5	<b>Pedigree</b>	:	Selection from OP seeds of line No.173
6	<b>Novel features</b>	:	Early flowering, higher number of flowers/plant, higher weight of flowers/plant.
7	<b>Developers</b>	:	Rajiv Kumar, T Manjunatha Rao and T Janakiram



1	<b>National Identity</b>	:	IC0610421
2	<b>Donor identity</b>	:	IIHRCA J 17
3	<b>INGR No.</b>	:	14049
4	<b>Year</b>	:	2014
5	<b>Pedigree</b>	:	Selection from self seeds of line No.15
6	<b>Novel features</b>	:	Early flowering, higher number of flowers/plant, higher weight of flowers/plant.
7	<b>Developers</b>	:	Rajiv Kumar, T Manjunatha Rao and T Janakiram



- 1 **National Identity** : IC0610422
- 2 **Donor identity** : IIHR-35
- 3 **INGR No.** : 14050
- 4 **Year** : 2014
- 5 **Pedigree** : An advanced pedigree selection of the cross Local Pink x AST-2
- 6 **Novel features** : Flower colour: Violet (83.A), flower type: Pompon.
- 7 **Developers** : SS Negi, SPS Raghava, T Manjunatha Rao, T Janakiram and Rajiv Kumar



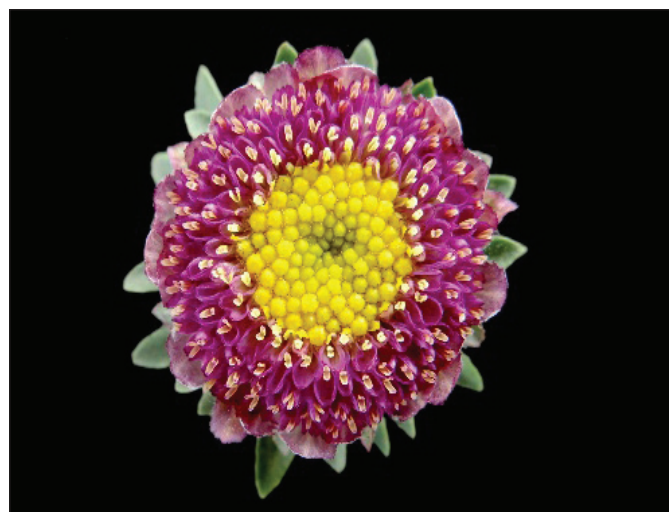
1	<b>National Identity</b>	:	IC0610423
2	<b>Donor identity</b>	:	IIHR-42
3	<b>INGR No.</b>	:	14051
4	<b>Year</b>	:	2014
5	<b>Pedigree</b>	:	An advanced pedigree selection of the cross Local Pink x AST-2
6	<b>Novel features</b>	:	Flower colour: Creamy white. Flower type: Powderpuff, resistant to root-knot nematode ( <i>Meloidogyne incognita</i> race 1).
7	<b>Developers</b>	:	T Manjunatha Rao, SS Negi, SPS Raghava, T Janakiram and Rajiv Kumar



- 1 **National Identity** : IC0624189
- 2 **Donor identity** : IIHRV1
- 3 **INGR No.** : 19097
- 4 **Year** : 2019
- 5 **Pedigree** : Selection from cv. Arka Poornima
- 6 **Novel features** : Flower colour: NN155D, white group, Fan 4.
- 7 **Developers** : Rajiv Kumar, T Manjunatha Rao, Sangama and T Janakiram



1	<b>National Identity</b>	:	IC0624190
2	<b>Donor identity</b>	:	IIHRV2
3	<b>INGR No.</b>	:	19098
4	<b>Year</b>	:	2019
5	<b>Pedigree</b>	:	Selection from cv. Arka Violet Cushion
6	<b>Novel features</b>	:	New flower form: Semi-double with pseudo ray florets.
7	<b>Developers</b>	:	Rajiv Kumar, T Manjunatha Rao, Sangama and T Janakiram



- 1 **National Identity** : 0624508
- 2 **Donor identity** : IIHRJ3-2
- 3 **INGR No.** : 21166
- 4 **Year** : 2021
- 5 **Pedigree** : Pedigree selection from cross Arka Kamini x Local White
- 6 **Novel features** : Flower colour (Red purple group, 65D, Fan 2), long flower stalk (47.67 cm), long vase life (10.11 days).
- 7 **Developers** : Rajiv Kumar, T Manjunatha Rao and T Usha Bharathi



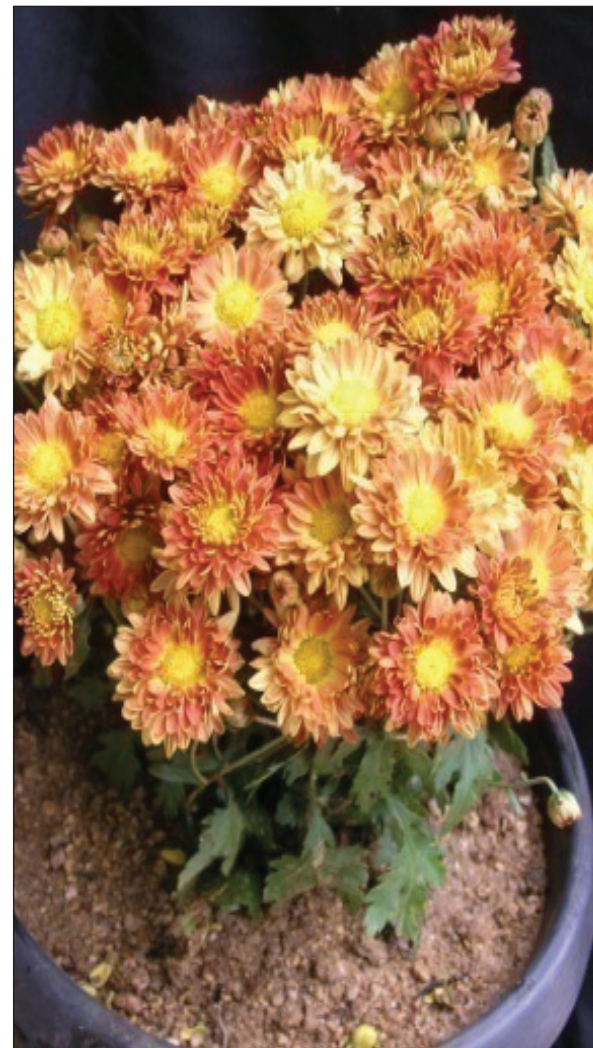
## **Chrysanthemum (*Dendranthema grandiflora*)**

1	<b>National Identity</b>	:	IC0568708
2	<b>Donor identity</b>	:	Selection IIHR-1
3	<b>INGR No.</b>	:	10114
4	<b>Year</b>	:	2010
5	<b>Pedigree</b>	:	Selection from Punjab Gold
6	<b>Novel features</b>	:	Early and off-season flowering, suitable for pot and garden use.
7	<b>Developers</b>	:	T Janakiram and Meenakshi Srinivas





1	<b>National Identity</b>	:	IC0568709
2	<b>Donor identity</b>	:	Selection IIHR-2
3	<b>INGR No.</b>	:	10115
4	<b>Year</b>	:	2010
5	<b>Pedigree</b>	:	Selection from Punjab Gold
6	<b>Novel features</b>	:	Early and off-season flowering, suitable for pot and garden use.
7	<b>Developers</b>	:	T Janakiram and Meenakshi Srinivas



1	<b>National Identity</b>	:	IC623437
2	<b>Donor identity</b>	:	IIHR2-47
3	<b>INGR No.</b>	:	17059
4	<b>Year</b>	:	2017
5	<b>Pedigree</b>	:	Half-sib progeny from cv. Pink Cloud
6	<b>Novel features</b>	:	Flower colour: 77.B, Purple group, Fan 2, stellate ray florets (cylindrical shape).
7	<b>Developers</b>	:	Rajiv Kumar, T Manjunatha Rao and MV Dhananjaya



1	<b>National Identity</b>	:	IC623438
2	<b>Donor identity</b>	:	IIHR5-23
3	<b>INGR No.</b>	:	17060
4	<b>Year</b>	:	2017
5	<b>Pedigree</b>	:	Half-sib progeny from cv. Red Stone
6	<b>Novel features</b>	:	Flower colour: 162.D, Gray yellow group, Fan 4, Stellate ray florets (cylindrical shape).
7	<b>Developers</b>	:	Rajiv Kumar, T Manjunatha Rao and MV Dhananjaya



## ***Crossandra (Crossandra undulaefolia)***

1	<b>National Identity</b>	:	IC560416
2	<b>Donor identity</b>	:	IIHR 2004-9
3	<b>INGR No.</b>	:	08052
4	<b>Year</b>	:	2008
5	<b>Pedigree</b>	:	Local x Laxmi crossandra
6	<b>Novel features</b>	:	Bigger flower and higher yield.
7	<b>Developers</b>	:	C Aswath and TM Rao



1	<b>National Identity</b>	: IC560417
2	<b>Donor identity</b>	: IIHR 2004-11
3	<b>INGR No.</b>	: 08053
4	<b>Year</b>	: 2008
5	<b>Pedigree</b>	: Local yellow x Delhi Crossandra
6	<b>Novel features</b>	: Novel in colour (golden yellow) and bigger size.
7	<b>Developers</b>	: C Aswath and TM Rao



## Gerbera (*Gerbera jamesonii*)

- 1 **National Identity** : IC556977
- 2 **Donor identity** : IIHR99-1
- 3 **INGR No.** : 08048
- 4 **Year** : 2008
- 5 **Pedigree** : *Gerbera jamesonii* (GJ4)  
x open pollinated lines of  
*Gerbera jamesonii*
- 6 **Novel features** : Floriferous and double type.
- 7 **Developers** : C Aswath and TM Rao



1 **National Identity** : IC556978

2 **Donor identity** : IIHR99-2

3 **INGR No.** : 08049

4 **Year** : 2008

5 **Pedigree** : *Gerbera jamesonii* (GJ4)  
x open pollinated lines of  
*Gerbera jamesonii*

6 **Novel features** : Floriferous and good for  
open cultivation.

7 **Developers** : C Aswath and TM Rao



- 1 **National Identity** : IC621471
- 2 **Donor identity** : IIHR3-34
- 3 **INGR No.** : 17090
- 4 **Year** : 2017
- 5 **Pedigree** : Half-sib derived from IIHR 3
- 6 **Novel features** : Flower head colour: 68D, Red purple group, double type flower head.
- 7 **Developers** : C Aswth, Rajiv Kumar, T Manjunatha Rao and MV Dhananjaya

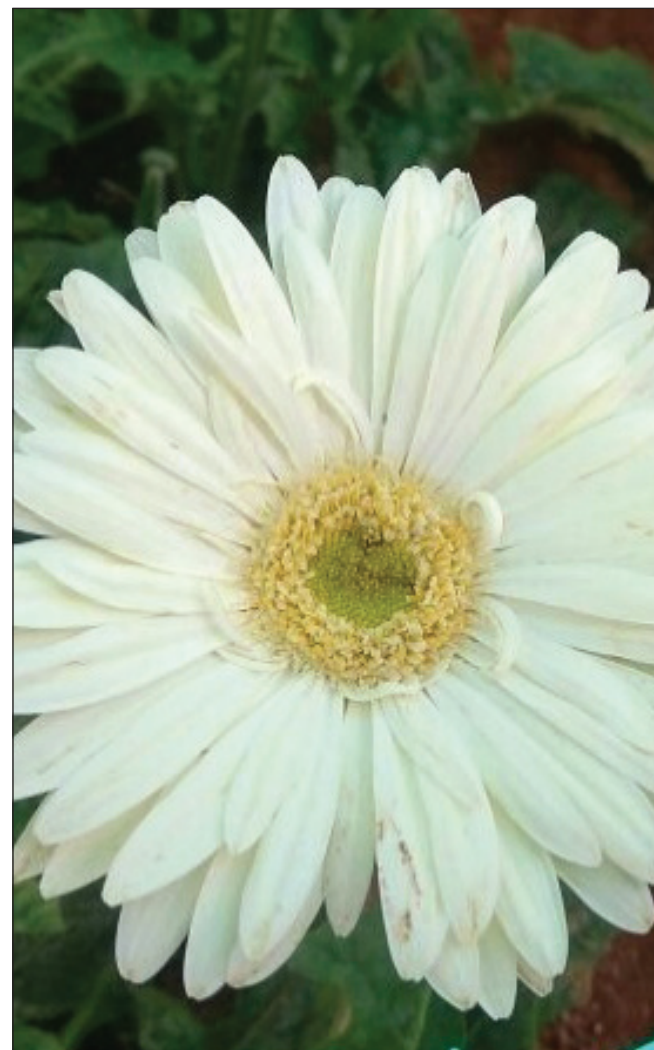




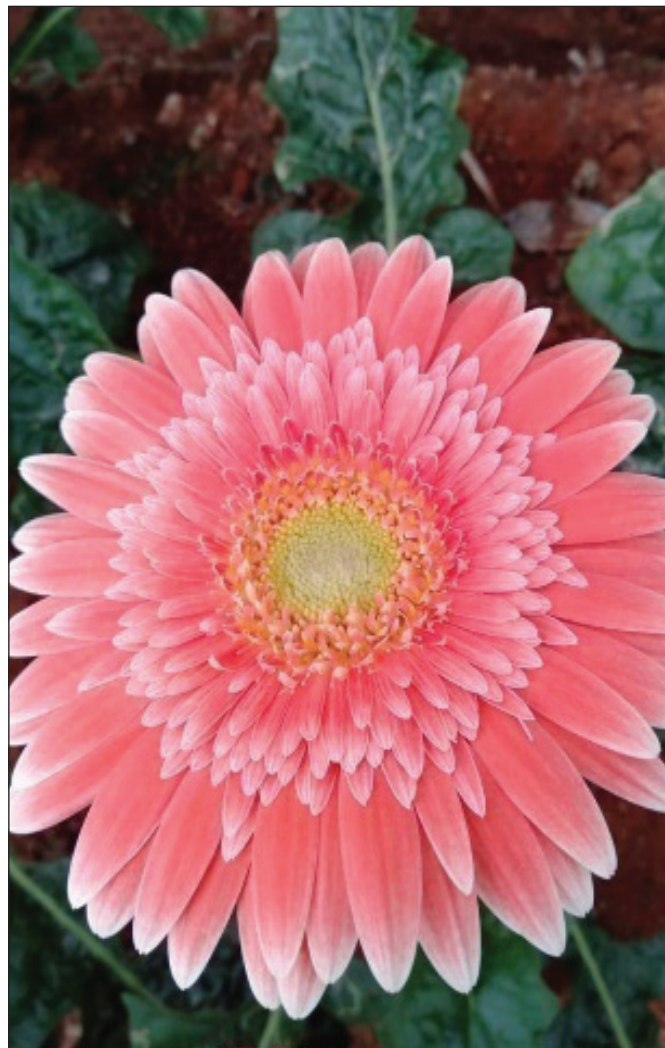
1	<b>National Identity</b>	:	IC621472
2	<b>Donor identity</b>	:	IIHR 8-45
3	<b>INGR No.</b>	:	17091
4	<b>Year</b>	:	2017
5	<b>Pedigree</b>	:	Half-sib derived from IIHR 1
6	<b>Novel features</b>	:	Flower head colour: 50A, Red group, double type flower head.
7	<b>Developers</b>	:	C Aswth, Rajiv Kumar, T Manjunatha Rao and MV Dhananjaya



- 1 **National Identity** : IC0632114
- 2 **Donor identity** : IIHR15-7
- 3 **INGR No.** : 20062
- 4 **Year** : 2020
- 5 **Pedigree** : Half sib selection from IIHR9
- 6 **Novel features** : Flower colour: NN155A, white group, flower form: Semi-double flower form.
- 7 **Developers** : C Aswath and Rajiv Kumar



1	<b>National Identity</b>	:	IC0632115
2	<b>Donor identity</b>	:	IIHR16-8
3	<b>INGR No.</b>	:	20063
4	<b>Year</b>	:	2020
5	<b>Pedigree</b>	:	Half sib selection from variety Arka Ashwa
6	<b>Novel features</b>	:	Flower colour: 65A, Red purple group, flower Form: Double flower form.
7	<b>Developers</b>	:	C Aswath and Rajiv Kumar



1	<b>National Identity</b>	:	IC0632739
2	<b>Donor identity</b>	:	IIHRGO-1
3	<b>INGR No.</b>	:	20102
4	<b>Year</b>	:	2020
5	<b>Pedigree</b>	:	IIHR99-5 x Savana
6	<b>Novel features</b>	:	Flower colour and flower form: Bright red (RHS colour: 40A, Red group) and double type flowers, ability to grow under open field conditions.
7	<b>Developers</b>	:	C Aswath, Rajiv Kumar and T Manjunatha Rao



## ***Gladiolus (Gladiolus hybridus Hort.)***

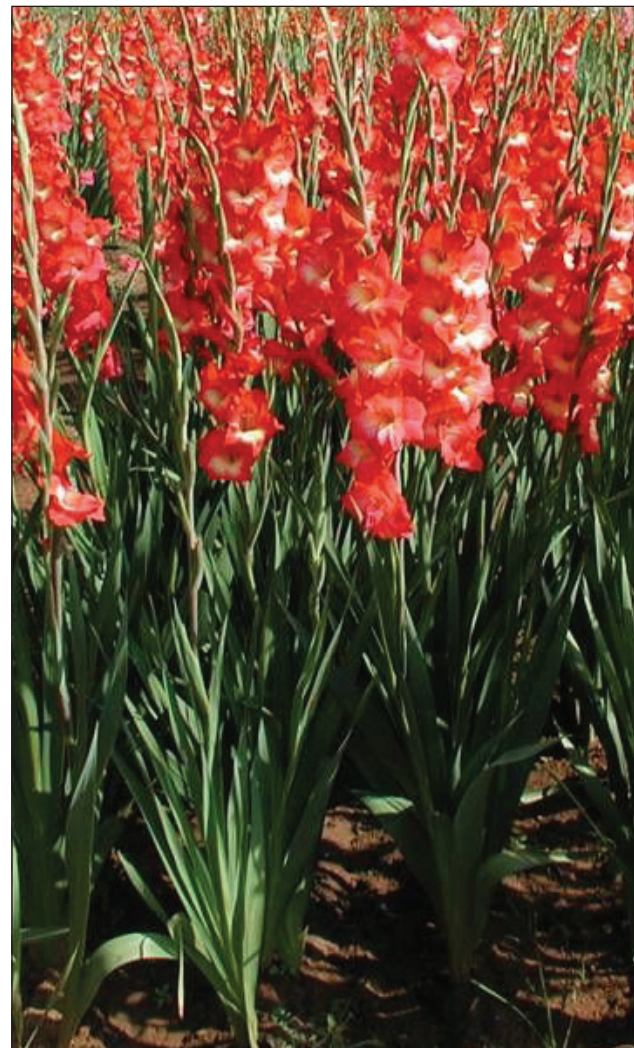
- |   |                          |  |
|---|--------------------------|--|
| 1 | <b>National Identity</b> | : IC0584125  |
| 2 | <b>Donor identity</b>    | : IIHGR-5 or IIHR-84-7-11  |
| 3 | <b>INGR No.</b>          | : 10067  |
| 4 | <b>Year</b>              | : 2010   |
| 5 | <b>Pedigree</b>          | : Hybrid 74-39-1 x Tropic Seas   |
| 6 | <b>Novel features</b>    | : Floret colour: (Based on R.H.S. colour chart) Purple-violet (82.C) having Red-Purple (72.B) margin with Yellow-Green (154.D) blotch. |
| 7 | <b>Developers</b>        | : T Manjunatha Rao, SS Negi, SPS Raghava, T Janakiram and R Venugopalan  |



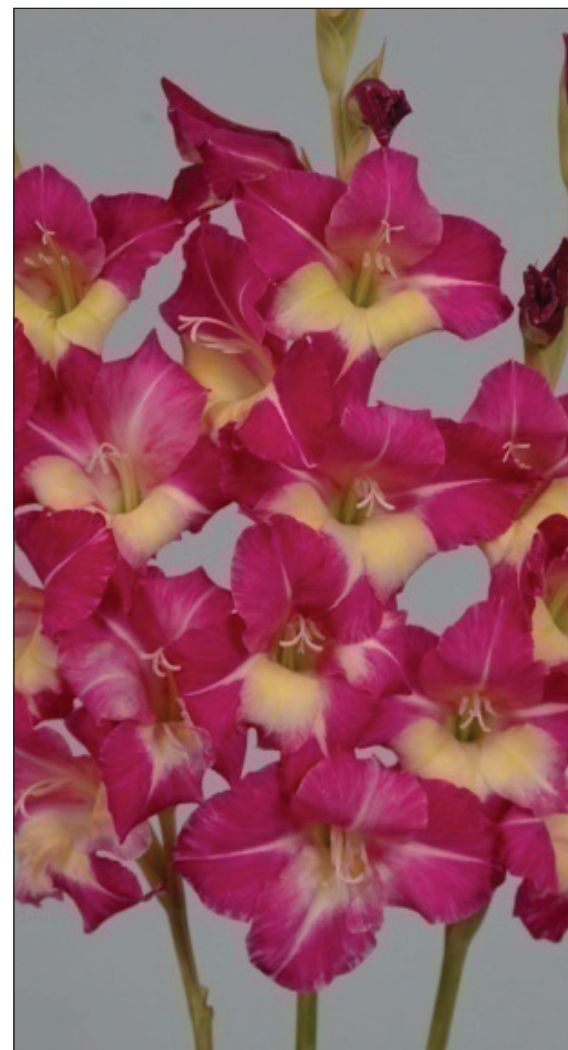
1	<b>National Identity</b>	:	IC0584126
2	<b>Donor identity</b>	:	IIHRG-9
3	<b>INGR No.</b>	:	10068
4	<b>Year</b>	:	2010
5	<b>Pedigree</b>	:	Greenbay x Gold Medal-412
6	<b>Novel features</b>	:	Floret colour: Yellow (4.C) having yellow (6.C) lower lip with Red (39.A) blotch.
7	<b>Developers</b>	:	T Manjunatha Rao, T Janakiram, SS Negi, MV Dhananjaya, Sangama and D Vamana Naik



- 1 **National Identity** : IC0584127
- 2 **Donor identity** : IIHRG-10 or IIHR-87-22-1
- 3 **INGR No.** : 10069
- 4 **Year** : 2010
- 5 **Pedigree** : Watermelon Pink x Aarti
- 6 **Novel features** : Resistant to Fusarium wilt disease cause by *Fusarium oxysporum*f.sp. gladioli race 1, floret colour: Red (46.D) having Red (45.B) margin and white (155.B) line on tepals with Yellow (2.C) blotch.
- 7 **Developers** : T Manjunatha Rao, T Janakiram, C Aswath, SS Negi, N Ramachandran and D Vamana Naik



- 1 **National Identity** : IC621473
- 2 **Donor identity** : IIHRG 6
- 3 **INGR No.** : 17088
- 4 **Year** : 2017
- 5 **Pedigree** : Poonum x Gold Medal-412
- 6 **Novel features** : Floret colour: Purple (78.A) middle. Red-purple (72.A) margin with Green Yellow (1.D) blotch, floret type is open faced and floret placement is in double rows.
- 7 **Developers** : T Manjunatha Rao, T Janakiram, SS Negi, MV Dhananjaya and Rajiv Kumar





1	<b>National Identity</b>	:	IC621474
2	<b>Donor identity</b>	:	IIHRG 12
3	<b>INGR No.</b>	:	17089
4	<b>Year</b>	:	2017
5	<b>Pedigree</b>	:	Junior prom x Poonum
6	<b>Novel features</b>	:	Floret colour: Purple violet (82.A) having purple (77.A) margin. Green-White (157.C) line on lower lip, early flowering (61.54 days).
7	<b>Developers</b>	:	T Manjunatha Rao, T Janakiram, SS Negi, MV Dhananjaya and Rajiv Kumar



1	<b>National Identity</b>	: IC620379
2	<b>Donor identity</b>	: IIHRG-7
3	<b>INGR No.</b>	: 20066
4	<b>Year</b>	: 2020
5	<b>Pedigree</b>	: Meera x Picardy
6	<b>Novel features</b>	: Spike with variegated florets. Floret colour [Red-Purple (65.B) having Red-Purple (62.A) streaks with Red-Purple (67.B) splash].
7	<b>Developers</b>	: T Manjunatha Rao, SS Negi, T Janakiram, C Aswath, MV Dhananjaya and Rajiv Kumar



- 1 **National Identity** : IC620380
- 2 **Donor identity** : IIHRG-11
- 3 **INGR No.** : 20067
- 4 **Year** : 2020
- 5 **Pedigree** : Gold Medal 412 x Poonam
- 6 **Novel features** : Resistant to *Fusarium* wilt disease. Floret colour [Red (41.C) having Red (41.A) margin. Blotch Red (46.B) with yellow (13.C) border].
- 7 **Developers** : T Manjunatha Rao, T Janakiram, SS Negi, C Aswath, MV Dhananjaya, Rajiv Kumar and N Ramachandran



## Jasmine (*Jasminum malabaricum*)

1	<b>National Identity</b>	:	IC0560611
2	<b>Donor identity</b>	:	IC560611
3	<b>INGR No.</b>	:	16037
4	<b>Year</b>	:	2016
5	<b>Pedigree</b>	:	NA
6	<b>Novel features</b>	:	High concrete recovery (0.375%) and high (17%) esters group of volatile in flowers.
7	<b>Developers</b>	:	HP Sumangala, VK Rao and KS Shivashankara



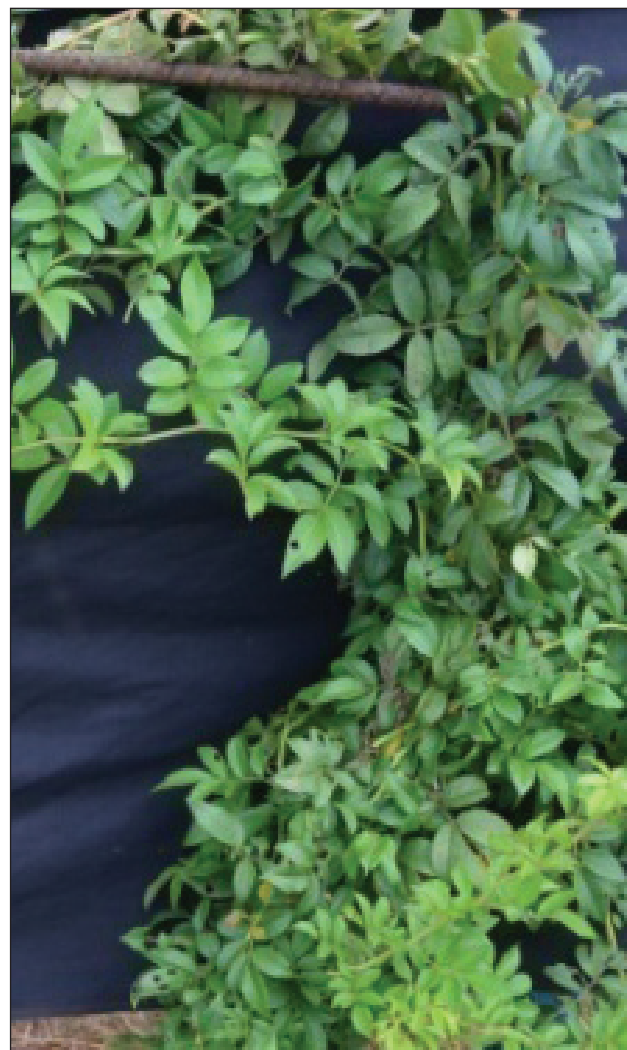
## Marigold (*Tegetes erecta*)

1	<b>National Identity</b>	: IC0613361
2	<b>Donor identity</b>	: IIHRMGYP-1
3	<b>INGR No.</b>	: 15036
4	<b>Year</b>	: 2015
5	<b>Pedigree</b>	: MG-87 X MG-32
6	<b>Novel features</b>	: Petaloid sterile flowers, ability to be multiplied by cuttings.
7	<b>Developers</b>	: Tejaswini



## Rose (*Rosa hybrida*)

1	<b>National Identity</b>	: IC567489
2	<b>Donor identity</b>	: IIHR Rs-1
3	<b>INGR No.</b>	: 09049
4	<b>Year</b>	: 2009
5	<b>Pedigree</b>	: Clonal selection from <i>R. indica</i>
6	<b>Novel features</b>	: Ideal rootstock resistant to powdery mildew.
7	<b>Developers</b>	: Tejaswini, MV Dhananjaya and N Ramachandra



1	<b>National Identity</b>	: IC567490
2	<b>Donor identity</b>	: IIHR Rs-2
3	<b>INGR No.</b>	: 09050
4	<b>Year</b>	: 2009
5	<b>Pedigree</b>	: Resistance identified in Nishkant
6	<b>Novel features</b>	: Ideal rootstock resistant to powdery mildew.
7	<b>Developers</b>	: MV Dhananjaya, Tejaswini and N Ramachandra



1	<b>National Identity</b>	: IC0584135
2	<b>Donor identity</b>	: IIHRP-2-28-1
3	<b>INGR No.</b>	: 10070
4	<b>Year</b>	: 2010
5	<b>Pedigree</b>	: Bud Sport of R72
6	<b>Novel features</b>	: Shining foliage, unique bicolor consisting vermillion red shading towards orient pink.
7	<b>Developers</b>	: Tejaswini and MV Dhananjaya





- 1 **National Identity** : IC0584136
- 2 **Donor identity** : IIHRP-3-18-2
- 3 **INGR No.** : 10071
- 4 **Year** : 2010
- 5 **Pedigree** : Mutant of variety Dr. GS Randhawa
- 6 **Novel features** : Less thorns, straight stalk of cut flower quality, light pink flowers with pointed bud and high centre.
- 7 **Developers** : Tejaswini and MV Dhananjaya



- 1 **National Identity** : IC0574579
- 2 **Donor identity** : IIHRP-13
- 3 **INGR No.** : 10072
- 4 **Year** : 2010
- 5 **Pedigree** : Half sib progeny of Red Chief
- 6 **Novel features** : Fragrant and field tolerance to thrips.
- 7 **Developers** : Tejaswini, MV Dhananjaya, Jhansirani B and RN Bhat



## **Tuberose (*Polianthes tuberosa* L.)**

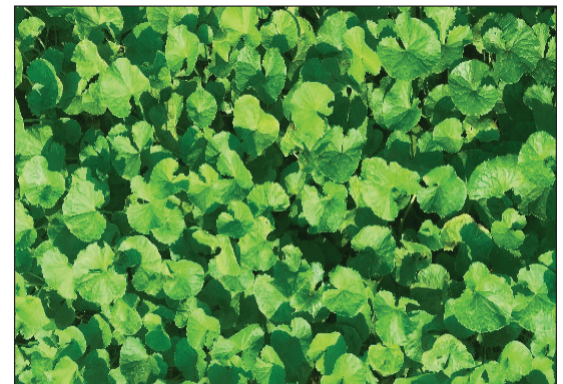
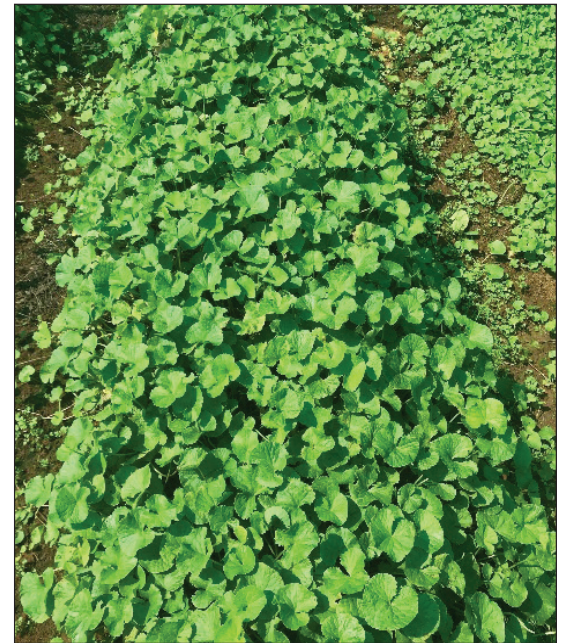
1	<b>National Identity</b>	: IC0630783
2	<b>Donor identity</b>	: IIHR-12
3	<b>INGR No.</b>	: 20061
4	<b>Year</b>	: 2020
5	<b>Pedigree</b>	: Selection from cv. Arka Shringar
6	<b>Novel features</b>	: Medium-tall and upright flower spike, compactly arranged florets on spike and shorter internode.
7	<b>Developers</b>	: Meenkashi Srinivas, T Usha Bharathi and R Umamaheswari



# MEDICINAL CROPS

## Indian birthwort (*Centella asiatica* (L.) Urban)

1	<b>National Identity</b>	:	IC0618244
2	<b>Donor identity</b>	:	IIHRCA-13
3	<b>INGRNo.</b>	:	20097
4	<b>Year</b>	:	2020
5	<b>Pedigree</b>	:	Clonal selection of germplasm collected from Shimoga
6	<b>Novel features</b>	:	Higher asiaticoside content (3.73%), higher total triterpene content (7.67%), higher dry biomass content (2276 kg/ha).
7	<b>Developers</b>	:	DH Sukanya, A Rekha, VK Rao, D Kalaivannan and MR Rohini



1	<b>National Identity</b>	:	IC0618233
2	<b>Donor identity</b>	:	IIHRCA-1
3	<b>INGRNo.</b>	:	20098
4	<b>Year</b>	:	2020
5	<b>Pedigree</b>	:	Clonal selection of germplasm collected from Pune, Maharashtra
6	<b>Novel features</b>	:	Higher fresh biomass yield of 15 t/ha/year, higher total carotenoid (32.33 mg/100g) and iron (149.5 ppm) content, broad sized leaves with long petiole.
7	<b>Developers</b>	:	DH Sukanya, A Rekha, VK Rao, D Kalaivannan and MR Rohini



## Velvet bean (*Mucuna utilis*)

1	<b>National Identity</b>	:	IC296847
2	<b>Donor identity</b>	:	IIHR1985
3	<b>INGRNo.</b>	:	3045
4	<b>Year</b>	:	2002
5	<b>Pedigree</b>	:	Selection from germplasm
6	<b>Novel features</b>	:	High L-DOPA (9.5%) content in seeds.
7	<b>Developers</b>	:	TN Shivananda and T Vasantha Kumar



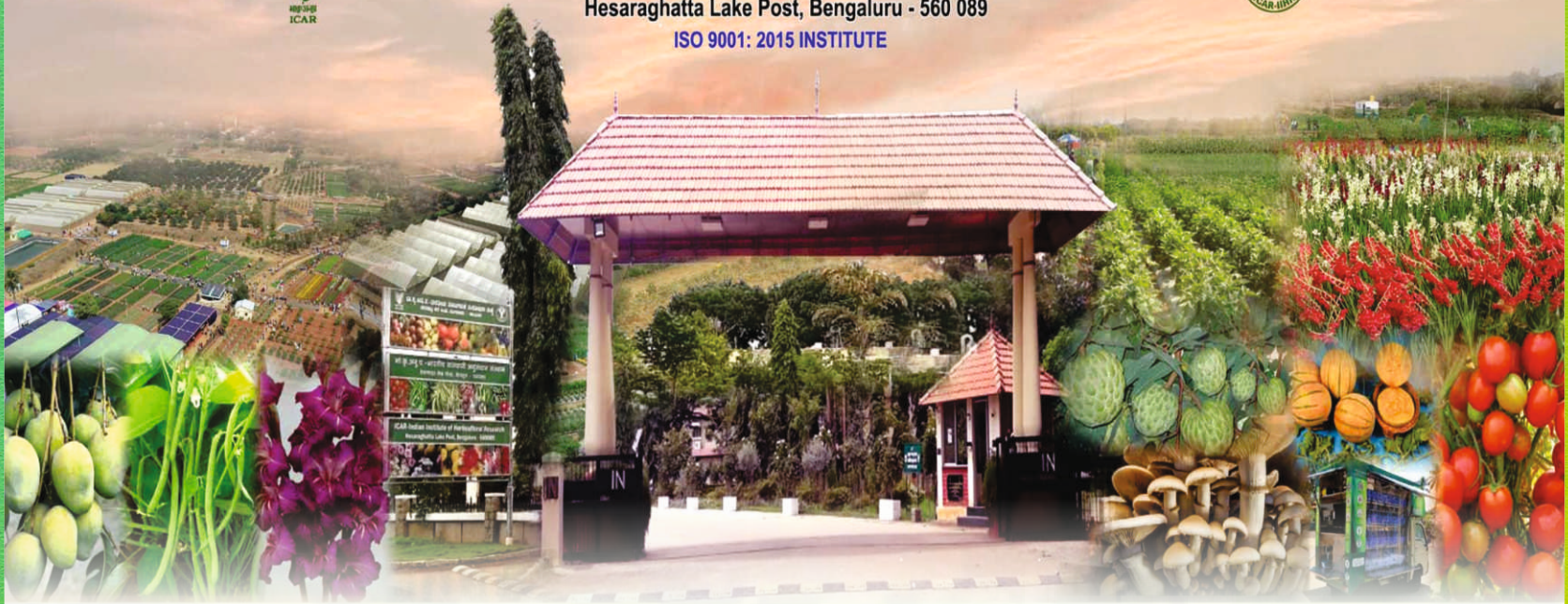
1	<b>National Identity</b>	:	IC296846
2	<b>Donor identity</b>	:	IIHR 1984
3	<b>INGRNo.</b>	:	3046
4	<b>Year</b>	:	2002
5	<b>Pedigree</b>	:	Selection from germplasm
6	<b>Novel features</b>	:	High L-DOPA (5.5%) content in seeds.
7	<b>Developers</b>	:	T N Shivananda and T Vasantha Kumar







ಭಾ.ಕೃ.ಅನು.ಪ.-ಭಾರತೀಯ ತೋಟಗಾರಿಕೆ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ  
**ICAR-Indian Institute of Horticultural Research**  
 Hesaraghatta Lake Post, Bengaluru - 560 089  
**ISO 9001: 2015 INSTITUTE**



ISBN 978-93-5508-006-6

9 789355 080066 >