



Tuber Crops Varieties released by ICAR-Central Tuber Crops Research Institute



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Technical Bulletin No.77

Published by

The Director

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Printed: July 2019

Printed at Digital House

Thiruvananthapuram 34

Preface

Tropical root and tuber crops play an important role in fulfilling the dietary-energy and nutritional requirement of more than 15% of the global population in the world. These crops are considered as the third most important food crop after cereals and pulses. These crops have a myriad role in fulfilling the future demand of food, feed and energy requirement of our country. Tropical tuber crops have greater adaptation in marginal lands and environments and has higher production potential per unit area per unit time. Hence, these crops are being considered as a strategic crop for socio-economic improvement of marginal and small farmers. Tuber crops varieties can have larger scope for adoption in non-traditional areas especially drought prone regions of our country.

The ICAR-Central Tuber Crops Research Institute is one of the premier research organisations in the world dedicated solely to the improvement of tropical tuber crops. The Institute celebrated its golden jubilee during 2013 and 55 years of concerted research have led to the development of 67 improved varieties of tropical tuber crops besides participating in the All India Co-ordinated Research Project on Tuber crops. ICAR-CTCRI & AICRP (TC) have played a key role in releasing 108 improved tuber crops varieties released for cultivation in different agro-climatic zones of our country including Kerala, Tamil Nadu, Andhra Pradesh, Maharashtra, Gujarat, Jharkhand, Chhattisgarh, Odisha, Bihar, West Bengal, Assam and other north eastern states.

The technical bulletin is a presentation of promising tuber crops varieties released by the ICAR-CTCRI for various stakeholders in India. The majority of the released varieties are widely accepted among the farming communities. The cassava starch and sago production in the country is mostly dependent on two major industrial varieties of cassava released from ICAR-CTCRI, viz.,

H-165 and H-226. Two recently released triploid cassava varieties, viz., Sree Athulya and Sree Apoorna have taken over the industrial belts of Tamil Nadu and is very much preferred by the farmers as well as the industrialists. In most of the Industrial belts, these two varieties are replacing the earlier ruling varieties, H-165 and H-226. Cassava mosaic disease is a serious concern in the industrial belts as yield was drastically reduced due to this infection. Recently, three high yielding cassava varieties viz. Sree Reksha, Sree Sakthi and Sree Suvarna with cassava mosaic disease resistance were released to solve this serious problem. The Institute has also recently released five bio-fortified sweet potato varieties and one greater yam variety. Bhu Sona, Bhu Kanti, Bhu Ja, Gouri, Sree Kanaka, and Sree Rethna are β carotene rich sweet potato varieties, while, Bhu Krishna, is rich in anthocyanin. In greater yam, Sree Neelima is an anthocyanin rich variety. Regular intake of 100g of orange fleshed sweet potato tubers per day can provide the recommended daily dose of vitamin A. Additionally, the purple fleshed sweet potato, being rich in anthocyanin (90mg/100g), can provide sufficient amounts of bio-available antioxidant to overcome oxidative stress. The improved high yielding varieties of yams viz., Sree Dhanya and Sree Swetha (dwarf white yam), Sree Nidhi, Sree Haritha, Sree Karthika, etc. with good culinary qualities and disease resistance are very popular among the farming communities. The high yielding, nutritionally-rich bio-fortified varieties of sweet potato and yams are gaining importance not only amongst the small and marginal farmers but also amongst the industrialists.

The information provided in this publication will be very useful for the various stakeholders including planners, administrators, research workers, extension personnel, progressive farmers, students, etc., This publication gives a brief detail with photographs for all the released varieties of ICAR-CTCRI till date.

Contents

Topics	Page No.
• Cassava	1-11
• Sweet potato	12-23
• Yams	24-36
• Aroids	37-44
• Chinese potato	45-46
• Package of practices	47

Cassava



H-97

Year of release: 1971

Pedigree: Hybrid (Manjavella x Acc. No. 300)

Yield: 25-35 t ha⁻¹

Potential yield: 40 t ha⁻¹

Maturity: 10 months

Suitable growing regions: Kerala, Tamil Nadu, Karnataka, Andhra Pradesh

Key traits: Erect branching flowering variety with dark grey mature stem and light sepia emerging leaf colour; mature leaf broad with dark green petiole; tubers cylindrical in shape with light brown tuber skin, cream tuber rind and white tuber flesh. Tubers with 27-31% starch, 180-200 ppm cyanogen having good cooking quality; Moderately resistant to *Cercospora* leaf spot, spider mite and scale insect.



H-165

Year of release: 1971

Pedigree: Hybrid

(Chadayamangalam Vella x Kalikalan)

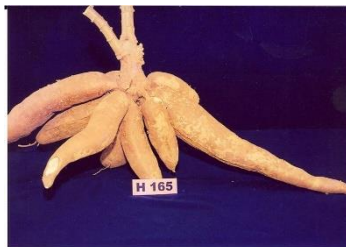
Yield: 33-38 t ha⁻¹

Potential yield: 45 t ha⁻¹

Maturity: 8-9 months

Suitable growing regions: Tamil Nadu, Kerala, Andhra Pradesh, Karnataka

Key traits: Medium tall, erect branching and flowering variety with light grey mature stem, light brown emerging leaf, broad mature drooping lower leaves with light green petiole. Tubers fusiform and closely arranged with golden brown tuber skin, cream tuber rind and white tuber flesh. Tubers with 23-25% starch, 150-165 ppm cyanogen having good cooking quality. Field tolerant to spider mite and scale insect.



H-226

Year of release: 1971

Pedigree: Hybrid (M4 x Ethakkakaruppan)

Yield: 30-35 t ha⁻¹

Potential yield: 40 t ha⁻¹

Maturity: 10 months

Suitable growing regions: Tamil Nadu, Kerala, Andhra Pradesh, Karnataka



Key traits: Medium tall erect branching and flowering variety with grey mature stem; green emerging leaf; mature leaf broad with green petiole; tubers cylindrical with tuber outer skin creamy with purplish patches; light pink tuber rind and white tuber flesh. Tubers have 28-30% starch, 180-200 ppm cyanogen having good cooking quality. Susceptible to CMD and *Cercospora* leaf spot; field tolerant to spider mite and scale insect.

Sree Visakham

Year of release: 1977

Pedigree: Hybrid

[Acc.No.1501 x S-2312 (exotic)]

Yield: 35-38 t ha⁻¹

Potential yield: 45 t ha⁻¹

Maturity: 10 months

Suitable growing regions: Kerala, Tamil Nadu, Karnataka, Maharashtra, Assam, Andhra Pradesh and North Eastern Region



Key traits: Tall, erect branching and flowering variety with dark sepia coloured mature stem; light brown emerging leaf; mature leaf broad with dark green petiole; tubers fusiform in shape and compact in arrangement with brown tuber skin, cream tuber rind and light yellow tuber flesh. Tubers with 25-27% starch, 466 IU/100g carotene, 35-40 ppm cyanogen having good cooking quality. Field tolerant to *Cercospora* leaf spot.

Sree Sahya

Year of release: 1977

Pedigree: Multiple cross hybrid

(Acc. No. 468, 174, 3027, 1310,

82, 3939, 3588 and M4)

Yield: 35-40 t ha⁻¹

Potential yield: 45 t ha⁻¹

Maturity: 10-11 months

Suitable growing regions: Kerala, Tamil Nadu, Karnataka, Maharashtra, Assam, Andhra Pradesh and North Eastern Region

Key traits: Tall, erect branching and flowering variety with dark grey mature stem; sepia coloured emerging leaf; mature leaf broad with purple petiole; long necked (4.5-6.5 cm) medium long cylindrical tubers with occasional beading; light brown outer skin, cream rind and white tuber flesh. Starch 29-31%, cyanogen 75-85 ppm. Good cooking quality. Moderately resistant to *Cercospora* leaf spot.



Sree Prakash

Year of release: 1987

Pedigree: A selection from indigenous germplasm collection of cassava

Yield: 30-35 t ha⁻¹

Potential yield: 40 t ha⁻¹

Maturity: Early maturing, 7 months

Suitable growing regions: Kerala (Suitable for low land cultivation as a rotation crop in a paddy based cropping system)

Key traits: Erect, generally non-branching, rarely top branching shy flowering variety with high leaf retention; reddish brown mature stem; light sepia emerging leaf; mature leaf dark green, 7-9 lobed with purple petiole; cylindrical, short necked, shallow bulking radially arranged tubers with brown outer skin, cream rind and white tuber flesh. Tubers with 29-31% starch, 30-50 ppm cyanogen having good cooking quality. Highly tolerant to *Cercospora* leaf spot.



Sree Harsha

Year of release: 1996

Pedigree: Triploid from the cross
[OP-4 (diploid) x H-2304 (tetraploid)]

Yield: 35-40 t ha⁻¹

Potential yield: 60 t ha⁻¹

Maturity: 10 months

Suitable growing regions: Industrial areas
of Kerala and Tamil Nadu

Key traits: Tall, erect branching variety with stout stem and shy flowering nature with greyish mature stem; light purple emerging leaf; mature leaves thick and broad with acuminate tip having light purple petiole; tubers conical with light brown outer skin, cream rind and white tuber flesh. Tubers with 38-41% starch, 40-55 ppm cyanogen having good cooking quality. Field tolerant to *Cercospora* leaf spot, spider mite and scale insect. Drought tolerant variety.



Sree Jaya

Year of release: 1998

Pedigree: A selection from indigenous
germplasm collection of Yield: 26-30 t ha⁻¹

Potential yield: 48 t ha⁻¹

Maturity: Early (6-7 months)

Suitable growing regions: Kerala, Tamil Nadu

Key traits: Erect branching and flowering variety with reddish brown mature stem; sepia coloured emerging leaf; mature leaves broad with light purple petiole; tubers conical with brown outer skin, purple rind and white tuber flesh. Tubers with 24-27% starch, 40-50 ppm cyanogen having excellent cooking quality. Field resistant to scale insect.



Sree Vijaya

Year of release: 1998

Pedigree: A selection from indigenous germplasm collection of cassava

Yield: 25-28 t ha⁻¹

Potential yield: 41 t ha⁻¹

Maturity: Early (6-7 month)

Suitable growing regions: Kerala, Tamil Nadu

Key traits: Erect branching and flowering variety with greenish brown mature stem; light purple coloured emerging leaf; mature leaves broad with light green petiole; tubers conical with brown outer skin, cream coloured tuber rind and light yellow tuber flesh. Tubers with 27-30% starch, 40-60 ppm cyanogen having excellent cooking quality. Field tolerant to *Cercospora* leaf spot.



Sree Rekha

Year of release: 2000

Pedigree: Top cross hybrid - TMS.63198 (Selfed) x Sree Visakhm

Yield: 45-48 t ha⁻¹

Potential yield: 61 t ha⁻¹

Maturity: 8-10 months

Suitable growing regions: Kerala, Tamil Nadu, Karnataka, Andhra Pradesh

Key traits: Erect branching and sparse flowering variety with brownish white mature stem; light sepia coloured emerging leaf; mature leaves broad and lanceolate with acuminate tip having purple petiole; long and conical tubers with light brown outer skin and cream coloured tuber rind and flesh. Tubers with 28-30% starch, 49-60 ppm cyanogen having excellent cooking quality. Field tolerant to *Cercospora* leaf spot.



Sree Prabha

Year of release: 2000

Pedigree: Top cross hybrid -TMS.63173-4

(selfed) x Sree Visakham

Yield: 40-45 t ha⁻¹

Potential yield: 62 t ha⁻¹

Maturity: 8-10 months

Suitable growing region: Kerala, Tamil Nadu, Karnataka, Andhra Pradesh

Key traits: Medium height semi-spreading flowering variety with light green stem and light sepia emerging leaves; mature leaves medium sized, lanceolate with acuminate tip purple petiole; tubers conical with brown tuber skin and light yellow tuber rind and flesh. Tuber neck is absent. Tubers with - 26-29% starch; 50-85 ppm cyanogen having good cooking quality good; field tolerant to *Cercospora* leaf spot, spider mite and scale insect.



Sree Padmanabha

Year of release: 2006

Pedigree: Exotic germplasm - (TMS 30001)

from IITA, Nigeria Introduced

through CIAT, Cali, Colombia

Yield: 38.0 t ha⁻¹

Potential yield: 46 t ha⁻¹

Maturity: 270-300 days

Suitable growing region: Rainfed areas of Kerala & irrigated plains of Tamil Nadu

Key traits: Tall, late branching variety with greyish green stem and light green emerging leaves; leaves 5 to 7 lobed with medium broad lobes; petiole dark green; flowers regularly and sets seeds; tuber shape long cylindrical; tuber skin colour silvery white; tuber rind and flesh colour white; tuber neck absent. Tubers with 25.8% starch, 38.2µg/100g cyanogen having excellent cooking quality. Resistant to cassava mosaic disease, shows cupping of leaves under drought conditions.



Sree Athulya

Year of release: 2014 (Central)

Pedigree: Triploid from the cross

OP-4 (2x) x Sree Visakhm (4x)

Yield: 35-40 t ha⁻¹;

Potential Yield : 70t ha⁻¹

Maturity: 10 months

Suitable growing region: Irrigated Plains of Tamil Nadu such as Salem, Namakkal and Dharmapuri districts, Kerala

Key traits: Tall, erect top branching with greyish brown stout stem; emerging leaves purple, leaves thick, broad palmately lobed (7-9 lobes) with acuminate tip; long purple coloured petiole (26-35cm) with green tinge; shy flowering; long cylindrical tubers with brown skin, cream rind and white flesh; tuber neck absent. Extractable starch high (30.2%); cooking quality fair; ideal for cassava based industries. Field tolerant to *Cercospora* leaf spot, spider mite and scale insect.



Sree Apoorva

Year of release: 2014 (Central)

Pedigree: Triploid from the cross

Ambakkadan (2x) x Sree Sahya (4x)

Yield: 35-40 t ha⁻¹;

Potential Yield : 70 t ha⁻¹

Maturity: 10 months

Suitable growing region: Tamil Nadu, Andhra Pradesh

Key traits: Tall, top branching variety with stout stem which is yellowish brown in colour; greenish purple emerging leaves; leaves thick and broad, 7-9 lobed with acuminate tip; red petiole, shy flowerer; long cylindrical tubers with brown skin, cream rind and white flesh. Extractable starch high (29.9%); cooking quality fair; ideal for cassava based industries. Field tolerant to *Cercospora* leaf spot, spider mite and scale insect.



Sree Swarna

Year of release: 2015

Pedigree: Clonal Selection from
landrace Arumasa Kappa

Yield: 35-40 t ha⁻¹;

Potential Yield : 55 t ha⁻¹

Maturity: 7-8 months

Suitable growing region: Kerala

Key traits: Tall, top branching variety with orange stem which turns brownish red on maturity; light purple emerging leaf and red petiole; cylindrical tubers with reddish brown skin, pink rind and light yellow flesh. Having good cooking quality. Medium starch (25.2%) content. Field tolerant to cassava mosaic disease.



Sree Pavithra

Year of release: 2015

Pedigree: Clonal selection from
indigenous germplasm

Yield: 35-40 t ha⁻¹;

Potential Yield : 69 t ha⁻¹

Maturity: 9-10 months

Suitable growing region: Kerala

Key traits: Tall, top branching variety with light brown stem and light purple emerging leaf, yellowish green petiole with light purple tinge of mixed orientation (both vertical & horizontal); cylindrical tubers with brown skin, pink rind and white flesh colour. Medium starch (24.4%) content. Tubers have excellent cooking quality. High K efficiency (243.65 kg tuber/kg K absorbed). Suitable for soils which are inherently low to marginal in soil exchangeable K.



Sree Reksha

Year of release: 2017

Pedigree: CM79515 X C-18

Yield: 45-50 t ha⁻¹;

Potential Yield : 80.0 t ha⁻¹

Maturity: 8-9 months

Suitable growing region: Kerala, Tamil Nadu



Key traits: It is a tall variety (275-325 cm), non branching with brown stem, lanceolate 5-7 lobed leaves with dark purple petiole and light brown emerging leaf. The tubers with brown skin, cream rind and white flesh colour. It is completely resistant to cassava mosaic disease caused by both Indian cassava mosaic virus and Sri Lankan cassava mosaic virus. It is also tolerant to post harvest physiological deterioration. It has medium starch (27-31%) and low sugar (1.10%) content. Suitable for planting in rainfed and irrigated conditions especially in regions with high incidence of cassava mosaic disease.

Sree Sakthi

Year of release: 2018 (Central)

Pedigree: C33 X CM4574-7

Yield: 45-50 t ha⁻¹;

Potential Yield : 70 t ha⁻¹

Maturity: 9-10 months

Suitable growing region: Tamil Nadu, Andhra Pradesh, Maharashtra and Kerala under irrigated/rainfed upland conditions .



Key traits: A non branching variety with dark brown stem, brownish green pubescent emerging leaves, dark green lanceolate leaves (7 lobed); green petiole with brown tinge. Long cylindrical tubers with brown skin, cream rind and white flesh colour. It is completely resistant to cassava mosaic disease caused by both Indian cassava mosaic virus and Sri Lankan cassava mosaic virus. It is also tolerant to post harvest physiological deterioration. It has high starch content of 29% (range: 26-32%) and is an industrial variety.

Sree Suvarna

Year of release: 2018 (Central)

Pedigree: SM1741 X C33

Yield: 45-50 t ha⁻¹;

Potential Yield : 70 t ha⁻¹

Maturity: 7-8 months

Suitable growing region: Kerala, Tamil Nadu, Andhra Pradesh,

Key traits: It is an erect top branching variety with brown stem, dark purple petiole, light brown emerging leaves; conical to cylindrical tubers with brown skin, cream rind and white flesh colour. It has medium starch, 25-27% (range: 24-29.8%). It is completely resistant to cassava mosaic disease caused by both Indian cassava mosaic virus and Sri Lankan cassava mosaic virus. Suitable for planting in regions with high incidence of cassava mosaic disease.



Cassava
Resistant (R) & Susceptible (S)

Cassava Tubers



Sweet Potato



H-41

Year of release: 1971

Pedigree: Hybrid

(Norin x Indigenous cultivar)

Yield: 20-25 t ha⁻¹

Potential yield: 37 t ha⁻¹

Maturity: 120 days

Suitable growing region: Kerala, Tamil Nadu, Karnataka

Key traits: Semi – spreading with green vine and unifoliate leaf, Profusely flowering; storage root fusiform with reddish purple skin and white flesh with excellent cooking quality



H- 42

Year of release: 1971

Pedigree: Hybrid

(Vella Damph xTriumph)

Yield: 22-25 t ha⁻¹

Potential yield: 30 t ha⁻¹

Maturity: 120 days

Suitable growing region: Kerala, Tamil Nadu, Karnataka

Key traits: Semi – spreading greenish vine with pink tinge, emerging leaf light purple, unifoliate leaf with toothed margin, petiole Greenish with purple tinge, Profusely flowering; Storage root fusiform with pink skin and cream flesh



Varsha

Year of release: 1983

Pedigree: Double cross hybrid

(Acc.No.39 x Acc.No.3) x

(Acc.No.1871 x Acc.No.1103)

Yield: 17-22 t ha⁻¹

Potential yield: 25 t ha⁻¹

Maturity: 120 days

Suitable growing region: Konkan region of Maharashtra

Key traits: Semi-spreading with dark green vine and simple 3-5- lobed leaves; Shy flowering; storage root fusiform with reddish purple skin and light yellow flesh; Drought tolerant.



Sree Nandini

Year of release: 1987

Pedigree: Selection from open pollinated progeny of S-32

Yield: 20-25 t ha⁻¹

Potential yield: 36 t ha⁻¹

Maturity: 100-105 days

Suitable growing region: Kerala

Key traits: Spreading type with green vine and light green emerging leaf, leaf unifoliate with entire margin; moderate flowering; storage root fusiform with cream skin and yellow flesh. Excellent cooking quality and sweet. Drought tolerant; Suitable for paddy fallows as a catch crop.



Sree Vardhini

Year of release: 1987

Pedigree: Selection from
open pollinated progeny of S-13

Yield: 20-25 t ha⁻¹

Potential yield: 25 t ha⁻¹

Maturity: 100-105 days

Suitable growing region: Kerala

Key traits: Semi-spreading , Green vine with pink tinge, emerging leaf light brown, leaf simple with 3-4 lobes, profusely flowering type; Storage root short fusiform with purple skin and yellow flesh. Carotene 1200 IU /100g



Sree Rethna

Year of release: 1996

Pedigree: Hybrid (S-187 x Sree Vardhini)
progeny of S-13

Yield: 20-22 t ha⁻¹

Potential yield: 26 t ha⁻¹

Maturity: 90-105 days

Suitable growing region: Kerala

Key traits: Spreading with light greenish brown vine and brown emerging leaf, light green shouldered leaves, profusely flowering type, storage root spherical with purple skin and orange flesh. Carotene 3200-3500IU /100g , Excellent cooking quality



Sree Bhadra

Year of release: 1996

Pedigree: Seedling selection from seeds introduced from Nigeria in 1984

Yield: 20-22 t ha⁻¹

Potential yield: 27 t ha⁻¹

Maturity: 90 days

Suitable growing region: Kerala, Maharashtra, Bihar and Madhya Pradesh.

Key traits: Semi – spreading with greenish brown vine and dark brown emerging leaf. Leaves broad cordate. Profusely flowering type .Storage root spherical with light pink skin and Cream flesh, Carotene 800-1000 IU /100g, Excellent cooking quality Useful as a trap crop for root knot nematode (*Meloidogyne incognita*)



Gouri

Year of release: 1998

Pedigree: Hybrid (H-219 x H-42)

Yield: 19 t ha⁻¹

Potential yield: 30 t ha⁻¹

Maturity: 110-120 days

Suitable growing region: Odisha

Key traits: Semi erect type with slightly purple vine and slightly purple emerging leaf. Leaf simple with 5-6 lobes , Profusely flowering nature. Storage root obovate to round elliptic with purple red skin and deep orange flesh; Excellent cooking quality. A medium duration variety with high carotene content 7500-9100 IU /100g; Can tolerate mid season moisture stress: suitable for *kharif* and *rabi* seasons



Sankar

Year of release: 1998

Pedigree: Hybrid (H-219 x S-73)

Yield: 13.7 t ha⁻¹

Potential yield: 27 t ha⁻¹

Maturity: 120 days

Suitable growing region: Odisha



Key traits: Spreading type with green vine and green with purple edged emerging leaf, hastate leaf ; petiole green with purple near leaf base; moderate flowering; storage root elliptical with red skin and pale yellow flesh; Starch 22.5-24%, medium duration variety with excellent cooking quality.

Sree Arun

Year of release: 2002

Pedigree: Seeding from recurrent selection of seeds of polycross

Yield: 20-28 t ha⁻¹

Potential yield: 30 t ha⁻¹

Maturity: 90 days

Suitable growing region: Kerala (uplands)



Key traits: Spreading type, vine green with light brown emerging leaf; Leaf cordate in shape; petiole green with purple spot near the leaf base; Sparse flowering; Storage roots fusiform short / spherical with very pale pink skin and cream flesh. Total starch 19.7-20.4%, Good cooking quality; Early maturing type.

Sree Varun

Year of release: 2002

Pedigree: Seedling selection from seeds
from CIP, Peru (Seed lot No. CIP 490056 in 1991)

Yield: 20-28 t ha⁻¹

Potential yield: 30 t ha⁻¹

Maturity: 90 days

Suitable growing region: Kerala (uplands)

Key traits: Spreading with green vine and slightly 5-lobed leaves, Profuse flowering type; storage roots fusiform short/ spherical with cream skin, cream rind and cream flesh, Starch 20.6-21.5%; good cooking quality;



Kalinga

Year of release: 2004

Pedigree: Selection from open pollinated seed

Yield: 17.2 t ha⁻¹

Potential yield: 28.4 t ha⁻¹

Maturity: 105 -110 days

Suitable growing region: Orissa

Key traits: Spreading type with green vine and green with purple edged emerging leaf, leaves deeply lobed, Moderate flowering, Storage root round to elliptic with purple red skin and white flesh. Total starch 28%, sugar 2.5-3.3%
Medium duration variety with excellent cooking quality and high starch. Can be used as food and fodder and for starch extraction.



Sree Kanaka

Year of release: 2004

Pedigree: Hybrid (S-187 x H-633)

Yield: 10-15 t ha⁻¹

Maturity: 75-85 days

Suitable growing region: Kerala



Key traits: Compact plant type with green vine and dark purple emerging leaf, leaf 3-5 lobed; very sparse flowering ; storage root cylindrical with cream skin with reddish yellow tinge and dark orange flesh; short duration variety with high carotene 14666 -16666 IU /100g fresh weight, starch 14.7%, sugar 1.8% Good cooking quality with soft texture.

Goutam

Year of release: 2005

Pedigree: Generated from polycross

Dhenkanal local, a popular land race is the female parent

Yield: 18.9 t ha⁻¹

Potential yield: 30 t ha⁻¹

Maturity: 105-110 days



Key traits: Spreading plant type with mostly purple vine and Light purple emerging leaf, Leaf shape triangular; petiole is green with purple spot at the leaf junction; Storage root round to ovate with white skin and cream flesh; Very good cooking quality, soft, mealy and very sweet; Suitable for both *kharif* and *rabi* season; Well accepted by the farmers of hilly and coastal areas of Odisha

Sourin

Year of release: 2005

Pedigree: Generated from polycross,
the female parent is accession No. 1162

Yield: 16.2 t ha⁻¹

Potential yield: 29.7 t ha⁻¹

Maturity: 105-110 days

Suitable growing region: Odisha, medium to uplands and hilly areas

Key traits: Spreading nature with mostly purple vine and purplish green emerging leaf; Lobed leaf with green petiole with purple spot throughout; Storage root Round to elliptic with red skin, white rind and creamy white flesh. Suitable for both *kharif* and *rabi* season; Well accepted by farmers of hilly and coastal areas of Odisha



Kishan

Year of release: 2005

Pedigree: Generated from polycross,
the female parent is accession 1016

Yield: 17 t ha⁻¹

Potential yield: 26 t ha⁻¹

Maturity: 110-120 days

Suitable growing region: Odisha, medium to uplands and hilly areas

Key traits: Semi compact with Greenish purple vine and green emerging leaf with purple margin, leaf triangular with green petiole with purple near leaf base; Storage root elliptic with reddish purple skin, white rind and creamy white flesh; High yielding, with 18.2% extractable starch. Suitable for food, fodder and starch. Can withstand mid season drought, perform better in sandy loam and black sandy soils



Bhu Sona

Year of release: 2017

Pedigree: Clonal selection of open pollinated seedling progenies of exotic source

Yield: 20-24 t ha⁻¹

Maturity: 105-110 days

Suitable growing region: Odisha



Key traits: Spreading type with pubescent, purple vine with shallow grooves and green emerging leaf, leaf triangular with green petiole; Profusely flowering; Storage root round elliptic with yellow skin and dark orange with β Carotene 19100-20800 IU/100g fresh weight. Extractable starch 19-20%, tolerant to salt stress 6-8.0 dSm⁻¹. Field tolerant to weevil, suitable for processing.

Bhu Kanti

Year of release: 2017

Pedigree: Clonal selection from exotic lines,

Source CIP

Yield: 22-24 t ha⁻¹

Maturity: 105-110 days

Suitable growing region: Odisha



Key traits: Spreading type with Green vine with many purple spots and Dark green emerging leaf; leaf triangular; Profusely flowering; Storage root elliptic with light yellow skin and orange flesh and β Carotene 10833 IU/100g; Tolerant to mid season drought and salt stress.

Bhu Ja

Year of release: 2017

Pedigree: Clonal selection of introduced CIP line

Yield: 20-22 t ha⁻¹

Maturity: 100-110 days

Suitable growing region: Odisha



Key traits: Semi-compact plant type with green vine and green emerging leaf; leaf triangular; profusely flowering; storage root round elliptic with pink skin and orange flesh and β carotene 9160-10670 IU/100g; Starch 16.6-17.2%, total sugar 2.4-3.0%, good cooking quality, tolerant to salt stress 6-8.0 dSm⁻¹

Bhu Krishna

Year of release: 2017

Pedigree: Clonal selection of open pollinated seedling progenies of exotic source

Yield: 18-22 t ha⁻¹

Maturity: 110-120 days

Suitable growing region: Odisha



Key traits: Semi-compact plant type with green pubescent vine having purple nodes; emerging leaf bright green with purple edge; leaf lobed; sparse flowering; long elliptic tuber with dark purple skin and dark purple flesh containing 90mg/100g anthocyanin; Highly tolerant to weevil and salt stress. Extractable starch 20-21%. Suitable for processing.

Bhu Swami

Year of release: 2017

Pedigree: Open pollination and

Clonal selection from exotic lines

Yield: 20 t ha⁻¹

Maturity: 105-110 days

Suitable growing region: Odisha



Key traits: Semi-compact plant type with green vine with purple spots and emerging leaf having purple veins on upper surface; Triangular leaf; Profusely flowering; Storage root round with white skin and white flesh; Suitable for food and processing with 21% extractable starch and tolerant to mid season drought; Excellent cooking quality



Bhu Krishna



Gouri



Bhu Ja

Yams



Dioscorea alata



Sree Keerthi

Year of release: 1987

Pedigree: Clonal selection from germplasm

Yield: Average: 25-30 t ha⁻¹ ;

Potential: 44 t ha⁻¹

Maturity: 9-10 months

Suitable growing region: Kerala



Key traits: Climber twining to right, male plant with green vine, light brown emerging leaves and sagittate broad leaves with green petiole. Conical tuber with rough texture, brown skin, yellowish cortex and white flesh colour. Resistant to anthracnose disease caused by (*Colletotrichum gloeosporioides*) and tolerant to scale insect during storage. suitable for intercropping in mature coconut gardens as well as with banana

Sree Roopa

Year of release: 1987

Pedigree: Clonal selection from germplasm

Yield: Average: 25-30 t ha⁻¹ ; Potential: 54 t ha⁻¹

Maturity: 9-10 months

Suitable growing region: Kerala



Key traits: Climber twining to right, female plant with green vine with purple ridges, green emerging leaf and cordate leaves, petiole with purple base, green middle portion and light purple tip. Digitate, smooth tuber with black skin, purple cortex and white flesh colour and excellent cooking quality. Tubers with less starch (16.0-18.0%) and medium protein (1.0-1.5%) content. Resistant to scale insect during storage.

Sree Shilpa

Year of release: 1998

Pedigree: Hybrid (Da - 140 x Sree Keerthi)

Yield: Average: 28 t ha⁻¹ ;

Potential: 40.4 t ha⁻¹

Maturity: 8 months

Suitable growing region: Kerala



Key traits: Climber twining to right, male plant with purplish green vine, Green emerging leaf and cordate leaves with overlapping lobes, purple petiole. Swollen, oval, smooth tuber with black skin, yellow cortex and white flesh colour and excellent cooking quality. Tubers with less starch (17.0-19.0%) and medium protein (1.4-2.0%) content. Medium sized oval tubers with easy harvestability. World's first hybrid variety released in *D. alata*

Sree Karthika

Year of release: 2004

Pedigree: Clonal selection from germplasm

Yield: Average: 30 t ha⁻¹

Potential: 46 t ha⁻¹

Maturity: 9-10 months

Suitable growing region: Kerala, Maharashtra, Chhattisgarh



Key traits: Climber twining to right, male plant with green vine, purplish emerging leaf. Narrow cordate leaves, petiole with purple base & tip and green middle portion. Medium long, oval tuber with greyish black skin, with pink cortex and white flesh colour. Tubers with medium starch (21.4%) and protein (2.5%) content. Excellent cooking quality. Field tolerant to anthracnose disease caused by (*Colletotrichum gloeosporioides*).

Orissa Elite

Year of release: 2005

Pedigree: Clonal selection from germplasm

Yield: Average: 25 t ha⁻¹ ; Potential: 30 t ha⁻¹

Maturity: 6-7 months

Suitable growing region: Odisha



Key traits: Climber twining to right with green vine and light brown emerging leaf. Long cordate leaves with purple petiole. Long, cylindrical tuber with dark brown skin, cream cortex and cream flesh colour. Tubers with medium starch (20.1%) and total sugar (3.8%) content. Field tolerant to scale insects and mealy bugs.

Sree Swathy

Year of release: 2014

Pedigree: Clonal selection from germplasm

Yield: Average: 25 t ha⁻¹ ; Potential: 30 t ha⁻¹

Maturity: 9 months

Suitable growing region: Kerala



Key traits: Climber twining to right with green vine and emerging leaves. Cordate leaves with green petiole (base & tip); purple wings. Medium conical to irregular tuber with dark brown skin, yellowish cortex and white flesh colour without browning. Drought tolerant and resistant to anthracnose disease caused by (*Colletotrichum gloeosporioides*). Good cooking and nutritional quality with medium starch (20.02%), high protein (16.94% DW) and ascorbic acid (6.9mg/100g DW) content.

Sree Neelima

Year of release: 2014

Pedigree: Clonal selection from germplasm

Yield: Average: 33 t ha⁻¹ ; Potential: 45 t ha⁻¹

Maturity: 9 months

Suitable growing region: Kerala



Key traits: Climber twining to right with purple emerging vine and dark purple emerging leaves. Broad cordate leaves. Petiole with green base & tip; purple wings with green petiole (base & tip). Conical tuber with dark brown skin, dark purple cortex and light purple flesh colour. Good cooking and nutritional quality. It has tubers with medium dry matter (24.6%), low starch (18.1% FW) and medium crude protein (3.28 % FW) content.

Sree Nidhi

Year of release: 2017

Pedigree: Clonal selection from germplasm

Yield: Average: 35 t ha⁻¹ ; Potential: 50 t ha⁻¹

Maturity: 8-9 months

Suitable growing region: Kerala, Odisha



Key traits: Climber twining to right with green vine and light brownish green emerging leaves narrow cordate light green leaves. Green petiole with purple end. Cylindrical tubers with light pink cortex and white flesh colour without browning. It has optimum tuber size with very little apical portion and hence less wastage and fetches higher market price to farmers as compared to local varieties with irregular tuber shape. Good culinary quality. It has tubers with medium dry matter (32.0%), starch (23.2% FW) and crude protein (2.5% FW) content. It has field tolerance to anthracnose disease.

Bhu Swar

Year of release: 2017

Pedigree: Clonal selection from germplasm

Yield: Average: 20-25 t ha⁻¹ ;

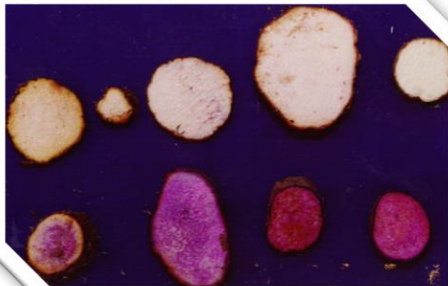
Potential: 30 t ha⁻¹

Maturity: 6-7 months

Suitable growing region: Odisha

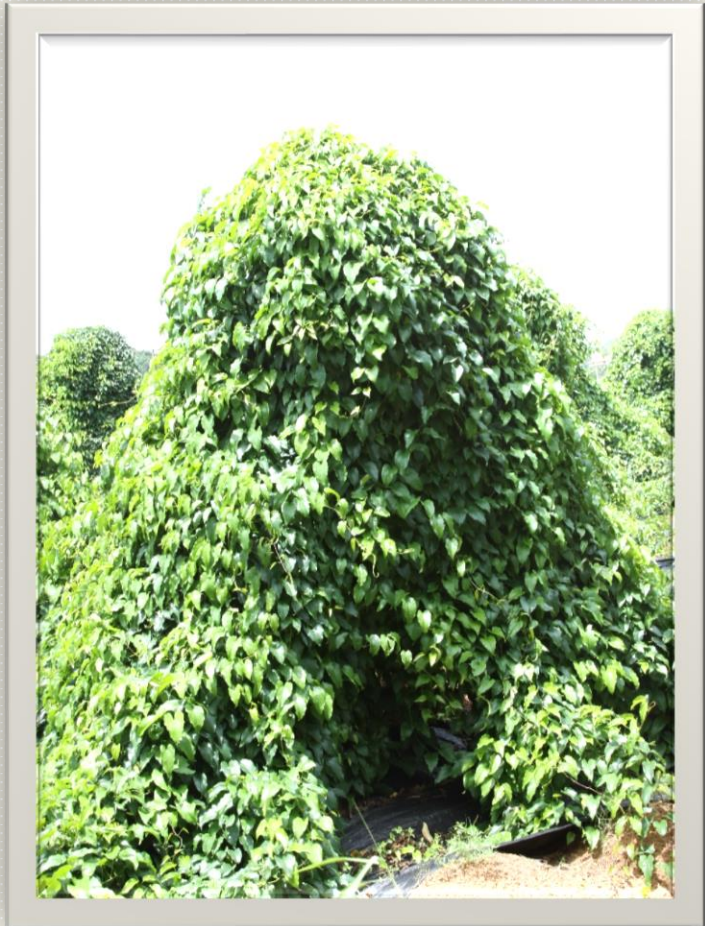


Key traits: Climber twining to right. Green vine with purple wings, purplish green emerging leaves, Sagitate leaves with overlapping base; Green petiole with purple base and wings. Long cylindrical to irregular tuber with brown skin, yellow cortex, cream flesh. Tubers have low starch (18-20%) and sugar (1.0-1.5%) content. Excellent cooking quality.



Flesh colour variation

Dioscorea rotundata



Sree Priya

Year of release: 1987

Pedigree: Seeding selection
from the African variety "Umidika"

Yield: Average: 35 t ha⁻¹ ;

Potential: 48 t ha⁻¹

Maturity: 9-10 months

Suitable growing region: Kerala



Key traits: Climber twining to right with spiny green vine and green emerging leaf with green petiole. Glossy cordate leaves with wavy margin. Female plant having cylindrical tubers with smooth texture, brown skin and white flesh colour. It has medium starch (19-21%) and sugar (2.0-2.5%) content. Drought tolerant; good flavour; suitable for intercropping in mature coconut gardens as well as with banana.

Sree Subhra

Year of release: 1987

Pedigree: Seedling selection from
the African variety "Iwo"

Yield: Average: 35 t ha⁻¹ ;

Potential: 48 t ha⁻¹

Maturity: 9-10 months

Suitable growing region: Kerala



Key traits: Climber twining to right with spiny green vine and green emerging leaf with green petiole. Cordate leaves with wavy margin. Female plant having cylindrical partly hairy tubers with brown skin and white flesh colour. Excellent cooking quality with good flavour. It has medium starch (21.0-22.0%) and protein (1.8-2.0%) content. Drought tolerant.

Sree Dhanya

Year of release: 1993

Pedigree: Seedling selection (Half – sib)

Yield: Average: 25 t ha⁻¹ ; Potential: 39 t ha⁻¹

Maturity: 9 months

Suitable growing region: Kerala



Key traits: Dwarf, bushy, non-climber, 30-50cm height. Green stem, green emerging leaf and light green petiole. Male, cylindrical partly hairy tuber with brown skin and white flesh colour. It has medium starch (24.0%) low sugar (0.3-0.5%) and medium protein (2.0-2.5%) content. A dwarf bushy variety that does not require staking and can be accommodated in closer spacing (60cm X 60cm).

Sree Swetha

Year of release: 2017

Pedigree: Hybrid : (Dr375 X Sree Dhanya)

Yield: Average: 30 t ha⁻¹ ; Potential: 40 t ha⁻¹

Maturity: 9 months

Suitable growing region: Kerala



Key traits: Dwarf, bushy, non-climber, 30-50cm height. Green stem, green emerging leaf dark green narrow mature leaves and light green petiole. Generally non flowering, cylindrical tuber with brown skin and white flesh colour. It has medium starch (22.02%) and medium protein (3.8%) content. A dwarf bushy variety that does not require staking and can be accommodated in closer spacing (60cm X 60cm).

Sree Haritha

Year of release: 2017

Pedigree: Hybrid (DrH42 X DrH314)

Yield: Average: 46 t ha⁻¹ ; Potential: 60 t ha⁻¹

Maturity: 9-10 months

Suitable growing region: Kerala

Key traits: Climber twining to right with spiny green vine, green emerging leaves and green petiole with dark green tip & base. Dark glossy unifoliate leaves with wavy margin. Medium size compact cylindrical tubers with smooth texture, brown skin and white flesh colour. Excellent cooking quality with good flavour. It has medium starch (24.02%) and crude protein (3.2%) content. Drought tolerant.



Sree Swetha

Sree Haritha



Dioscorea esculenta



Sree Latha

Year of release: 1983

Pedigree: Clonal selection from indigenous germplasm

Yield: Average: 25 t ha⁻¹ ;

Potential: 35 t ha⁻¹

Maturity: 8 months

Suitable growing region: Kerala

Key traits: Climber twining to left with spiny dark brown vine, light green emerging leaves. Cordate leaves with brownish green petiole. Oblong to fusiform tubers with greyish brown skin and creamy white flesh colour. Excellent cooking quality. It has low starch (18-19%), medium crude protein (2.0-2.5%) and sugar (2.0-2.5%) content.



Sree Kala

Year of release: 1993

Pedigree: Clonal selection from exotic germplasm

Yield: Average: 20 t ha⁻¹ ;

Potential: 36 t ha⁻¹

Maturity: 7-8 months

Suitable growing region: Kerala

Key traits: Climber twining to left with spiny dark brown vine, light green emerging leaves. Cordate leaves with brownish green petiole. Oblong to fusiform tubers with greyish brown skin and creamy white flesh colour. Excellent cooking quality. It has medium starch (23.0-25.0%) and low sugar (1.0-1.3%) and sugar (2.0-2.5%) content.



Aroids



Elephant foot yam



Sree Padma

Year of release: 1998

Pedigree: A selection from indigenous germplasm collection from Wyanad (Kerala)

Yield: 42 t ha⁻¹

Potential yield: 80.2 t ha⁻¹

Maturity: 8-9 months

Suitable growing region: Kerala

Key traits: Medium tall (78 cm); medium canopy spread (123 cm diameter); light green petiole with green ornamentations; petiole girth 13 cm; corm shape globose; brown tuber skin colour; cream tuber flesh colour; very good cooking quality; first variety from Kerala.



Sree Athira

Year of release: 2006

Pedigree: Hybrid selection from the cross Am-15 x Am-45

Yield: 40.5 t ha⁻¹

Potential yield: 45.6 t ha⁻¹

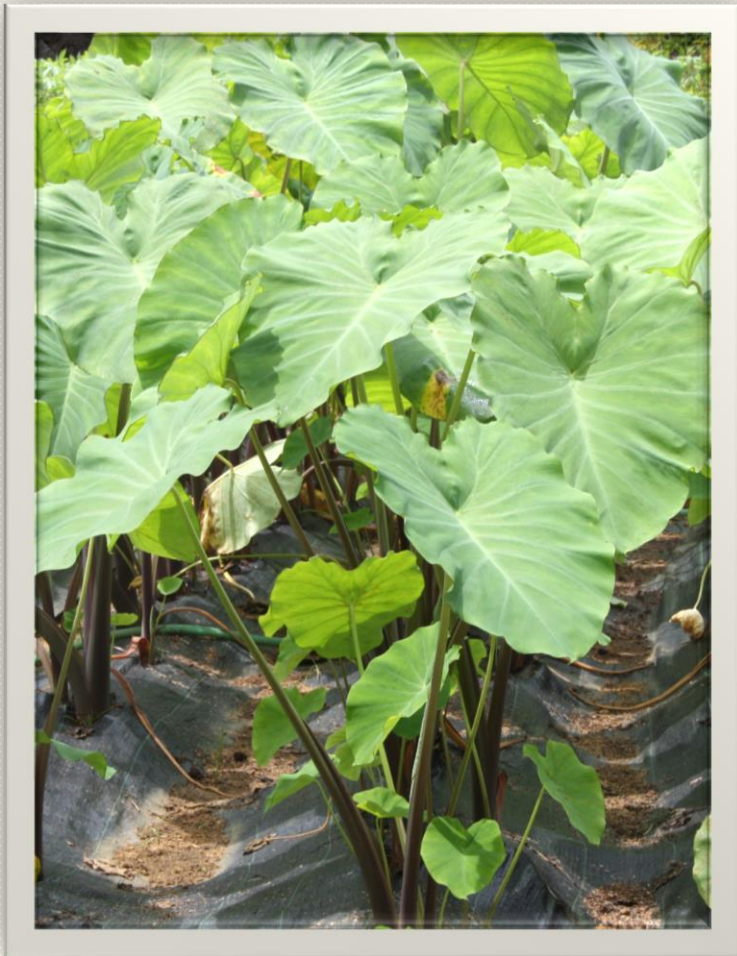
Maturity: 9-10 months

Suitable growing region: Kerala

Key traits: Medium tall (85-110 cm); medium canopy spread (95-120 cm); light green petiole with green ornamentations; petiole girth 10-13 cm; corm shape globose; tuber skin colour brown; tuber flesh colour pink; excellent cooking quality; tolerant to collar rot (*Sclerotium rolfsii*) and mosaic disease; first genetically improved variety released in this crop.



Taro



Sree Rashmi

Year of release: 1987

Pedigree: Selection from germplasm (indigenous)

Yield: 18 t ha⁻¹

Potential yield: 32 t ha⁻¹

Maturity: 7 months

Suitable growing region: Kerala

Key traits: Erect, tall variety; with droopy leaves having straight margin; petiole colour top green, middle and base purplish green; flowering type; corm shape cylindrical, big; cormel shape conical, medium size; tuber skin colour brown; tuber flesh colour white; field tolerant to dasheen mosaic virus; having edible leaves, corms and cormels which are acrid free; good cooking quality; gives economic yield under low input levels also.



Sree Pallavi

Year of release: 1987

Pedigree: Selection from germplasm collection from Meghalaya

Yield: 16 t ha⁻¹

Potential yield: 18 t ha⁻¹

Maturity: 7 months

Suitable growing region: Kerala

Key traits: Tall erect variety with droopy leaves having undulate green margin with green petiole; flowering type; corm shape conical, big; cormel club shaped, small and numerous; tuber skin colour brown; tuber flesh colour white; good cooking quality; field tolerant to leaf blight (*Phytophthora colocasiae*) and *Dasheen mosaic virus*.



Muktakeshi

Year of release: 2002

Pedigree: Clonal selection from

Bhatpara village under Block

Salepur, Distt. Cuttack, Orissa

Yield: 20 t ha⁻¹

Potential yield: 30 t ha⁻¹

Maturity: 150-180 days (medium maturity)

Suitable growing region: Orissa, Chhattisgarh, Jharkhand

Key traits: Erect type with medium tillering; leaves narrow; petiole green; flowering type; corm round; cormel cylindrical; tuber skin colour light grey; tuber flesh colour white; excellent cooking quality and non-acrid; resistant to taro leaf blight under field condition, field tolerant to dasheen mosaic, aphids, cut worm and scale insects; suitable for uplands and lowlands during summer and rainy seasons.



Sree Kiran

Year of release: 2004

Pedigree: Hybrid (C-303 x C-383)

Yield: 17.5 t ha⁻¹

Potential yield: 28.5 t ha⁻¹

Maturity: 190-210 days

Suitable growing region: Kerala

Key traits: Semi erect, medium tall (70-80 cm) variety with broad and droopy leaves with undulate purple margin; petiole greenish brown; moderately flowering type; corm shape oval; cormel shape round to oval; tuber skin colour light brown; tuber flesh colour white; first hybrid taro variety in India; good cooking quality; long keeping quality (60 days).



Pani Saru - 1

Year of release: 2005

Pedigree: Local land race from Kantilo, Odisha

Yield: 15.7 t ha⁻¹

Potential yield: 20.2 t ha⁻¹

Maturity: 6-7 months

Suitable growing region: Suitable for water logged /submerged condition including coastal areas of Odisha

Key traits: Tall, erect variety with erect leaves; petiole green; flowering type; corm shape round; cormel shape elliptic; tuber skin colour white and brown; tuber flesh colour white; good cooking quality; long keeping quality of tubers (3 months); field tolerant to leaf blight; can be grown in upland and low / submerged condition



Pani Saru - 2

Year of release: 2005

Pedigree: Local land race from Begunia, Orissa

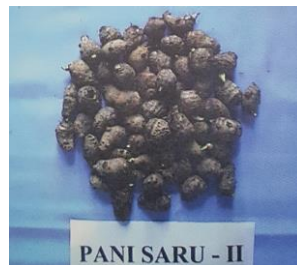
Yield: 13 t ha⁻¹

Potential yield: 18 t ha⁻¹

Maturity: 6-7 months

Suitable growing region: Suitable for swampy / water logged /submerged and upland conditions of Odisha

Key traits: Medium tall variety with erect leaves and green petiole; flowering type; corm shape round; cormel shape round to elliptic; tuber skin colour white and brown; tuber flesh colour white; good cooking quality; field tolerant to leaf blight; can be grown in upland and low land / water logged / swampy conditions.



Bhu Kripa

Year of release: 2017

Pedigree: Selection from
local landrace Jhankri

Yield: 15-20 t ha⁻¹

Maturity: 6-7 months

Suitable growing region: Odisha



Key traits: Erect plant type with medium tillering; leaves cup shaped; petiole green; flowering type; corm round; cormel round; tuber skin colour brown; tuber flesh colour white; non-acrid with excellent cooking quality; Biotic and abiotic stress tolerant.

Bhu Sree

Year of release: 2017

Pedigree: Selection from
local landrace Sonajuli

Yield: 15-20 t ha⁻¹

Maturity: 6-7 months

Suitable growing region: Odisha



Key traits: Erect Plant type with medium tillering, broad leaf with wavy margin, petiole green, profusely flowering, corm round, cormel elliptic, skin light brown, flesh white in colour. Biotic and abiotic stress tolerant taro; cooking quality good

Chinese potato



Sree Dhara

Year of release: 1993

Pedigree: Clonal selection from indigenous germplasm

Yield: 25 t ha⁻¹

Potential yield: 28 t ha⁻¹

Maturity: 5 months

Suitable growing region: Kerala

Key traits: It is the first variety of Chinese potato released in Kerala and in India. Plant type is spreading with round to ovate leaves having green petiole, green stem and green emerging leaves; flowering type; tuber shape round (2-5 cm diameter); tuber skin colour dark brown; tuber flesh colour cream; susceptible to root knot nematode (*Meloidogyne incognita*)



Sree Dhara

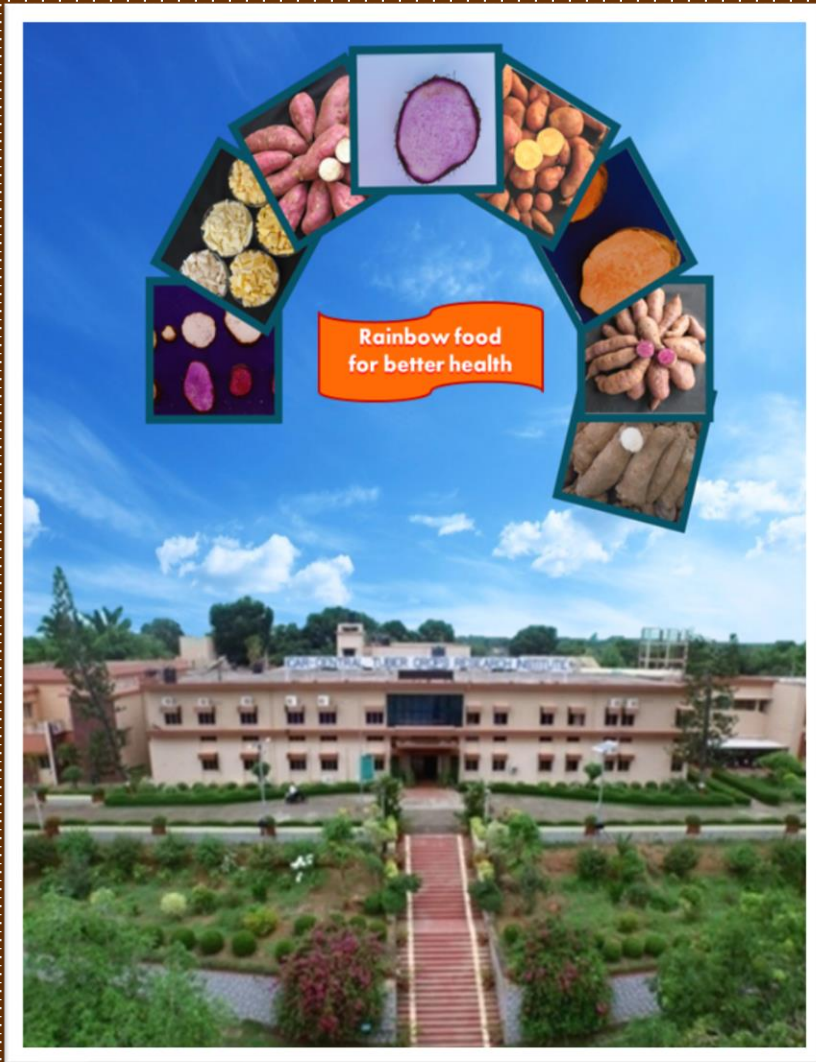
Package of Practices

Crop	Spacing (cm)	Plant population/ ha	Seed requirement/ha	FYM (t ha ⁻¹)	N: P: K (kg ha ⁻¹)
Cassava	90 x 90	12345	2000 stems	12.5	100:50:100
Sweet potato	60 x 20	83333	83333 cuttings 100 kg (nursery)	5	50:25:50
Greater yam	90 x 90	12345	3000-3700 kg	10	80:60:80
White yam	90 x 90	12345	3000-3700 kg	10	80:60:80
Lesser yam	75 x 75	17777	1800-2700 kg	10	80:60:80
Taro	60 x 45	37037	800 kg	12	80:25:100
Elephant foot yam	90 x 90	12345	6200-9258 kg	25	100:50:150
Chinese potato	45 x 30	74074	74074 cuttings 75-100 kg (nursery)	10	60:60:100

Acknowledgment

We place on records our sincere gratitude and acknowledgement to the painstaking efforts taken by the Breeders, Scientists and staff of ICAR-CTCRI (HQ and RC) who were involved in the development of the varieties included in this bulletin. Our sincere thanks are also due to the Directors, Project Coordinators and ICAR for providing the facilities necessary for the development of the varieties. We acknowledge the International institutes and the farming community of our country who have contributed the parent material. Special thanks are due to Dr. K. Susan John, Dr. G. Suja, Dr. S. Sunitha, Dr. M.L. Jeeva and Mr. P.V. Abhilash for the help rendered in the preparation of this bulletin.





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