Content

Post-harvest and Processing Technologies

Other Technologies

CITH Apricot-1

Salient features

- Fruits are bigger in size (50-60g), round in shape, orange in colour with reddish coloration on one side (25-30%), high yielder (15-20 t/ha), low acidity, high T.S.S (14° Brix), suitable for table use and also for processing.

Performance

- Fruit yield 15-20 t/ha with 50-60% increase over check.

Cost

- Through this technology new orchard for commercial purpose could be established which can fetch returns of ₹ 7-8 crore from 1.0 lakh plants.
- Institute has the capacity of producing 50,000 plants per year.

Impacts and benefits

- Medium density plantation has been standardized using spacing of 3.5×3.5 (816) and 5 × 5m (400 plants/ha) as against conventional spacing of 6 × 6m (278 plants/ha). The variety under medium density gives yield ranging from 15 to 20 t/ha.
- Through this variety new commercial orchards can be established which can come to bearing by 5th year and give returns of 4-5 lakh/ha. More returns can be generated, besides improved nutrition.
- Commercialized to State Agriculture Department, progressive orchardists, and fruit processing industries.

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CITH Apricot-2

Salient features

- Fruits are yellowish orange in colour, medium in size (40-50g), round in shape, low acidity, high T.S.S. (14° Brix) and high yielding (12-15 t/ha), mature trees are expected to yield 20-25 kg/tree. Suitable for table use and also for processing.

Performance

- Fruit yield 12-15 tons/ha with 40-50% increase over check..

Cost

- Through this technology new orchard for commercial purposes could be established which can fetch returns of ₹ 7-8 crore from 1.0 lakh plants. Institute has the capacity of producing 50,000 plants per year (1 lakh plants for 2 years).

Impacts and benefits

- Medium density plantation had been standardized using spacing of 3.5 × 3.5 (816) and 5 × 5 m (400 plants/ha) against conventional spacing of 6 × 6m (278 plants/ha). The variety under medium density gives yield ranging from 15 to 20 t/ha.
- Through this variety new commercial orchard can be established which can come to bearing by 5th year and gives returns of 4-5 lakh/ha and more remuneration will be generated, besides improved nutrition.
- The apricots are used by State agriculture departments, progressive orchardists, and fruit processing industries.

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CITH Apricot-3

Salient features

- Fruit is very attractive with bright colour (30-40% area of fruit with orange back ground), medium in size (40-45g), low acidity, high T.S.S. (16°Brix) and heavy yielder (10-12 t/ha), suitable for desert use.

Performance

- Fruit yield 10-12 t/ha with 20-30% increase over check.

Cost

- Through this technology new orchard for commercial purposes could be established which can fetch returns of ₹ 7-8 crore from 1.0 lakh plants. Institute has the capacity of producing 50,000 plants per year (1 lakh plants for 2 years) .

Impacts and benefits

- Medium density plantation had been standardized using spacing of 3.5 × 3.5 (816) and 5 × 5m (400 plants/ha) against conventional spacing of 6 × 6m (278plants/ha). The variety under medium density gives yield ranging from 15 to 20 t/ha.
- Through this variety new commercial orchard can be established which can come to bearing by 5th year and gives returns of 7 crore and more remuneration will be generated, besides improved nutrition.

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CITH Walnut-1

Salient features

- Suitable for export as well as domestic market, having light kernel color, bold nut (27g), and large kernel size (12.76g), good kernel recovery (47%), light shell colour, long trapezoidal in shape, easy to remove kernel halves.

Performance

- Mature tree expected to yield 60 kg/tree at 20-25 years of age.

Cost

- Through this technology new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of ₹ 12-15 crore from 1.0 lakh plants. Institute has the capacity of producing 25,000 plants per year (10,000 for four years).

Impacts and benefits

- High and medium density plantation with 5 × 5 m, (400 plants/ha), and 7 × 7 m (204 plants/ha) spacing respectively had been recommended as against conventional 10 × 10 m (100 plants/ha) spacing.
- The growers in temperate region will have promising walnut variety by which they can start commercial orchard establishment. The new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of ₹ 5-6 lakh/ha.
- The nuts of walnut are used by food industry, cosmetic industry and exporters, while state development departments, nurserymen and farmers would be interested in mass multiplication for commercial growing.

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CITH Walnut-2

Salient features

- Nuts are large, ovate, medium shell texture, medium shell colour, strong shell seal, intermediate shell strength, complete shell integrity, satisfactory kernel flavour, well filled kernel, plumy, easy to remove kernel halves and light kernel colour.
- It gives 13.51 g nut weight and 6.61 g kernel weight.

Performance

- Nut yield 60 kg/tree at 20-25 years of age.

Cost

- Through this technology new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of ₹ 12-15 crore from 1.0 lakh plants. Institute has the capacity of producing 25,000 plants per year (10,000 for four years).

Impacts and benefits

- The budded and grafted plants under different densities with drip irrigation and organic mulching start bearing just after three years as against 12-15 years in seedling trees.
- The growers in temperate region will have promising walnut variety by which they can start commercial orchard establishment. The new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of ₹ 5-6 lakh/ha.
- The nuts of walnut are used by food industry, cosmetic industry and exporters, while state development departments, nurserymen and farmers would be interested in mass multiplication for commercial growing.

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CITH Walnut-3

Salient features

- Nuts are large, round, medium shell texture, medium shell colour, strong shell seal, strong shell strength, complete shell integrity, satisfactory kernel flavour, well filled kernel, plumy, difficult to remove kernel halves and light kernel colour.
- It gives nut weight 16.75 g and kernel weight of 7.69 g.

Performance

- Nut yield 50 kg/tree at 20-25 years of age with 40-50% increase over check.

Cost

- Through this technology new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of rupees 12-15 crore from 1.0 lakh plants. Institute has the capacity of producing 25,000 plants per year (10,000 for four years).

Impacts and benefits

- The budded and grafted plants under different densities with drip irrigation and organic mulching start bearing just after three years as against 12-15 years in seedling trees.
- The growers in temperate region will have promising walnut variety by which they can start commercial orchard establishment. The new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of ₹ 5-6 lakh/ha.
- The nuts of walnut are used by food industry, cosmetic industry and exporters, while state development departments, nurserymen and farmers would be interested in mass multiplication for commercial growing.

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CITH Walnut-4

Salient features

- Nuts are large, ovate, rough shell texture, light shell colour, strong shell seal, intermediate shell strength, complete shell integrity, thin, satisfactory kernel flavour, well filled kernel, moderately plumy, very easy to remove kernel halves and light kernel colour.
- It gives nut weight of 14.24 and kernel weight of 6.92 g.

Performance

- Nut yield 45kg/tree at 20-25 years of age with 40-50% increase over check.

Cost

- Through this technology new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of rupees 12-15 crore from 1.0 lakh plants. Institute has the capacity of producing 25,000 plants per year (10,000 for four years).

Impacts and benefits

- The budded and grafted plants under different densities with drip irrigation and organic mulching starts bearing just after three years as against 12-15 years in seedling trees.
- The growers in temperate region will have promising walnut variety by which they can start commercial orchard establishment. The new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of ₹ 5-6 lakh/ha.
- The nuts of walnut are used by food industry, cosmetic industry and exporters, while state development departments, nurserymen and farmers would be interested in mass multiplication for commercial growing.

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CITH Walnut-5

Salient features

- High yielder, having extra light kernel color, suitable for export, bigger nut (19 g) and kernel (9.5 g) size, good kernel recovery (48.9%), light shell color, ovate in shape, moderate to remove the full kernel halves..

Performance

- Nut yield 50kg/tree at 20-25 years of age with 40-50% increase over check.

Cost

- Through this technology new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of ₹ 12-15 crore from 1.0 lakh plants. Institute has the capacity of producing 25,000 plants per year (10,000 for four years).

Impacts and benefits

- The growers in temperate region will have promising walnut variety by which they can start commercial orchard establishment. The new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of ₹ 5-6 lakh/ha.
- The nuts of walnut are used by food industry, cosmetic industry and exporters, while state development departments, nurserymen and farmers would be interested in mass multiplication for commercial growing.

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CITH Walnut-6

Salient features

- Nuts are large, ovate in shape, shell colour medium, intermediate shell seal, Intermediate shell strength, satisfactory kernel flavour, well filled kernel, moderate plumy and easy to remove kernel halves. It gives in shell nut weight (24 g), kernel weight (12.2 g) with kernel recovery (50.8 %).

Performance

- Nut yield 60 kg/tree at 20-25 years of age with 50-60% increase over check.

Cost

- Average cost of production per ha: ₹ 1.00 lakh.
- Average returns per year: ₹ 5.00-6.00 lakh.

Impacts and benefits

- The budded and grafted plants under different densities with drip irrigation and organic mulching starts bearing just after three years as against 12-15 years in seedling trees.
- The growers in temperate region will have promising walnut variety by which they can start commercial orchard establishment. The new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of ₹ 5-6 lakh/ha.
- The nuts of walnut are used by food industry, cosmetic industry and exporters, while state development departments, nurserymen and farmers would be interested in mass multiplication for commercial growing.

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CITH Walnut-7

Salient features

- Matures 155-160 days after full bloom, nuts are medium in size, ovate in shape, medium shell texture, medium coloured shell, intermediate shell seal, intermediate shell strength, satisfactory kernel flavour, well filled kernel, plumy, moderate removal of kernel halves.
- It gives nut weight (24.7 g), kernel weight (12.26 g) with (49.60%) kernel recovery.

Performance

- Nut yield 50 kg/tree at 20-25 years of age with 40-50% increase over check.

Cost

- Average cost of production per/ha:1.0 lakh. Average return/year: ₹ 5-6 lakh.

Impacts and benefits

- The budded and grafted plants under different densities with drip irrigation and organic mulching starts bearing just after three years as against 12-15 years in seedling trees.
- The growers in temperate region will have promising walnut variety by which they can start commercial orchard establishment. The new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of rupees 5-6 lakh/ha.
- The nuts of walnut are used by food industry, cosmetic industry and exporters, while state development departments, nurserymen and farmers would be interested in mass multiplication for commercial growing.

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CITH Walnut-8

Salient features

- Nuts are having light kernel colour, nut weight (20.4g), and kernel weight (11.01g), good kernel recovery (54%), light shell colour, long trapezoidal in shape, very easy to remove kernel halves, rough shell texture, strong shell seal and strong shell strength.

Performance

- Nut yield 45kg/tree at 20-25 years of age with 40-50% increase over check.

Cost

- Average cost of production per ha: ₹ 1.00 lakh.
- Average returns per year: ₹ 5.00-6.00 lakh.

Impacts and benefits

- The budded and grafted plants under different densities with drip irrigation and organic mulching starts bearing just after three years as against 12-15 years in seedling trees.
- The growers in temperate region will have promising walnut variety by which they can start commercial orchard establishment. The new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of rupees 5-6 lakh/ha.
- The nuts of walnut are used by food industry, cosmetic industry and exporters, while state development departments, nurserymen and farmers would be interested in mass multiplication for commercial growing.

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CITH Walnut-9

Salient features

- Nuts are medium in size, round light in shape, in colour, strong shell seal, intermediate shell strength, well filled kernel, plumy, moderate to remove the kernel halves.
- It gives nut weight (21.23 g) and kernel weight (10.65 g) with kernel recovery (50.9%).

Performance

- Nut yield 50kg/tree at 20-25 years of age with 40-50% increase over check.

Cost

- Average cost of production per ha: ₹ 1.00 lakh
- Average returns pet year: ₹ 5.00-6.00 lakh.

Impacts and benefits

- The growers in temperate region will have promising walnut variety by which they can start commercial orchard establishment.
- The new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of ₹ 5.00-6.00 lakh/ha.
- The nuts of walnut are used by food industry, cosmetic industry and exporters, while state development departments, nurserymen and farmers would be interested in mass multiplication for commercial growing.

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CITH Walnut-10

Salient features

- Heavy bearing, nuts are small, round, smooth shell texture, medium coloured shell, intermediate shell seal, intermediate shell strength, satisfactory flavour, well filled kernel, plumy and easy to remove kernel halves. It gives shellnut weight (19.95 g) and kernel weight (11.08 g) with kernel recovery (55.5 %).

Performance

- Nut yield 50kg/tree at 20-25 years of age with 40-50% increase over check.

Cost

- Average cost of production per ha: ₹ 1.0 lakh
- Average returns per year: ₹ 5.00-6.00 lakh

Impacts and benefits

- The growers in temperate region will have promising walnut variety by which they can start commercial orchard establishment. The new orchard starts production after four years, commercial bearing by 10th year and can fetch returns of ₹ 5-6 lakh/ha.
- The nuts of walnut are used by food industry, cosmetic industry and exporters, while state development departments, nurserymen and farmers would be interested in mass multiplication for commercial growing.

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Ajmer Dill 1

Salient features

- It is a European type dill variety
- It is suitable for cultivation under irrigated conditions.
- The average plant height is 134 cm.
- The leaves are dark green in colour with good content of herbal constituents.
- It takes about 142 days to reach maturity.
- It is suitable for export and contain about 3.5% essential oil.

Performance

- Average seed yield is 14.7 q/ha under irrigated conditions.

Cost

- Seed cost ₹ 60/kg.

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Ajmer Dill 2

Salient features

- Suitable for cultivation both under irrigated and rainfed conditions.
- The average plant height is 90 cm.
- It takes about 135 days to reach maturity.
- The seeds are bold, compact and dark brown in colour which require pressure to split.

Performance

- Seed yield is 14.6 q/ ha under irrigated and 5.8 q/ ha under rainfed conditions.
- The seeds contain about 3.2% essential oil.

Cost

- Seed cost ₹ 80/kg.

Impacts and benefits

- Dill seeds are effective in respiratory disorders like cold, influenza and bronchitis.
- Oil extracted from seeds and its emulsion in water is considered to be an aromatic, carminative specially useful in control of flatulence, colic pain, hyperacidity, vomiting, diarrhoea and hiccups due to indigestion in infants.
- Will enhance the production of dill with good export potential. Growers can get better incentives producing export quality produce thus improving their living standard.

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Ajmer Fennel 1

Salient features

- This variety is from late maturity group.
- The plants are erect and tall, bearing large size umbels.
- The seeds are attractive bold, medium sized, fragrant.
- Performs well all over the country in irrigated conditions

Performance

- Seed yield 20-22 q/ha.
- This variety has tolerance to *Ramularia* and *Alternaria* blight.
- Seeds having volatile oil content up to 1.6%.

Cost

- Seed cost ₹ 120/kg

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Ajmer Fenugreek 1

Salient features

- The variety is medium in height.
- It bears broad leaves with less bitterness.
- The crop takes 137 days to mature.
- Performs well all over the country in irrigated conditions.

Performance

- The number of seeds per pod ranges from 17-20.
- The seeds are bold with 17-20 g test weight.
- Seed yield 20-22 q/ha.

Cost

- Seed cost ₹ 80/kg.

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Ajmer Fenugreek 2

Salient features

- The variety is medium in height.
- It bears broad leaves with less bitterness.
- The crop takes 137 days to mature.
- Performs well all over the country in irrigated conditions

Performance

- The number of seeds per pod ranges from 17-20.
- The seeds are bold with 17-20 g test weight.
- Seed yield 20-22 q/ha.

Cost

- Seed cost ₹ 80/kg.

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Ajmer Fenugreek 3

Salient features

- The variety is medium in height.
- The seeds are small and show higher bitterness.
- The number of seeds/pod ranges from 16-18.
- It bears broad leaves and may also be used as leafy vegetable.
- Performs well under irrigated conditions.
- The crop takes 138 days to mature.
- Seeds are carminative, tonic, aphrodisiac and customarily used for the treatment of colic, flatulence, dysentery, diarrhoea, dyspepsia with loss of appetite, chronic cough, dropsy, enlargement of liver and spleen, rickets, gout and diabetes, and are good for the elimination of bad breath and body odour.
- Will enhance the production of fenugreek with good export potential. Growers can get better incentives producing export quality produce thus improving living standard.

Performance

- Seed yield : 15-18 q/ha.
- Possess high medicinal value.
- Performs well all over the country.

Cost

- Seed cost ₹ 80/kg.

Status of commercialization

- Non exclusive license for production and selling of seeds granted to Mr P. Vidhyasagar, Director, Divine Horticultural Farms Pvt. Ltd, Hyderabad.

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Ajmer Coriander 1

Salient features

- This variety is from late maturity group.
- The plants are erect.
- Seeds are medium in size, round in shape.
- Suitable for export purpose.
- Performs well all over the country in irrigated condition.

Performance

- Seed yield 10-12 q/ha.
- Seeds contain essential oil up to 0.4 %
- Plants are resistant to stem gall.

Cost

- Seed cost ₹ 100/kg.

Impacts and benefits

- Coriander is used to treat stomach problems, nausea, fevers, measles, colds, etc. in Asian folk medicines.
- Oil extracted from seed is used in canned soups, sauces, candy, chewing gum, ice cream, liquors and tobacco products.
- It enhances the production of coriander with good export potential. Growers can get better incentives producing export quality produce thus increase living standard.
- Status of commercialization: nonexclusive license for production and selling of seeds granted to Mr P. Vidhyasagar, Director, Divine Horticultural Farms Pvt. Ltd, Hyderabad.

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Advanced Oil Palm Parent Materials for Hybrid Seed Production

Salient features

- In oil palm, high quality planting material is obtained through the production of hybrids by crossing dura palms as female parent with pisifera palms as male parent.
- These parental palms are to be selected from the established seed gardens by utilizing the dura and tenera palms with high yield potential and other desirable qualities.

Performance

- Fresh fruit bunch (FFB) yield, min : 200kg/ palm/year
- Oil to bunch (O/B), min : 24%
- Kernel to bunch (K/B) min : 3%.

Cost

- Price of the oil palm parental planting material is ₹ 1,000 per seedling.

Impacts and benefits

- Production of quality planting material involves high technical skills and it is completely different from commercial cultivation. It requires careful selection of mother palm based on set standards, crossing desirable Dura × Pisifera material under strict quality control and finally monitoring the seed germination. Each seed garden through proper selection and utilization of Dura and Pisifera parents in the seed garden shall have the potential for producing more than 10.00 lakh sprouts per year with high yield potential. These gardens are expected to earn a minimum net profit of ₹ 50.00 lakh per year per garden.
- Commercialized: Material was supplied to Taraka and Kabini Seed gardens in Mysore district of Karnataka for an amount of ₹ 24,26,600 (Assistant Director of Horticulture, Oil Palm Seed Garden, Taraka, H.D. Kote, Mysore).

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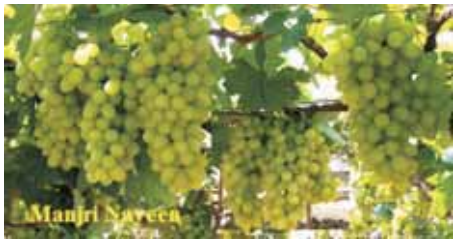
Manjri Naveen: A Table Grape Variety

Salient features



- Early ripening by 25 days as compared to Thompson Seedless, self-thinning variety, recommended for Maharashtra, Karnataka and Andhra Pradesh. Less labour intensive, responds well to low concentration of hormone levels compared to Thompson Seedless. Suited for exports with recovery of 100 per cent berries.

Performance

- The variety is a regular yielder and can expect up to 25 t/ha/year. Mildly tolerant to downy mildew but susceptible to powdery mildew.

Cost

- Due to its uniform berry size and shape, it is a tailor made variety for exports. Fruits are crisp, Muscat flavoured and with balanced sugar, acid taste.

Impacts and benefits

- Due to less operational costs with stable yield performances and high uniform fruit qualities has great economic benefit, this variety is hence becoming popular among Indian grape growers.
- Due to less hormone use and plant protection chemicals and also less labour interventions this variety has good high cost competitiveness in the markets.
- The variety is spreading in Nasik , Pune and Sangli areas of Maharashtra.
- Commercialized to Mr Prakash Bafna, Roha, Pune, Mr Sriram Bhau Dhokre, Khedgaon, Nasik, and Rajendra Ghuli, Miraj, Sangli, etc. in Maharashtra.

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Red Globe: A Table Grape Variety

Salient features

- Berries light red, obovate to round, skin thick, tender and crisp. Leaves medium smooth, moderate green with light canopy.

Performance

- Clusters big, berries very bold, red round, seeded with meaty pulp. A late ripening variety having good keeping qualities. Fruit yield 25 t/ha.

Cost

- Naturally bold berries, good keeping quality, crisp pulp and excellent taste.

Impacts and benefits

- Few farmers in Maharashtra have already started exporting to Gulf and other South-east Asian countries. Many farmers in Maharashtra and Karnataka are growing this variety and supplying to metro markets in Bengaluru, Mumbai, Kolkata, Delhi, Chennai and Hyderabad.
- Due to less labour requirement and high market demand even small and marginal farmers can get high economic benefit
- The variety is recommended for commercial cultivation by NRCG in 2008, since then gradually the area is increasing in Maharashtra and Karnataka.
- More than 100 farmers across Maharashta and Karnataka have benefitted from the planting material supplied by NRCG, Pune.

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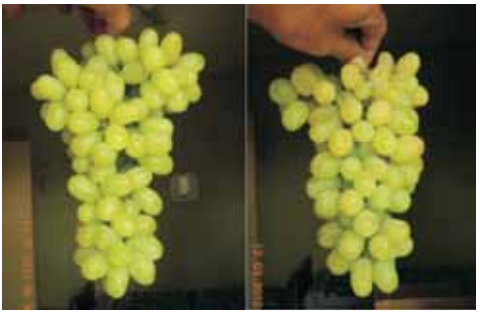
KR White

Salient features



- A white clonal mutant selection from the red 'Kishmish Rozavis' an introduced Russian variety, Evaluated as (NRCG Accn.No. B33-3).
- Berries light green, bold and elliptical and attached firmly. Responds well to hormones such as GA, CPPU and treated berries have meaty pulp, crisp and tender skin and light rosy/ Muscat flavour. Clusters large attractive with uniform green bold berries.

Performance

- It is a heavy yielder even under close planting accommodating 2,500 plants and yielding up to 40-45 t/ha.

Cost

- Less labour intensive and more profits margins due to its high yield and uniform fruit quality.

Impacts and benefits

- It has advantage over other white seedless grapes due to its high recovery of bold berries suitable for exports and premium markets.
- Suitable for small and marginal farmers with higher income and profit margins.
- The variety is becoming popular in Bijapur areas of Karnataka with predominant light soils. The planting material is distributed under Material Transfer Agreement.
- Commercialized to BM Kokare, Bijapur, Karnataka.

Contact
The Director ,
National Research Centre for Grapes,
Pune-412 307 (Mahahtra)
Tel: 020-26956050, 26956001, Fax: 020-26956099
E-mail: dirnrcg@gmail.com

Manihot esculenta Crantz: CO 1

Salient features

- Plant Type : Erect growing and medium tall (1.5 2m), late branching
- Mature stem colour : Dark grey, emerging shoot is pink
- Emerging leaf colour : Light green
- Leaf type : Broad
- Petiole colour: Green
- Flowering nature: Shy
- Tuber Shape: Long, cylindrical
- Tuber skin colour : Brown
- Tuber rind colour : Purple
- Tuber flesh colour : Light yellow
- Presence of tuber neck : Absent

Performance

- Tubers suitable for processing
- Total starch : 35 %
- Cyanogen : 40-60 ppm
- Average yield : 32-35 t/ha.

Cost

- Cost of stem ₹ 2-3 (5-6 setts).

Impacts and benefits

- Prefers irrigated condition.
- Food security and climate resilient.
- Commercialized in Tamil Nadu.

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Manihot esculenta Crantz: CO 2

Salient features

- Plant type : Dwarf with top branching
- Mature stem colour : Greenish brown
- Emerging leaf colour : Greenish purple
- Leaf type : Broad
- Petiole colour : Maroon
- Flowering nature : Flowering and seed set occurs naturally
- Tuber shape : Conical
- Tuber skin colour : Brown
- Tuber rind colour : White
- Tuber flesh colour : Creamy white flesh

Performance

- Tolerant to cassava mosaic virus.
- Low in incidence of tuber rot.
- Average yield : 35-37 t/ha

Cost

- Cost of stem ₹ 2-3 (5-6 setts)

Impacts and benefits

- The starch content is 35%. The HCN content is 40 µg/100 g.
- Suitable for chip making and processing industries.
- Used for culinary purpose.
- Drought tolerant type.
- Suited for irrigated and rainfed condition.
- Commercialized in Tamil Nadu.

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Manihot esculenta Crantz: CO 3

Salient features

- Plant type : Highly branching, medium stature
- Petiole colour : Green
- Flowering nature : Flowering
- Tuber skin colour : Brown
- Tuber rind colour : Yellowish white
- Tuber flesh colour : White
- Tuber shape : Long, cylindrical

Performance

- Tolerant to cassava mosaic virus.
- Low in incidence of tuber rot.
- Average yield : 40 t/ha.

Cost

- Cost of stem ₹ 2-3 (5-6 setts)

Impacts and benefits

- Good cooking quality
- The starch content is 36%
- HCN content is 78 µg/100 gm.
- Suitable for processing.
- Drought tolerant type.
- Suitable for irrigated and rainfed condition.
- Commercialized in Tamil Nadu.

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Manihot esculenta Crantz: CO 4

Salient features

- Plant type : Erect, non-branching
- Petiole colour : Purple colour with green tinge
- Flowering nature : Shy
- Tuber skin colour : Brown
- Tuber rind colour : White
- Tuber flesh colour : White
- Tuber shape : Conical

Performance

- Tolerant to cassava mosaic virus
- Average yield : 45.0 t/ha

Cost

- Cost of stem ₹ 2-3 (5-6 setts)

Impacts and benefits

- Starch content is 40%
- HCN content is 38 mg/100 gm
- Suitable for irrigated condition
- Commercialized in Tamil Nadu

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Manihot esculenta Crantz: Indira Cassava- 2

Salient features

- Plant type : Spreading and branching
- Plant height : 1.95 m
- Nature of stem : Zig zag and dark grey
- Colour of young stem : Green
- Shoot colour : Light sepia
- Leaf : Narrow, green with green petiole
- Stipule colour : Green
- Tuber skin colour : Light brown
- Tuber rind colour : Cream
- Tuber flesh colour : Light yellow
- Tuber shape : Cylindrical

Performance

- Cassava mosaic disease : Field resistant
- Cercospora leaf spot : Tolerant
- Spider mite : Tolerant
- Average yield : 38.0 t/ha

Cost

- Cost of stem ₹ 2-3 (5-6 setts)

Impacts and benefits

- Starch: 30%
- Dry matter: 40.5%
- Suitable for irrigated condition
- Commercialized in Tamil Nadu
- Drought tolerant

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Ipomoea batatas (L.) Lam: CO 1

Salient features

- Plant type : Moderately vigorous
- Spreading nature : Low
- Leaf shape : Medium lobed
- Emerging leaf colour : Dark green
- Petiole colour : Green
- Tuber skin colour : Sling, light pink
- Tuber flesh colour : White
- Tubers/ plant : 3-4 Nos.

Performance

- Tolerant to root weevil infestation registering only 11–15 per cent
- Average yield : 28.0 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha

Impacts and benefits

- Total starch : 24.2 %
- Total sugar : 10.6 %
- Acidity : 1.2 %
- Reducing sugar : 1.6 %
- Total sugar : 9.7 %
- Ascorbic acid : 20mg/100g
- Suitable for well drained sandy loam soil
- Commercialized in Tamil Nadu

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Ipomoea batatas (L.) Lam: CO 2

Salient features

- Plant type : Dwarf and erect
- Spreading nature : Shorter vine and less spreading
- Leaf shape : 10 lobed
- Emerging leaf colour : Pink
- Tuber size : Medium
- Tuber skin colour : Light pink
- Tuber flesh colour : White

Performance

- The root weevil incidence is only 10–15 per cent.
- Average yield : 32.0 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Total starch : 29.5 %
- β Carotene : 3.2 mg/100mg
- Good consumer acceptability
- Suitable for well drained sandy loam soil
- Commercialized in Tamil Nadu

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Ipomoea batatas (L.) Lam: CO 3

Salient features

- Plant type : Bushy growth habit
- Emerging leaf colour : Pink
- Nature of leaf colour : Dark green
- Tuber skin colour : Light red
- Tuber flesh colour : Dark orange
- Suitable season : *Kharif* and *rabi*

Performance

- The root weevil (*Cylas formicarius*) incidence ranges from 0 to 3 per cent.
- Average yield : 31.0 t/ha.

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Tubers are markedly rich in carotenoids
- β Carotene : 13.28 mg/100g
- Total Starch : 30.72%
- Ascorbic acid (21.1 mg/100g)
- Amylopectin : 81.31%
- Suitable for well drained sandy loam soil
- Commercialized in Tamil Nadu

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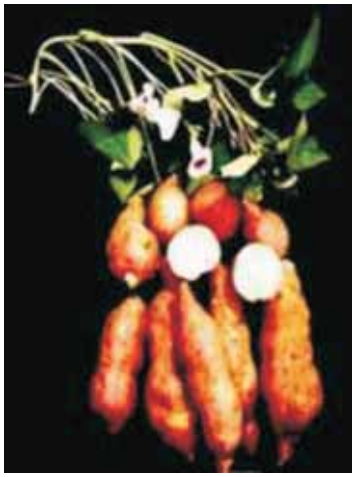
Ipomoea batatas (L.) Lam: COCIP-1



Salient features

- Plant type : Spreading
- Vine colour : Green
- Leaf type : Simple with 3-4 lobes
- Tuber skin colour : Pink
- Tuber flesh colour : Yellow

Performance

- The tubers are tolerant to weevil incidence.
- Average yield : 30-35 t/ha.

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Suitable for making cutlet, chips, RTS beverage and mash
- Suitable for well drained sandy loam soil
- Commercialized in Tamil Nadu

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Ipomoea batatas (L.) Lam: CIP- 440038

Salient features

- Plant type : Vigorous
- Tuber skin colour : White
- Tuber flesh colour : Orange
- Tubers/ plant : 3-4 Nos
- Harvest index : 44-31%
- Suitable season : *Kharif* and *rabi*

Performance

- The clone is tolerant to root weevil infestation.
- Average yield : 25-35 t/ha.

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Highest carotene : 20.02µg/g
- Dry matter content : 18.27%
- Least cooking time : 11 min
- Low water absorption : 580 ml
- Suitable for red sandy loam soil
- Commercialized in Tamil Nadu.

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Ipomoea batatas (L.) Lam: IGSP-14

Salient features

- Plant type : Dwarf and erect
- Tuber skin colour : Pink
- Tuber flesh colour : White
- Tuber size : Medium
- Harvest index : 45.2%
- Suitable season : *Kharif* and *rabi*

Performance

- The root weevil incidence is only 10-15 per cent.
- Average yield : 25.56 t/ha.

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Highest carotene : 20.02 g/g
- Dry matter : 23.28 %
- Total sugar : 1.2 %
- Cooking time : 8 min
- Water absorption : 468 ml
- Commercialized in Tamil Nadu
- Suitable for red sandy loam soil
- Commercialized in Tamil Nadu.

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Ipomoea batatas (L.) Lam: Samrat (S-30)

Salient features

- Photo-insensitive type
- Plant height : 130-145cm
- Plant spread : Medium
- Leaf type : Cordate
- Petiole colour : Purple
- Flowering nature : Flowering
- Tuber skin colour : White and pinkish streaks
- Tuber flesh colour : Creamy white
- Tuber shape : Fusiform
- Stem girth : Thick and succulent (2.2 cm)
- Branching habit : Auxiliary
- Number of days for initiation of tuberization: Early bulking variety; *kharif*-50-55 days; *rabi*-45 days; summer-55-60 days
- Suitable season: *kharif*: June; *rabi*: October; summer: February; main season is October when the yields are generally high.

Performance

- Due to early bulking, it fairly escapes weevil incidence, which generally starts building up after 90th day.
- Average yield : 15 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Rind: 6.31%, starch: 23.5%, fibre: 0.68%, sugars: 8.92%, protein: 1.06% and dry matter: 35%
- Carotene: 48 µgm/100 mg
- Dry/moderate/moist: Cooks to mealy consistency
- Time taken for boiling (under conventional): 15-18 minutes

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Ipomoea batatas (L.) Lam: Kiran

Salient features

- Plant type : Medium spreading
- Mature stem colour : Green
- Leaf type : Palmate leaves with 4-8 shallow lobes
- Emerging leaf colour : Light green
- Flowering nature : Flowering
- Leaf colour : Light green
- Tuber shape : Necked fusiform
- Tuber skin colour : Light red skinned
- Tuber flesh colour : Orange flush
- Suitable season : *Kharif* and *rabi*

Performance

- Early bulking habit facilitates escaping from weevil incidence fairly which generally starts building up 90 days after planting. The tubers are necked and have deep bulking habit which also facilitates escaping weevil incidence.
- Average yield : 20 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Carotene : High
- Rind : 5.4 %
- Dry matter : 31-35 %
- Comes up well both in low and high input conditions. Photoinsensitive, suitable for cultivation in *kharif* and *rabi* seasons.
- Commercialized in Andhra Pradesh and Bihar

Contact
Head (Vegetable Crops);
Tuber scheme, AICRP (Tubers),
Vegetable Research Station,
ARI, Rajendranagar,
Hyderabad, Andhra Pradesh

Ipomoea batatas (L.) Lam: Konkan Ashwini

Salient features

- Plant type : Semi-spreading
- Mature stem colour : Green
- Leaf type : Heart spread leaves
- Petiole colour : Green
- Flowering nature : Non flowering
- Tuber shape : Elliptical round
- Tuber skin colour : Pink
- Tuber flesh colour : Creamy white
- Suitable season : *Kharif* and *rabi*

Performance

- No incidence of pests and diseases were recorded except minor incidence of sweet potato weevil.
- Average yield : 15-20 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Moisture : 69%
- Protein : 3.65%
- Red sugar : 3.76%
- Cooking quality: Good, non bitter
- Commercialized in Tamil Nadu
- Well suited as rainfed crop in Konkan, requires lateritic and medium black soil with warm and humid climate
- Commercialized in Konkan region and adjoining area.

Contact
Head (Vegetable Crops);
AICRP on Tuber crops (Dapoli Centre),
Central Experiment Station,
Wakawali, Tal: Dapoli, Dist: Ratnagiri,
Maharashtra

Ipomoea batatas (L.) Lam: Indira Priya

Salient features

- Plant type : Erect
- Vine colour : Green with few purple spots
- Emerging leaf colour : Green with purple edges
- Leaf type : Deep lobe, elliptic and abaxial vine pigmentation
- Petiole colour : Green with purple at both the ends
- Flowering nature : Profusely flowering
- Tuber shape : Fusiform
- Tuber skin colour : Pink
- Tuber rind colour : Pink
- Tuber flesh colour : Pale yellow
- No of tuber/plant : 4-5
- Suitable season : *Kharif*

Performance

- Tolerant to sweet potato weevil
- Average yield : 25.0 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha

Impacts and benefits

- Dry matter : 24.97%
- Starch : 15.4%
- Total sugar : 5.25%
- TSS : 12.5%
- Protein : 4.30%
- Suitable for early planting and both rainfed and irrigated conditions
- Commercialized in Chhattisgarh and Tamil Nadu

Contact
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Ipomoea batatas (L.) Lam: Indira Narangi

Salient features

- Plant type : Erect
- Vine colour : Green with few purple spots
- Emerging leaf colour : Green with purple edges
- Leaf type : Deep lobe, elliptic and abaxial vine pigmentation
- Petiole colour : Green with purple near leaf
- Tuber shape : Fusiform
- Tuber skin colour : Purple red
- Tuber rind colour : Pink
- Tuber flesh colour : Orange
- No of tuber/plant : 2-3
- Vine colour : Green with few purple spots
- Emerging leaf colour : Green with purple edges
- Suitable season : *Kharif*

Performance

- Tolerant to sweet potato weevil
- Average yield : 23.79 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Dry matter : 25.17%
- Starch : 13.55%
- Total sugar : 4.43%
- TSS : 11.2%
- Carotene : 5.72 mg/100 g
- Suitable for early planting and both rainfed and irrigated conditions.
- Commercialized in Chhattisgarh and Andhra Pradesh.

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Ipomoea batatas (L.) Lam: Indira Madhur

Salient features

- Plant height (Vine length) : 100-200 cm
- Growth habit : Semi-spreading
- Type of stem : Vine
- Leaf type : Narrow lobed (5)
- Vine colour : Pigmented
- Tuber flesh colour : Orange
- Flower formation : Flowering
- Flower colour : Light purple
- No. of tuber per plant : 3-4
- Tuber skin colour : Red
- Tuber shape : Elliptical long
- Suitable season : *Kharif* and summer season

Performance

- Tolerant to sweet potato weevil
- Average yield : 21.62 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha

Impacts and benefits

- Cooking quality : Good, soft and excellent taste
- Carotene : 15,524 IU/100g
- Responsive to fertilizer at recommended dose.
- Commercialized in Chhattisgarh.

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Ipomoea batatas (L.) Lam: Indira Naveen

Salient features

- Plant height (Vine length) : 80-100 cm
- Growth habit : Semi-spreading
- Type of stem : Vine
- Leaf type : Narrow lobed
- Vine colour : Pigmented
- No. of tuber per plant : 6-7 Nos.
- Tuber colour : Pinkish red
- Tuber flesh colour : Cream colour
- Tuber shape : Elliptical round
- Flower colour : Light purple
- Flower formation : Flowering
- Suitable season : *Kharif* and *rabi* season

Performance

- Tolerant to sweet potato weevil
- Average yield : 26.33 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Tubers are suitable for culinary purpose
- Total soluble sugar : 12.5 (%)
- Dry matter : 25.5 (%)
- Early bulking, suitable for double cropping system under rainfed situations.
- Responsive to fertilizer at recommended dose.
- Suitable for both rainfed and irrigated conditions.

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Ipomoea batatas (L.) Lam: Indira Nandini

Salient features

- Vine length (cm) : 120-130 cm
- Growth habit : Semi-spreading
- Leaf type : Broad lobed
- Vine colour : Pigmented green
- Type of stem : Vine
- Tuber colour : Red
- No. of tuber per plant : 5-6 Nos.
- Tuber shape : Elliptical round
- Tuber flesh colour : Cream colour
- Flower formation : Flowering
- Flower colour : Light purple
- Suitable season : *Kharif* and *rabi* season

Performance

- Critical stage for tuber development (60-90 days after planting)
- Field tolerant to sweet potato weevil
- Average yield : 25.53 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Suitable for culinary purpose, soft, fibreless
- Easy to cook and good taste
- Responsive to fertilizer at recommended dose
- Suitable for both rainfed and irrigated condition
- Spacing for normal harvest - 60 × 20 cm.
- Commercialized in Chhattisgarh.

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Ipomoea batatas (L.) Lam: Narendra Shakarkand -9

Salient features

- Plant type : Semi erect leaf and vine green colour and emerging leaf colour-green
- Leaf type : Semi elliptic with five lobes and moderate
- Petiole colour : Light green with purple near stem
- Tuber shape : Elliptic to long elliptic
- Tuber skin colour : Cream
- Tuber flesh colour : Whitish cream
- Tuber cracking : Many crakes
- Suitable season : September

Performance

- Less incidence of sweat potato weevil
- Average yield : 16 to 20 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Cooking quality : Excellent
- Dry matter : 30-34 %
- Total sugar : 3.2 %
- Commercialized in Uttar Pradesh

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Ipomoea batatas (L.) Lam: Rajendra Shakarkand -5

Salient features

- Plant type : Extremely spreading, deep bulking
- Vine : Moderate thick vines
- Leaf type : Broad, six lobed
- Emerging leaf colour : Yellowish green
- Flowering nature : Shy flowering
- Tuber shape : Cylindrical with long neck
- Tuber skin colour : Greenish white
- Tubers per plant : 4-6 Nos.
- Suitable season : *Kharif* and *rabi*

Performance

- Tolerant to sweet potato weevil and *Cerospora* leaf spot.
- Tolerant to Bihar hairy caterpillar.
- Average yield : 20 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Good cooking quality, sweet
- Suitable for two tier cropping system and performed better under low input management.
- Commercialized in plains of Bihar, Jharkhand and Uttar Pradesh.

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Ipomoea batatas (L.) Lam: Rajendra Shakarkand -35

Salient features

- Dual purpose variety
- Plant type : Medium spreading
- Mature stem colour : Deep green
- Leaf colour : Green
- Flowering nature : Shy flowering
- Tuber shape : Cylindrical
- Tuber skin colour : White
- Tuber flesh colour : White
- Suitable season : February

Performance

- Moderately tolerant to sweet potato weevil and *Cercospora* leaf spot.
- Average yield : 25 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Good cooking quality
- Better performance and less mortality of vines even when planted in spring season.
- Commercialized in Bihar, Asom, Karnataka, West Bengal and Jharkhand.

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Ipomoea batatas (L.) Lam: Rajendra Shakarkand -43

Salient features

- Plant type : Medium spreading
- Mature stem colour : Deep green
- Flowering nature : Flowering
- Tuber shape : Cylindrical
- Tuber skin colour : Dull white
- Tuber flesh colour : White
- Tuber per plant : 5-6 No.
- Suitable season : *Kharif* and *rabi*

Performance

- Moderately tolerant to sweet potato weevil and *Cercospora* leaf spot.
- Average yield : 20 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Good cooking quality
- Vine is widely used as green fodder for milch and draft animals.
- Suitable for late harvesting which will fetch better market price.
- Commercialized in Bihar, Asom, Jharkhand, Karnataka, Andhra Pradesh and Maharashtra.

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Ipomoea batatas (L.) Lam: Rajendra Shakarkand -47

Salient features

- Plant type : Spreading
- Mature stem colour : Green
- Leaf colour : Green
- Petiole colour : Green
- Emerging leaf colour : Purplish white
- Flowering nature : Flowering
- Tuber shape : Cylindrical, Deep bulking
- Tuber skin colour : Purple
- Tuber flesh colour : White
- Suitable season : *Kharif* and summer

Performance

- Tolerant to sweet potato weevil and *Cercospora* leaf spot
- Average yield : 30 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Good cooking quality sweet taste
- Dual purpose
- Comes up well in low land condition
- Commercialized in Bihar, Jharkhand, West Bengal and Uttar Pradesh

Contact
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Ipomoea batatas (L.) Lam: Rajendra Shakarkand -92

Salient features

- Plant type : Spreading
- Leaf colour : Green
- Foliage is distinctly different for leaf incision
- Flowering nature : Flowering
- Tuber shape : Cylindrical
- Tuber skin colour : Red
- Tuber flesh colour : White
- Tuber per plant : 6-7 Nos.
- Suitable season : September and February

Performance

- Tolerant to sweet potato weevil and *Cercospora* leaf spot
- Average yield : 20 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Good cooking quality sweet taste
- Dual purpose
- Suitable for flood prone area of North Bihar and sandy loam soil under rainfed condition
- Commercialized in Bihar

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Ipomoea batatas (L.) Lam: Kamala Sundari

Salient features

- Plant Type : Spreading type
- Vine colour : Purple-green
- Emerging leaf colour : Purple to deep purple
- Leaf type : Cordate
- Tuber Shape : Long elliptical
- Tuber skin colour : Orange
- Tuber rind colour : Orange
- Tuber flesh colour : Vibrant orange
- Suitable season : Winter/spring

Performance

- Field resistance to tuber rot and black scurf diseases.
- Mild infection of Poty viruses
- Tolerant to leaf curl virus (begomo virus).
- Average yield : 21 t/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Moisture : 73.53%, dry matter: 26.47%, total soluble sugar: 9.67°B, starch content: 15.33%, protein: 0.55%, total sugar: 6.10%, reducing sugar content: 0.43%, non-reducing sugar content: 5.67%, vitamin C: 17.74 mg/100g and β- carotene: 8.20 mg/100g.
- Irrigated and highly adaptable in the river bed 'Diara' areas, in highly sandy condition.
- Commercialized in West Bengal

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Ipomoea batatas (L.) Lam: Bidhan Jagannath

Salient features

- Plant type : Medium spreading (70-80 cm)
- Leaf type : Semi-elliptic, lobed leaf at alternate orientation
- Emerging leaf colour : Purplish green
- Flowering nature : Irregular
- Leaf petiole : No hairs, green
- Tuber shape : Ovate with deep longitudinal grooves
- Tuber skin colour : Deep purplish, scarlet red
- Suitable season : *Rabi*

Performance

- Less infested by weevil. Infection of SPVD is also very low.
- Average yield : 20 to 22 tons/ha

Cost

- Cost of planting material ₹ 100 per nursery meant for one ha.

Impacts and benefits

- Tuber length : 11-12.5 cm
- Girth : 6.9-7.2 cm
- Tuber weight : 210-230 gm
- Flavour : Excellent
- β- carotene : 3.5 mg/100g (5833 IU)
- Yield well even under low fertility and low moisture condition.
- Commercialized in West Bengal

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Dioscorea esculenta (L) Burls: Konkan Kanchan

Salient features

- Plant type : Climbing with thick foliage with high vigour
- Leaf type : Simple, entire, deeply lobed, non - leathery dark green
- Tuber shape : Uniform, non-branching, long cylindrical with blunt ends
- Petiole : 8-9 cm with two prominent spines at base
- Tuber skin colour : Yellowish light brown skin
- Tuber flesh colour : White
- Suitable season : *Kharif*

Performance

- Uniform snow white on cooking
- No erosion of cooking flesh
- Smooth texture
- Non bitter and acceptable taste
- Average yield : 20-22 t/ha

Cost

- Cost of seed tuber/kg ₹ 15-20

Impacts and benefits

- Tuber length : 11-12.5 cm
- Girth : 6.9-7.2 cm
- Tuber weight : 210-230 gm
- Flavour : Excellent
- β- carotene : 3.5 mg/100g (5833 IU)
- Well suited as rainfed crop in Konkan, requires lateritic and medium black soil with warm and humid climate
- Commercialized in Konkan region and adjoining area of Maharashtra

Contact
Head; AICRP on Tuber Crops (Dapoli centre), Central Experiment Station,
Wakawali, Tal: Dapoli, Dist: Ratnagiri (M.S.)

Dioscorea alata: CO 1

Salient features

- Plant type : Climber, twining to right
- Leaf type : Cordate
- Petiole colour : Green
- Stem colour : Green
- Emerging leaf colour : Green
- Tuber shape : Long, cylindrical
- Tuber skin colour : Brown
- Tuber flesh colour : Creamy white
- Suitable season : *Kharif*

Performance

- Field tolerance to scale insects
- Average yield : 40.2 t/ha

Cost

- Cost of seed tuber/kg ₹ 15-20

Impacts and benefits

- Carbohydrate : 28 %
- Protein : 2.5 %
- Sandy loam soil with a pH of 6-6.5 is preferred with good drainage and cool weather
- Commercialized in Tamil Nadu

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Dioscorea alata: Konkan Ghorkhand

Salient features

- Plant type : Erect, climber vine
- Leaf type : Cordate
- Stem colour : Green
- Leaf colour and position : Purplish green, alternate at base and opposite to position of vine
- Tuber shape : Spherical
- Tuber skin colour : Brown
- Tuber flesh colour : Snow white with purple tinge
- Suitable season : *Kharif*

Performance

- No major pests and diseases
- Average yield: Tuber yield – 15-16 t/ha arial bulb yield – 3-3.5 t/ha.

Cost

- Cost of seed tuber/kg ₹ 15-20

Impacts and benefits

- Protein : 3 %
- Total starch : 18.70-18.80 %
- Fat : 0.275-03.70 %
- Cooking quality : Good
- Non bitter, very acceptable.
- Well suited as rainfed crop in Konkan, requires lateritic and medium black soil with warm and humid climate
- Commercialized in Tamil Nadu and Konkan region and adjoining areas.

Contact
Head; AICRP on Tuber crops (Dapoli centre),
Central Experiment Station, Wakawali, Tal: Dapoli,
Dist: Ratnagiri, Maharashtra

Colocasia esculenta var. *antiquorum* (L.) Schott: CO 1

Salient features

- Plant type : Medium tall
- Leaf type : Erect
- Petiole colour : Green
- Flowering nature : Flowering
- Corm shape : Round
- Cormel shape : Oval
- Tuber skin colour : Light brown
- Tuber flesh colour : White
- Suitable season : *Kharif*

Performance

- Moderately susceptible to leaf blight
- Average yield: 24.30 t/ha

Cost

- Cost of seed tuber/kg ₹ 15-20

Impacts and benefits

- Tubers have less acidity
- Starch : 22.5%
- Dry matter : 24-26%
- Protein : 2.4%
- Cooking quality : Good
- Red sandy loam soil, warm and moist climate and grown up to an elevation of 1500 MSL
- Commercialized in Tamil Nadu

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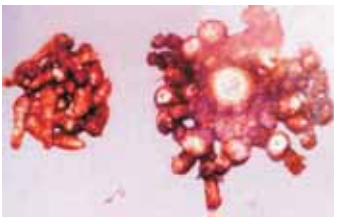
Colocasia esculenta var. *antiquorum* (L.) Schott: Satamukhi

Salient features

- Plant type : Medium spread, free budding
- Plant height : 50-55 cm
- Leaf arrangement : Alternate
- Leaf shape : Sagitate
- Leaf color : Dark green
- Leaf surface : Glossy
- Petiole : 12-15 cm long, uniformly light purple, channels open with purple petiole margin.
- Corm size : Medium
- Corm and cormel shape: Oblong and elliptic
- Tuber skin colour : Brown
- Tuber Flesh colour : White
- Suitable season : February - March



Performance

- Moderate to tolerant against leaf blight
- Moderately insistent to flood
- Average yield: 10-15 t/ha

Cost

- Cost of seed tuber/kg ₹ 15-20

Impacts and benefits

- Moisture content: 72.6%
- Starch content : 20%
- Fiber content : 0.67%
- Protein content : 2.10%
- Sugars : Reducing sugars : 0.3
- Dry matter : 27.01
- Oxalic acid : 0.25%
- Cooking quality : Mealy consistency, 20-25 minutes for cooking, non-bitter
- Texture : Soft
- Suitable for early and late condition. It can be planted 20-25 days earlier or later during planting season.
- Commercialized in Andhra Pradesh, Bihar, West Bengal, Tamil Nadu and Kerala.

Contact
Head
ARI, Rajendranagar, Hyderabad, Andhra Pradesh

Colocasia esculenta var. *antiquorum* (L.) Schott: Bhavapuri (KCS-2)

Salient features

- Plant type : Stout and medium tall
- Leaf type : Broad
- Petiole colour : Green
- Flowering nature : Flowering
- Corm shape : Globose
- Tuber skin colour : Brown
- Tuber flesh colour : White
- Suitable season : *Kharif*

Performance

- Moderate tolerant to leaf blight
- Average yield: 28-30 t/ha

Cost

- Cost of seed tuber/kg ₹ 15-20

Impacts and benefits

- Edible portion : 91.67 %
- Total carbohydrates : 15.2%
- Crude protein : 2.30 %
- Crude fibre : 0.37%
- Oxalic acid (fresh weight basis): 0.184 %
- Recommended under irrigated conditions.
- Commercialized in all coastal and some Telangana districts of Andhra Pradesh.

Contact
Head
Hort. Res. Station, APHU,
Kovvur, Andhra Pradesh

Colocasia esculenta var. *antiquorum* (L.) Schott: Indira Arvi - 1

Salient features

- Plant height : 75-100 cm
- Growth habit : Erect
- Type of stem : Sucker
- Leaf type : Medium
- Vein colour upper : Pale green
- Vein colour lower : Pigmented
- Tillering : Medium (5-6 tillers/plant)
- Leaf margin : Pigmented in early stage
- Petiole type : Medium
- Leaf sheath pattern : Open
- Cormel shape : Clubbed shape with blunt end
- No. of cormel/plant : 9-10 main cormels
- Cormel weight/plant : 600-700 gm
- Corm shape : Round
- Corm size : Medium (100-110 gm)
- Flower formation : Flowering
- Suitable season : *Kharif*

Performance

- Field tolerant to pest and leaf blight disease
- Average yield: 22 t/ha

Cost

- Cost of seed tuber ₹ 15/kg

Impacts and benefits

- Suitable for culinary purpose. Soft and easy to cook. Non acrid.
- Responsive to fertilizer at recommended dose.
- Suitable for both rainfed and irrigated conditions
- Commercialized in Chhattisgarh and Madhya Pradesh.

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Colocasia esculenta var. *antiquorum* (L.) Schott: Narendra Arvi -1

Salient features

- Growth habit- erect
- Leaf arrangement- clockwise
- Leaves- undulate green with light green margin
- Vein colour- cinus; Olive green dorsal and glacous green ventral
- Petiole colour- top 1/3 and middle are green and base is dark green
- Sheath colour- dark green
- Corm shape- round
- Corm size- medium
- Corm shape- clubbed shape
- Cormel size- medium
- Suitable season: summer season as well as rainy season

Performance

- Fewer incidences of aphids and tobacco caterpillar, least infection of phytopthora leaf blight.
- Average yield: 22 t/ha

Cost

- Cost of seed tuber ₹ 15/kg

Impacts and benefits

- Excellent
- Dry matter-24.5 %
- Starch- 19.5 %
- Acridity (calcium oxalate) and dry weight- 0.032 %
- Suitable for table purpose
- Less acridity.
- Soft and easy to cook
- Required a continuous supply of water, performance well on marginal land, well-drained and fertile sandy loam (pH 5.5 - 7.0 is better).
- Commercialized in Uttar Pradesh.

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Colocasia esculenta var. *antiquorum* (L.) Schott: Narendra Arvi -2

Salient features

- Growth habit- spreading
- Leaf arrangement- anti clockwise
- Leaves- undulate green with light green margin
- Vein colour-upper vein colour is dark green and lower is yellowish green
- Petiole colour- top 1/3 and middle is green and basal portion is dark green
- Sheath colour- dark green
- Corm shape- round
- Corm size- medium
- Cormel shape- clubbed
- Cormel size- medium.
- Suitable season: suitable for both summer as well as rainy season

Performance

- Low incidence of aphids and tobacco caterpillar.
- Tolerant to *Phytophthora* blight.
- Average yield: 16 tons/ha

Cost

- Cost of seed tuber ₹ 15/kg

Impacts and benefits

- Drymatter-24.2 %, starch- 19.1%, acridity (calcium oxalate) % dry weight-0.032.
- Suitable for table purpose as it has less acridity, soft and easy to cook.
- Required a continuous supply of water, performance well on marginal land , well-drained and fertile sandy lom (pH 5.5 - 7.0 is better)
- Commercialized in Uttar Pradesh and Bihar

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Colocasia esculenta var. *antiquorum* (L.) Schott: Rajendra Arvi- 1

Salient features

- Plant type : Erect
- Leaf type : Droopy leaves
- Shoot length : 60-65 cm
- Shoot colour : Yellowish green
- Petiole length : 15-18 cm
- Petiole colour : Green
- Flowering nature : Flowering
- Cormel shape : Spherical, 10-12 cm length
- Tuber skin colour : White and brown
- Tuber flesh colour : White
- No. of tubers per plant : 8-10
- Suitable season : *Kharif* and Spring season

Performance

- Moderately susceptible to tobacco caterpillar and phytophthora leaf blight
- Average yield: 16-18 t/ha

Cost

- Cost of seed tuber/kg, ₹ 15/-

Impacts and benefits

- Dry matter : 24.2 %
- Starch : 19.1%,
- Acridity (calcium oxalate) per cent dry weight- 0.032.
- Suitable for table purpose as it has less acridity, soft and easy to cook.
- Suitable for both upland and low conditions.
- Commercialized in Bihar, Jharkhand and Chhattisgarh.

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Colocasia esculenta var. *antiquorum* (L.) Schott: Upland Taro-Bidhan Chaitanya

Salient features

- Plant type : Tall, erect (75-80 cm)
- Leaf type : Drooping leaf, waxy with blunt tip
- Petiole colour : Green
- Leaf shape : Palmate
- Flowering nature : Flowering
- Cormel shape : Oval
- Tuber skin colour : White and brown
- Tuber flesh colour : White
- Suitable season : March-August (*kharif*) season in West Bengal

Performance

- Resistant to *Phytophthora* blight
- Average yield: 15-20 t/ha

Cost

- Cost of seed tuber ₹ 10/kg

Impacts and benefits

- Excellent cooking quality
- Non-irritant type
- Good for chips production
- Dry matter: 24%
- Tropical humid climate with good irrigation facility
- Commercialized in West Bengal.

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Colocasia esculenta var. *antiquorum* (L.) Schott: Upland Taro

Salient features

- Plant height : 75-80cm (erect)
- Leaf sagittate and little cup shaped, slanting
- leaf size : 30-32cm (L) × 22-25 cm (B)
- Girth of plant : 14-15.5cm
- Petiole length : 70-73cm
- Corm size : 5.87-6.8 × 7.5-8.46
- No of corms/plant 18.37
- Individual corm weight 19.43 -21.0g.
- Corms are round to ovate
- Tuber flesh colour : Hard tuber and white colour
- Suitable season: March-August (*kharif*) season in West Bengal

Performance

- Resistant to *Phytophthora* blight and stem rot diseases
- Average yield: 22-24 t/ha

Cost

- Cost of seed tuber ₹ 10/kg

Impacts and benefits

- Very good bulking of corm
- Excellent cooking type
- Tropical humid climate under irrigated and rainfed condition
- Commercialized in West Bengal.

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Colocasia esculenta var. *Esculenta* (L.) Schott: Narendra Bunda -1

Salient features

- Growth habit : Erect
- Leaves arrangement : Clockwise
- Leaves : Erect upper green lower gloucous green
- Vein colour : Upper and lower are green with purple streaks
- Petiole colour : Top 1/3 purple and lower green with purple, middle is green with upper purple base light green
- Sheath colour : Light green with purple margin
- Corm shape : Cylindrical
- Corm size : Medium
- Cormel shape : Elliptical shape
- Cormel size : Medium
- Suitable season: Suitable for both summer season as well as rainy season. Suitable for both early and late sowing.

Performance

- Less incidence of aphids, caterpillar and phytopthora leaf blight.
- Average yield: 38 t/ha

Cost

- Cost of seed tuber ₹ 15-18/kg

Impacts and benefits

- Dry matter : 20.17 %
- Total starch : 67.78 %
- Acridity (calcium oxalate) dry weight: 0.06%
- Suitable for table purpose as it has less acridity
- Soft and easy to cook
- Commercialized in Uttar Pradesh and Arunachal Pradesh.

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Colocasia esculenta var. *Stoloniferum* (L.) Schott: BCST-13

Salient features

- Plant type : Erect
- Leaf colour : Deep green leaf and purple margin
- Leaf orientation : Anti-clockwise
- Plant height : Medium 100-125 cm
- Basal girth : 25-30 cm
- Stolon length : 125cm with 205cm girth
- Individual stolon weight : >50 g
- No. of stolon per plant : 35-45
- Suitable season : Irrigated and rainfed. As the crop stands for 10 months, it needs continuous standing water.

Performance

- Less infestation by caterpillar (*Spodoptera* sp.), resistant to stem rot infection
- Average yield: 24-26 t/ha

Cost

- Cost of seed tuber ₹ 15/kg

Impacts and benefits

- Very good and palatable taste
- Excellent cooking type
- Non-irritant type
- Recommended for low land/swampy areas (January-October)
- Commercialized in West Bengal and Asom.

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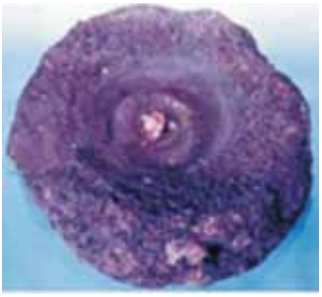
Amorphophallus paeoniifolius (Dennst.) Nicolson: Gajendra

Salient features



- Plant type : Medium tall
- Canopy spread : Medium
- Leaf shape : Pinnately by compound
- Leaf colour : Light green
- No. of leaves/plant : 2-3
- Skin colour : Brownish black
- Tuber flesh colour : Yellow with orange tinge
- Suitable for rainy, winter and summer seasons

Performance

- Fairly tolerant to leaf blight
- Average yield: 42 t/ha

Cost

- Cost of seed tuber ₹ 12-15/kg

Impacts and benefits

- Oxalates : 0.03 mg/100 g
- Carotene : 2,412 IU
- Suitable for all the conditions, responded well to high input agriculture
- Commercialized in Andhra Pradesh, Tamil Nadu, West Bengal (70-80% area in India).

Contact
Head;
AICRP (Tubers), Vegetable Research Station,
ARI, Rajendranagar, Hyderabad

Amorphophallus paeoniifolius (Dennst.) Nicolson: Elephant Foot Yam -Bidhan Kusum

Salient features

- Plant type : Tall (80-100 cm)
- Leaf orientation : Divergent type
- Leaf type : Palmate compound, downward arching of leaflet
- Pseudostem : Fairly thick, smooth and erect
- Flowering : Irregular
- Corm shape : Globose- flat
- Corm weight : 2-4 kg
- Corm flesh colour : Cream
- Suitable season : March-September (*kharif* season in West Bengal)

Performance

- Less susceptible to stem rot disease
- Average yield: 41 t/ha

Cost

- Cost of seed tuber ₹ 12-15/kg

Impacts and benefits

- Excellent cooking quality
- Non-irritant type
- Good for pickle preparation
- Dry matter (%): 23%
- The corms contain less soluble oxalates (11.59g/100g)
- Suitable for tropical humid climate
- Commercialized in West Bengal, Andhra Pradesh and Bihar.

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Xanthosoma sagittifolium (L.) Schott: Konkan Haritparni

Salient features

- Plant type : Erect
- Leaf sheath colour : Violet with light green tinge
- Petiole colour : Purple
- Corm colour : Brown
- Tuber flesh colour : white
- Suitable season : *Kharif*

Performance

- No major pests and diseases, minor incidence of snail
- Average yield: cormel yield – 3.44 t/ha and leaf yield – 3.39 t/ha

Cost

- Cost of seed tuber ₹ 10-12/kg

Impacts and benefits

- Cooking quality : Good
- Leaves are edible eaten cooked as patra
- Moisture : 81.2 %
- Cormels are edible
- Well suited as rainfed crop in Konkan and requires lateritic and medium black soil with warm and humid climate
- Commercialized in Konkan region and adjoining areas.

Contact
Head
AICRP on Tuber crops (Dapoli centre),
Central Experiment Station, Wakawali, Tal- Dapoli,
Dist: Ratnagiri, Maharashtra

Plectranthus rotundifolius (Poir): CO 1

Salient features

- First variety of Chinese potato
- Plant type : Spreading
- Leaf type : Ovate
- Petiole colour : Green
- Stem colour : Green
- Emerging leaf colour : Green
- Flowering nature : Flowering profusely
- Tuber shape : Round to oval
- Tuber skin colour : Brown
- Tuber flesh colour : Creamy white
- Suitable season : *Kharif*

Performance

- Average yield: 31.93 t/ha

Cost

- Cost of seed tubers ₹ 30-40/kg

Impacts and benefits

- Dry matter : 28-30 %
- Total starch : 21.5 %
- Cooked tubers are tasty and have less soil odour
- Red sandy loam soil
- Commercialized in Tamil Nadu.

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Pachyrhizus erosus (L.) Urban: Rajendra Mishrikand - 1

Salient features

- Only variety released so far for commercial cultivation
- Plant type : Long spreading vine
- Leaf colour : Yellowish green
- Bulking type : Shallow
- Tuber shape : Round, conical
- Tuber skin : Thin, creamy white
- Tuber flesh : White
- No. of tubers : 2-3 per plant
- Suitable season : *Kharif*

Performance

- Crop grown for tuber purpose is mostly free from pest infestation with mild mosaic symptoms. But its flowers and pods are heavily damaged by spotted pod borer.
- Average yield: 35 t/ha

Cost

- Cost of seed tubers ₹ 50/kg

Impacts and benefits

- Sweet and tasty in raw consumption.
- Fibre content: low
- Mature seed possess retenone and highly poisonous
- Yam bean seeds can also be used as bio pesticides in different formulation against leaf feeding pests.
- Suitable for intercropping with *kharif* maize and *arhar*
- Commercialized in North Bihar and West Bengal.

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Swarna Shree Brinjal

Salient features

- Plant height is medium (50-60 cm) and broad plant spread.
- Seed Rate : 250-300 g/ha.
- First harvest is 55-60 days after planting.
- Recommended for Bihar, Jharkhand and adjoining areas.
- Fruit are creamy white in colour, round to oval, soft and preferred for *bharta* preparation.

Performance

- Yield - 55-60 t/ha
- Moderately resistant to bacterial wilt

Cost

- Cost of production of seed is ₹ 1200/kg
- Selling price of seed is ₹ 2000/kg.

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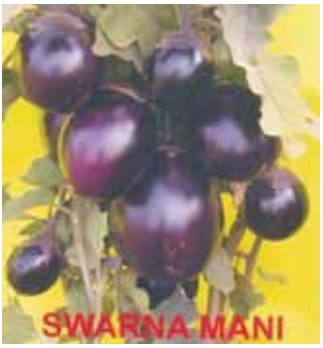
Swarna Mani Brinjal



Salient features

- Plant height is 60-70 cm, very broad plant spread and purple pigmentation on the leaf and stem.
- First harvest takes place at 65-70 days after planting.
- Recommended for Bihar, Jharkhand, Uttar Pradesh, Punjab and Uttrakhand.
- Fruits are attractive shiny purple in colour and round in shape.

Performance

- Yield - 60-65 t/ha
- Moderately resistant to bacterial wilt

Cost

- Cost of production of seed is ₹ 1200/kg
- Selling price of seed is ₹ 2000/kg.

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Swarna Shyamli Brinjal

Salient features

- Plant height is 40-50 cm, prostate spread and having spines on leaves and calyx.
- Preferred locally for better cooking quality.
- First harvest takes place 35-40 days after planting.
- Recommended for Bihar, Jharkhand and adjoining areas.
- Fruits are medium sized with round attractive green colour with white stripes.

Performance

- Yield - 60-65 t/ha.
- Resistant to bacterial wilt.

Cost

- Cost of production of seed is ₹ 1200/kg.
- Selling price of seed is ₹ 2000/kg.

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Swarna Pratibha Brinjal

Salient features

- Plant height 60-70 cm, erect and intermediate plant spread.
- Time of sowing September, February and March, first harvest is 55-60 days after planting.
- Fruits are medium sized with shiny purple in colour.
- Recommended for Bihar, Jharkhand, Uttar Pradesh, Himachal Pradesh, Jammu and Kashmir, Uttrakhand, Madhya Pradesh and Maharashtra.

Performance

- Yield - 60-65 t/ha.
- Resistant to bacterial wilt.

Cost

- Cost of production of seed is ₹ 1200/kg.
- Selling price of seed is ₹ 2000/kg.

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Swarna Sobha Brinjal

Salient features

- Plant height is 50-60 cm, prostate growth habit and broad plant spread.
- Time of sowing is August - September and first harvest takes place 55-60 days after planting.
- Fruits are medium in size, attractive milky white coloured with purple tinge.
- Recommended for Bihar and Jharkhand.

Performance

- Yield - 50-60 t/ha.
- Resistant to bacterial wilt.

Cost

- Cost of production of seed is ₹ 1200/kg.
- Selling price of seed is ₹ 2000/kg.

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Swarna Ajay (F_1) Brinjal

Salient features

- Plant height is 50-60 cm, intermediate growth habit and broad plant spread. Spines are visible on leaves and calayx.
- Time of sowing is July - September and February March. First harvest takes place 50-55 days after planting.
- Fruits are medium sized with attractive purple colour.
- Recommended for Bihar, Jharkhand, Punjab, Uttrakhand and Uttar Pradesh.

Performance

- Yield - 70-75 t/ha.
- Resistant to bacterial wilt and phomopsis blight.

Cost

- ₹ 2.5 lakh for parental lines (one time).
- Cost of production of F_1 hybrid seed is ₹ 5,000/kg.
- Selling price of seed is ₹ 10,000/kg.

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Swarna Shakti (F_1) Brinjal

Salient features

- Plant height is 70-80 cm, plant erect and intermediate spread.
- Sowing time is August - September and first harvest takes place 55 -60 days after planting.
- Fruits are medium in size with attractive purple colour.
- Recommended for Bihar and Jharkhand.

Performance

- Yield - 70-75 t/ha.
- Resistant to bacterial wilt and *Phomopsis* blight.

Cost

- ₹ 2.5 lakh for parental lines (one time).
- Cost of production of F_1 hybrid seed is ₹ 5,000/kg.
- Selling price of seed is ₹ 10,000/kg.

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Swarna Ageti Cucumber

Salient features

- Fruits are cylindrical long (150-200 g), green and without prominent placental hollowness.
- Sowing time is July-August and February-March and the first harvest takes place 45-50 days after sowing.
- Recommended for Bihar, Jharkhand, Punjab and Uttar Pradesh.

Performance

- Yield - 30.0-35.5 t/ha.
- Tolerant to powdery mildew.

Cost

- Cost of production of seed is ₹ 400/kg.
- Selling price of seed is ₹ 800/kg.

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Swarna Sheetal Cucumber

Salient features

- Fruit is cylindrical long 200-250 g, greenish white and without prominent hollowness.
- Sowing time is February-March and the first harvest takes place 60-65 days after sowing.
- Recommended for Bihar and Jharkhand.

Performance

- Yield - 20-30 t/ha.
- Tolerant to powdery mildew disease.

Cost

- Cost of production of seed is ₹ 400/kg
- Selling price of seed is ₹ 800/kg.

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Swarna Poorna Cucumber

Salient features

- Fruits are cylindrical with approximately 300 g weight, generally light green in colour and without prominent hollowness.
- Time of sowing is July - August and February - March.
- First harvest takes place 55-60 days after sowing.
- Recommended for Bihar, Jharkhand, Uttar Pradesh and Punjab

Performance

- Yield - 30-35 t/ha.
- Tolerant to powdery mildew disease.

Cost

- Cost of production of seed is ₹ 400/kg.
- Selling price of seed is ₹ 800/kg

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Swarna Utkrisht *Dolichos* Bean

Salient features

- Pods are straight flat green fleshy (10-12 cm) having very good cooking quality.
- Mature seeds are light brown in colour.
- Time of sowing June - July and first harvest takes place 110 - 120 days after sowing.
- Recommended for Bihar, Jharkhand, Uttar Pradesh and Punjab.

Performance

- Yield – 35-40 t/ha.
- Resistant to powdery mildew disease.

Cost

- Cost of production of seed is ₹ 80/kg.
- Selling price of seed is ₹ 150/kg.

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Swarna Mukti Garden Pea

Salient features

- Pods are mildly concave long and light green shelled. Obtuse apex having more than 50% recovery of shelled dark green peas.
- Peas are sweet in taste and have very good cooking quality.
- Time of sowing is September - October and the first picking may take place at 80-90 days after sowing.
- Recommended for Bihar, Jharkhand and Rajasthan.

Performance

- Yield – 20-25 t/ha.
- Resistant to powdery mildew.

Cost

- Cost of production of seed is ₹ 50/kg.
- Selling price of seed is ₹ 80/kg.

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Swarna Rekha Pointed Gourd

Salient features

- Fruits are elongated (30-35 g), striped green and contain soft seed.
- Time of planting mid-September to mid-February.
- Recommended for Bihar, Jharkhand and West Bengal.

Performance

- Yield - 30-35 t/ha.
- Profuse bearer with attractive fruits.

Cost

- Cost of establishment of 1 ha nursery production farm will be ₹ 2,50,000 which will have the capacity of producing planting material worth ₹ 5,00,000 per annum.

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Swarna Alaukik Pointed Gourd

Salient features

- Fruits are cylindrical 25 - 30 g and light green without stripes.
- Time of planting mid-September to mid-February.
- Recommended for Bihar, Jharkhand and West Bengal

Performance

- Yield - 25-30 t/ha.
- The variety has good cooking quality.

Cost

- Cost of establishment of 1 ha nursery production farm will be ₹ 2,50,000 which will have capacity of producing planting material worth ₹ 5,00,000 per annum.

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Swarna Manjhari Ridge Gourd

Salient features

- Fruits are elongated, long and highly ridged, pulp soft and contain less fibre.
- Recommended for Bihar, Jharkhand, Odisha, Tamil Nadu, Maharashtra and Andhra Pradesh

Performance

- Yield – 18-20 t/ha.
- Resistant to powdery mildew disease.

Cost

- Cost of production of seed is ₹ 400/kg.
- Selling price of seed is ₹ 800/kg.

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Swarna Uphar Ridge Gourd

Salient features

- Fruits are elongated in shape, long ridged at edible stage, pulp soft and contain less fibre.
- Recommended for Bihar, Jharkhand and adjoining areas.

Performance

- Yield – 20-30 t/ha.
- Resistant to powdery mildew disease.

Cost

- Cost of production of seed is ₹ 400/kg.
- Selling price of seed is ₹ 800/kg.

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Swarna Prabha Sponge Gourd

Salient features

- Fruits are light greenish, pulp soft and contain less fibre.
- Recommended for Bihar, Jharkhand and Uttar Pradesh.

Performance

- Yield – 25-30 t/ha.
- Tolerant to powdery mildew disease.

Cost

- Cost of production of seed is ₹ 400/kg.
- Selling price of seed is ₹ 800/kg.

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Swarna Lalima Tomato

Salient features

- Fruit is medium sized with attractive deep red colour, round in shape and TSS - 4° Brix
- The variety is recommended for Bihar and Jharkhand.

Performance

- Yield – 60-70 t/ha.
- Resistant to bacterial wilt disease.

Cost

- Cost of production of seed is ₹ 1,500/kg.
- Selling price of seed is ₹ 2,500/kg.

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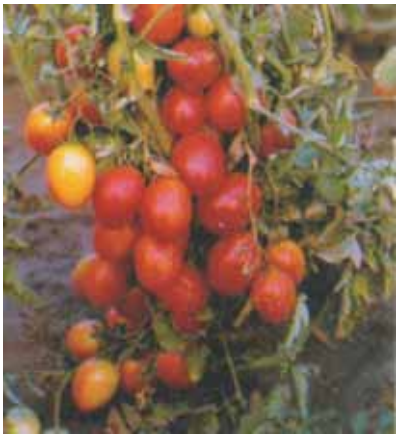
Swarna Naveen Tomato

Salient features

- Fruit is oblong in shape, deep red and TSS - 5°Brix.
- Recommended for Bihar, Jharkhand and adjoining areas.



Performance

- Yield – 60-65 t/ha.
- Resistant to bacterial wilt disease.

Cost

- Cost of production of seed is ₹ 1,500/ kg.
- Selling price of seed is ₹ 2,500/kg.

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Swarna Baibhav (F_1) Tomato

Salient features

- Fruits are round in shape, deep red, firm and contain high pulp.
- Recommended for Bihar, Jharkhand, Punjab, Uttrakhand and Uttar Pradesh.

Performance

- Yield – 90-100 t/ha.
- Suitable for long distance transportation and processing.

Cost

- Cost of production of F_1 hybrid seed is ₹ 7,500/Kg.
- Selling price of seed is ₹ 20,000/kg.

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Swarna Sampada (F_1) Tomato

Salient features

- Fruits are round in shape, red in colour, firm, contain high pulp and TSS - 5°Brix.
- Recommended for Bihar, Jharkhand and Uttar Pradesh.

Performance

- Yield – 100-105 t/ha.
- Resistant to bacterial wilt and early blight diseases.

Cost

- ₹ 2.5 lakh for parental lines (one time).
- Cost of production of F_1 hybrid seed is ₹ 7,500/kg.
- Selling price of seed is ₹ 20,000/kg.

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Cardozo Mankurad: A Promising Mango Variety from Goa

Salient features

- Unique features of the variety compared with the standard Goa variety Mankurad.
- Regular bearing nature.
- Attractive fruit colour and bigger fruit size.
- Higher content of fibreless pulp.
- Higher fruit yield.
- Better shelf life.

Performance

- At the age of 8-10 years, about 400-500 fruits/tree can be expected.
- Moderately susceptible to mango hoppers and powdery mildew disease.

Cost

- Selling price of variety: ₹ 150/graft

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Goa-1: A Cashew Variety for Goa

Salient features

- It is a selection derived by clonal evaluation of a local accession 'Balli-2', based on superior performance of a promising tree located in village Balli of Quepem Taluka in South Goa.
- Medium to bold nut size (7.41 - 7.92 g), excellent kernel recovery (29.82 -30.05 %) of export grade (W210 -W240) and higher nut yield.
- Bigger apples (about 70 g) with higher juice content (66 - 70 %) of 12 °Brix.
- Higher number of flowering laterals M-2 canopy (15.93), male to bisexual sex ratio of 10.02:1 and bunch bearing habit (5-10 fruits per panicle).
- Yellow coloured bigger apples with higher juice contents are suitable for processing juice and distinctly advantageous for the Feni industry.

Performance

- The nut yield (kg/tree) of 7.5, 8.35, 8.69, 9.76, 9.15 and 12.05 was recorded at 7th, 8th, 9th, 10th 11th and 12th year of age with a mean nut yield per tree of 8.57 kg and the cumulative yield of 55.71 kg/tree for six harvests.
- The mean nut weight is 7.9 g coupled with mean shelling of 30.17 per cent.

Cost

- Total cost for 10 years : ₹ 2,20,530/ha.
- Gross returns for 10 years : ₹ 3.62,000/ha.
- Net returns: ₹ 1,59,270 at the 10th year/ha
- Net returns/tree at the 10th year : ₹ 417/tree.

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Tiswadi-3 : A Cashew variety from Goa

Salient features

- High yield potential
- Bold nut size
- Higher shelling percentage
- Export quality grade kernels
- Bigger apple size

Performance

- The selection yields 8-9 kg of raw nuts per tree (about 1.5 t/ha).
- Nuts of 9.5 g mean weight yield kernels of higher grade (W 180).
- The apples are of big size (110 g).

Cost

- Total cost for 10 years : ₹ 30,000-40,000/ha (₹ 150-200/tree, for a density of 200 trees/ ha).
- Net returns: ₹ 80,000 - 1,00,000/ha at the 10th year
- Net returns/tree at the 10th year : ₹ 400-500 /tree.

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Ganje- 2: A Cashew variety from Goa

Salient features

- High yield potential
- Bold nut size
- Higher number of bisexual flowers
- Higher bunch bearing capacity
- Bigger apple size with higher juice content

Performance

- Mean nut yield of 8.4, 8.8, 10.5, 12.4 kg/tree recorded in the 5th, 6th, 7th and 8th harvests.
- The mean nut weight is 8.2 g coupled with 29.5 per cent of kernel recovery and bigger apple size of 94 g.

Cost

- Total cost for 10 years comes to ₹ 30,000-40,000/ha (₹ 150- 200/tree, for a density of 200 trees/ ha)
- Net returns/tree at the 10th year : ₹ 400-500 /tree.

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KN 2/98: A Cashew variety from Goa

Salient features

- Higher bunch bearing capacity
- Bold nut size
- Higher shelling percentage
- Export quality grade kernels

Performance

- This promising selection yielded 7.32, 8.7, 9.5 and 9.8 kg/tree of raw nuts during the 5th, 6th 7th and 8th harvests.
- The mean nut weight is 8.5 g with 29.6 per cent of shelling.
- The apples are bigger in size (105 g).

Cost

- Total expenditure for 10 years : ₹ 30,000-40,000/ha (₹ 150-200/tree, for a density of 200/trees/ha).
- Net returns in the 10th year: ₹ 400-500/tree.

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