

**Healthy,
Genetically Pure**

JOURNEY

The incessant journey of JISL started with a motive of achieving farmers prosperity through sustainable agriculture. The founder, Dr. Bhavarlal Jain, the son-of-the-soil, instinctively believed that agriculture was the backbone of the Indian economy. For sustainability, self-reliance and all round growth, the country has no alternative but to adopt Science and Technology for the progress of agriculture. This inspired him to sow the seed of 'Jain Irrigation Systems Limited' in 1963.

During the journey, The Founder felt it was imperative to utilize biotechnological tools to enhance farm productivity, reduce crop losses occurred due to diseases and pests and for crop improvement.

In 1995 he decided to use Tissue Culture Technology, a wing of biotechnology as a tool for propagating disease free, genetically pure, true to type, high yielding quality planting material. Thus fulfilling his dream of bringing prosperity to the farmer by doubling farm income.

Jain Tissue Culture is a Hi-Tech quality plant production division of Jain Irrigation Systems Limited, a multinational conglomerate dedicated to the farmers prosperity by providing quality agri solutions. Jain Tissue Culture has been the world leader in production & marketing of tissue cultured plants of Banana, Pomegranate, Strawberry, Jain Sweet Orange, Coffee, Black Pepper, Onion, Potato, Guava of highest genetic purity and pre-eminent health quality.

JISL believes that sustainability of any technology and of the business could only be achieved by a process of innovations. Improvements and innovations have been the intrinsic values to the company ever since it was founded. Time, Money, Intellectual resources, Consistent efforts and Strong commitment made us the 'World Leader' in the field of tissue culture.

JISL has brought many improvements in the traditional tissue culture technology since inception. These include Clonal selection, Process modification, and Optimum resource utilization, Improvements in process & work efficiency, High success rate during hardening, Assured plant establishment after field planting. Our major focus of research has been concentrated on bringing superiority in quality, Price stability and New product development.

The products under development include, Apple and Pineapple. Key technologies followed include, Clonal selection, Mutation breeding, Cell line selection, Embryo rescue, Interspecific hybridization, Disease elimination, Meristem culture, Somatic embryogenesis, Direct organogenesis.

JISL has also been extensively engaged in field crop research in the areas of water and nutrient scheduling, Planting methods, Plant geometry, Plant spacing, Crop cooling, Crop protection, Solution for crop, Pre and post-harvest management.

The R&D Farm located at Jalgaon in Maharashtra, Udumalpet in Tamil Nadu, Alwar in Rajasthan and Kanool in Andhra Pradesh have been facilitating field research activities.

JISL has signed MoU's with 29 Agriculture and/or General Universities for supporting agriculture and biotechnology research activities.

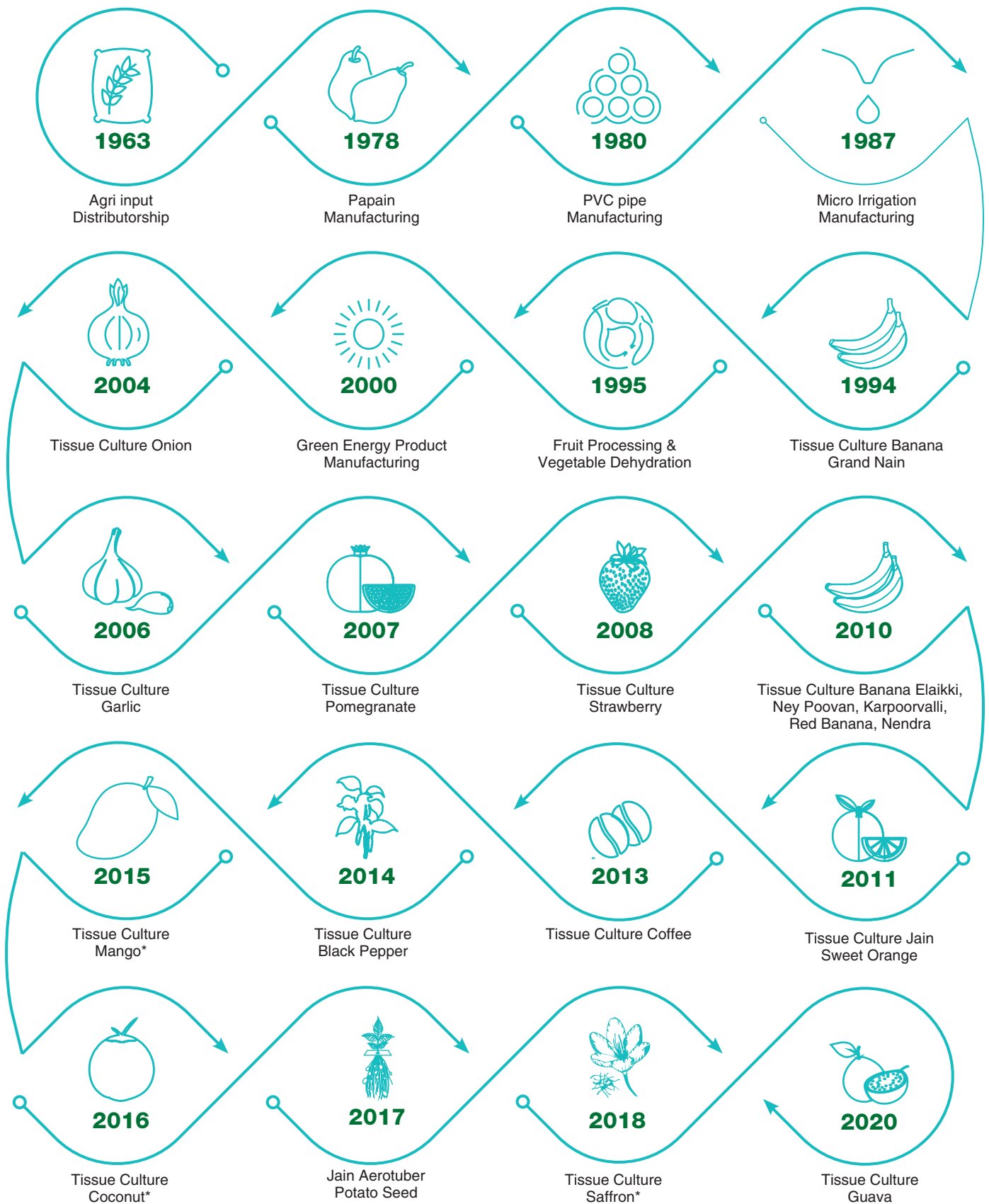


Tissue culture of mango



Tissue culture of coconut

ACHIEVEMENTS



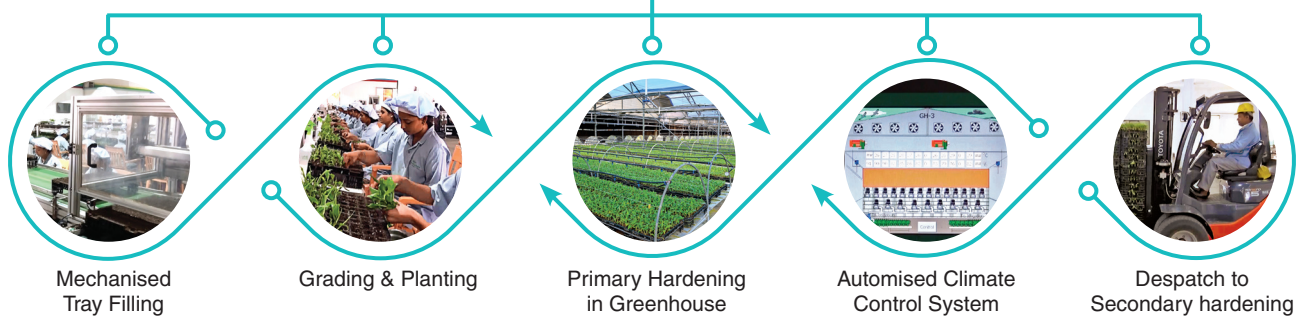
* Crops under field evaluation.

PRODUCTION - PROCESS

TISSUE CULTURE LAB



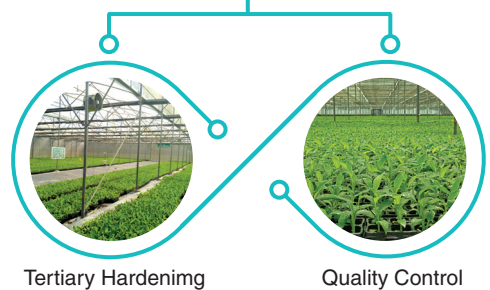
PRIMARY HARDENING



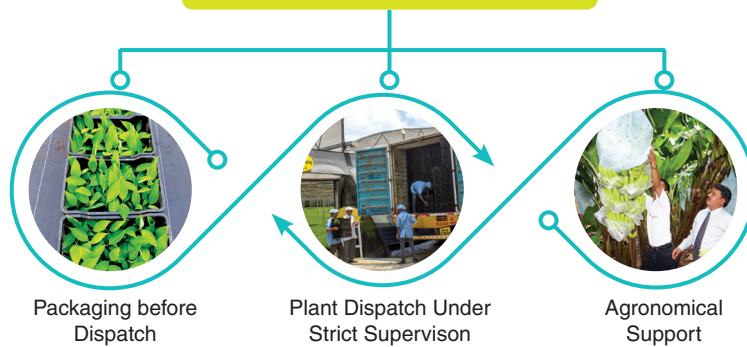
SECONDARY HARDENING



TERTIARY HARDENING



SALES & SUPPORT



PRODUCTION - GLIMPSES

JISL has introduced the concept of a Mother nursery for the first time in the country. This guarantees Health, Genetic quality, Traceability, Better control over selection, Isolation of mother nursery from commercial plantations and Exhaustive internal control as well as Management of access control.

Unique propagation protocol for true to type plants production, Protected mother nurseries for maintaining elite mother plants, Unique clones selected through rigorous selection process from millions of tissue cultured plants, Automated green houses for scientific hardening, Mechanized media handling & Robotic planters for precision in-plant handling, Specially designed propagation trays suitable for development and protection of roots, Specially designed ventilated and insect proof poly cum shade net houses for secondary and tertiary hardening, are some of the important features of the production systems.

‘Quality First’ has been the target set up throughout the Jain Tissue Culture production process that guarantees performance of the plants in the farmers field.

JISL has developed its own quality standards through its dedicated research, Long experience and genuine expertise which has been recognised by the government institutions, the industry and the customers.

Jain Tissue Culture has become the ‘Symbol of Quality’ in the farming community and popularly termed, ‘Jain Quality’.



1) Tissue dissection under aseptic condition. 2) Transfer of in vitro plants for primary hardening. 3) Transfer of primary hardening plants through robotic transplanters for secondary hardening. 4) Tertiary hardening of plants under specially designed poly-cum-shade net house.

QUALITY ASSURANCE

JISL strongly believes that quality can only be assured if quality control practices are established and rigorously followed. Keeping in view the importance of QC, JISL has strengthened its biotechnology division in 1999 by establishing well equipped, multi-disciplinary Jain R&D laboratory for controlling quality of tissue cultured plants.

Disease Diagnosis Laboratory for testing Bacterial, Fungal, Viral diseases and Pests, Virus Elimination Laboratory for virus eradication from the tissues, Molecular Biology Laboratory for testing genetic purity of the plants, Microbiology Laboratory for testing mother tissues, Nutritive growth media, Water, Dissection instruments, Air microbial load monitoring, Microbial load monitoring, Chemical and Leaf, Soil, Water Analysis Laboratory for testing raw material includes water, media, minerals, Hormones, Amino acids, Vitamins, and Chemicals, Calibration Laboratory for calibrating all measuring devices at frequent intervals for higher accuracy, are among the few important facilities that have been created at the Jain R&D laboratory.

Quality has been assured through rigorous 'QC' tests and stringent Quality Inspections (QI) that begin from the selection of mother tissues up to the plant delivery to the customer.

Inspection at every step is followed for all inward raw material, Production processes and Finished products to ensure quality.

Maintaining traceability through the Labeling of every batch for source of mother tissue, Disease diagnosis, Genetic fidelity, Propagation cycles, Propagation media, Roughing of somaclonal variants and Vector monitoring, assures our commitment towards delivering highest quality plants to our esteemed customers. JISL strongly believes that quality can only be assured if quality control practices are established and rigorously followed. Keeping in view the importance of QC, JISL has strengthened its biotechnology division in 1999 by establishing well equipped, multi-disciplinary Jain R&D laboratory for controlling quality of tissue cultured plants



Disease Diagnosis Laboratory



Molecular Biology Laboratory



Micro Biology Laboratory 4) Inspection of somaclonal variation.



Inspection of somaclonal variation.

PRODUCTION - GLIMPSES

25 _{Yr}

Proficient Experience

>90%

Repeat Customers

>600 _{Mn}

Plants Delivered as of Now

>17%

States Covered under Sale

>100 _{Mn}

Plants Production per Annum

>15%

YOY Growth

1 _{Mn}

Plants Production per Day



ISO 9001 Certified

12000 _{M²}

Laboratory for Plant Production



NCS-TCP Recognised

4000000 _{M²}

Greenhouses for Hardening



NABL Accreditation

>2300

Dedicated Associates

>60%

Market Share

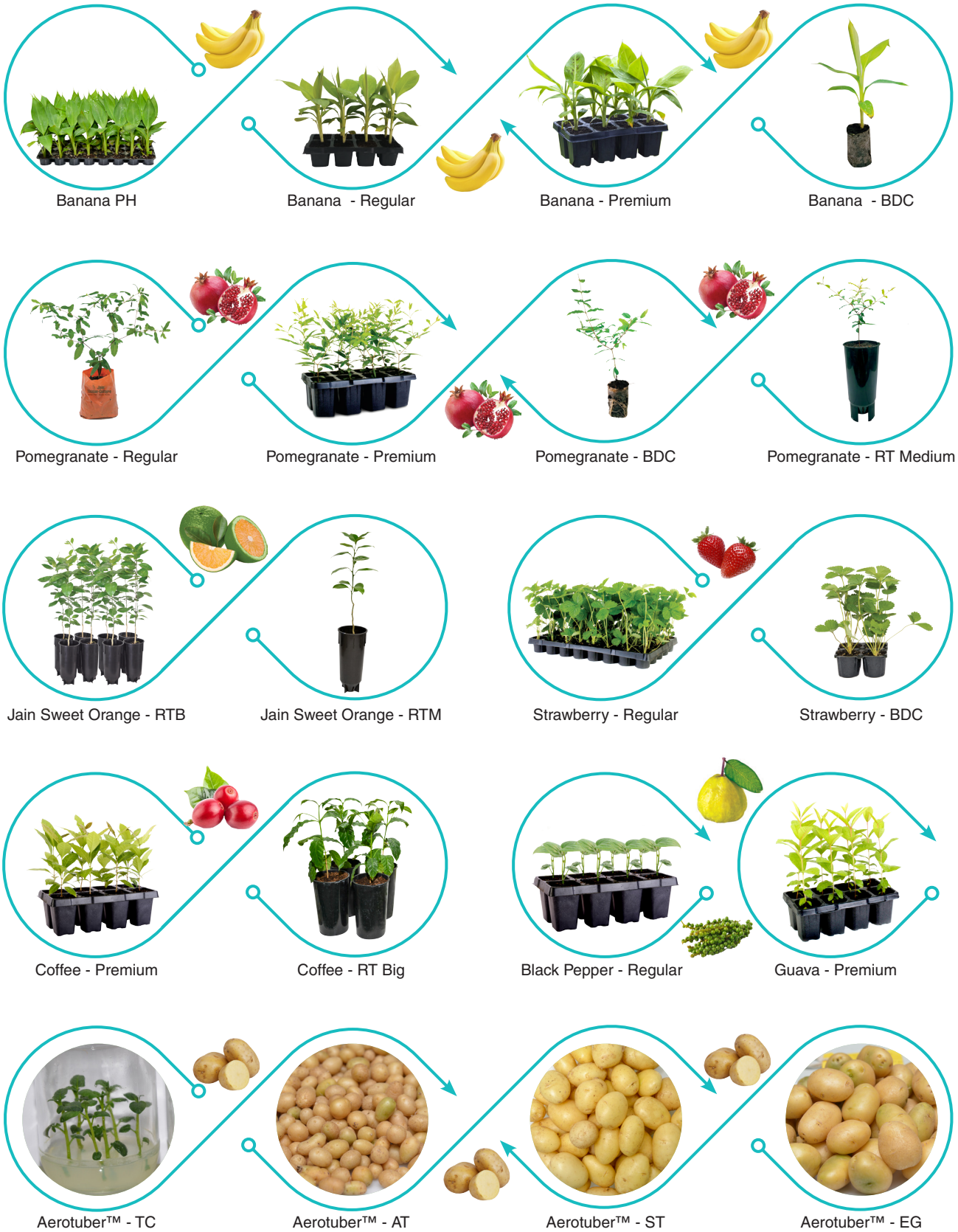


DSIR Recognised

>95%

Customer Satisfaction Index (CSI)

PRODUCT - RANGE



PRODUCT – FEATURES

Banana

- True to type
- Robust
- Free from CMV, BBTV, BSV, BBMrV, Sigatoka, Fusarium, Erwinia, Ralstonia, Nematode, Weevils, Stem borer
- Grown in Pathogen free, Bio-fortified, Crop specific Soilless media
- Propagated in specially designed root protective pots & biodegradable wraps
- Strong & well developed root system
- Sequentially increased leaf area
- Tertiary hardened
- Uniform age
- Assured establishment
- Minimum period required for new leaf emergence and accelerated growth after field planting
- Superior clone popularly called 'Jain Grand Nain', 12+ hands, record productive
- Long, straight, compact, eye catching fingers suitable for domestic as well as export market
- Strong trunk, thick leaves tolerant to abiotic stress includes high temperature and low humidity
- Low and/or late sucker emergence
- First crop get ready for harvest in 11-12 months
- Yield potential 100+ MT/H*
- Available in four different pot sizes
- Plants certified form Dept of Biotechnology, Gol, and Jain NABL accredited laboratory
- Offers special discounts for 3-6 months advanced plant booking
- Also available for spot buying with premium pay
- Welcomes online booking

Varieties

Grand Nain, Ellaikki, Poovan, Karpoorvalli, Virupakshi, Red Banana, Monthan, Bhimkol, Nendran , Super Nendran

Pomegranate

- True to type
- Robust
- Free from Bacterial Blight Disease (Oily Spot Diseases), Fusarium Wilt, Nematode, Stem borer
- Grown in Pathogen free, Bio-fortified, Crop specific Soil as well as in Soilless media
- Propagated in specially designed root protective pots, Root trainer vessels & in biodegradable wraps
- Strong & well developed root system

- Tertiary hardened
- Uniform age
- Well-developed unique branch architecture
- Assured establishment, accelerated growth and uniform canopy development after field planting
- All round and profused fruit setting
- Fruits having thick skin, more keeping quality, high market demand
- First crop get ready for harvest within 24-26 months
- Yield potential 30+ MT/H*
- Available in four different pot
- Offers special discount for 6-9 months advanced plant booking
- Also available for spot buying with premium pay
- Welcomes online booking

Varieties

Bhagwa, Super Bhagwa, Mrudula

Strawberry

- True to type
- Robust
- Free from viral diseases like SLRSV, SMYEV, TSV, Fusarium, Phytophthora, Anthracnose, Bacterial wilt, Nematode
- Grown in Pathogen free, Bio-fortified, Crop specific Soilless media
- Propagated in specially designed root protective pots as well as in biodegradable wraps
- Strong & well developed root system
- Complete hardened
- Uniform age
- Assured establishment, accelerated growth and large canopy development after field planting
- Profused fruit setting
- Yield potential 25 MT/H*
- Available in two different pot
- Offers special rates for 3-6 months advanced plant booking
- Also available for spot buying with premium pay
- Welcomes online booking

Varieties

Sweet Charlie, Cama Rosa

PRODUCT – FEATURES

Jain Sweet Orange

- True to type
- Robust
- Free from viral diseases like CEVd, CTV, CMBV, Phytophthora, Fusarium, HLB, Citrus canker, Nematode
- Grown in Pathogen free, Bio-fortified, Crop specific Soilless media
- Propagated in specially designed root trainer vessels
- Strong & well developed root system
- Most compatible and variety specific root stock
- Complete hardened • Uniform age
- Assured establishment, accelerated growth and uniform canopy development after field planting
- Varieties with less seed and high juice content, suitable for both table as well as processing purpose
- Profused fruit setting
- Yield potential 40 MT/H*
- Available in two different pot sizes
- Offers special discount for 12-15 months advanced plant booking
- Also available for spot buying with premium pay
- Welcomes online booking

Varieties

JSO1, JSO2, JSO3, JSO4, JSO5

Coffee

- True to type
- Robust
- Free from Root rot, Die back, Wilt, Nematode
- Grown in Pathogen free, Bio-fortified, Crop specific Soilless media
- Propagated in specially designed root protective, root trainer pots
- Strong & well developed root system
- Complete hardened
- Genetic and age uniform
- Assured establishment, accelerated growth and uniform canopy development after field planting
- Uniform & profused fruit setting
- Yield potential xxx MT/H*
- Available in two different pot sizes
- Offers special discount for 9-12 months advanced plant booking
- Also available for spot buying with premium pay
- Welcomes online booking

Varieties

Arabica, Robusta

Black Pepper

- True to type
- Robust
- Free from Foot rot, Die back, Wilt, Nematode
- Grown in Pathogen free, Bio-fortified, Crop specific Soilless media
- Propagated in specially designed root protective & biodegradable cups
- Strong & well developed root system
- Complete hardened
- Genetic and age uniform
- Assured establishment and accelerated growth after field planting
- Uniform & profused fruit setting
- Yield potential XXX MT/H*
- Available in two different pot sizes
- Offers special discount for 9-12 months advanced plant booking
- Also available for spot buying with premium pay
- Welcomes online booking

Varieties

Panniyur -1, Panniyur -2, Panniyur -3

Guava

- True to type
- Robust
- Free from Thread Blight, Root Rot, Fusarium Wilt, Nematode
- Grown in Pathogen free, Bio-fortified, Crop specific Soilless media
- Propagated in specially designed root protective pots
- Strong & well developed root system
- Tertiary hardened
- Uniform age
- Assured establishment, accelerated growth and uniform canopy development after field planting
- All round and profused fruit setting
- First crop get ready for harvest within 24-26 months
- Yield potential 12+ MT/H*
- Offers special discount for 6-9 months advance plant booking
- Also available for spot buying with premium pay
- Welcomes online booking

Varieties

Lucknow-49, Alahbad Safeda, Sweta, Lalit

SALES & SUPPORT

JISL has established its dealer network at every 50 kms periphery across the country, thus facilitating farmer to book their Jain Tissue Culture plants.

Plants can be booked by depositing advance money by demand draft through the dealer or online payment direct to the company's account.

In view of the long production cycle of 12-24 months, JISL advises farmers to book their plants well in advance. In the case of banana and pomegranate 3-6 months advance booking prior to delivery date assures plant availability to the farmer.

The price of Jain tissue culture plants is ex-factory. JISL may provide transportation facilities on paid basis on demand.

Plants are delivered from Company's production facilities located at Jalgaon (Maharashtra), Udumalpet (Tamil Nadu), Alwar (Rajasthan) and Karnool (Andhra Pradesh) to the farmers directly.

Team of qualified, experienced and expert agronomists provide their consistent support to the farmers in guiding Irrigation scheduling, Fertigation, Agronomy, Plant Protection, Pre and post-harvest management.

The dedicated team of agronomist and scientists have been involved in educating farmers by conducting Farmers gathering, Field visits, Technology demonstration, Class room Training etc.

Special campaign has been organised for promotion of technology before start of the season. Jain Hi-Tech Agri Institute located at Jalgaon arranges 1 to 30 days training program for the farmers across the country in the areas of advanced agriculture technologies.



Agronomical support of Jain Crop experts visiting farmers field.

FARMERS SUCESS STORIES

Better Yield Greater Profits	Mr. M. Surya Narayana	Mr. Maheshwara Reddy	Mr. Kisan Bhillare	Mr. Hemchandra Patil
				
Address	Narsapuram, Tal: Narpala, Dist: Anantpuram, Andhra Pradesh	Pedda Tekur, Tal: Karnul, Dist: Karnul, Andhra Pradesh	Lingmala, Tal: Mahabaleshwar, Dist: Satara, Maharashtra	Panchak, Tal: Chopada, Dist: Jalgaon, Maharashtra
Crop	Banana	Pomegranate	Strawberry	Jain Sweet Orange
Type of planting material	Jain Tissue Culture	Jain Tissue Culture	Jain Tissue Culture	Jain Tissue Culture
Variety	Jain Grand Nain	Bhagwa	Cama Rosa	JSO4
Plant survival after planting	99.5%	99.9%	97.0%	99.9%
Irrigation	Method: Micro- irrigation Type: Jain In-line Layout: Double lateral Dripper spacing: 30 cms Discharge: 2 LPH	Method: Micro- irrigation Type: Jain In-line Layout: Double lateral Dripper spacing: 60 cms Discharge: 4 LPH	Method: Micro- irrigation Type: Jain In-line Layout: Double lateral Dripper spacing: 20 cms Discharge: 2 LPH	Method: Micro- irrigation Type: Jain In-line Layout: Double lateral Dripper spacing: 60 cms Discharge: 4 LPH
Fertilizer application	Method: Fertigation through drip irrigation Type: Water soluble	Method: Fertigation through drip irrigation Type: Water soluble	Method: Fertigation through drip irrigation Type: Water soluble	Method: Fertigation through drip irrigation Type: Water soluble
Other technologies adopted	Jain Nutricare	None	None	None
Year since Jain farmer	1995	2011	2012	2015
Area under cultivation (H)	40	3	1.5	5
Plant spacing followed	Row to Row: 6' Plant to Plant: 5'.6"	Row to Row: 12' Plant to Plant: 10'	Row to Row: 2' Plant to Plant: 1'	Row to Row: 10' Plant to Plant: 10'
No of ratoons preferred/Age of the orchard	01	10	01	5
Productivity (MT/H)	100-120	10-14	8-10	12-17
Crop/Bahar completion period (Months)	10.5	6.5	8	8
% of plant harvests	98	99	97	99.9
Market for sale	Domestic & Export through local trader	Export through local trader	Domestic through local trader	Domestic through local trader
Avg. price received for the produce (Rs./Kg)	10.00-14.00	75.00-90.00	50-80	15.00-22.00
Total income (Rs./H)	10.00-16.80 lakhs	7.5-12.0 lakhs	4.00-8.00 lakhs	1.80-3.74 lakhs
Cost of cultivation (Rs./H)	2.50 to 3.12 lakhs	1.5-2.5 lakhs	2.5-4.00 lakhs	0.7-1.25 lakhs
Net profit (Rs./H)	7.50-13.67 lakhs	6.0-9.5 lakhs	1.5-4.00 lakhs	1.10-2.49 lakhs

FARMERS SUCESS STORIES

Better Yield Greater Profits	Mr. Sadanand Mahajan	Mr. Dharmendra Patel	Mr. Santosh Lacheta	Mr. Salvakumar
				
Address	Tandalwadi, Tal: Raver, Dist: Jalgaon, Maharashtra	Hazarpada, Tal: Nandod, Dist: Narmada, Gujarat	Sattalai, Tal: Dhar, Dist: Dhar, Madhya Pradesh	Chinnamanur, Tal: Theni, Dist: Theni, Tamil Nadu
Crop	Banana	Banana	Banana	Banana
Type of planting material	Jain Tissue Culture	Jain Tissue Culture	Jain Tissue Culture	Jain Tissue Culture
Variety	Jain Grand Nain	Jain Grand Nain	Jain Grand Nain	Jain Grand Nain
Plant survival after planting	99.0%	98.0%	98.0%	97.0%
Irrigation	Method: Micro-irrigation Type: Jain In-line Layout: Double lateral Dripper spacing: 30 cms Discharge: 2 LPH	Method: Micro-irrigation Type: Jain In-line Layout: Double lateral Dripper spacing: 30 cms Discharge: 2 LPH	Method: Micro-irrigation Type: Jain In-line Layout: Double lateral Dripper spacing: 30 cms Discharge: 2 LPH	Method: Micro-irrigation Type: Jain In-line Layout: Double lateral Dripper spacing: 30 cms Discharge: 2 LPH
Fertilizer application	Method: Fertigation through drip irrigation Type: Water soluble	Method: Fertigation through drip irrigation Type: Water soluble	Method: Fertigation through drip irrigation Type: Water soluble	Method: Fertigation through drip irrigation Type: Water soluble
Other technologies adopted	None	None	None	None
Year since Jain farmer	2001	2004	2000	2010
Area under cultivation (H)	15	22	18	10
Plant spacing followed	Row to Row: 6' Plant to Plant: 6'	Row to Row: 6' Plant to Plant: 5'	Row to Row: 6' Plant to Plant: 6.5'	Row to Row: 6' Plant to Plant: 6'
No of ratoons preferred/Age of the orchard	01-02	01-02	01-02	01-02
Productivity (MT/H)	80-100	80-90	70-80	70-80
Crop/Bahar completion period (Months)	11.0	11.5	12.0	12.0
% of plant harvests	97	95	95	95
Market for sale	Domestic & Export through local trader	Domestic through local trader	Domestic through local trader	Domestic through local trader
Avg. price received for the produce (Rs./Kg)	8.00-10.00	7.00-9.00	7.00-8.00	7.00-8.00
Total income (Rs./H)	6.4-10.00 lakhs	5.6-8.1 lakhs	4.90-6.40 lakhs	4.90-6.40 lakhs
Cost of cultivation (Rs./H)	2.00 to 2.50 lakhs	2.00 to 2.50 lakhs	1.75-2.00 lakhs	1.75-2.00 lakhs
Net profit (Rs./H)	4.40-7.50 lakhs	3.60-5.60 lakhs	3.15-4.40 lakhs	3.15-4.40 lakhs



Jain Tissue Culture - Banana



Jain Tissue Culture - Pomogranate



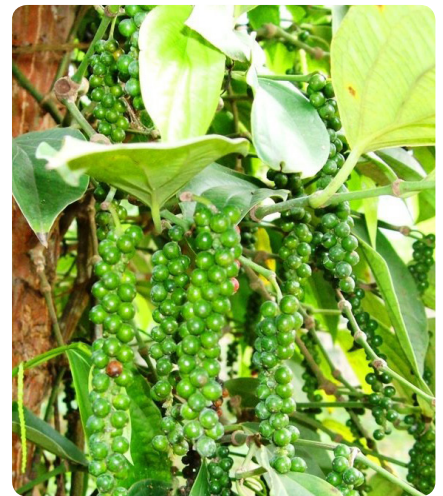
Jain Tissue Culture - Sweet Orange



Jain Tissue Culture - Guava



Jain Tissue Culture - Strawberry



Jain Tissue Culture - Black Pepper

**Better
Yield
Greater
Profits**



Jain Tissue Culture - Coffee



Jain Tissue Culture - Potato



Jain Tissue Culture - Mango

 **Jain™
Tissue-Culture**
Better Yield - Greater Profits.

 **JAIN®**
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