

To,  
The Registrar,  
Geographical Indication Registry,  
Chennai, India.

Date: - August 25, 2014


Subject: - Submission of Geographical Indication application of Jalna Sweet Orange

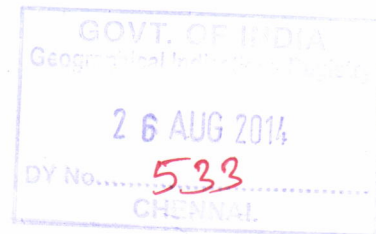
Respected Sir,

We are happy to submit herewith Geographical Indication application for Jalna Sweet Orange of Jalna District. We are also submitting herewith all documents which are required at the time of submission of GI application to the GI registry. These documents are prepared according to The Geographical Indications of Goods (Registration & Protection) Act, 1999.

Kindly acknowledge the submitted documents and do the needful.

With regards,

  
Prof. Ganesh S. Hingmire  
Chairman,  
GMGC,  
Pune,



C.C. :- To,  
The Director,  
Department of Horticulture,  
Government of Maharashtra,  
Pune.

GI APPLICATION No.

495

No.

A/C PAYEE ONLY



Drawee Branch

(02) NUNGAMBAKKAM, CHENNAI

DD No.

7714

VALID FOR THREE MONTHS ONLY

DATE

2 3 0 8 2 0 1 4

D D M M Y Y Y Y

ON DEMAND PAY REGISTRAR OF GEOGRAPHICAL INDICATION\*\*\*\*\*

OR ORDER

RUPEES Five Thousand Only

₹

\*\*\*\*\*5,000.00

FOR VALUE RECEIVED

TT/5/4 Not Above 5,000.00

6450DDCENPAY  
R.P.PUNE

Issuing Branch

Authorised Signatory

*Abhishek*  
*125247*  
Authorised Signatory

Please sign above

⑈007714⑈ 000229000⑈ 006450⑈ 16

SBF(M) / CTS - 2010



सत्यमेव जयते

# Geographical indications Registry

Intellectual Property Building,  
G.S.T. Road, Guindy, Chennai - 600 032

Phone: 044-22502091 & 92 Fax : 044-22502090

E-mail: gir-ipo@nic.in



INTELLECTUAL  
PROPERTY INDIA

## Receipt

CBR NO :2469

Date : 26-08-2014

TO

Generated by :BABU

PROF. GANESH S. HINGMIRE,  
GMGC, 210-B, ASHOKA PAVILION, NEAR NIV, DR. AMBEDKAR ROAD, CAMP,  
PUNE,  
MAHARASHTRA,  
411 001,  
INDIA

### C B R Details :

Application No	Form No	Class	No of Class	Name of GI	Goods Type	Amount Calculated
495	GI-1A	31	1	Jalna Sweet Orange	Agriculture	5000

### Payment Details :

Payment Mode	Cheque/DD /PostalNO	Bank Name	Cheque/DD/Postal Date	Amount Calculated	Amount Paid
DD	007714	ICICI Bank	23-08-2014	5000	5000

Total Calculated Amount in words : Rupees Five Thousand only

Total Received Amount in words : Rupees Five Thousand only

\*\*\* This is electronically generated receipt, hence no signature required \*\*\*

## Index

Sr. No.	Documents	Annexure(s)
1.	Covering letter for GI application	Annexure 1
2.	FORM GI -1 : GI application	Annexure 2
3.	Statement of Case	Annexure 3
4.	FORM GI 10 B: Form of Authorization	Annexure 4
5.	Additional Representation	Annexure 5
6.	<p>Research Papers</p> <ul style="list-style-type: none"> <li>• Comparative study of nucellar and sathgudi mosambi (Citrus sinensis osbeck) under the Parbhani condition.; R. F. PATIL, S. S. DIGRASE, S. D. VASMATE, S.S. PAWAR AND S.S. SARSAMKAR.; <i>The Asian Journal of Horticulture</i>, June 2007, Vol. 2 (1) : 111-113.</li> <li>• <i>Plant Variety Journal of India</i>, Vol. 08, No. 04; April 01, 2014.</li> <li>• History, Global Distribution, and Nutritional Importance of Citrus Fruits. YuQiu Liu, Emily Heying, and Sherry A. Tanumihardjo.; <i>Comprehensive Reviews in Food Science and Food Safety</i>.; Vol.11,2012. 530-545.</li> <li>• Checklist of commertial varieties of fruits. Government of India, Ministry of Agriculture, Department of Agriculture and Cooperation.; Nov 2012.</li> <li>• Studies on Preparation of Squash from Sweet Orange; Syed H.M., Pravin Udhavrao Ghatge, Girish Machewad and Sharad Pawar.; Open Access Scientific Reports. (Research Article).</li> </ul>	Annexure 6

	<ul style="list-style-type: none"> <li>• Effect of rootstocks on performance of mosambi – sweet orange under irrigated condition in laterite soil of West Bengal, India. S. N. GHOSH, 1B. BERA AND 1S. ROY.; <i>Journal of Crop and Weed</i>, 2012.; Vol 8(2): 50-52.</li> <li>• Irrigation, Nutrition, and Citrus Fruit Quality. Mongi Zekri, Thomas A. Obreza and Robert Koo.; University of Florida</li> <li>• Characterization and Classification of Sweet Orange-growing Soils of Jalna District, Maharashtra.; Dhale S.A., Prasad Jagdish.; <i>Journal of the Indian Society of Soil Science</i> 2009, Vol.57(1).; 11-17.</li> <li>• Studies on Extraction of Essential Oil and Pectin from Sweet Orange.; Syed Hammed Hashmi, Pravin Ghatge, Girish Marotirao Machewad and Sharad Pawar.; (Research article) 2012.</li> </ul>	
7	<p>Other Article</p> <ul style="list-style-type: none"> <li>• Citrus Varieties</li> </ul>	Annexure 7
8.	News Articles	Annexure 8
9.	Registration Certificate of Applicant	Annexure 9
10.	Soil and rainfall report	Annexure 10

GI APPLICATION No.

495

GI Application for Jalna Sweet Orange

THE GEOGRAPHICAL INDICATIONS OF GOODS  
(REGISTRATION & PROTECTION) ACT 1999

Received Rs. 5000 in cash/  
Cheque/DD/MO on 26.8.2014  
vide entry no. 2469 in the  
register of valuables  
Cashier [Signature] D.D.O.

FORM GI -1

A: Application for the registration of a Geographical Indication in part A of the register: Section 11(1) of Geographical Indication Act, 1999 and rule 23(2) of Geographical Indication of Goods (Registration and Protection) Rules, 2002

Fee: Rs. 5,000/- (See entry No 1A of the First Schedule)

Application is hereby made by GMGC for the registration on behalf of 'Jalna Jilha Phale & Mosambi Bagayatdar Sangh' in part A of register of the Geographical Indication furnishing the following particulars.

NAME OF THE APPLICANT: Jalna Jilha Phale & Mosambi Bagayatdar Sangh

ADDRESS---: c/o Pragat Shetkari Kendra,  
Subhash Road, Mama Chowk,  
Jalna Dist.  
Maharashtra, India.  
Pin 431203.

**Geographical Indication: Jalna Sweet Orange**

Class: 31

- A NAME OF APPLICANT:** Jalna Jilha Phale &  
Mosambi Bagayatdar  
Sangh, Represented  
by Prof. Ganesh S.  
Hingmire of GMGC
- B ADDRESS:** c/o Pragat Shetkari  
Kendra, Subhash  
Road, Mama Chowk,  
Jalna Dist.  
Maharashtra, India.  
Pin 431203.
- C LIST OF ASSOCIATION OF  
PERSONS/PRODUCER/  
ORGANISATION/AUTHORITY:** Jalna Jilha Phale &  
Mosambi Bagayatdar  
Sangh
- D TYPES OF GOODS:** Horticultural Product,  
Class 31
- E SPECIFICATION:** **Jalna Sweet Orange.**
- Jalna sweet orange  
is traditional  
variety of sweet  
orange in Jalna  
district.

- Jalna Sweet Orange variety is known as Nucellar variety which is famous for **higher peel (rind) thickness** which gives **highest protection to the pulp due to higher potassium and nitrogen content.**
- **Earlier maturity** to the sweet orange fruit in Jalna is due to **highest TSS/acid ratio.**
- **Juice of Jalna sweet orange is sweet** in taste due to high TSS content<sup>1</sup>.
- Largest spread of Jalna Sweet Orange trees gives **highest**

---

<sup>1</sup> [nhb.gov.in/fruits/citrus/cit013.pdf](http://nhb.gov.in/fruits/citrus/cit013.pdf)



**fruit yield per tree.<sup>2</sup>**

- Fresh juice of Jalna sweet orange is an important nutritious product providing **45 kcal, moderate quantity of vitamin C, potassium, bioflavonoid and folic acid and essential items of breakfast.**
- The peel of sweet orange from Jalna contains **sugars, edible fibers.**

**F NAME OF GEOGRAPHICAL INDICATION AND PARTICULARS:**

Jalna Sweet Orange.

Goods: Class 31,  
Horticultural product.

---

<sup>2</sup> Comparative study of nucellar and sathgudi mosambi (*Citrus sinensis osbeck*) under the Parbhani condition.; R. F. PATIL, S. S. DIGRASE, S. D. VASMATE, S.S. PAWAR AND S.S. SARSAMKAR.; *The Asian Journal of Horticulture*, June 2007, Vol. 2 (1) : 111-113.

GI APPLICATION No.

495

## G. DESCRIPTION OF JALNA SWEET ORANGE:



In Jalna, due to fantastic atmosphere, soil and climate for sweet orange crop, Sweet orange Research Station was established in Badnapur tehsil of Jalna district. Following points are describing the Jalna sweet orange in particular.

**Appearance:** Truncated shape of apex.

**Shape:** Oblate to spherical.

**Skin:** Rough surface with prominent streaks on the rind.

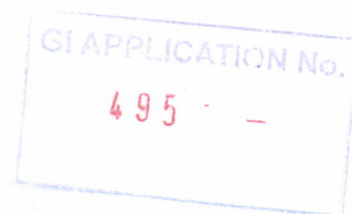
**Number of segments:** 9 to 12

**Color:** Greenish yellow.<sup>3</sup>

<sup>3</sup> *Plant Variety Journal of India*, Vol. 08, No. 04; April 01, 2014.

**Taste:** Sweet

**Overall acceptability:** Very good.



## H. GEOGRAPHICAL AREA OF PRODUCTION AND MAP:

Jalna district is approximately situated at the center part of the Maharashtra state of Republic of India and in the northern direction of Marathwada region. Specifically district lies between 19<sup>0</sup>1 North to 21<sup>0</sup>3 North Latitudes and 75<sup>0</sup>4 East to 76<sup>0</sup>4 East Longitude.

The boundaries of Jalna district are adjacent to Parbhani and Buldhana on east, Aurangabad on west Jalgaon on North and Beed on South. Jalna district covers an area 7,612 Sq.Kms, which is 2.47% of the total state area. The city is situated on the banks of Kundalika river.

Jalna district comprises of 8 tehsils. The majority of its population engaged in agricultural occupations.<sup>4</sup> Jalna district is leading in Sweet Orange orchards. Maximum Sweet Orange orchards are in Ghansawangi and Ambad tehsil.<sup>5</sup> District has the largest area (7,169 Ha) in the State under sweet lime cultivation.<sup>6</sup>

### Ghansawangi

Ghansawangi is a Tahsil place in Jalna District. Ghansawangi covers an area of 1, 11,071 hectares. From the broken tanks and numerous dilapidated tombs which

<sup>4</sup> <http://www.dcmsme.gov.in/publications/traderep/Jalna.htm>

<sup>5</sup> <http://www.loksatta.com/vruthanta-news/mosambi-gets-affected-of-one-lakhs-acres-16857/>

<sup>6</sup> <https://www.manase.org/en/maharashtra.php?mid=68&smid=22&did=26&dsid=9>

surround it, Ghansawangi appears to have been a place of much importance in the olden days. Weekly market is held on Saturday.

### Ambad

Ambad situated between a ridge of hills in 19°35'15" North Latitude and 75°50'7" East Longitude is the headquarters of the tahsil of the same name. It is located along Jalna-Gevai road the former place being the principal commercial centre in the Marathvada region.<sup>7</sup>

Area under cultivation of major fruit crops for the district is indicated in the following table:

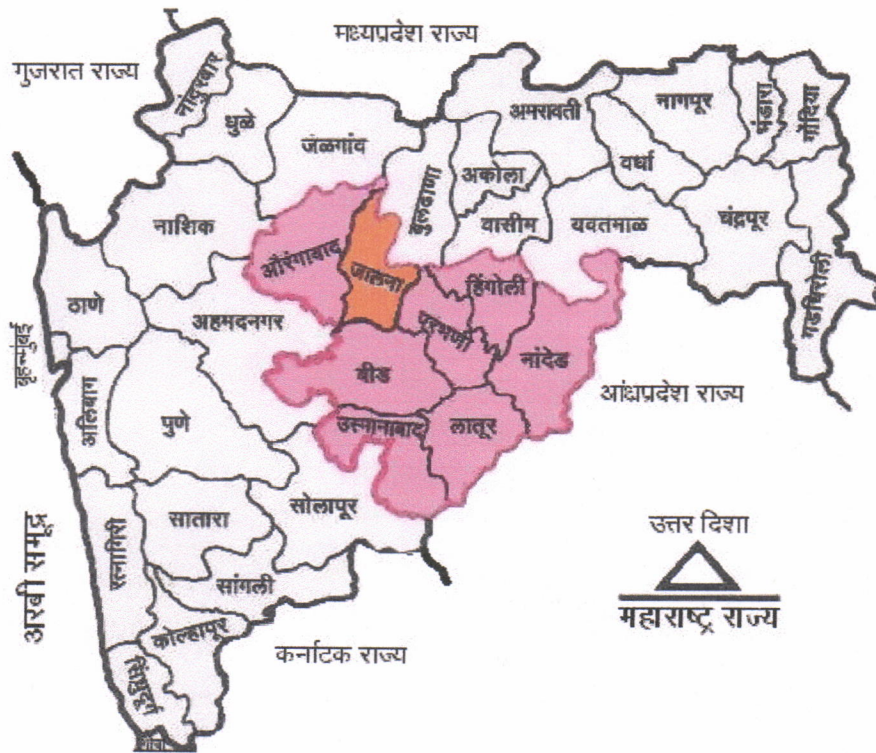
#### Area under cultivation and production of fruit crops in Jalna

Sl.No.	Name of the Crop	1998-99 Area (Hect.)	1999-2000 Area (Hect.)
1	Mango	260	463
2	Chikku	470	135
3	Pomegranate	85	25
<b>4</b>	<b>Mosambi</b>	<b>525</b>	<b>701</b>
5	Ber	75	27
6	Guava	145	150
7	Lime	70	47
8	Awala	25	19

<sup>7</sup> <http://Jalna.nic.in/html/intro.html>

9	Tamarind	25	42
10	Custard Apple	35	55 <sup>8</sup>

## MAP OF JALNA DISTRICT



Location of Jalna district in Maharashtra.

<sup>8</sup> <http://www.dcsmse.gov.in/publications/traderep/Jalna.htm>



Tehsils in Jalna district.

### I. PROOF OF ORIGIN:

Sweet orange (*Citrus sinensis* Osbeck) is considered as second important citrus species after mandarin orange in India and it shares 23% of production among all the citrus cultivars. Sweet orange contributes 71% of the total citrus production in the world.

The origin of citrus fruit is identified with a history full of controversy and interesting legends. Some researchers believe that citrus is native to the subtropical and tropical areas of Asia, originating in certain parts of Southeast Asia including

<sup>9</sup> <http://Jalna.nic.in/html/distp.html>

China, India, and the Malay Archipelago. Lemon was originally grown in India and sweet oranges and mandarins are indigenous to China.<sup>10</sup>

Brazil is largest producer of sweet orange. India has 3<sup>rd</sup> rank in the production of sweet orange with annual production of 4266.9 million tonnes. Citrus is grown practically all over India. However the states of Andhra Pradesh, and Maharashtra have the largest share. The most significant part of the Jalna district is that about 85% of the geographical area is under agricultural use. Out of the total 7,61,200 Hectares of the geographical area, 6,51,553 Hectare of land is under agricultural use.<sup>11</sup> There are various varieties of sweet orange in India like Mosambi in Maharashtra, Malta (Red blood Malta) in Punjab & Haryana and Sathgudi in Andhra Pradesh.<sup>12</sup> Among the various factors responsible for sustainable production and tree longevity, use of suitable rootstock is considered to be the foremost ones. A number of rootstocks have been recommended for different sweet orange cultivars in various states. It is an established fact that a rootstock – scion combination, which is suitable for one locality, may or may not be the suitable in other areas. So, a perfect combination of rootstock – scion is to be standardized for specific agro-ecological condition.

In Jalna district, *Nucellar mosambi*, *Kagdi Mosambi* and *Rajapimpri* are the major cultivars of sweet orange.<sup>13</sup> Kagdi Mosambi is a traditional variety cultivated in Jalna. Kagdi Mosambi variety has small fruit size, thin peel, less fruit yield per tree and tree growth is also not so good hence trees become prone to many diseases. Therefore, to overcome with these problems, cultivation of new

---

<sup>10</sup> History, Global Distribution, and Nutritional Importance of Citrus Fruits. YuQiu Liu, Emily Heying, and Sherry A. Tanumihardjo.; *Comprehensive Reviews in Food Science and Food Safety*.; Vol.11,2012. 530-545.

<sup>11</sup> <http://Jalna.nic.in/html/distp.html>

<sup>12</sup> Checklist of commercial varieties of fruits. Government of India, Ministry of Agriculture, Department of Agriculture and Cooperation.; Nov 2012.

<sup>13</sup> Studies on Preparation of Squash from Sweet Orange; Syed H.M., Pravin Udhavrao Ghatge, Girish Machewad and Sharad Pawar.; Open Access Scientific Reports. (Research Article)

variety i.e. Nucellar variety started in last few decades. Nucellar variety produced in Jalna by grafting method. Rangpur lime stock from Rangpur, Bangladesh found to be the best suitable for sweet orange in Jalna. Nucellar variety possesses large fruit size, thick peel and also gives highest fruit yield per tree.



## J. METHOD OF CULTIVATION OF SWEET ORANGE:

### ➤ Sweet Orange Planting

Sweet orange planting in Jalna is generally done during monsoon in north-western and western parts of the country, i.e. Punjab, Haryana, Rajasthan and Maharashtra, while in southern India; it is done at the onset of rainy season. Land should be ploughed in a cross manner to soften the upper surface. The pits of 60 cm x 60 cm x 60 cm size should be dug. They are filled up first with clay soil, murrum, soil, farmyard manure mixture and micronutrients. A planting distance of 6m from plant-to-plant and 6m from row-to-row is generally followed in square system of planting. However, planting distance as well as planting density depends upon the cultivar, rootstock used and agro climatic conditions. In Jalna, sweet orange plants

<sup>14</sup> <http://www.agrowon.com/Agrowon/20140424/5042474641548635169.htm>



budded on Rangpur lime planted at a distance of 6m x 6m, accommodating 270 plants/ha.

➤ **Training and pruning**

The trees are trained to a single system and any shoot emerging from the portion below the bud union should be nipped off regularly. Only 4-6 branches having wide angle with the main trunk, should be allowed to grow up to 3-4 m. thereafter no training is required. Training of plants should be completed in first 3 years so that plants attain a mechanically strong canopy. Pruning of bearing trees differs with variety. It consists of removal of dead, diseased, criss-cross and weak branches. Removal of water sprouts and suckers from each rootstock below the bud union is also essential and should be attended to regularly along with thinning of the shoots for better penetration of sunlight and aeration. The best time for pruning in bearing trees is after harvesting during late winter or early spring.

➤ **Manure and fertilization**

Fertilizer requirement of the plants is influenced by various factors like age of the plants, rootstock used, soil and climate along with the crop load in bearing trees. No uniform fertilizer recommendation can be made for all sweet orange cultivars in different agro climatic regions. The fertilizers should be applied in a ring from below the canopy of the trees depending on age. For a mature tree, fertilizers is applied in a 30-40 cm wide ring made at a radial distance of 100-200 cm from the trunk as maximum feeder roots are located below the tree canopy. Though the requirement of major elements is met and large met by supplementing N,P,K fertilizers, farmers usually forget to apply micronutrients, the most essential part of citrus nutrition.

➤ **Aftercare**

Most of the sweet orange cultivars are planted 6-8 m part, leaving much area unutilized. The interspaces can profitably be utilized for growing some short duration crops. The additional crop not only provides additional income to the orchardists, but also helps to check weed growth, conserve soil moisture and prevents soil erosion.

➤ **Weed control**

In order to eliminate competition for nutrition by weeds in sweet orange orchard, control of weed is very essential. Apart from Interculture operations, that check weed growth chemical weed control is also necessary during certain period of the year to avoid disturbances to feeding roots.

➤ **Irrigation**

Sweet orange require more water because sap circulation never entirely ceases and transpiration takes place throughout the year. Being an evergreen plant, sweet orange requires good amount of water. Water deficiency, moisture stress at critical periods such as fruit development check the growth, reduces fruit size and quality. Thus moisture stress during the period of growth, flowering and fruit development should always be avoided. The frequency of irrigation is influenced by soil, climate, variety and age of plants. Water is applied at every 6-8 days interval from March to June and at every 10-12 days interval during November-February. In young plants up to the age of 8 years, the irrigation should be given through basis system of irrigation. In grown-up and old orchards, flood system of irrigation may be adopted avoiding water content with tree trunks.

### ➤ **Harvesting and Postharvest Management**

Sweet oranges mature in 9-12 months. Being a non-climacteric fruit, there is no improvement in colour, taste and flavour after harvesting. Therefore, fruits should be harvested when they are fully ripe and attain proper size, attractive colour and acceptable sugar: acid ratio. Sweet oranges can be allowed to remain on their trees on reaching maturity for several weeks without deterioration. November-January for 'Ambe bahar' and March and March-May for 'Mrig bahar' are time for harvesting. Fruits should preferably be harvested by clipping with secateurs. Sweet oranges are tight-skinned fruits possessing comparatively better shelf life than loose-skinned mandarins.

Washing, drying, sorting, grading and wrapping in tissue paper is usually adopted for postharvest handling and packaging. Sweet oranges can be stored at temperature of 5<sup>0</sup>C and 85-90% relative humidity for 3 month.<sup>1516</sup>

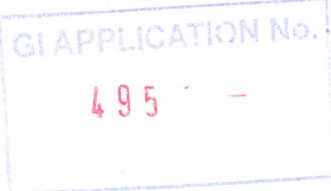
---

<sup>15</sup> [http://www.fruitipedia.com/sweet\\_orange%20Citrus%20sinensis.htm](http://www.fruitipedia.com/sweet_orange%20Citrus%20sinensis.htm)

<sup>16</sup>Book – "Mosambi lagwad va Prakriya" by Dr. B A Kadam.  
(<http://www.bookganga.com/Preview/Preview.aspx?BookId=5148694564029286619&PreviewType=books>)

## **K. GEOGRAPHICAL SIGNIFICANCE AND UNIQUENESS OF JALNA SWEET ORANGE:**

### **GEOGRAPHICAL SIGNIFICANCE:**



#### **Topography**

Jalna district is situated in the upper Godavari Basin. The central hill range known as Jalna Hill is an upland, plateau and is drained by Purna river and its tributaries. Southern portion is comparatively low land, flat area terminating at Bank of Godavari River in the South. Jalna covers maximum flat land area which is ideal requirement for cultivation of sweet orange. District slopes towards south and average elevation above sea level is 534 meters.

#### **Climate**

The climate of the district can be divided into three seasons as: a) Moderately warm wet season during June to Sept., b) Cool dry season from Oct. to Feb., and c) Hot dry season from March to May. Temperature requirement for plantation of sweet orange trees ranges from 12<sup>0</sup>C to 35 <sup>0</sup>C and overall dry climate conditions. The average temperature of the district is ranging from 20<sup>0</sup>C during winter to 41<sup>0</sup>C during summer with dry conditions perfectly suitable for sweet orange. During greater part of the year, the climate is quite pleasant. It receives rainfall mostly from South-West monsoon. Rainfall is not uniform in all parts of the district as the sweet orange trees require very less rainfall. The average rainfall ranges between 600mm to 700mm.

#### **Soil**

The soils of the district are black with considerable variation in texture and depth and are consists of light, medium and heavy soils. The soils along the river banks

especially in Ambad and Partur blocks are deep black and quite fertile hence the cultivation of sweet orange is higher in Ambad. The soils in northern parts of the district i.e. in Jalna, Bhokardan and Jaffrabad blocks are coarser.

### **Rivers**

Rainfall of the district is not uniform hence the important source of water for sweet orange crop is river. The most important river in Jalna district is Godavari, which flows for about 60 km along the Southern boundary of the district. Its principle tributaries are Dudhana, which flow from Central part of the district and Galhati, which passes through Ambad tehsil. The river Purna, which is one of the tributaries of Godavari flows through the Northern part of the district. The other tributaries of Purna and Khelna are Girija and Dudhana respectively.

### **UNIQUENESS OF JALNA SWEET ORANGE:**

#### **➤ High TSS/acid ratio:**

Sweet orange are considered mature when their juice content and total soluble solids: acidity ratio have attained certain minimum limits for palatability. Total soluble solids constitute about 80 % sugars, 10% acids and 10 % nitrogenous compounds. An increase in sugars is accompanied by an increase in TSS; there is a very strong correlation between TSS and acidity.<sup>17</sup> Maturity is determined mainly on the basis of the ratio of TSS to titratable acidity. Hence the maturity

<sup>17</sup>

Book – “Citrus Fruit: Biology, Technology and Evaluation” By Milind Ladanyia, Milind Ladaniya.  
(<http://books.google.co.in/books?id=v5hCqEvR9eEC&pg=PA200&lpg=PA200&dq=tss+acid+ratio+fruit&source=bl&ots=L.SHW63oIHB&sig=iFMXB7w988MpFVky4tpDJIXe0&hl=en&sa=X&ei=7oHcU5XMOYquATfi4HIDg#v=onepage&q=tss%20acid%20ratio%20fruit&f=true>)

time is earlier (November) in sweet orange Jalna variety than other varieties in India.

**Maturity time, TSS: acid ratio for harvesting different sweet oranges**

Variety	TSS: acid ratio	Maturity time
<b>Mosambi</b>	<b>30:1</b>	<b>November</b>
Pineapple	14:1	December
Jaffa	14:1	December
Blood Red	14: 1	December-January
Valencia	10:1	February-March

➤ **Superior in TSS content**

Total soluble solids constitute about 80 % sugars, 10% acids and 10 % nitrogenous compounds. An increase in sugars is accompanied by an increase in TSS. Rangpur lime stock used in Nucellar variety of Jalna sweet orange gives highest TSS to the fruit. Hence the maximum content of sugar gives Sweet taste to this variety.

➤ **High Nitrogen content**

Nitrogen, phosphorus and Potassium are the very important nutrients present in all fruits. Presence of higher Nitrogen leads to Increases juice content, total soluble solids (TSS), and acid concentration. Also peel thickness increases due to higher

nitrogen and fruit color is green during harvest. <sup>18</sup>These all characteristics are found exclusively in Jalna Sweet orange nucellar variety as it uses Rangpur lime stock which gives richness to the Nucellar variety quality.

**Effect of rootstock on physico-chemical properties N, P, K status of sweet orange (pooled)**

Rootstock	Fruit wt (g)	Fruit diameter (cm)	Juice (%)	TSS (Brix)	Acidity (%)	Total sugar (%)	TSS/ Acid ratio	Ascorbic acid (mg ml-100 juice)	Foliar status (on dry weight basis)			No. of seeds fruit-1
									N (%)	P (%)	K (%)	
Karna Khatta Jambheri	136	7.3	48.5	8.3	0.20	7.48	41.5	38.2	2.6	104	1.3	11
Local strain	133	7.0	48.0	8.4	0.18	6.76	46.7	38.2	2.3	98	1.3	9
Lemon cv. Gandharaj	140	7.6	44.0	8.9	0.20	8.42	44.5	33.6	2.1	90	1.3	11
<b>Rangpur lime Sweet lime</b>	150	7.6	<b>49.0</b>	<b>9.4</b>	0.20	<b>8.26</b>	<b>47.0</b>	<b>43.7</b>	<b>2.8</b>	<b>105</b>	<b>1.4</b>	12
lime	142	7.5	47.5	7.9	0.22	6.80	35.9	28.7	1.7	75	1.2	7
Kumquat	190	8.1	46.5	8.0	0.18	6.00	44.4	28.5	1.9	72	1.1	12
Lemon (local strain)	145	7.5	48.0	8.9	0.20	7.30	44.5	27.7	1.9	74	1.2	13
SEm (±)	0.9	0.07	0.3	0.1	0.02	0.06	-	0.5	0.1	1.1	0.02	0.06
LSD(0.05)	2.8	0.2	0.8	0.3	NS	0.2	-	1.4	0.3	3.4	NS	0.2 <sup>19</sup>

➤ **Content of Potassium is highest**

Higher potassium and nitrogen leads to greater thickness of the peel. As the thick peel is the specific characteristic of sweet oranges in Jalna, this peel thickness in

<sup>18</sup> Irrigation, Nutrition, and Citrus Fruit Quality. Mongi Zekri, Thomas A. Obreza and Robert Koo.; University of Florida. (<http://edis.ifas.ufl.edu/pdf/files/ss/ss42600.pdf>)

<sup>19</sup> Effect of rootstocks on performance of mosambi – sweet orange under irrigated condition in laterite soil of West Bengal, India. S. N. GHOSH, 1B. BERA AND 1S. ROY.; *Journal of Crop and Weed*,2012.; Vol 8(2): 50-52.

the nucellar variety is due to Rangpur lime stock. Tight and thick peel gives maximum protection to the pulp inside the fruit.

➤ **Maximum fruit yield**

Spread of the Jalna sweet orange tree is largest as compared to other sweet orange varieties. Largest spread of the tree leads to the highest fruit yield per tree. Hence the yield of Nucellar sweet orange variety in Jalna is highest.

**L. INSPECTION BODY**

\_\_\_\_\_ will work as a Inspection body, it will form an internal group consisting Agriculture scientist, farmers, GI experts to monitor the quality norms.



**M. OTHER****Analysis of Jalna Sweet Orange (Mosambi)**

<b>Properties</b>	<b>Sweet Orange (Jalna)</b>
<b>pH</b>	3.7
<b>Moisture</b>	88.4%
<b>Protein</b>	0.6%
<b>Fat</b>	0.05%
<b>Carbohydrates</b>	10.5%
<b>Fibre</b>	0.12%
<b>Ash</b>	0.3%
<b>Water</b>	86-92%
<b>Sugar</b>	5-8%
<b>pectin</b>	1-2%
<b>Glycosides</b>	0.1-1.5%
<b>Pentosans</b>	0.8-1.2%
<b>Citric acid</b>	0.4-1.5%
<b>Fibre</b>	0.6-0.9%
<b>Minerals</b>	0.5-0.9%
<b>Essential Oils</b>	0.2-0.5% <sup>20</sup>

<sup>20</sup> Studies on Extraction of Essential Oil and Pectin from Sweet Orange.; Syed Hammed Hashmi, Pravin Ghatge, Girish Marotirao Machewad and Sharad Pawar.; (Research article) 2012.

## **USES OF JALNA SWEET ORANGE**

The sweet orange fruit is processed commercially in to various forms mainly juice, frozen concentrates, squash, RTS drinks, nectar, dry mixes, canned segments, juice blends, marmalades and other value added products like pectin and essential oil from peel, natural colors, candied peel, feed yeast etc. Fresh juice of sweet orange is an important nutritious product providing 45 kcal, moderate quantity of vitamin C, potassium, bioflavonoid and folic acid and essential items of breakfast. It is refreshing, thirst quenching and energizing drink that improves health and nutritional requirements. The sweet orange peel contain sugars, edible fiber and many other components that offer excellent opportunities as value-added products, particularly those components that have biological activities (antioxidant, anti-cancer, cardio-protective, and food/drug-interactions) or other attributes that are useful in the development of high-value food products from citrus peel. Expressed sweet orange oil is primarily used for flavoring beverages, soft drinks, ice cream, sweets, pharmaceutical preparations, and also perfumes.

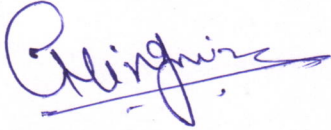
Along with the Statement of Case in Class 31 in respect of Jalna Sweet Orange in the name(s) of Jalna Jilha Phale & Mosambi Bagayatdar Sangh, Jalna whose address is c/o Pragat Shetkari Kendra, Subhash Road, Mama Chowk, Dist. Jalna, Maharashtra, India. Who claims to represent the interest of the producers of the said goods to which the geographical indication relates and which is in continuous use since in respect of the said goods.

The Application shall include such other particulars called for in rule 32(1) in the Statement of Case.

All communications relating to this application may be sent to the following address in India:

Ganesh Shankar Hingmire, 959, Budhwar Peth, Pune, Pin:411002, Maharashtra, India.

SIGNATURE



NAME OF THE SIGNATORY

(Ganesh S. Hingmire)