



GMGC
Intellectual for Intellectuals[®]

APPLICATION
470 --

PATENT | TRADE MARK | COPY RIGHT | DESIGN | GEOGRAPHICAL INDICATION | WTO

Date: - 25th March, 2014

To,

The Registrar,
Geographical Indication Registry,
Chennai,

Subject: - Submission of ten Geographical Indication applications from state of Maharashtra,

Dear Sir,

It gives us great pleasure to inform you that we have successfully studied ten GI potential products from State of Maharashtra with the support of World Bank assisted project called Maharashtra Agricultural Competitiveness Project (MACP). We have prepared GI application for the same and submitting herewith for your perusal. Kindly acknowledge the same and do the needful in the interest of agri communities involved in this regard.

Thanks and Regards,

Prof. Ganesh S. Hingmire
Chairman,
GMGC,
Pune



Enclosed : following GI applications with required documents

1. Ajra Ghansal Rice
2. Waigaon Turmeric
3. Bhiwapur Chilli
4. Pune Mulshi Ambemohar
5. Mangalwedha Maldandi Jowar
6. Navapur Desi Tur
7. Solapur Chutney
8. Kolhapuri Masala
9. Sindhudurg Ratnagiri Kokum
10. Koregaon Waghya Ghevada

Email: info@gmhc.co.in www.gmhc.co.in

Pune: 210-B, Ashoka Pavilion, Near NIV, Dr. Ambedkar Road, Camp, Pune 411 001.
Mumbai: 3/57, Saraswati, Dr S.S Rao Road, Laibaug, Mumbai 400 012.
New Delhi: Nirmal Tower, Connaught Place, Barakhamba Rd., New Delhi 110 001.
Nashik: 7, Gurudeep Apts., Parabnagar, Indiranagar, Nashik 422 009.

जारी करने वाला भारतीय स्टेट बैंक
State Bank of India
 Issuing Branch: NEW SHAHUPUR (KOLHAPUR)
 कोड नं. / CODE No: 15087
 Tel No. 0231-2668147

मांगद्वारपत्र
DEMAND DRAFT

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 | 4 | 0 | 3 | 2 | 0 | 1 | 4 |
| D | D | M | M | Y | Y | Y | Y |

मांगे जानेपर REGISTRAR OF GEOGRAPHICAL INDICATIONS*****

या उनके आदेश पर

OR DEMAND PAY

OR ORDER

Five Thousand Only

शुद्ध पैसे
 पाँच हजार रुपये
 Only Payee

अदा करें ₹ 5000.00

IOI 000330031391 Key: WABDOP Sr. No. 117657 AMOUNT BELOW 5001(5/4) मूल्य प्राप्त / VALUE RECEIVED



भारतीय स्टेट बैंक
STATE BANK OF INDIA
 अदाकर्ता शाखा / DRAWEE BRANCH: CCPC, CHENNAI
 कोड नं. / CODE No. 10395

प्राधिकृत हस्ताक्षरकर्ता
 AUTHORISED SIGNATORY

J.P. Nayak
 जयश्री नयक
 BRANCH MANAGER
J.P. Nayak
 10395

कम्प्यूटर द्वारा मुद्रित होने पर ही वैध
 VALID ONLY IF COMPUTER PRINTED

केवल 3 माहों के लिए वैध
 VALID FOR 3 MONTHS ONLY

₹ 1,50,000/- एवं अधिक के लिखत दो अधिकारियों द्वारा हस्ताक्षरित होना आवश्यक है।
 INSTRUMENTS FOR ₹ 1,50,000/- & ABOVE ARE NOT VALID UNLESS SIGNED BY TWO OFFICERS

⑈031391⑈ 000002000⑈ 000330⑈ 16

9
8
7
6
4
3
2
1

MACRAS SECURITY PRINTERS PVT. LTD. KOLHAPUR, M.S. 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 :2386

Date : 26-03-2014

TO

Generated by :BABU

AJARA TALUKA SHETKARI VIKAS MANDAL,
RAMDEV GALLI, TALUKA AJARA, DISTRICT-KOLHAPUR,
KOLHAPUR,
MAHARASTRA,
416505,
INDIA

C B R Details :

| Application No | Form No | Class | No of Class | Name of GI | Goods Type | Amount Calculated |
|----------------|---------|-------|-------------|--------------------|-------------|-------------------|
| 470 | GI-1A | 30 | 1 | Ajara Ghansal Rice | Agriculture | 5000 |

Payment Details :

| Payment Mode | Cheque/DD/PO NO | Bank Name | Cheque/DD/PO Date | Amount Calculated | Amount Paid |
|--------------|-----------------|---------------------|-------------------|-------------------|-------------|
| DD | 031391 | State Bank of India | 24-03-2014 | 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. | Contents | Annexure(s) |
|---------|---|-------------|
| 1. | GI Application for Ajara Ghansal Rice | Annexure 1 |
| 2. | Map of Ajara Taluka with demarcation of rice growing villages | Annexure 2 |
| 3. | Statement of Case | Annexure 3 |
| 4. | Additional Representation | Annexure 4 |
| 5.. | Form of Authorization | Annexure 5 |
| 6. | <p>Research Papers/Thesis:</p> <ul style="list-style-type: none"> • Shilpa J. Bhonsle, Journal of Agricultural Science Vol. 2, No. 3; Sept2010 • Nadaf et al, Food Anal. Methods (2011) 4:326-333 • Nadaf et.al, Current Science, 91(11) 1533-1536 (2006) • Mathur et. al, Food Chemistry, 142(2014)383-391 • Mathur et. al, Euphytica (2011) 179:237-246 • Mr. Ramchandra Bolke's M.Phil Thesis on Ajara Ghansal Rice accepted by Dept. of Commerce, Shivaji University, Kolhapur • Research Booklet on Rice in Europe and India Agronomical, Geographical and Hystorical Traits edited by Aldo Ferrero • Govt. of Maharashtra's Booklet, 'Kharip Bhat Lagwad' • Scented Rice of India, Asian Agri-History Vol. 12, No.4, 2008(267-283) | Annexure 6 |
| 7.. | <p>Information provided by ATMA co:</p> <ul style="list-style-type: none"> • Information from District Web site of Kolhapur • Soil report of Dhabhil village • Information from APMC of Kolhapur • Newspaper Articles/Cuttings • Historical evidence: 'Biography of Shrimant Narayanrao Govindrao Ghorpade, Chief of Ichalkaranji, published in 1951 | Annexure 7 |

GI APPLICATION No.
470

Received Rs. 5000 in cash/
Cheque/DD/MO on 26.3.2014
vide entry no. 2386 in the
register of valuables
Cashier
26/3/14
D.D.O.

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

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 Great Mission Group Consultancy for the registration on behalf of 'Ajara Taluka Shetkari Vikas Mandal' in part A of register of the Geographical Indication furnishing the following particulars.

NAME OF THE APPLICANT: Ajara Taluka Shetkari Vikas Mandal

ADDRESS: Ajara Taluka Shetkari Vikas Mandal,

Ramdev Galli, Taluka Ajara,

District Kolhapur, Pin 416505

GEOGRAPHICAL INDICATION: AJARA GHANSAL RICE

Class: 30

Goods: Class 30, Agricultural product, Scented rice

- A. Name of the Applicant:** Ajara Taluka Shetkari Vikas Mandal, Represented by Prof. Ganesh S. Hingmire of GMGC
- B. Address:** Ramdevi Galli, Taluka Ajara, District Kolhapur, Pin 416505, Maharashtra.
- C. List of association of persons/producer/ Organization/authority:** Ajara Taluka Shetkari Vikas Mandal
- D. Types of goods:** Agricultural Product, Scented Rice under class 30.
- E. Specification:** AJARA GHANSAL RICE
- Ajara Ghansal rice is traditional variety of rice in Ajara Taluka of Kolhapur district.
 - Ajara Ghansal rice is specially famous for its aroma (specific fragrance), taste and nutritional value
 - The Ghansal rice is an Indigenous aromatic rice variety of Maharashtra.
 - It is short bold grain having the ratio(3.61:5.5mm)
 - Its appearance is creamy white
- F. Name of Geographical Indication and Particulars:** AJARA GHANSAL RICE
- Goods: Class 30, Agricultural product, Scented rice

G. Description of Ajara Ghansal Rice¹ :

Following are the main features of the Ajara Ghansal Rice:

- Appearance: Creamish white/ brown
- Cohesiveness: Well separated
- Tenderness on touching: Hard
- Tenderness on chewing: Hard
- Taste: Desirable
- Aroma: Strong
- Elongation: Moderate
- Overall acceptability: Good
- It is a short bold grain having ratio (3.61: 5.5 mm).

The most important characteristic of Ghansal variety is its **aroma**. According to the various research papers covering study of Ajara Ghansal rice mention that aroma of this rice arises from a mixture of many compounds like alcohols, aldehydes, esters etc. It further emphasizes that the main chemical constituent responsible for aroma is 2-Acetyl-1-pyrroline (2AP). Ghansal grown in Maharashtra state excel in 2AP content over some of the Basmati samples. Percentage of 2AP on an average is 0.237 mg/kg in Ghansal rice. Like basmati rice has specific fragrance because of high 2-AP content, this high 2-AP content gives specific fragrance to the Ghansal rice.^{2 and 3}

The areas of aromatic rice cultivation are based at the foothills and are characterized by relatively low temperature, fertile lateritic soil and favorable cool and dry climate at the stage of maturity for development and retention of high aroma. Various villages from Ajara are blessed by similar geographical conditions, further it is blessed by nature in terms of forest, mountains and waterfalls.

¹ Shilpa J. Bhosale, Journal of Agricultural Science Vol. 2, No. 3; September 2010

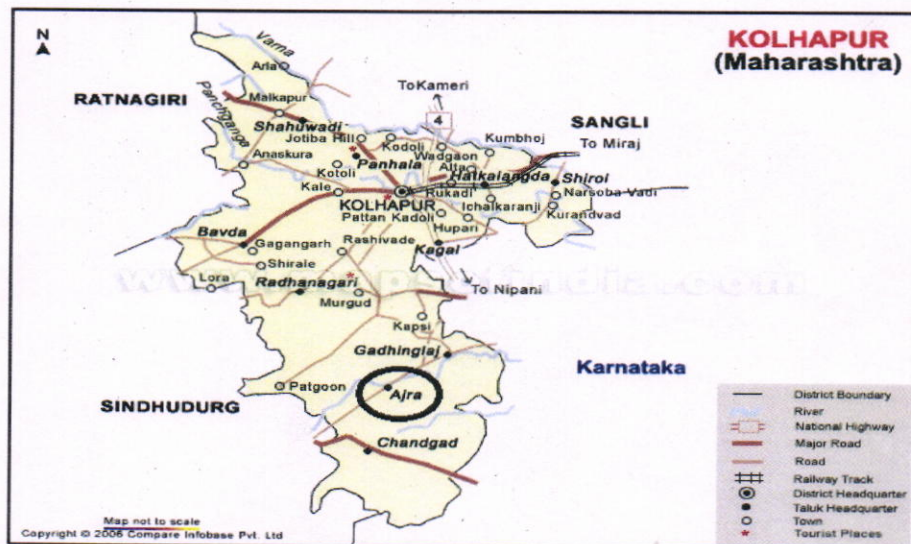
² Nadaf et al, Food Anal. Methods (2011) 4:326–333 and Nadaf et.al, current science, 91(11) 1533-1536 (2006)

³ Food Anal. Methods (2011), 4, 326-333.

Most of the farmers cultivating Ajara Ghansal rice polish Ghansal by traditional ways manually instead of mechanized polishing which is done by means of machine in industries. Due to this reason the aroma and taste of rice remains on higher side hence it catches great demand from market. In addition to this largest cultivation period of 150-160 days helps in enhancing the aroma and quality of rice grains.

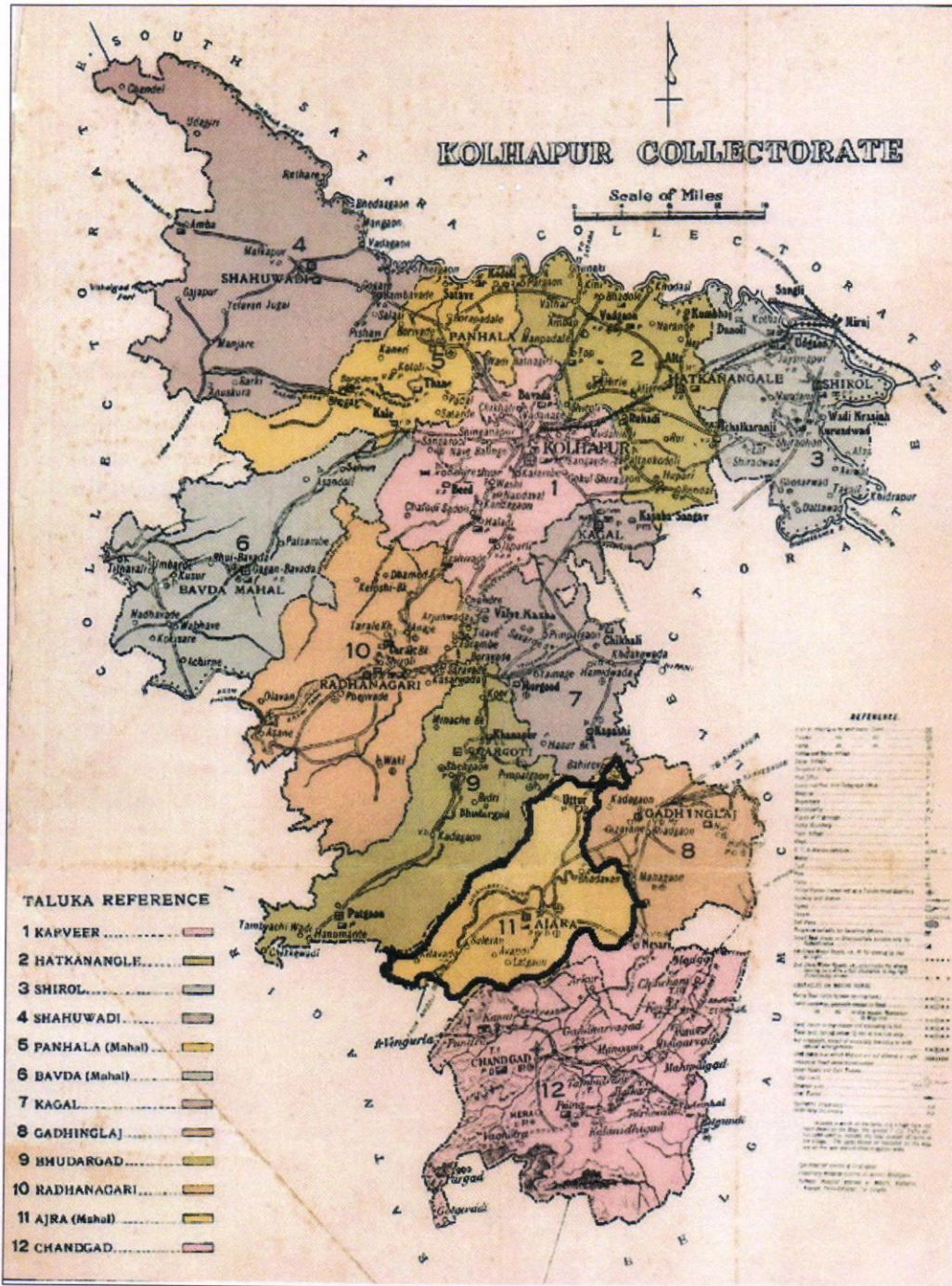
H. Geographical Area of Production and Map

Map of Kolhapur



1. Latitude : 16°-43'N
2. Longitude : 74°-14'E
3. Elevation : 574 m above MSL

Ajara is located at 16.12 degree North latitude and 74.2 degree East Longitude. It has an average elevation of 660 meters (2165 feet). Ajara is 84 km away from Kolhapur city, 121 km away from Panajim, 320 km away from Pune, and 469 km away from Mumbai.



Area under cultivation:

There are 2200 farmers in Ajara Taluka cultivating Ghansal Rice. Total area under cultivation is about 513 hectare⁴. Total production of Ghansal rice is 13-15 quintals per acre. Total production of Ghansal rice is 17955 quintals⁵. Average cost of cultivation is Rs. 20000 per acre. In 2012 Ghansal rice fetched Rs 3751 per quintal price in the market.⁶

There are 35 villages from Ajara Taluka in which Ghansal rice is cultivated. Names of the villages are as follows:

1. Dabhil, 2. Gavas, 3. Pernoli, 4. Latgaon, 5. Shelap 6. Masoli, 7. Chafwaday, 8. Medoli, 9. Kitwaday, 10. Salgaon, 11. Yemaykod, 12. Polgaon, 13. Chitali, 14. Jeur, 15. Khanapur, 16. Devarday, 17. Ajara, 18. Salgaon 19. Petiwadi, 20. Ujagi, 21. Kadgaon, 22. Keni, 23. Halewadi, 24. Yerdol, 25. Surgurwadi, 26. Hatwadi, 27. Etay, 28. Hathiwaday, 29. Chandwadi, 30. Watagi, 31. Hajgoli, 32. Sohali, 33. Murday, 34. Bhavewadi, 35. Shirsagi.

I. Proof of origin

Scented rice have been known in Indian subcontinent since the times of 'Charaka' [600 BC (c.700 BC-eds.)] and 'Sushruta' [200 BC (c. 400 BC- eds.)]. These rice have played important role in many regional economies and have been the favorites of kings, religious heads, royalty and the elite of society. Most of these rice are highly area specific hence each Indian state has its own special scented rice. Scented rice were known since ancient times and were considered the best among the specialty rice. Throughout the world they have been the choicest food of kings, royalty, and common man.

Ghansal rice is cultivated over many generations in Ajara Taluka. Many families of farmers are cultivating Ghansal rice for more than 100 years. In biography of Late Shrimant Narayanrao Govindrao Ghorpade, Chief of Ichalkaranji, (born in

⁴ According to information by Kolhapur APMC and Ajra Taluka Shetkari Vikas Mandal

⁵ Calculated figure based on Kolhapur APMC data

⁶ Sakal News articles dated 4th Dec 2012

1870, ruling period 1876-1943), it has been mentioned that he had given encouragement to increase cultivation of Ghansal rice in Ajara Taluka⁷. Traders like M/s P. M. Kelkar are in the trading for Ghansal rice for more than 100 years.

Table1: Traditional scented rice cultivars of Maharashtra and the area of their origin.⁸

| Sr. No. | Name of cultivar | Area of origin |
|---------|------------------------|--------------------------|
| 1 | Kala girga | Kolhapur Dist. |
| 2 | Ghansal | Kolhapur Dist. |
| 3 | Kothimbari Sal (Bodga) | Kolhapur Dist. |
| 4 | Champakali | Kolhapur Dist. |
| 5 | Krishna Sal | Kolhapur Dist. |
| 6 | Tambada jog | Satara, Sangali Dist. |
| 7 | Ambemohar | Pune Dist. |
| 8 | Kasbai | Thane Dist. |
| 9 | Thilsa | Thane Dist. |
| 10 | White Luchai region | Eastern Vidharbha |
| 11 | Chinoor | Eastern Vidharbha region |

⁷ Biography of Late Shrimant Narayanrao Govindrao Ghorpade, Published in 1951.

⁸ Research book: *Rice in Europe and India: Agronomical, Geographical and Historical Traits*, Author: Aldo Ferrero

J. Method of Cultivation of Ghansal rice

Ghansal rice is cultivated by *Kinishet* or *patharshet* type of farming. For cultivation Ghansal rice, seeds are selected from the previous year's stock i.e. farmers select good panicles and seeds from last year panicles and these are stored separately for the purpose of sowing. Due to this, purity of seed is maintained.

After harvesting the previous year's crop, land preparation for the next crop starts. Land preparation starts in the month of June. Land preparation involves cleaning, plowing and puddling. In cleaning process all the weeds are burnt. Burning of the weeds helps in removing insects from the paddy field. After the first rain, plowing of the paddy field is done. Plowing helps in making the soil soft. Small stones from the field are removed. This is done to level the field. At this time organic manure as fertilizer is added in the soil. After this, seeds are sown. The aim of land preparation for rice production is to place the soil in the best physical condition for crop growth and to ensure that the soil surface is leveled.⁹

Land is prepared for seedbed in the first or second week of June, after first rain. After preparation of seedbed, sowing of seed is done by applying bio fertilizer like azatobactor. 30-35 kg seed is required per hectare of paddy field. After 20 to 25 days pre-germinated seedlings are transplanted from a seedbed to the wet field. Timely sowing and transplanting of Ghansal rice is an important factor in determining grain yield and quality parameters. Seedlings are transplanted by hand. Before transplanting seedlings, the organic farm yard manure is also added into the soil. 20 X 15 cm distance is kept between two seedlings.

Ajara Taluka is surrounded by hills. In Ajara Taluka most of the rice is cultivated on rain water which comes down from the hills surrounding to it. The Hiranyakeshi River which is at the distance of 5 km from the Ajara Taluka helps in maintaining necessary water level in the soil which is extremely necessary for

⁹ Kharip Lagvad, , A booklet by Maharashtra Government Agricultural Department, Ajara Taluka, Dist Kolhapur.

cultivation of rice. Suitable amount of water is needed till full growth of the seeds and that is mostly received through rains. Water from the nearby pond is used for irrigation purpose.



J.1 Source of Water: Natural source of water near paddy field

For better retention of aroma this variety is exposed to cool humid weather conditions during ripening. It is a tropical crop requiring high temperature and well distributed rainfall during growing season. It requires the soil which has more water storage capacity.¹⁰ Increased heat in the October causes loss of aroma of rice, but particularly in this area the temperature is suitable to maintain the aroma.



J.2 Ajara Ghansal rice panicle

Harvesting is done in the month of October-November. Ghansal rice crop usually reaches maturity at around 150 to 160 days. Hand harvesting or manual harvesting of rice is very common practice. It involves cutting the rice crop with

¹⁰ Mr. Ramdas Bolke's M. Phil Thesis Accepted at Dept. of Commerce, Shivaji University, Kolhapur.

simple hand tools like sickles and knives. Following cutting, the rice is then threshed to separate the grain from the stalk and cleaned. This is either done by hand or machine. Harvesting activities include cutting, stacking, handling, threshing, cleaning, and hauling. Good harvesting helps in maximizing the grain yield and minimizing the grain damage and deterioration.

After harvest, the rice grain undergoes a number of processes depending on how it will be used. Such methods include, drying, milling, processing and storing.

Drying rice is a critical post harvest activity. Seeds are dried up to 13% moisture. As drying is the most important operation after harvesting a rice crop, delay in drying, incomplete drying or ineffective drying may reduce grain quality.

Storing grains is done to reduce grain loss due to weather, moisture, rodents, birds, insects and micro-organisms.

Milling is a crucial step in post- harvest production of rice. The basic objective of a rice milling system is to remove the husk, bran layers and to produce an edible white rice kernel which is sufficiently milled and free of impurities.

For storage of Ghansal paddy seeds very unique method is used. After drying, paddy seeds are stored in huge pot made up of clay and cow dung. Leaves of *Azadirachta -indica* (Neem) are used for preservation of rice from insecticides. This method is adopted to store the seed material.



J.3 Traditional Storage Method

K. Geographical Significance and Uniqueness of Ajara Ghansal Rice:

Geographical Significance

i. Soil

Red to reddish brown soil of varying depths is found in Ajara Taluka. Lateritic soils (*Tambadi mati*) occur mainly in the western hilly tracks of heavy rainfall, on the hill tops and in the ridges which are not covered by forest. Lateritic soils found in the western parts of Ajara. The soil is rich in Nitrogen, Zink, Iron, Copper, Calcium and Magnesium and very fertile. The quality of soil varies from medium, shallow to coarse soil. Black soil is also found in some parts of Ajara Taluka in the transition tract. Soil is mainly derived from trap and is dark brown in colour, with, a reddish tinge. The region is composed of hilly terrain with rich Lateritic soils (*Tambadi mati*) favorable for the magnificent growth of Ghansal rice.¹¹

¹¹ http://kolhapur.nic.in/kolhapurgazetteer/agri_soils.html

ii. **Climate**

Ajara Taluka comes under the agro climatic zone number IX i.e. western plateau and hill region¹². Average temperature of Ajara Taluka is 14 degree Celsius to 36 degree Celsius. The temperature during the cultivation period of the Ghansal rice i.e. in between June to November is 17 degree Celsius to 29 degree Celsius. The average annual rainfall recorded is 1900 mm.¹³

The climate is humid and warm during growth while it is cool and dry at maturity. Plant growth, development, aroma are more concern with climatic conditions. The mean temperature ranges between 28-30 degree C, humidity above 65% and minimum temperature do not fall below 10 degree C, such type of climate favors to develop aroma in Ghansal rice which influence the genes of the variety. Though paddy requires hot and humid climate for growth and development, the cool climate at the time of maturity favors development of aroma in panicles and grain.

Ghansal rice is totally rain fed crop. Ajara Taluka is surrounded by hills. In Ajara Taluka most of the Ghansal rice is cultivated on rain water which comes down from the hills surrounding to it. The Hiranyakeshi River helps in maintaining necessary water level in the soil.

Cool climatic condition prevailing at maturity stage has further influenced the production level of the rice.¹⁴

¹² http://www.iasri.res.in/agridata/12data/chapter1/db2012tb1_2.pdf

¹³ Information provided by Ajara Krishi Samiti

¹⁴ Information by Dr. Ramchandra Sable (Ex. Principle of Agricultural College, Pune)

Uniqueness of Ajara Ghansal Rice

- **High aroma**

The Ajara Ghansal variety of rice is known for its taste and aroma. The areas of aromatic rice cultivation are based at the foothills and are characterized by relatively low temperature, fertile lateritic soil and favorable cool and dry climate at the stage of maturity for development and retention of high aroma.¹⁵

The most important characteristic of Ghansal variety is its **aroma**. This aroma arises from a mixture of many compounds like alcohols, aldehydes, esters etc. The major Chemical constituent responsible for aroma is 2-Acetyl-1-pyrroline (2AP). Ghansal grown in Maharashtra state excel in 2AP content over some of the Basmati samples. Percentage of 2AP on an average is 0.237 mg/kg in Ghansal rice. Like basmati rice has specific fragrance because of high 2-AP content, this high 2-AP content gives specific fragrance to the Ghansal rice.¹⁶ and 17

- **Tender and Non sticky**

Texture of Ghansal rice is firm tender and non sticky. Chalkiness is absent in Ghansal variety of rice. Chalkiness is one of the physical characteristics of the rice varieties. The chalky grains reduce the palatability of cooked products thus the presence of more than 20% chalkiness in rice kernels is not acceptable. This chalkiness is totally absent in Ghansal variety due favorable cool and dry climatic conditions.¹⁸ This rice is less sticky as compare to other rice.

¹⁵ Information by Dr. Ramchandra Sable (Ex. Principle of Agricultural College, Pune)

¹⁶ Nadaf et al, Food Anal. Methods (2011) 4:326–333 and Nadaf et.al, current science, 91(11) 1533-1536 (2006)

¹⁷ Food Anal. Methods (2011), 4, 326-333.

¹⁸ Shilpa J. Bhosale, Journal of Agricultural Science Vol. 2, No. 3; September 2010

Table 2: The chalkiness frequency, kernel area of chalkiness, type and percentage of chalkiness in aromatic rice varieties

| Sl. No. | Varieties | Frequency | Kernel area (Extent) | Type | Chalkiness % |
|---------|----------------|-----------|-----------------------|--------------|-------------------------|
| 1 | Basmati local | OC | Medium (11% to 20%) | White belly | 34.90±2.35 ^b |
| 2 | Ek-Kadi | OC | Medium (11% to 20%) | White belly | 64.36±2.20 ^a |
| 3 | Ghansal | A | None | ND | 0.000±0 ^b |
| 4 | Girga | VOP | Small (less than 10%) | White centre | 10.86±3.09 ^f |
| 5 | Jiresal | OC | Medium (11% to 20%) | White belly | 16.20±0.9 ^f |
| 6 | Kotumirsal | A | None | ND | 0.000±0 ^b |
| 7 | Masuri | VOP | Small (less than 10%) | White centre | 13.83±1.50 ^f |
| 8 | Pusa Basmati-1 | VOP | Small (less than 10%) | White belly | 15.30±0.36 ^f |
| 9 | Pusa Sugandh-2 | A | None | ND | 0.000±0 ^b |
| 10 | Pusa Sugandh-3 | OC | Medium (11% to 20%) | White centre | 27.33±1.06 ^d |
| 11 | Pusa Sugandh-5 | OC | Medium (11% to 20%) | White belly | 24.16±0.80 ^a |
| 12 | Mugadh Sugandh | P | Long (more than 20%) | White belly | 31.26±1.11 ^c |
| 13 | Kasturi | P | Long (more than 20%) | White belly | 27.30±1.15 ^d |
| 14 | Vasumati | OC | Medium (11% to 20%) | White belly | 14.43±1.16 ^e |

Superscript letters (a-h) indicate significant differences ($p < 0.05$) among different rice varieties. Means with same letter within column are not significantly different ($p < 0.05$), means \pm SD, VOP, very occasionally present; OC, occasionally present; P, present; ND, not detected.

- **Highest elongation ratio**

Ghansal rice kernels elongate almost twice upon cooking i.e. 60-110% elongation than the precooked grain. This percentage of elongation is higher than any other variety of rice.¹⁹ One of the main characteristic required for cooking of rice is higher elongation ratio (ER) of the cooked rice. Kernel length after cooking (KLAC) ranged from 2.31 to 3.76 mm in aromatic traditionally cultivated variety. In Ghansal variety the elongation ratio is highest.²⁰

¹⁹ Shilpa J. Bhosale, Journal of Agricultural Science Vol. 2, No. 3; September 2010

²⁰ Shilpa J. Bhosale, Journal of Agricultural Science Vol. 2, No. 3; September 2010

Table 3: The volume expansion ratio, kernel length after cooking, kernel elongation ratio and water uptake in aromatic traditionally cultivated and basmati rice varieties

| Sl. No. | Varieties | Volume Expansion | Kernel length after cooking | Elongation ratio |
|---------|----------------|------------------------|-------------------------------------|--------------------------|
| 1 | Basmati local | 3.63±0.05 ^b | 3.76±0.04 ^d | 1.18±0.04 ^b |
| 2 | Ek-Kadi | 2.36±0.15 ^f | 3.20±0.03 ^{d^e} | 1.10±0.02 ^{cd} |
| 3 | Ghansal | 3.56±0.15 ^b | 3.08±0.08 ^{d^{ef}} | 1.42±0.03 ^a |
| 4 | Girga | 4.03±0.05 ^a | 2.94±0.04 ^{ef} | 1.06±0.04 ^{def} |
| 5 | Jiresal | 4.10±0.1 ^a | 2.56±0.06 ^{ef} | 1.22±0.08 ^b |
| 6 | Kotimirsal | 3.56±0.05 ^b | 2.31±0.01 ^f | 1.06±0.01 ^{def} |
| 7 | Masuri | 4.06±0.11 ^a | 2.98±0.01 ^{ef} | 1.01±0.04 ^g |
| 8 | Pusa Basmati-1 | 3.06±0.11 ^d | 5.49±0.03 ^{ab} | 1.12±0.02 ^c |
| 9 | Pusa Sugandh-2 | 3.00±0 ^d | 4.62±0.04 ^c | 1.04±0.01 ^{efg} |
| 10 | Pusa Sugandh-3 | 3.13±0.05 ^d | 4.81±0.01 ^{b^c} | 1.10±0.01 ^{cd} |
| 11 | Pusa Sugandh-5 | 3.63±0.05 ^b | 4.73±0.05 ^{b^c} | 1.04±0.01 ^{efg} |
| 12 | Mugadh Sugandh | 2.73±0.11 ^e | 4.93±0.04 ^{b^c} | 1.03±0.01 ^{fg} |
| 13 | Kasturi | 3.3±0.1 ^c | 4.68±0.03 ^c | 1.02±0.04 ^{fg} |
| 14 | Vasumati | 3.6±0.05 ^b | 5.88±1.73 ^a | 1.08±0.01 ^{cde} |

Superscript letters (a-g) indicate significant differences ($p < 0.05$) among different rice varieties. Means with same letter within column are not significantly different ($p < 0.05$). means \pm SD.

• Quality of grain

The alkali spreading value (ASV) and gelatinization temperature (GT) for Ghansal variety is noted as intermediate. The intermediate ASV indicated the medium disintegration and classified as intermediate GT which highly desirable for quality grain.

L. Inspection Body:

Ajra Taluka Shetkari Vikas Mandal will work as a Inspection body, it will form an internal group consisting Agriculture scientist, farmers, GI experts to monitor the quality norms.

M.Others:

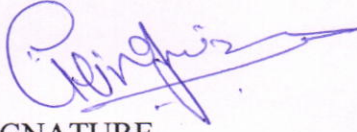
Uses of Ajara Ghansal Rice

1. Culinary use
2. It is specially used in marriage ceremonies.
3. Rice puff making (Murmure).
4. The rice bran(s) are used for edible oil extraction.
5. Paddy straws are used in mushroom cultivation.

Along with the Statement of Case in Class 30 in respect of Ajara Ghansal Rice in the name(s) of Ajra Taluka Shetkari Vikas Mandal whose address is Ramdev Galli, Taluka, Ajara, District Kolhapur, Pin 416505, Maharashtra, 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 S. Hingmire, 959, Budhwar Peth, Pune, Pin-411002, Maharashtra, India.



SIGNATURE

(GANESH S. HINGMIRE)

NAME OF THE SIGNATORY