Advertised under Rule 41 (1) of Geographical Indications of Goods (Registration & Protection) Rules, 2002
in the Geographical Indications Journal 185 dated November 29, 2023

G.I. APPLICATION NUMBER – 823
Application Date: 03-02-2022

Application is made by Pragtisheel Arajiline Farmer Producer Company Limited at C/o Ram Chandra Patel, Karnadadi, Kashipur, District: Varanasi - 221 311, Uttar Pradesh, India for Registration in Part A of the Register of **Banaras Lal Bharwamirch** under Application No. 823 in respect of Chilli falling in Class – 31 is hereby advertised as accepted under Sub-section (1) of Section 13 of Geographical Indications of Goods (Registration and Protection) Act, 1999.

A) Name of the Applicant : Pragtisheel Arajiline Farmer Producer Company Limited

B) Address : Pragtisheel Arajiline Farmer Producer Company Limited, C/o Ram Chandra Patel, Karnadadi, Kashipur, District: Varanasi - 221 311,
Uttar Pradesh, India.

Facilitated By:
1. Department of Horticulture, Government of Uttar Pradesh
2. NABARD, Uttar Pradesh

C) Name of the Geographical Indication:

BANARAS LAL BHARWAMIRCH

D) Types of Goods : **Class 31** – Chilli

E) Specification:

Banaras Lal Bharwa mirch is one of the most valuable crops grown in north eastern region. Fruits are long or small with high pungency. It is used as a principal ingredient of various curries and chutneys. It is also used for vegetables, spices, condiments, sauces and pickles. Banaras Lal Bharwamirch is good sources of vitamin A and vitamin C. Cultivars. local cultivars prefers this variety for this region.

- Banaras Lal Bharwamirch growth for yield and quality under Varanasi Agro climatic condition. Banaras Lal Bharwamirch are a rich source of spicy-hot capsaicin.
- Banaras Lal Bharwamirch provides some carbonate and offers a small amount of protein and fiber.
- Banaras Lal Bharwamirch are rich in various vitamins and minerals. These are also very high in antioxidant carotenoids, which are linked to numerous health benefits.

- Stuffed Red Chili Pickle / Laal Mirch ka bharwa achar is among the most popular and traditional pickles. It is very popular as Banarasi Laal Mirch ka achar. During winter very good quality of red chilies are available for making pickles.
- This pickle is prepared by making a spicy tangy masala mix and then chilies are either slit lengthwise or then stuffed or the top crown is removed and then the spice mix is stuffed or pushed with the help of a small spoon.

F) Description:

Banaras Lal Bharwamirch (Red Pickel Chilli)
Varietal evaluation of **Banaras Lal Bharwamirch** for growth, yield and quality. in Varanasi Agro climatic condition.

Name of variety	–	**Banaras Lal Bharwamirch**
Plant height (cm)	–	68.63
Number of branches plant	–	13.28
1 Days to first flower initiation	–	35.67
Number of fruit plant	–	38.37
Days to 50% flowering -1 Length of fruit (cm)	–	9.50
Fruit diameter (cm)	–	2.08
Weight of fruit (g)	–	25 - 35 gram
Number of seeds fruit-1	–	67.61
Fruit plant-1 (kg)	–	94.38
Fruit yield plot-1	–	1.32
Fruit yield (t ha-1)	–	34.96
Total soluble solid (0 Brix)	–	6.85
Ascorbic acid (mg/ 100g)	–	156.59

Nutrition facts
The nutrition facts for 1 tablespoon (15 grams) of raw, fresh, red chili peppers are:

- **Calories** : 6
- **Water** : 88%
- **Protein** : 0.3 grams
- **Carbs** : 1.3 grams
- **Sugar** : 0.8 grams
- **Fiber** : 0.2 grams
- **Fat** : 0.1 grams

Banaras Lal Bharwamirch provide some carbs and offer a small amount of protein and fiber.
Vitamins and minerals:

Banaras Lal Bharwamirch are rich in various vitamins and minerals.

- **Vitamin C.** Banaras Lal Bharwamirch are very high in this powerful antioxidant, which is important for wound healing and immune function.
- **Vitamin B6.** A family of B vitamins, B6 plays a role in energy metabolism.
- **Vitamin K1.** Also known as phylloquinone, vitamin K1 is essential for blood clotting and healthy bones and kidneys.
- **Potassium.** An essential dietary mineral that serves a variety of functions, potassium may reduce your risk of heart disease when consumed in adequate amounts.
- **Copper.** Often lacking in the Western diet, copper is an essential trace element, important for strong bones and healthy neurons.

- **Vitamin A. Banaras Lal Bharwamirch (**Red chili peppers) are high in beta carotene, which your body converts into vitamin A.

Banaras Lal Bharwamirchare rich in various vitamins and minerals but usually eaten in small amounts.

G) Geographical area of Production and Map as shown in page no:

The Geographical Area of production of **Banaras Lal Bharwamirch** is being done in the following districts of Uttar Pradesh, India.

Varanasi District is situated 25°.20' N latitude & 83°.00' E longitudes.
Azamgarh District is situated 26°.03' N Latitude & 83°.13' E Longitude.
Jaunpur District situated 25°.46' N Latitude & 82°.44' East Longitude.
Ghazipur District is situated 25°.19' North Latitude & 83°.40' E Longitude.
Ballia District is situated 28°.11'N latitude &79°.22'E longitude.

H) Proof of Origin (Historical records):

The district Banaras was originally a part of Kashi kingdom Pururavas Alia, the grandson of Manu, is said to be the founder of the earliest dynasty that ruled over this district. It acquired the ancient name Kashi, after the name of the seventh king of this dynasty, the Kasha. A few generations later there ruled a king named Dhanvantari who has been identified in Yayu Puran as the founder of Ayurveda, the indigenous system of medical treatment (the Pancham Veda). According to Hindu mythology, in Satyug, the king Satya Harish Chandra with his wife sold himself to Dom Raja at Kashi, to pay the Dhakshina to Rajarshi Vishwamitra.

Phulpur area is famous for the cultivation of Lal Bharva Mirch known as Lal Sona. It is supplied in all the major cities of the country. In Phulpur (Azamgarh region), farmers do the cultivation of red Bharwa chillies prominently. It is the main source of income for the farmers. The arrival of red chili has started in Phulpur division. This year red chilli production is expected to be higher than last year. Earlier farmers used to cultivate sugarcane prominently, but due to non-availability of reasonable price of sugarcane, this cultivation was eclipsed. Now the farmers are doing the cultivation of red gold prominently as a commercial farming. This is the reason that the scope of cultivation of red chilli is increasing in the area.

Banaras Lal Bharwamirch is a renowned horticulture product of Eastern Uttar Pradesh. Gazetteers, Govt. document, Research papers of Ph. D scholars and electronic and print media has prominently mentioned about this product. Banaras Lal Bharwamirch is cultivated in specific geographical area of Varanasi mandal and Azamgarh mandal.

I) Method of Production:

Tools: Khurpi, Kudal, Fawara, Hal Tokari, Tirpal, Bora (jute bag)

Soil: Well drained loamy soils rich in organic matter with pH range 6.5-7.5.

Season of sowing: As a commercial crop, the Banaras Lal Bharwamirch seeds are sown in August. Spacing 45cm X45. cm. Manure and Fertilizer FYM @ 25t/ha is incorporated before transplanting.

Seed treatment: Treat the seeds with Trichodermaviride @ 4 g / kg or Pseudomonas fluorescens @ 10 g/ kg and sow in lines spaced at 10 cm in raised nursery beds and cover with sand. Watering with rose can has to be done daily. Drench the nursery with Copper oxychloride @ 2.5 g/l of water at 15 days interval against damping off disease. Apply Carbofuran 3 G at 10 g/sq.m. at sowing.

Protected nursery

- Prepare the nursery area of 3 cents with slanting slope of 2 % for the seedling production to cover 1 ha.
- Cover the nursery area with 50 % shade net and cover the sides using 40 / 50 mesh insect proof nylon net.
- Form raised beds of 1 m width and convenient length and place HDPV pipes at 2m interval for further protection with polythene sheets during rainy months.
- Mix sterilized cocopeat @ 300 kg with 5 kg neem cake along with Azospirillum and phosphobacteria each @ 1 kg. Approximately 1.2 kg of cocopeat is required for filling one protay. 300 protrays (98 cells) are required for the production of 29,000 seedlings, which are required for one hectare adopting a spacing of 90 x 60 x 45 cm in a paired row system.
- Sow the treated seed in protrays @ 1 seed per cell.
- Cover the seed with cocopeat and keep the trays one above the other and cover with a polythene sheet till germination starts.
- After 6 days place the protrays with germinated seedlings individually on the raised beds inside the shade net.
- Water with rose can everyday upto seed germination. Drench with 19:19:19 @ 0.5% (5g/l) at 18 days after sowing.

Field preparation

Thoroughly prepare the field with the addition of FYM @ 25 t/ ha and form ridges and furrows at a spacing of 60 cm. Apply 2 kg/ha of Azospirillum and 2 kg / ha of Phosphobacteria by mixing with 20 kg of FYM. Irrigate the furrows and transplant 40-45 days old seedlings, with the ball of earth on the ridges.

Spacing

Varieties: 60 x 45 cm
Hybrids: 75 x 60 cm

Weed control:

Apply Pendimethalin 1.0 kg *a.i.* / ha or Fluchloralin 1.0 kg *a.i.* / ha followed by one hand weeding helps check weed growth to a considerable extent. Irrigation Irrigate the crops immediately after transplanting and subsequent irrigation at weekly interval. as pre-emergece herbicide followed by hand weeding once 30 days after planting. Mulching helps conserve moisture and nutrients and prevents weed growth.

Irrigation

Irrigate is done at weekly intervals.

Layout and planting for drip irrigation and fertigation

- Apply FYM @ 25 t / ha as basal before last ploughing.
- Apply 2 kg / ha of Azospirillum and 2 kg/ha Phosphobacteria by mixing with 20 kg of FYM.
- Apply 75 % total recommended dose of superphosphate i.e. 375 kg / ha as basal.
- Install the drip irrigation with main and sub main pipes and place lateral tubes at an interval of 1.5 m.
- Place the drippers in lateral tubes at an interval of 60 cm and 50 cm spacing with 4 LPH and 3.5 LPH capacities respectively.
- Form raised beds of 120 cm width at an interval of 30 cm and place the laterals at the centre of the each bed.
- Before planting wet the beds using drip system for 8-12 hrs.
- Planting to be done at a spacing of 90 x 60 x 45 cm in the paired row system, using ropes marked at 60 cm spacing.

- Spray Pendimethalin 1.0 kg *a.i.* / ha or Fluchloralin 1.0 kg *a.i* / ha as pre-emergence herbicide at 3rd day after planting.
- Gap filling to be done at 7th day after transplanting.

Manuring Varieties

- Basal dose: FYM 25 t/ha, NPK 30:60:30 kg/ ha.
- Potassium as K2SO4 for quality improvement. Application of potassium in the form of potassium
- sulphate will increase quality of chilli.
- Top dressing: 30 kg N/ha in equal splits on 30, 60 and 90 days after planting.

Harvest

Harvesting can be done 75 days after transplanting. First two picking yield green chilli and subsequently yield red ripe fruits.

Yield

Varieties: 2 - 3 t/ha of dry pods or 10 - 15 t/ha of green chillies.
Hybrids: 25 t / ha of green chillies.

Plant Protection Thrips (Scirtothrips dorsalis) - This small insect suck the sap from the foliage and lacerate the leaf tissue, which results in curling of leaves and flower fall down prematurely. Spraying Dimethoate or Monocrotophos @lml/l of water at 15 days interval is recommended to control this pest. Aphids (Aphis gossypi) - Aphids suck the sap from plants; they generally attack the plants in winter. Imparting blackish colour to the calyx and pods spoils the quality of the produce. Spraying the crop with Dimethoate @ lml/l of water and spraying with castor oil or paraffin controls the pests. Damping off (Pythium aphanidermatum) - Damping off generally occurs in nursery bed.

The disease infected seedling at ground level and plant fall over ground. The seedbed should be treated with formalin before sowing of seeds and seed should be treated with Ceresan or Agrosan GN @ 2-3g/kg of seeds before sowing. Anthracnose or fruit rot (Colletotrichum capsici)-Dark sunken spot are formed on fruit and pink or dark coloured dots appear in the centre of the sunken spots. Due to this Spot, fruit rot and fall. Spraying the crop with Mencozeb @ 2.5gm/l of water and seed treatment with Ceresan @ 2-3g/kg of seeds before sowing helps in controlling this disease.

Leaf curl (viral) - The disease spreads through insect vector such as thrips and aphids. The disease affected leaves become small in size accompanied by downward curling. The leaves may fall off in case of severe attack. Spraying Rogor @ l ml/l of water control the insect vector and uprooting of infected plants is recommended to manage the disease. Harvesting and Yield Flowering takes place two months after transplanting and it takes another month for green fruit. For vegetable purpose, chillies are harvested while they are still green. For drying chillies are harvested at full ripe stage. Green chilli yield: 75-100q/ha. Dry chilli yield: 20-25q/ha.

J) Uniqueness:

Banaras Lal Bharwamirch is a renowned horticulture product of Eastern Uttar Pradesh. Gazetteers, Govt. document, Research papers of Ph. D scholars and electronic and print media has prominently mentioned about this product. Banaras Lal Bharwamirch is cultivated in specific geographical area of Varanasi mandal and Azamgarh mandal.

1. **Banaras Lal Bharwamirch** is rich in various vitamins and minerals but usually eaten in small amounts.
2. The specialty of this red Bharva chilly is when it is on the field, the skin is very thick and when this chilly has used after stuffing the spices for making stuff pickle (Bharwa Achar) then gradually the chilly skin has thinner and thinner like a thin paper.

3. This is not a very spicy red chilly, but this is mainly use for the Bharwa Achar (stuff pickle) known as Banarasi Lal Mirch Bharva Achar.
4. Stuffed Banaras Lal Bharwamirch (Red Pickel Chilli**)** achar is among the most popular and traditional pickles. It is very popular as Banarasi Laal Mirch ka achar.
5. Unripe Banaras Lal Bharwamirch is not bitter in taste, but gradually when it ripen it become bitter.
6. **Health benefits of chili peppers -** Despite their burning taste, Lal Bharva Mirch have long been considered a healthy spice.
7. **Pain relief -** Capsaicin, the main bioactive plant compound in Lal Bharva Mirch has some unique properties. It binds with pain receptors, which are nerve endings that sense pain. This induces a burning sensation but does not cause any real burning injuries.
8. This is supported by another small, 6-week study showing that 15 grams of Lal Bharva Mirch each day improved heartburn in people with acid reflux.
9. The desensitization effect does not seem to be permanent, and one study noted that it was reversed 1–3 days after capsaicin consumption stoppe).
10. **Weight loss -** Lal Bharva Mirch are associated with several health benefits. They may promote weight loss when combined with other healthy lifestyle strategies and may help relieve pain. It appears that regular consumption of Lal Bharva Mirch Pickel supplements may aid weight loss when combined with other healthy lifestyle strategies.
11. It is also reduce calorie intake. People who consume Lal Bharva Mirch regularly discovered that taking capsaicin before a meal led to reduced calorie intake.

K) Inspection Body:

1. One Representative from Department of Agriculture, Government of Uttar Pradesh, having office at Varanasi.
2. One Representative from concern District Administration.
3. Representative from NABARD, Varanasi
4. One Representative from Human Welfare Association, Varanasi
5. One Representative from Traders and Exporters of GI Product.
6. Representative of related FPO (Farmers) and concern NGO.
7. Representative of related Producers / cultivators / farmers and related Awardees.

L) Others:

GEOGRAPHICAL AREA OF PRODUCTION OF BANARAS LAL BHARWAMIRCH

JPN - JYOTIBA PHULE NAGAR
GBN - GAUTAM BUDDHA NAGAR
KRN - KANSHIRAM NAGAR
AMB - AMBEDKAR NAGAR
SID - SIDDHARTHNAGAR
SKN - SANT KABIR NAGAR
KUS - KUSHINAGAR
SRNB - SANT RAVIDAS NAGAR (BHADOHI)

BOUNDARIES:

INTERNATIONAL.....
STATE.....
DISTRICT.....
TAHSIL.....

HEADQUARTERS:

STATE.....★
DISTRICT.....◉
TAHSIL..... •

1 - Chandausi
2 - Garhmukteshwar
3 - Sikandra Rao
4 - Bakshi Ka Talab
5 - Chakarnagar
6 - Ramsanehighat
7 - Sirauli Gauspur
8 - Sohawal
9 - Domariyaganj
10 - Shohratgarh
11 - Campierganj
12 - Chauri Chaura
13 - Tamkuhi Raj
14 - Bhatpar Rani
15 - Nizamabad
16 - Ghosi
17 - Madhuban
18 - (Maunath Bhanjan)
19 - Muhammadabad Gohna
20 - Belthara Road
21 - Sikanderpur
22 - Mohammadabad

Where the district name differs from its headquarters name, the latter is given within brackets.

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