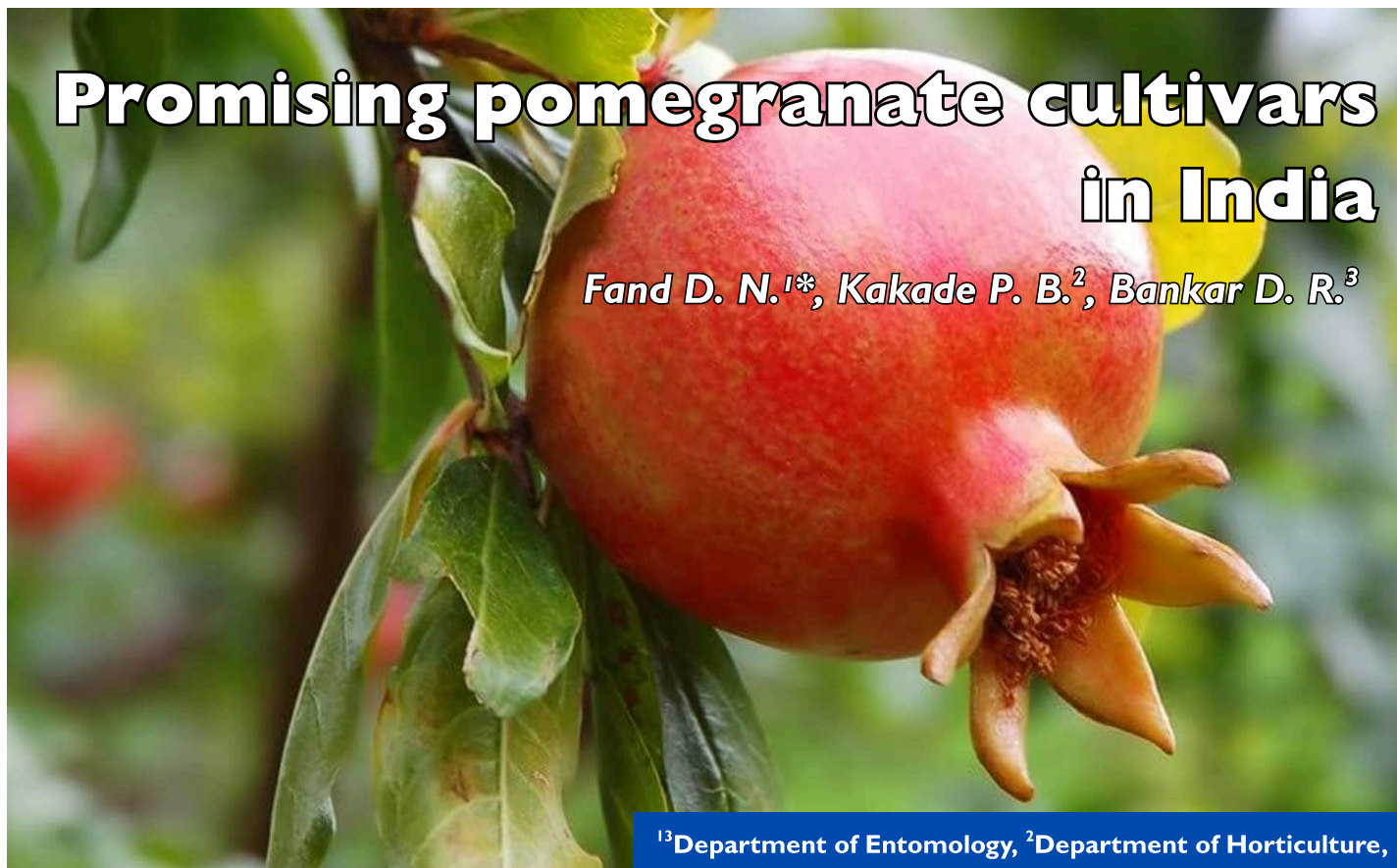


Promising pomegranate cultivars in India

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Abstract

In pomegranate cultivation Maharashtra is the leading state (*Punica granatum*) in India, with the variety 'Bhagwa' revolutionizing production and exports since 2003. Various improved cultivars have been developed to enhance yield, quality and marketability. This study compiles information on commercially important pomegranate cultivars, emphasizing their morphological, physico-chemical and agronomic characteristics. 'Sharad King' exhibits large fruit size, thick rind and high export potential, while 'Solapur Lal,' a biofortified variety, matures earlier than 'Bhagwa' and has higher nutrient content. 'Ganesh,' released in 1970, remains popular for its soft-seeded fruits, whereas 'G-137' and 'Mridula' are selections with improved juice yield and aril colour. 'Phule Arakta,' 'Phule Bhagwa Super' and 'Phule Anardana' are high yielding varieties suited for both fresh and processed markets. Other cultivars like 'Dholka,' 'Ruby,' 'IIHR Selection,' 'Jyoti' and 'Gul-E-Shah' exhibit unique traits such as high juice recovery, distinct aril colour and adaptation to specific climatic conditions.

The identification and characterization of these cultivars provide insights into their suitability for domestic and export markets, processing industries and breeding programs. This compilation will aid farmers, researchers and policymakers in selecting appropriate varieties to improve productivity and market competitiveness in pomegranate cultivation.

Keywords: pomegranate, productivity, high yield, climate conditions

Introduction

Pomegranate (*Punica granatum* L.) in India grown on area of 2,57,900 hectares producing 30,97,700 tons with an average yield of 12 tons per hectare. Maharashtra led all Indian states with 1,37,850 hectares under cultivation, producing 15,54,350 ton at an average productivity of 11.28 tons per hectare (Anonymous, 2024). Pomegranate is evergreen bush with spiny branches. The leaves are opposite, ovate and lanceolate. Flowers borne singly or in cluster on terminally or auxiliary position. Flowers having three s

ex forms viz., male, female and intermediate or hermaphrodite and three flowering season/bahar (Ambe or Ambia, Mrig and Hastha). In 2003 Bhagwa Pomegranate variety revolutionized the pomegranate cultivation in India by opening the new horizons in the international market. National Research Center on Pomegranate in 2017 released biofortified pomegranate variety "Solapur Lal.

1. Bhagwa

This variety holds popularity and having the largest area under it even after 22 years. Bhagwa variety having different local names such as Shendri or Sinduri, Asthagandh, Kesar, Jai Maharashtra, Red Diana and Mastani. This variety released by Mahatma Phule Krishi Vidyapeeth, Rahuri for cultivation in 2004, developed from F2 population of the cross Ganesh x Gul-E-Shah Red by selection.

The flowers are dark saffron colour. Fruits are attractive smooth glossy red thick rind whereas arils are blood red in colour, soft seeds hence fruits develop very high demand both in domestic and export market. At ambient conditions keeping quality of fruits is 15-20 days. fruits mature within 180-190 days with 30-35 kg fruit/tree. Average weight of fruit is 405.97 g. with having 15.38 per cent T.S.S. and

0.37 per cent acidity.

There is a high demand for this variety for export markets particularly in United Kingdom, Holland, other European and Gulf countries etc. (Saroj and Sharma, 2017).

2. Sharad King

In 2009, in an orchard of 'Bhagawa' progressive farmer Mr. Vitthal Pundlikarao Bhosale from Jalgaon taluk, Chhatrapati Sambhajnagar, Maharashtra noticed mother plant of 'Sharad King' with bigger size of fruit and thicker rind. ICAR-NRC on Pomegranate, Solapur has evaluated the newly identified pomegranate variety 'Sharad King' at Tupewadi, Chhatrapati Sambhajnagar, Maharashtra, India. This variety is now popular in Maharashtra and as per the demand from farmers for planting material for cultivation soon it will take place of Bhagawa. Till 2023-24, 125 pomegranate growers cultivated this variety with one lakh planting material but the recent data on cultivated area is not available.

This variety found promising for both table and processing purposes with large fruit size, attractive red colour thick rind, more number of arils per fruit, sweet red arils, soft seeds, better shelf life. 'Sharad King' matures in about 160-170 days.

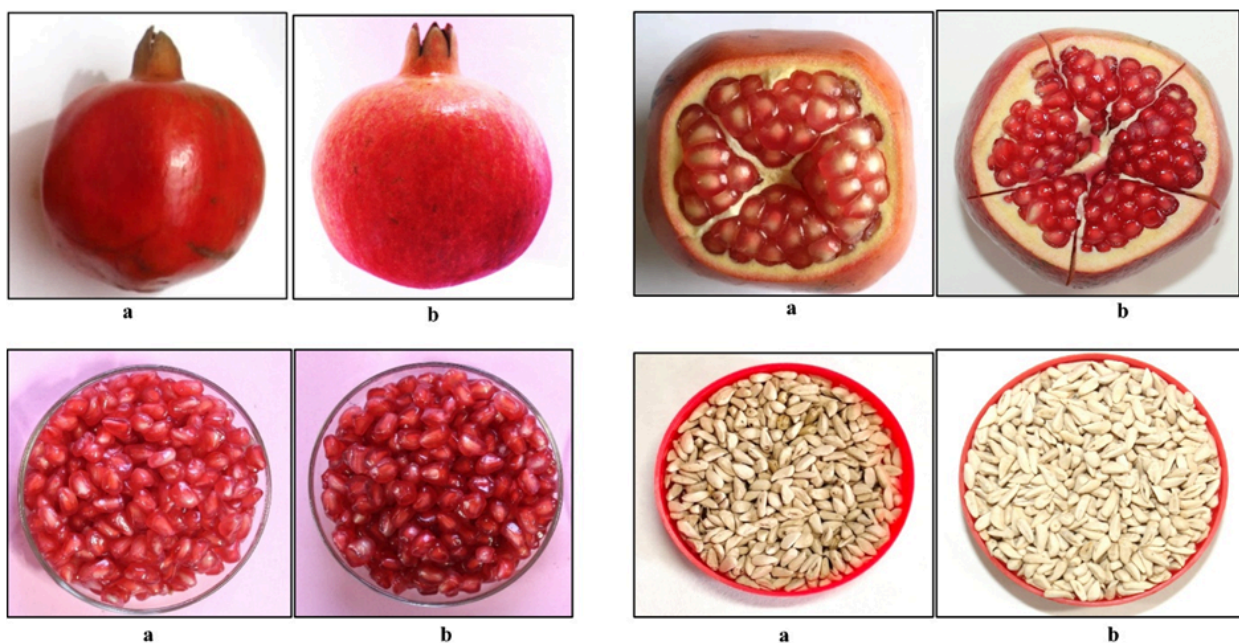


Fig. 1. Morphological features of variety Bhagwa (a) and Sharad King (b)

3. Solapur Lal

First biofortified pomegranate variety developed by ICAR-NRC on Pomegranate, Solapur from Bhagwa × [(Ganesh × Nana) × Daru].

This variety mature 15-20 days earlier than Bhagwa. Average yield of 35-39 kg/tree with 130-140 no. of fruits/tree. Fruit size slightly lesser than Bhagwa while TSS 17.5-17.7° Brix which is more than Bhagwa. Vitamin-C, anthocyanins, iron and zinc significantly higher than Bhagwa. However, seed are harder than Bhagwa and it is released for Processing (Juice, value addition) and table purpose (ICAR-NRCP, 2024).

This variety helps farmer to grow pomegranate where problem in defoliation before taking bahar.



Fig. 2. Solapur Lal

4 . Ganesh

This variety also known as GBG-I and selected by Dr. Cheema in 1936. This variety is a soft seeded selection from seedlings of hard seeded Alandi. While, in 1970, it was renamed as 'Ganesh'. In Maharashtra Ganesh variety mature within 145-155 days. Fruit is round, smooth, rind colour pinkish yellow to reddish yellow. Arils are sweet in taste with pink colour in winter months while whitish in warmer months. Fruits weighing between 225 to 250 gm, with 16° Brix T.S.S. having acidity of 0.3 per cent.

5.G-137

It was released in the year 1989 by Mahatma Phule Krishi Vidyapeeth Rahuri. This variety is a clonal selection from variety Ganesh. Fruit is reddish yellow colour, round and smooth, weighing 232-270 g, light

pink colour arils with sweet in taste. TSS observed to be 16.20°-17.4° Brix, acidity 0.42-0.49 per cent.

6 .Mridula

It was released in the year 1994 by Mahatma Phule Krishi Vidyapeeth, Rahuri. This variety having medium size fruits (300-350 g) with reddish brown skin colour. This variety has all the characters of the Ganesh variety except the arils are dark red in colour 15.6° Brix TSS. Variety is suitable for long distant market. The arils colour in 'Ambe' bahar and 'Mrig' bahar is dark red in colour whereas pink during the 'Hasta' bahar.

7 .Phule Arakta

It was released in the year 2003 by Mahatma Phule Krishi Vidyapeeth, Rahuri. It is selection from F-2 progeny of Ganesh × Gul-e-Shah Red. This variety is heavy yielder with maturity within 130-140 days. Fruit is round, smooth and glossy, dark brick red in colour, arils are sweet in taste with dark red in colour. Medium size fruits (182.70 g) with rind thickness 0.24 cm. Fruits are juicier (63.71 %) with TSS 15.89° Brix and 0.45 per cent acidity. Fruit yield 29.83 kg/tree, with 78-90 number of fruits per tree.

8 .Phule Bhagwa Super

It was released in the year 2013 by Mahatma Phule Krishi Vidyapeeth, Rahuri. Fruits are medium in size (271- 299 g). Fruit surface is glossy, having attractive dark saffron rind colour, rind thickness is 0.35 cm and seeds are soft. This variety mature in 176.60 days. Fruit yield 30.6 kg/tree.

9. Phule Anardana

It was released in the year 2015 by Mahatma Phule Krishi Vidyapeeth, Rahuri. Medium sized fruits with attractive red surface, more acidic, arils are bold and blood red in colour, highly suited for preparation of anardana. Anardana recovery is 13.95 per cent and yield is about 1.58 kg/plant anardana.

10 .Dholka

It is a popular variety of Gujarat. Fruits large, rind yellowish red with pinkish white aril. TSS 15.41° Brix. Mature within 165 to 175 days.

11 .Ruby

This variety is developed by IIHR, Bangalore. The mature fruits resemble variety Ganesh with respect to shape and size. However, the rind of this variety is reddish brown with green streaks containing red bold

arils. The fruit weighs 270 g.

12. IIHR selection

It is a selection from the open pollinated seedlings. Mean fruit weight is 255 g with soft seeds.

13. Jyoti

This variety developed by UAS Bengaluru a selection from Bassein Seedless and Dholka. Trees are dwarf, fruits remain small in size. Average fruit weight is 200 g. Fruits having red colour rind with pinkish-reddish coloured arils. The juice has TSS 15° Brix with very low acidity.

14. Amlidana

This variety was developed in 1999 by IIHR, Bengaluru from Ganesh x Nana. Plants are dwarf. Medium size fruits, highly acidic arils (4.8 %). Suitable for Anardana.

15. Nana

A dwarf variety of pomegranate good for bonsai and ornamental.



Fig. 3.Nana

16. Gul-E-Shah

Fruits are round, smooth and pink in colour with reddish tinge. Arils are pink with acidic in taste. Fruit weighing from 175-182 g. TSS of the juice observed to be 13.2-14.0° Brix.

Conclusion

Pomegranate cultivation in India has seen significant advancements with the development of various high yielding and commercially viable varieties. Among them, Sharad King is a promising new variety with superior fruit quality and better shelf life.

Bhagwa remains the most widely cultivated variety, favoured for both domestic and export markets due to its attractive fruit characteristics. Biofortified varieties like Solapur Lal offer nutritional advantages and early maturity, benefiting farmers facing defoliation issues. Traditional varieties such as Ganesh and its selections like G-137 and Mridula continue to be popular for their sweetness and adaptability. Additionally, specialized varieties like Phule Anardana and Amlidana cater to processing industries, particularly for anardana production. Dwarf varieties such as Nana and Jyoti provide options for ornamental and small scale cultivation.

The continuous research and development of new pomegranate varieties by institutions like ICAR-NRCP, Solapur and Mahatma Phule Krishi Vidyapeeth, Rahuri, have significantly contributed to improving yield, quality and market potential. With increasing global demand, these varieties offer farmers diverse options suited for fresh consumption, processing and export, ensuring sustained growth in the pomegranate industry.

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