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High-yielding varieties of pomegranate

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Abstract

Pomegranate (*Punica granatum L.*) is emerging as one of the important fruits of semiarid and rainfed areas. Its cultivation is possible even on marginal degraded lands earlier found as unsuitable for growing crop. Apart from this, its ability to withstand salinity in soil and water to some extent made this crop to emerge as a hardy fruit crop. The present paper found that suitable high-yielding varieties of the crop widely cultivated by Afghanistan, Arabian Peninsula, Bulgaria, China, Cyprus, Greece, India, Iran, Israel, Malta, Mexico, Spain, Tunisia, USA and Yugoslavia in the world according to the agro-climatic conditions of crop.

Keywords: High-Yielding, Varieties, Pomegranate

1. Introduction

The pomegranate is an important and favourite table fruit. To highlight its importance it was chosen as a symbol of the 18th International Horticultural Congress held during 1970, showing it in a basket. It is commercially grown for its sweet-acidic fruits used for dessert purposes. It is very much liked for its cool refreshing juice and also valued for its medicinal properties. Its popularity is also due to ornamental characters of the tree, especially when bearing bright red flowers during most of the seasons.

Pomegranate is an ancient fruit originated in Persia, Afghanistan and Baluchistan (De Candolle, 1967)^[3]. It is also thought to be indigenous to the region of Iran, where it was first cultivated about 2000 B. C. ago, according to Everein off (1949)^[1], but it spread to Mediterranean countries at a very early date. The pomegranate is a fruit of great antiquity and is known to have been cultivated in the Middle East more than 5000 years ago. The wild or semi-wild pomegranate still exists in the north of Syria, in Gil end and on Mount Carmel. According to De Candolle, Vavilov and others, the pomegranate originated in South-west Asia, probably in Iran and some adjoining countries.

Composition of the edible portion (68%) of pomegranate is as below. Moisture 78% protein 1.6%, fat 0.1%, fibre 5.1%, carbohydrates 14.5%, mineral matter 0.7%, calcium 10 mg/100 mg, magnesium 12 mg/100 g, phosphors 70 mg/100 g, iron 0.3 mg/ 100 g, oxalic acid 14 mg/100 g, thiamine 0.06 mg/100 g, riboflavin 0.10 mg/ 100 g, nicotinic acid 0.30 mg / 100 g, vitamin C 14 mg/ 100 g and calorific value 65 mg/ 100 g.

The fruit juice easily ferments and may be used for the production of wine. The juice of wild pomegranate in Azerbaijan (USSR) is used in the manufacture of citric acid and sodium citrate for medicinal purpose.

The bark of the stem and root contain a number of alkaloid belonging to the pyridine group. It is also employed in the therapeutics in dysentery and diarrheas.

El-Shaaraway and Nahapetian (1983)^[8] reported that pomegranate seed contain about 15% oil with a high refractive index, iodine value and very low melting point. The oil has a potential for industrial use. The seeds also contain 1.09 g oestrone/100g of seeds and 0.036 mg coumestrol (a non-steroidal oestrogen)/100 g of seeds (Moneamet *et al.*, 1988)^[2].

Pomegranate grows well under semi-arid conditions. It thrives best under hot dry summer and cold winter provided irrigation facilities are available. The tree requires hot and dry climate during fruit development and ripening. It cannot produce sweet fruits unless the temperature is high for a sufficiently long period. Humid climate lowers the quality of fruits and increases incidence of fungal diseases. The pomegranate tree is deciduous in areas of

low winter temperature and an evergreen or partially deciduous in tropical and subtropical conditions. It can tolerate frost to a considerable extent in dormant stage, but is injured at temperature below -11° C. Orchards can be established up to an altitude of 500m.

Pomegranate can be grown on a wide range of soils. It prefers a well-drained, sandy loam to deep loamy or alluvial soils. It can also be grown on light soils. Quality and colour development in light soils is good but poor in heavy soils. It tolerates salinity up to 9.00 EC/mm and sodicity 6.78 ESP.

2. Need for the study

The geographical boundary of the study area is restricted to the world. The topical scope focuses on the High-Yielding varieties of Pomegranate. It is very important to study the high-yielding varieties of the pomegranate for the purpose of increasing the area, production and yield by suitable varieties of the crop with respect to various countries in the world.

3. Objective

- To study the high-yielding varieties of pomegranate in the world.

4. Source of Data

For evaluating the specific objective of the study, necessary data was obtained from secondary data. Secondary data was collected from various published sources like books, articles, journals and reports.

5. Results and Discussion

The pomegranate varieties ruling in different countries are discussed as follows:

Afghanistan

- Kandhar large white* - Extra-large yellowish sweet fruit, early ripening.
- Kandharlargered* – Extra-large fruit with sweet flavor, mid-season ripening. This is one of the best varieties in the world of Pomegranate.
- Kandhar large black* – Dark purple (looks black), extra-large fruit, sweet tart fruit.

Arabian Peninsula

- Roman Chouall* - Medium dark, almost dark fruit, sweet tart flavor, grown in Iraq.
- Mellassi* - Large red fruit with soft seeds and sweet taste.
- Cherabani* - Medium red fruit, sour taste and the syrup is used for preparing beverages.
- Selimi* - Large red fruit with sweet tart taste and small seed.
- Aswar (Black), Ahmar (Red) and Halwa also grown.

Bulgaria

- UzbekskiiSaldikii (Uzbek sweet)* – sweet fruit.
- NikiskiiRanii* – Sweet tart fruit, early ripening and to produce.

China

- Cin-Kwene-liu-Cin-pehin e-liu* - are some of the varieties.
- Echen* - large thin skinned (paper shell) fruit, sweet taste.

Cyprus

- Zaitiki* - Large, sweet fruit with soft seed.

Greece

- Patrasacide* - Extra-large, red fruit with very sour taste, good for syrup.
- PatrasDouce* - Large red, sweet fruit, productive.

India

- Ganesh* – The number one Pomegranate in India, large yellowish red, with soft seeds.
- Mridula* – A hybrid of Ganesh and a red Russian variety, pink red skin with soft seeds, sweet taste, early mature in 150 days.
- Bhagwa* – Sweet, soft seeded red fruit suitable for export.
- Muscat* – The rind is yellowish pink, grains are medium hard.
- Bassein seedless* – The outer skin color is red, seeds soft.
- Jodhpur Red* – Grown in Rajasthan, rind is yellowish in color with whitish pink arils.
- Jalore seedless* – Grown in Rajasthan the rind is reddish. Arils are soft, pink colored.
- Dholka*– Grown in Gujarat, arils pink red colored.
- Joyti* – Released from UAS, Bangalore, red fruit with soft arils.
- RCR-1*- Released from UAS, Dharwad. Fruit red colored soft arils.
- G-137* – Open pollinated variety from Ganesh, released by MPKV, Rahuri.
- Yercaud Selection* - CO-1-Released by TNAU, Coimbatore having soft seeds.
- Ruby red* – It is a multiple hybrid developed at IIHR, Bangalore, rind red, and seeds soft. Fruit size small.

Iran

- Shahvar (Saveh)* – Red skin, very large fruit.

Israel

- Wonderful* - The sweet tart variety from USA. High production with medium hard seeds.
- Asmar (Black)* - Dark purple almost black fruit, white, hard seeds.
- Ras-el-Bghil* - Very large fruits with normal seed
- Red Lufani* - Red, large with normal seeds, good production.
- Malissi* - Nearly seedless (called seedless) early ripening.

Italy

- Dolce* - Alappi, Dolce Nostrale.

Malta

- Blanca* - Medium whitish fruit, seeds are undeveloped (nearly seedless), aril pink in color, productive.
- Dulce Colorada*- Large red color, red arils, soft seeded, sweet, productive.
- Gorda de Jativa* - Large red fruit, red aril, sweet, productive.
- Pignoncea* - Large red fruit, small seed, sweet.
- Cagin* - Large red fruit, very hard small seed, sour.
- Quiseppe* - Large, red, sweet fruits with high production.

Mexico

- Granada de china and Granada Agria are grown.

Spain

- *Molar* - The best seedling pomegranate in Spain, sweet good red fruit, productive.
- *Valencia* -An early ripening sweet variety with moderate production

Tunisia

- *Gabsi* – Large yellowish fruit, with sweet taste.
- *Tunsi* – Medium red fruit, dark red aril with sweet tart taste.
- *Chelfi* – Medium red, seedless variety.
- *Djebeli* – Very large red fruit, late ripening sweet variety with very small seed.

Turkey

- *Hicaznar* - A large fruited, having good productivity.
- *AK-anar* -Yellowish white juice and light seeds.
- *Kizil anar* - Large red fruit with sweet tart flavor, high production.
- United States of America
- *Granada* – Very early, red medium a bud sprout of wonderful.
- *Early foothill* – Large fruit similar to wonderful, ripens after Granada, low acid and high sugar.
- *Early wonderful* – Large, early.
- *Wonderful* – Bright red variety with sweet tart. This is the main commercial variety of USA. Very productive in San Jaquin Valley of California. It is frost sensitive variety.

United States of America

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Yugoslavia

- *SlatkiBarshi Nar* - Early ripening, large, yellowish green fruit with sweet taste.

6. Conclusion

The pomegranate is one of the ancient and highly praised favourite fruit. It is commercially grown through different high-yielding varieties which are suitable for the agro-climatic conditions of the nations in the world. For its sweet-acidic fruits, which provide a cool refreshing juice and is valued from its medicinal properties. Its popularity is also due to the ornamental nature of the plant which bears bright or very attractive flowers.

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