Pomegranate, a fruit growing species of major interest in Greece

Hoza D.1, Plisiotis N.1

1University of Agriculture Science and Veterinary Medicine, Faculty of Horticulture
*Corresponding author. Email: hozadorel@yahoo.com

Abstract  Pomegranate is a fruit growing species that may represents an alternative of the specimen in Greece and other Mediterranean countries, but also in Romania, in areas with microclimate of Mediterranean influence. The rusticity of the species, the low requirements regarding environmental conditions and the continuous increase in the demand of fruits for consumption and industrialization are strong points in favor of expanding the culture. Easy multiplication possibilities contribute to the formation of nursery and by capitalizing the fields that are uncharacteristic for other species, areas large enough to expand this culture can be found.

Key words  pomegranate, new varieties

Pomegranate (Punica granatum) is a millenary fruit growing species, originating from Iran, which populates vast areas in the Mediterranean Basin, North Africa, Asia, America and Australia. Portions of branches, fruits and seeds, flower remains, used in funeral decorations, and several decorating and household objects, having fruit aspect, that were discovered in the pharaoh tombs in Ghizeh, Karnak and Tel-El-Amarna, testify the age of this culture.

Pomegranate fruits are appreciated for consumption because they are rich in sugars (8-20%), organic acids, fibers (0.5-0.75 mg%), proteins (0.5-0.95%), vitamins B, vitamin C, panthotenic acid, mineral ions etc. The fruits are consumed fresh, in salads or as non-alcohol drinks. Fruit consumption, in many forms, has different positive effects of the human body, such as late ageing, it is efficient against Alzheimer disease, prevents cancer, heart diseases, and relieves arthritis. Pomegranate juice keeps blood pressure in the normal limits, prevents and relieves prostate cancer.

Tannin is extracted from pomegranate peel, vegetal oil from seeds and from the flowers red and purple dyes can be obtained.

The wood is hard, yellow colored, easy to polish and is used especially in producing handicraft ware.

Technological aspects

In Greece, since old times, pomegranate is known and cultivated at family level. Fruits have been used at different festive events: weddings, New Year etc., when tradition demands smashing a pomegranate fruit on the ground because it is considered to be the fruit that bring welfare, fertility and happiness. Even though it is an ancient species, the area occupied in Greece by pomegranate plantations is small; according to 2005 statistics, there were approximately 100 ha of industrial plantations, from which a production of approximately 3000 t is obtained. Own production is not enough for consumption and considerable quantities of fruits are imported from Turkey and Spain. Not until recently, fruits were used almost exclusively for family consumption, for cooking different dishes or pastry products. Together with the development of the manufacturing industry, in recent years, the tendency is to highly increase the areas cultivated with pomegranate, and the production obtained will get to the level of hundreds of thousands of tones.

Some pomegranate varieties present flowers with a fascinating color and that is why they are used as ornamentals to decorate parks.

The plants grow as bush, with 4-6 strains no taller than 4-5 m, they rarely get as tall as 7-8 m. Ramifications form on each strain, some more vigorous and some thinner and shaggier, grouped by 2-3.

The flowers form on the branch tips, are larger or smaller depending on the variety and their color is pink, red or purple.

The fruits are big (200-800 g), spherical or flattened spherical, their color varies from fallow to raspberry red and present a large, persistent calyx. The edible part is represented by seeds, which are covered in a layer of juicy pulp. The number of seeds depends generally on the variety and is circa 600 seeds/fruit, with a deviation of 340-800 seeds/fruit. From some local varieties seeds without pulp were exclusively capitalized as condiments known as “anarda”.
The most spread varieties in Greece cultures are Politiki, Kararelos, Claud, Francis, Musket Red, Wanderfull, Meles melli, Bala Mursal etc.

Pomegranate prefers fertile soils, light and deep, but it adapts easily and fructifies normally also on sandy, limestone and rocky soils on the sunny slopes. It tolerates salty soils or with excess humidity, in appropriate irrigation and fertilization conditions.

Pomegranate multiplies easily through seedling, grafting and cutting.

The slips have a length of 25-30 cm and are obtained from annual thick branches of 0,5 m, are planted in vertical position, on graded and loose terrains, at a distance of 90-100/15-20 cm. After the planting, the base of the slips is covered with soil.

During summer, the soil is maintained without weeds, is irrigated and additionally fertilized with nitrogen.

In orchards, the planting is made at a distance of 3 x 3 m or 4 x 4 m. It is recommended to fertilize at the hole with organic fertilizers, especially on poor soils.

The plants are conducted as low bushes, fan or proper tree. The bush form is most spread because it allows renewing the sprains as they drain.

For maintaining the culture, 4-5 superficial soil works, 2-3 irrigations, fertilization on phases and 4-5 treatments against the fruit butterfly (Virochola isocrates) and against the diseases produced by some Cercospora and Gleosporium species are applied. Regardless of the level of soil fertility, it is recommended to apply NPK fertilization in mature plantations, the ratio being 6:8:12 or 11:15:15. In young plantations, the fertilization is applied locally, under the tree, starting with 200 g of N and 150 g of P per plant.

At the end of the winter or in early spring, every year fructification cuts are made, which consist especially in maintaining lightening conditions obtained through the removal of the branches from inside the crown, of the dried, broken or sick ones and shortening the vigorous sprains in order to maintain the symmetry of the crown.

The vigorous shoots are shortened by 1/3-1/4 of length, and the weaker ones, that have flowers, are removed in a proportion of 40-50%, with 2-3 weeks before blooming.

Six months after the blooming, the fruits reach the harvesting maturity, can be harvested and let on the plant to stage the harvesting and capitalization on a longer period of time. The fruits are removed from the branches by cutting with scissors, as they are big and hard to remove. It is important to know that fruits do not continue their maturation after being harvested.

The harvested pomegranates are transported in baskets or containers to the sorting hall, after being sorted there are sent to the storage places and processed or capitalized depending on the demand. Fruits can be stored in warehouses at a temperature of 1-2°C and a humidity of 80-85%.

In the Mediterranean Basin, pomegranates are harvested in September - October, when the peel and juice acquire the variety characteristics. The fruit production is around 30 t/ha.

References