

# Unit E: Fruit and Nut Production

## Lesson 6: **Production of Pomegranate**

# Terms

- **Aril**

*I. Punica granatum* is commonly referred to as pomegranate.

A. The pomegranate originated in areas around Afghanistan and the Himalayas in northern India.

1. Pomegranates have been cultivated and naturalized over the whole Mediterranean region since ancient times.
2. It is widely cultivated throughout India and the drier parts of southeast Asia, Malaya, the East Indies and tropical Africa.

3. The primary commercial growing regions of the world are the Middle East, India and surrounding countries, and southern Europe.
4. The fruit can be eaten out of hand
  - a. Pomegranate fruits are most often consumed as juice and can be juiced in several ways.
  - b. The juice can be used in a variety of ways: as a fresh juice, to make jellies, sorbets or cold or hot sauces as well as to flavor desserts.
  - c. Pomegranate syrup is sold commercially as grenadine.
  - d. The juice can also be made into a wine.

II. Pomegranates prefer a semi-arid mild-temperate to subtropical climate and are naturally adapted to regions with cool winters and hot summers.

A. A humid climate adversely affects the formation of fruit.

1. The tree can be severely injured by temperatures below  $-11^{\circ}\text{C}$ .
2. The tree adapts well to container culture and will sometimes fruit in a greenhouse.

B. The pomegranate is a rounded shrub or small tree that can grow to 6 to 9 meters, but more typically to 3.5 to 4.8 meters in height.

1. Dwarf varieties are also known.
2. Pomegranates are a deciduous tree, but can keep their leaves in some areas.
3. The trunk is covered by a red-brown bark which later becomes gray.
  - a. The branches are stiff, angular and often spiny.
  - b. There is a strong tendency to sucker from the base.



4. Pomegranates are also long-lived. There are specimens in Europe that are known to be over 200 years of age.
5. Pomegranates become less vigorous after about 15 years.
6. The pomegranate is self-pollinated as well as cross-pollinated by insects.
  - a. Cross-pollination increases the fruit set.
  - b. Wind pollination is insignificant.

C. Pomegranates are nearly round 6 to 12 cm wide fruit is crowned at the base by the calyx.

1. The skin is tough and leathery and usually yellow with pinks and deep reds.
2. The interior is separated by membranous walls into compartments packed with sacs filled with sweetly acid, juicy, red, pink or whitish pulp or **aril**.
  - a. In each sac there is one angular, soft or hard seed.



3. High temperatures are essential during the fruiting period to get the best flavor.
  - a. The pomegranate may begin to bear in 1 year after planting out, but 2-1/2 to 3 years is more common.
  - b. Under suitable conditions the fruit should mature some 5 to 7 months after bloom.

- D. Pomegranates should be placed in the sunniest, warmest part of the yard or orchard for the best fruit, although they will grow and flower in part shade.
1. The pomegranate does best in well-drained ordinary soil, but also thrives on calcareous or acidic loam as well as rock strewn gravel.
  2. Once established, pomegranates can take considerable drought, but for good fruit production they must be irrigated.
    - a. To establish new plants they should be watered every 2 to 4 weeks during the dry season.
    - b. The plants are tolerant of moderately saline water and soil conditions.

3. The trees can be given 56 to 113 gram applications of a nitrogen fertilizer the first two springs, but test the soil to see if any other nutrients are required.
  - a. After that very little fertilizer is needed, although the plants respond to an annual mulch of rotted manure or other compost.

4. Plants should be cut back when they are about 60 cm high.
  - a. From this point allow 4 or 5 shoots to develop, which should be evenly distributed around the stem to keep the plant well balanced.
  - b. These should start about 30 cm from the ground, giving a short but well-defined trunk.
  - c. Any shoots which appear above or below should be removed as should any suckers.

- d. Since the fruits are borne only at the tips of new growth, it is recommended that for the first 3 years the branches be carefully shortened to encourage the maximum number of new shoots on all sides, prevent straggly development and achieve a strong well framed plant.
- e. After the 3rd year, only suckers and dead branches are removed.

5. The pomegranate can be raised from seed but may not exhibit the same characteristics as the parents.
  - a. Cuttings root easily and plants from them bear fruit after about 3 years.
  - b. 30 to 50 centimeters long cuttings should be taken in winter from mature, one-year old wood.
  - c. The leaves should be removed and the cuttings treated with rooting hormone and inserted about two-thirds their length into the soil or into some other warm rooting medium.
  - d. Plants can also be air-layered but grafting is seldom successful.

6. Pomegranates are relatively free of most pests and diseases.
  - a. Minor problems are leaf and fruit spot and foliar damage by white flies, thrips, and scale insects.

III. The fruits are ripe when they have developed a distinctive color and make a metallic sound when tapped.

- A. The fruits must be picked before over maturity when they tend to crack open, particularly when rained on.
1. The pomegranate is equal to the apple in having a long storage life.
  2. It is best maintained at a temperature of 0 to 5 C. and can be kept for a period of 7 months within this temperature range and at 80 to 85% relative humidity without shrinking or spoiling.
  3. The fruits improve in storage, becoming juicier and more flavorful.

IV. There are many native varieties of pomegranate in Afghanistan.

A. Sor Kandahari is found around Kandahar.

1. It is circular and red in color with a sour taste.
2. It has an average weight of about 233 grams per fruit.

B. Mykosh is found in Kapisa.

1. Mykosh has a brownish, circular protuberant shape, which means it bulges out at the sides.
2. It has a moderate taste which has a balance of sweet and sour and an average weight of 189 grams per fruit.

- C. Tashkorghani is found in Nangarhar and Balkh.
1. Tashkorghani pomegranates are circular and brownish and red in color.
  2. They are a sour fruit which average about 243 grams per fruit.
- D. Post ghasab is found in Samangan
1. The fruit is circular in shape and pink in color.
  2. It has a moderate taste and an average fruit weight of 257 grams.
- E. Khog Kandahari is found in Nangarhar and Kandahar.
1. It has a circular shape and a red and yellowish color.
  2. The fruit is sweet and weights about 234 grams.

# Review/Summary

- Where did *Punica granatum* originate?
- What are the uses of pomegranate?
- What growing conditions preferred by pomegranates?
- When should pomegranates be harvested?
- What are some common pomegranate varieties of Afghanistan?