

## The Pomegranate<sup>1</sup>

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- **Scientific Name:** *Punica granatum* L.
- • **Family:** Punicaceae

### ORIGIN AND HISTORY

Pomegranates are native to southeastern Europe and Asia and were grown in ancient Egypt, Babylon, India and Iran. Cultured extensively in Spain, pomegranates moved with missionaries into Mexico and California in the 16th century.

### CLIMATE

Pomegranates can be grown in tropical to warm temperate climates. However, the best quality pomegranate fruits are produced in regions with cool winters and hot, dry summers. Few areas are too hot and the pomegranate is more cold hardy (receives less damage) than citrus. Pomegranates vary in frost tolerance, but in some cases temperatures down to 10°F may not severely injure the plants. Several hundred hectares are cultivated in California and a small commercial industry existed in Florida during the 1800's.

### DESCRIPTION

**Tree.** Normally a dense, bushy, deciduous shrub, 2-4 m (6-12 ft.) tall, the plant has slender, somewhat thorny branches. It may be trained as a small tree reaching 7 m (20 ft.) in height. Pomegranate is an attractive ornamental.

**Leaves.** Pomegranate leaves are glossy, dark green, oblong to oval, 2.5-3 cm (1-1.25 in.) long. Leaves are arranged opposite or nearly so and clustered on short branchlets.

**Flowers.** Blooms are a flaming orange-red, 4-6 cm (1.5-2.5 in.) in diameter with crinkled petals and numerous stamens. Flowers are borne solitary or in small clusters angled towards the end of branchlets.

**Fruit.** Pomegranates are brownish-yellow to purplish-red berries 5 - 12 cm (2-5 in.) in diameter with a smooth, leathery skin. Fruits are spherical, somewhat flattened, with a persistent calyx. The

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calyx may be 1-6 cm (1.5-2.5 in.) long. Numerous seeds are each surrounded by a pink to purplish-red, juicy, subacid pulp (arils) which is the edible portion. The pulp is somewhat astringent. Pomegranates in North Florida mature from July to November, but may produce year round in South Florida.

## CULTIVARS

'Wonderful' is grown commercially in California, having been exported as cuttings from Florida. 'Purple Seed' and 'Spanish Ruby' are popular dooryard cultivars.

## PROPAGATION

Trees are easily propagated with winter from hardwood cuttings, 15-20 cm (6-8 in.) in length and pencil size or larger in diameter. Cuttings should be taken in February or March and placed vertically in soil with the top node exposed. Cuttings may be left in nursery rows for 1 to 2 years. Seed-propagated plants do not come true-to-type, but seeds will germinate in 45-60 days. Layering is also successful but more labor-intensive.

## SOILS

Pomegranates produce best on deep, heavy loams, but are adapted to many soil types from pure sand to heavy clay. Yields are usually low on sands, while fruit color is poor on clays. Growth on alkaline soils is poor. Optimum growth is associated with deep, fairly heavy, moist soils in the pH range of 5.5-7.0.

## IRRIGATION

Water requirements for pomegranate are about the same as for citrus--125-150 cm (50-60 in.) per year. Trees should be irrigated every 7-10 days in the absence of significant rainfall. Maintain adequate soil moisture in late summer and early fall to reduce potential fruit splitting. Pomegranates are tolerant of some flooding.

## PLANTING AND SPACING

Plant trees in early spring (February - March), avoiding late frost. Soil should be loosely worked and not too wet. When used as a hedge, plants are spaced 2-3 m (6-9 ft.) apart. Suckers will fill spaces and produce a compact hedge. Spacings of 5-6 m (15-18 ft.) between plants and rows are used for orchards and similar spacings should be maintained for dooryard trees.

## FERTILIZATION

Young trees should receive about 1 kg (2-2.5 lb.) of 8-8-8 (or similar) fertilizer in November and March. Mature trees require 2-3 kg (4.5-6.5 lb.) of a similar fertilizer at the same intervals. Excessive or late applications tend to delay fruit maturity and reduce color and quality.

## TRAINING AND PRUNING

Trees tend toward a bushy habit with many suckers arising from the root and crown area. Tree-type plants can be produced by allowing only one trunk to develop. Additional suckers should be removed frequently around main trunk(s). Prune to produce stocky, compact framework in the first 2 years of growth. Cut trees back to 60-75 cm (2-2.5 ft.) at planting and develop three to five symmetrically spaced scaffold limbs by pinching back new shoots, the lowest at least 20-25 cm (8-10 in.) from the ground. Shorten branches to 3/5 of their length during the winter following planting. Remove interfering branches and sprouts leaving two or three shoots per scaffold branch.

Light, annual pruning of established trees encourages production of good quality fruit. Remove dead or damaged wood during late winter months. Remove sprouts and suckers as they appear.

## SPECIAL CONSIDERATIONS

Pomegranate trees are self-fruitful. That is, they can pollinate themselves. Severe fruit drop during the plant's juvenile period (3-5 years) is not uncommon. Fruit drop is aggravated by practices favoring vegetative growth such as over-fertilization and excess irrigation. Avoid putting young trees under

conditions of stress. Fruit drop is less severe on mature trees than on younger trees.

## **PESTS**

The most destructive disease observed on trees in Florida causes a leaf blotch and fruit spot. Leaf symptoms include small, circular to angular, dark, reddish-brown to black areas, 4-5 mm (0.25 in.) in diameter. Infected leaves are pale green and fall prematurely. Fruit symptoms are small, conspicuous, dark brown spots, initially circular, becoming irregular. At least three sprays per year of neutral copper fungicide gives desired control. Scale mites occasionally attack the plant, but these do little damage. Sulfur dust applied in early June offers good mite control. Scale insects can be controlled by an application of 3% oil spray during the winter when the leaves are not present.