



# The **super** pomegranate

The pomegranate is one of the world's oldest cultivated fruits, it is believed to have been domesticated as many as 5 000 years ago and grew wild long before that. The pomegranate has a long history in the arid and semi-arid regions stretching from the Mediterranean east through Asia.

The pomegranate (*Punica granatum*) derives its name from the Middle French term *pome garnete*, which means "seeded apple". It is the fruit of a shrubby tree believed to have originated in Persia (modern-day Iran). Many ancient cultures considered it to be a symbol of fertility, health and prosperity.

Hundreds of new pomegranate beverages enter the international market each year. Product Scan Online, a database of new products, reports that around 350 new pomegranate beverages were introduced in 2006 alone.

Pomegranates are currently ranked 18th in the world in terms of fruit consumed annually. The

world's top producer is India, which specialises in the Bhagwa Arakta Ruby variety. Other countries noted for their pomegranate production, are Iran, the USA, Turkey, Spain and Israel.

## **About the pomegranate**

The round fruit, which has a spiky, flared crown, can be as small as an orange or as large as a grapefruit, depending on variety. Pomegranates have shiny, leathery skin, which can be anything from deep brick red to yellow.

Inside, the fruit consists of around 800 crunchy seeds surrounded by juice sacs, called arils, which are suspended in membranes. According to sources, there are exactly 840 arils in a pomegranate. This is true for at least three different varieties.

Arils can be a vivid ruby red, pale pink or even white, depending on the particular variety. Pomegranates preferred for eating contain large arils filled with a sweet, refreshing and slightly tart juice. The varieties differ in terms of sweetness

and juice-to-seed ratio. Some can be extremely astringent or even sour. Seedless and soft-seeded varieties exist as well.

Arils, which burst open when bitten, can be eaten as they are used in other preparations. Used for both their flavour and colour, they make lovely additions to fruit salads; a great topping for yoghurt, cereal, mixed salads and tarts; and is a satisfying garnish for meats, fish, dips, and desserts.

Pomegranate juice is drunk as it is, or used to make pomegranate syrup, molasses, sorbet and jelly. It can also be fermented into a kind of wine. The juice is cooked with walnuts and poultry to make a traditional Persian stew called *fesenjan*.

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Modern consumers have embraced pomegranate juice in recent years. Sensing this growing demand, more and more companies have introduced pomegranate juices into the market. Brand after brand have proliferated to meet consumers’ desire for healthy, high anti-oxidant food.

### Health benefits

Recent studies suggest that pomegranate juice may lower cholesterol, improve blood flow, aid in erectile function, and even slow the growth of prostate cancer. According to Oded Shtemer, chief executive officer of Israel-based processing equipment company, Hefestus, the pomegranate leads the superfruit category due to the fact that it is high in anti-oxidants.

The European Union, according to Shtemer, imports 27 000 tons of pomegranates annually and the forecast is that consumption will have doubled by 2010.

According to a recent study published in the *Journal of Agriculture and Food Chemistry*,

pomegranate juice contains higher and more potent polyphenol (antioxidant) levels than any other beverage, including red wine, concord grape juice, and even other superfoods such as blueberry and açai berry. It also boasts anti-carcinogenic properties.



### Processing pomegranates

One of the main issues that prevent many existing fruit processors from including pomegranates in their product line-up, is the fact that the fruit is expensive, with delicate and sensitive arils which make for an intricate processing regime. Hefestus recently introduced a new production line which aims to cut down significantly on pomegranate production overheads.

The production line automates the separation of the peel from the arils, and wraps them in MAP-packaging for long-lasting shelf life. This process saves a lot of time and is, according to Shtemer, much more cost-effective than manual separation. Washing of the fruit is done at room temperature and no curing or rinsing in hot water, which can potentially damage the quality of the fruit, is done. In addition, the rinsing tank consists of 92 litres of water that gets recycled in the production process.

Shtemer says the new technology can also serve food producers creating products that contain pomegranate, such as dressings and jams, or those who require arils for juice extraction.

### Tips for producers

**Climate and soil:** Pomegranates are said to favour Mediterranean type climates, but are grown quite successfully in a variety of climates. The fruit is tolerant of many soil conditions, but grows best in sandy to deep loamy or alluvial soils. The trees will tolerate a pH of between 6,5 and 7,5 and will stand salinity levels of up to 4,5 dS/m.

**Irrigation:** Trees are also tolerant of drought conditions, but require irrigation for optimum yields. Regular and sufficient irrigation is essential to avoid fruit from cracking. Fruit can crack due to calcium, boron and potassium deficiencies. Certain cultivars are more prone to cracking than others.

**Harvesting:** The first fruits are harvested in the third year, when approximately 50 to 60 fruit per tree are allowed to mature. In the fourth year approximately 80 fruits are allowed to mature, rising to 100 in the fifth year and between 120 and 150 in the sixth year.

**Maturity:** Pomegranates are non-climateric – they are picked ripe and will not ripen any further. The fruit is ripe when the “calyx” at the distal end

of the fruit closes and the skin indents slightly. It makes a metallic “crack” sound when tapped. Fruit is usually harvested every six to seven days over a 24- to 28-day period.

**Packaging:** Care should be taken while picking and handling the fruit. The fruit is usually graded according to weight and packed in a single layer in an open lid box. Quality is measured by the amount of cracks, cuts, bruises, sun-scalding and decay of the fruit. The skin colour and smoothness is also taken into consideration and flavour is judged on sugar/acid balance.

**Storage:** Whole pomegranates will keep at room temperature, away from direct sunlight, for several days, but should go the market or processor within a day of picking.

### For the consumer

In the home, pomegranates can be sealed in a plastic bag and refrigerated for up to three months. When buying pomegranates, consumers should select ones that are heavy for their size, with thin, tough, unbroken skin. **M&J**



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