

# Peaches and Nectarines

## *Prunus persica*

In Australia we celebrate Christmas and New Year during the summer months, and this allows us to enjoy a plethora of fruits, from peaches, apricots, plums and cherries that we associate with the Northern Hemisphere to exotic fruits such as mangoes, pawpaws, pineapples, passionfruit, lychees and rambutan from the tropics. Peaches are always popular. Peaches (*Prunus persica*) belong in the Rose family (Rosaceae) which includes many species of major economic importance such as apples, apricots, pears, raspberries, strawberries and almonds.

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The scientific name *Prunus persica*, literally means *Persian Peach*, but like apples, they originate from the Tarim Basin of far north-western China, not Persia (which we now know as Iran). Earlier reports indicated that peaches were domesticated about 4,000 to 5000 years ago, but more recent studies indicate that this might extend as far back as 7000 to 8000 BP. Like so many other treasures from China, peaches were carried via the Silk road to Persia, introduced to Rome in the first century BC, and then distributed throughout the Roman Empire.



Origin of Peaches – in the Tarim Basin of far north-western China

Surprisingly, **nectarines** are considered to be the same species as peaches, both classified as *Prunus persica*, but nectarines have smooth-skins rather than the fuzzy skins typical of peaches. Nectarines



appeared later than peaches on the world stage: they have been known in the oases of the Tarim Basin of China for over 2000 years and along the trade routes of the Silk Road through Central Asia and the Caucasus. Their introduction to Europe is not well documented and the earliest accounts appear to be their description by European botanists at the end of the Renaissance (15<sup>th</sup> and 16<sup>th</sup> Centuries).

The difference between peaches and nectarines is the *fuzziness* of peach skins compared to the smooth skins of nectarines. Hair-like appendages known as *trichomes* are responsible for the *fuzz*. In the natural environment, trichomes (fuzz) can be important in providing protection against various biotic and abiotic stresses. A mutation in a single gene, the *fuzzy gene*, (PpeMYB25), is considered to be responsible for the difference between peaches and nectarines. It carries a mutation that blocks the fruit from producing trichomes. Smooth-skinned nectarines can appeal to those who don't like the fuzzy feel of peach skins, but can also be important for those who have the potentially dangerous *oral allergy syndrome* as the fuzz (trichomes) produce two proteins that trigger the allergy.



Peaches have only eight pairs of chromosomes, less than half those of apples (17), so breeding better peaches is made easier for geneticists. For example, peaches have either one or two copies of the **dominant** gene for *fuzziness*, whereas all nectarines have two **recessive** genes and their skins are smooth.

Moreover, peaches can be either freestone or



White Clingstone Peach  
Photo: Fir0002/Flagstaffotos

clingstone. Freestone peaches have flesh that softens as it ripens and falls away easily from the stone; clingstone peaches have firm flesh preferred for processing (canning). Again, this is a simple matter of genetics. A gene coding for an enzyme, endopolygalacturonase, controls the softening of the fruit and

specifically whether the flesh falls away from the stone (*freestone*) or not (*clingstone*).

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