



Desmond R. Layne

Stone Fruit

Chinese Peaches: Past And Present

DID you know that 桃子 “Tao zi” is Pinyin for the Chinese characters meaning “peach fruit”? Peaches originate in China, where they are one of the most ancient domesticated fruits, with nearly 4000 years of cultivation.

Vast genetic diversity exists in China where peach and its related species grow in provinces ranging from the warm subtropical south to the cold and dry north. In the 1980s a Chinese fruit survey team found a peach tree in Tibet that had a 30 foot circumference, was 65 feet tall, and was estimated to be 1000 years old!

Efforts at domestication and improved culture of peaches have been documented over the last 2500 years. In an encyclopedia written in 500 B.C., it was noted that peach trees require good soils and respond to high levels of fertilization. Selection of superior peach cultivars was recorded as early as 100 B.C. and high-density plantings (22 feet by 6 feet) were described in the first century A.D. By the middle of the sixth century A.D., Chinese farmers well understood the need for seed stratification to ensure good germination, the burning of straw or manure for frost protection, and the use of burning torches in the orchard during the Chinese New Year to reduce insect damage.

In an article written in 1081 A.D., more than 30 peach cultivars were described including the flat, white, golden, smooth and waxy skin (nectarine), and honey peach. The vast genetic diversity of peach and related *Prunus* species present in China may provide useful genes for breeding and/or genetic engineering to develop varieties/ rootstocks with enhanced tolerance or resistance to pests and diseases, dwarfness, improved fruit size, quality and nutritional value, improved postharvest shelf life, etc. Genetic diversity is being preserved at three na-

tional germplasm repositories (gene banks) in Beijing, Zhengzhou, and Nanjing where more than 1000 peach accessions currently exist. These repositories house active breeding and germplasm evaluation programs. A 2001 peach monograph described 495 registered peach cultivars in China.

Back To The Future

China currently boasts 63% of the total peach acreage (3,000,000 acres) and 32% of the total peach production (4.4 million tons) of the entire world (UN-FAO, 2003 data). However, most of this production is on small family-based farms that often lack the efficiency of highly organized and industrialized western operations with large centralized packing and shipping facilities.

Nearly 80% of China's peach production is in white, melting flesh cultivars. Almost all of China's fresh market peaches are marketed within China itself. Approximately 80% of

Asia and processed products are marketed in Europe and America. Since China is now a member in the World Trade Organization (WTO), their exporting of peaches and peach products will likely increase substantially in the future.

A fairly recent development in China is “protected” peach cultivation where peaches are grown in energy saving lean-to greenhouses. This occurs primarily in northern China but recent estimates indicate that there are 30,000 acres of peaches being grown this way. In these greenhouses, trees are spaced 3 feet by 6 feet and a very systematic management protocol has been developed including the use of growth regulators, summer pruning, girdling, root pruning, imposed drought, reflective mulches, etc. Early cropping of very early season low-chill cultivars can result in market prices five-fold higher than normal. To improve the economic efficiency of these greenhouses, peaches are typically intercropped with strawberry in-between the tree rows.

One of the most beloved stories in Chinese history is “Xiyouji” (“Journey to the West”) by Wu Chang-En (1504-1582). In the story, one character, Monkey King, visits the Peach Garden of the Heavenly Queen Mother and eats the peaches of immortality. In the Chinese culture, a peach may be given as a special birthday gift to an aging family member or friend to wish them a long life — I like that tradition!

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Photo courtesy of Desmond Layne

Peach genetic diversity is being preserved at national germplasm repositories orchards (gene banks) such as this one in Zhengzhou, according to Dr. Desmond Layne.

peaches produced are consumed fresh while the rest are canned, dried, or processed to make peach juice, peach tea drinks, beer, jelly, and candy. Some fresh market peaches are exported to southeast

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