Tango Mandarin

A new seedless mid-late season irradiated selection of W. Murcott (Afourer) mandarin developed by the University of California Citrus Breeding Program

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W. Murcott mandarin (also known as Afourer) is a very attractive, easy to peel mid-late season mandarin (peak maturity February-March) which, when grown in isolated conditions, can be virtually seedless. The variety, known worldwide for its high quality, has been widely planted throughout California over the past decade as consumer demand for high-quality, low-seeded, easy to peel mandarins has increased. It is currently estimated that between two and three million trees have been planted in California with more than half of those trees in production. Production is excellent with very little alternate bearing when grown under commercial conditions. In California, however, isolation of citrus orchards has become increasingly difficult and consequently many W. Murcott orchards in the state have been suffering from an increasing problem with seedy fruit caused by cross pollination by other citrus varieties (notably other mandarins but including Valencia oranges, Minneola tangelos, lemons and other citrus types). This situation greatly reduces fruit value and is not likely to improve over the next several years.

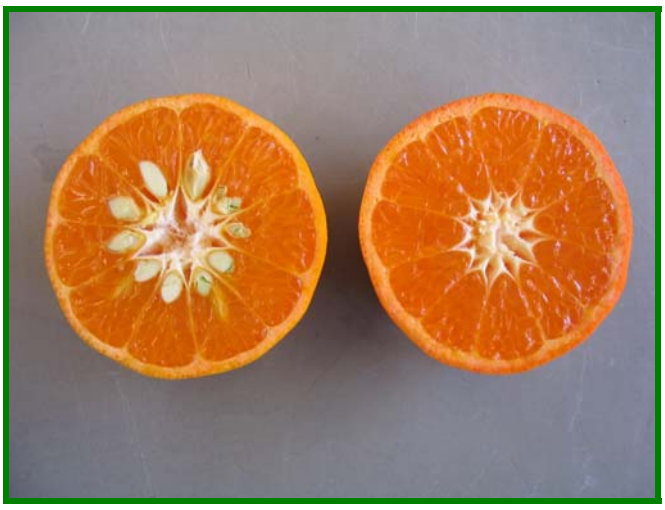
The University of California Citrus Scion Breeding Program located at Riverside has been pursuing seedless mandarin breeding for several decades. One aspect of the program has utilized irradiation of buds from several common mandarin varieties to induce mutations that will cause reduced seed count in previously seedy mandarins. Among these mandarins are several selections from an irradiation of W. Murcott mandarin that were chosen for additional field trials to determine their suitability for release. The most promising of these selections (known during testing as W. Murcott IR1) has been designated **Tango**.

The selection has been planted in replicated trials at seven locations in California, three fruiting trials planted in 2001 and 2002 and four trials planted in 2003 and 2004 that will fruit in 2007. Observations on 15-20 three to four-year-old trees in each of the three locations planted in 2001/2002 indicate that all trees produce a good crop of uniformly low-seeded fruit in trials where cross-pollination occurs (see photos). In winter/spring 2006 and 2007, the average number of seeds per fruit was less than 0.2 in samples of 25-50 fruit from each tree at each location. Control W. Murcott trees averaged 8-15 seeds per fruit. Through eight years of evaluation for the mother Tango tree and for from three to four years of evaluation for the other trials trees, all trees appear similar to the standard selection of W. Murcott in all tree and fruit characteristics except seediness, except that, in 2006 Tango fruit had lower acidity compared to the (seeded) W. Murcott. In Riverside, California Tango matures in winter (late January) and holds its fruit quality characteristics through April. Fruit size is moderately large (59mm or 2.3 in.) averaging 90 grams (3.2oz.) per fruit. Fruit are deeply oblate in shape with a deep orange rind color and a very smooth rind texture. Flesh color is deep orange and finely textured, fruit are juicy (50% juice), with a rich, sweet flavor when mature (12-14% brix), and are easy to peel. Tree growth habit is upright with excellent production commencing in the second year after planting. Alternate bearing does not appear to be a significant problem. Studies of Tango pollen indicate that Tango pollen has very low germination (~5%) and is smaller in size than W. Murcott pollen. In hand-pollination trials Tango has not set fruit or seed in Clementine mandarins while parallel pollinations with W. Murcott pollen set seedy fruit from 50% of these pollinations. Because this selection results from mutation breeding, its genetic stability is a possible issue, but over 60 trees propagated from multiple generations of Tango buds have remained true-to-type.

Tango was released for propagation in California in June 2006. A rapid budwood increase program supplied about 24,000 buds in June 2006, with additional buds expected to be available in September 2006. A system to distribute this limited budwood supply was developed in consultation with the industry. Tango has been submitted for patent protection and has received preliminary (patent-pending) protection. A license to propagate and sell the variety is available to any CDFA licensed California citrus nursery that purchases said license.

The following photos show representative fruiting trees and a sample of fruit from the 2004-5 crop.

50 fruit of Tango, 11 seeds total
(mixed block planting - UC Riverside)



W. Murcott (left) and Tango (right) fruit
(mixed block planting - UC Riverside)