



Redwood Barn Nursery

1607 Fifth Street Davis, California

Tangerines or Mandarins?

Our holiday treat can grow in your back yard.

Christmas and citrus are inextricably connected in my memories.

As a child growing up in Southern California, the gourmet fruit in the toe of my Christmas stocking each year was a tangerine. To be specific, it was a Dancy tangerine, one of the first mandarin-type oranges that became commercially popular in the United States.

Dancy fruit are very juicy, easy to peel, very sweet but also more acidic than oranges, and quite seedy. We were required to eat them on the patio so we could spit the seeds at each other. Eating tangerines outside on Christmas morning is one of those special Southern California treats.

Mandarins, on the other hand, were something my mother bought in cans to mix into jello.

Dancy tangerines are *tangy*, though that isn't the origin of word 'tangerine'. In fact, it's more likely the other way around.

The parent of the seedling found and grown in Florida by Colonel Dancy in 1867 was from Tangiers, Morocco. There were other varieties that preceded Dancy from those Moroccan parentages, all called "tangierines."

These were some of the first citrus grown commercially in Florida, the first that were consistently grafted or budded (vs seed-grown), and for about a century Dancy was the predominant variety of mandarin, a very special fruit that ripened in time for the holidays.

What is a mandarin?

Is a tangerine a specific type of mandarin orange, or is it just a generic name for the whole group of small, sweet-tart, easy-to-peel oranges? Are all "tangerines" mandarins? Are all "mandarins" tangerines?

The original mandarin orange is one of the important parents of modern citrus varieties. We can divide them into four categories: tangerines, satsumas, clementines and modern mandarin hybrids. So, tangerines are a subset of mandarin oranges with their own distinct pedigree.

Many citrus varieties are natural hybrids that grew as chance seedlings, or as 'sports' (localized mutations) on existing trees. There are numerous natural and intentional hybrids between mandarins and other citrus.

US Department of Agriculture and UC Riverside have introduced important varieties, including some excellent choices for home gardeners. These were created through intentional, old-fashioned hybridization.

Clementines, which have become the most popular category in recent years thanks to shrewd marketing, are crosses between true mandarins and an orange (hence their milder flavor).

Mutations have sometimes been induced via irradiation. Genetic modification (gene insertion) may be a source of future varieties, as plant breeders race to beat HLB disease, but no commercial or home garden citrus are presently produced that way. Two successful citrus varieties that were created by irradiation of budwood include Tango, a naturally seedless clementine mandarin used in the 'Cuties' and 'Halos' marketing programs, and the Rio Red and Star Ruby grapefruits which have unusually dark pink flesh.

High value crop

California now produces most of the mandarins in the United States. There are about 67,000 acres of mandarins in California, especially in Tulare, Kern, and Fresno counties. Those are the three highest-value ag production counties in the United States. There's money in mandarins.

How about Florida citrus?

HLB disease has really taken a toll on citrus production in the Sunshine State. Total acreage of all citrus in Florida has been dropping 2 – 3% per year for several years due to the widespread infection of orchards by HLB. The pace of acreage loss has been accelerating: citrus acreage in Florida decreased by 8% in 2022. There are about 10,000 acres of mandarins and tangelos in Florida. Which, by the way, they call tangerines.

Why we grow them

The characteristics of all these related types of citrus that we call mandarins are:

- Easy to peel
- Sweet but with a rich, tangy flavor
- Very little bitterness
- Juicy
- Seedless strongly preferred
- Soft peel is typical
- Ripen in winter and/or spring

Lack of bitterness is a key characteristic.

Naringin, limonin, and citrus oil all taste bitter and are present in most citrus fruit, but in very different levels in different types. The bitterness is concentrated in the white, spongy part between and around the segments, and in the peel. If those separate off readily, and the fruit is handled carefully to avoid bruising, more than 90% of those bitter compounds are removed before we eat the fruit.

Those bitter compounds provide some complexity to the flavor and most people expect and accept slight bitterness in citrus. Grapefruit are notably bitter and not to everyone's taste, but crossing Dancy tangerine with a grapefruit led to the very rich-flavored Minneola tangelo. Minneola is easy to grow in your back yard. Your fruit will likely have seeds as it cross-pollinates with nearby citrus trees. Note: the rind color changes before the fruit is at peak sweetness. They look great in January, but are sweetest March to April.

For the home gardener

Mandarin oranges are some of the easiest citrus to grow!

- Typically compact growth habit, more like large shrubs than trees.
- Easily maintained low enough by simple pruning so you can pick all the fruit from the ground.
- Mandarins are cold hardy here. Cold weather improves the sweetness of the fruit.
- Note that production is heavy in alternate years. This is a drawback for farmers but of little consequence to home gardeners.
- With careful variety selection you can harvest mandarins from your back yard easily from November through spring, even into summer.

Where and how to grow mandarins

- Full sun is best.
- Trees should be planted up a bit, so water drains away from the crown.
- Water deeply and infrequently once established. Expand the watering zone as the tree grows.

Note: always cut, don't pull, mandarin fruit when you pick them. That keeps the peel intact, so they store longer.

Which varieties to grow

- Owari Satsuma: the gold standard for flavor in mandarins, and really one of the very best fruit trees you can grow in this area. Ripens December to January.

Farmers in Placer County planted satsuma mandarins many decades ago, notably near Newcastle and Penryn. Autumn nights are colder there, and that early chilling makes the fruit sweet earlier, so they can pick and market for Thanksgiving. My experience with the same variety here is that they ripen in December most years. Very cold temperatures this fall ripened my fruit a few weeks ahead of schedule.

This is the classic puffy-skinned mandarin that peels in one quick piece, nearly seedless, and very juicy. They're vulnerable to weather damaging the fruit, so the season can be short. They're usually done by January.

- Clementines

There are several varieties in this category. These are the mainstays of the branded mandarin marketing programs you see in the grocery store. Sweet, milder flavor than satsumas because of the lower acidity, easy to peel but tighter skin. The texture is crisper.

Farmers exclude bees to prevent seeds in the fruit. In your yard they will have some seeds if there are other citrus nearby. The tight skin makes them more prone to fruit splitting in summer than other types.

My clementines begin to ripen in late December and are at their best through January, holding well into February.

- UC Riverside hybrids

Tango

In my opinion, this is the best-flavored of the mandarins in the commercial 'Cuties' program. Naturally seedless, very sweet and somewhat tangier than the clementines, it begins ripening in February and is great into April. Very productive, not as prone to fruit splitting as the others. This is a vigorous tree that will need some pruning to prevent overproduction and limb breakage.

Shasta Gold, Tahoe Gold, Yosemite Gold

Breeders at UCR created hybrids that are complex crosses between 4 – 5 varieties of mandarins, including our old friend Dancy. All have great flavor, are seedless and easy to peel, and hold on the tree well. Shasta Gold has become the most popular of this group, ripening February into April.

Gold Nugget

Hybridized at UCR "sometime in the 1950s." The Givaudan Citrus Variety Collection at UCR maintains a phenomenal citrus database, and there we find high praise: "The taste is extremely sweet when mature (brix 15.0% in March, 17.5% in May) with a very rich flavor, considered by professional taste panels to be one of the very best flavored citrus in the world."

That's *very* late-ripening and the fruit is said to hold well on the tree into summer.

Easy to peel, naturally seedless.

How about Sumo mandarin?

Sumo is a trademark name of the Dekopon mandarin from Japan, also called shiranui there. For many years all shiranui trees in California were controlled by one company by the simple fact that importing budwood from Japan is a long, costly quarantine process. The company that introduced it brought it into our state in 1998, and it was 2011 before Sumo mandarins appeared in stores.

Nursery growers of trees have gained access to disease-free stock (from UCR, again) and begun propagating it, so home gardeners will soon be able to grow these huge mandarins themselves. Some special practices are required to get extra-large, very sweet, seedless fruit from this variety.

- It takes careful pruning and fruit thinning to achieve good fruit size.
- The peel is soft, and the fruit is notable for the large 'bump' on top (much like the Minneola tangelo). That softer peel makes the fruit more vulnerable to weather damage. Harvest (cut, don't pull) and handle with care. In Japan they grow them in greenhouses to protect the fruit.
- After harvest the fruit are left to sit for a few weeks to let the acidity decrease and the sugar content increase. Eaten right off the tree, they are much like a satsuma mandarin. In a few weeks, they're sweeter.

Shiranui is very sweet, easy to peel, and juicy. Seedless? California growers isolate them by covering the trees in bloom to prevent bees from reaching the flowers, and then they spray with gibberellic acid to induce fruit set (as is done with the clementine varieties in the branded

programs). Fruit on trees in the UCR Citrus Variety Station are seedy, and fruit from a tree in your back yard will likely have seeds as well. Peak flavor is January to February, with good quality fruit into April.

How about that Dancy tangerine?

Per SlowFoodUsa.org: “In 2012, no Dancy fruit was available on the market for the first time since 1874. While nurseries still sell young trees as a “door-yard” cultivar, the most historically significant and culturally resonant tangerine has vanished from the produce market.”

But you can buy trees and grow them yourself if you’re nostalgic for Christmas Day seed-spitting contests.

