

Stone Fruits - Section Review

This section covers members of the genus *Prunus*, commonly referred to as stone fruits. The common name derives from the hard endocarp or “pit” found in the center of each fruit, which some people call the stone. The fruit type is the same for all species - a drupe, which is a fleshy fruit with a single, central seed surrounded by a bony endocarp. Almonds are included here, and not with the nut crops lesson, since they are botanically related to peaches, and have some similar cultural requirements to other *Prunus* species. In almond, the harvested product is just the pit of a small, dry, peach-like fruit that splits open to reveal the nut at maturity.

Stone fruits are all members of the Rosaceae, or rose family, subfamily Prunoideae. Take a moment to find the stone fruits on the Rosaceae family tree, noting the three subgenera within *Prunus*: the *Amygdalus*, *Prunophora*, and *Cerasus*. This underscores the fact that peach and almond are closely related, as are plums and apricots, and obviously sweet and sour cherries. Graft and cross-compatibility are often present within a subgenus, but less often between members of different subgenera. As you read, notice the common features that tie all *Prunus* together, such as fruit type and floral morphology, but also the fine differences among species like degree of self-compatibility, cold tolerance, and chilling requirement. As a review aid, I generally put the following chart on the board for students. This allows you to make broad comparisons across all species after you have read the fine details contained within each chapter. See if you can fill it out yourself!

	Peach	Jap plum	Euro plum	Apricot	Sweet cherry	Sour cherry
Cultivar of major importance (name)						
Needs a pollinizer? (Yes or no)						
Bloom date rank (1-7)						
Chilling req't rank (lo, med, hi)						
State that leads production (name)						
Thinning needed? (Yes or no)						
Training system (name)						
Pruning severity (light, mod, heavy)						
Food usage? (fresh, processed)						

Some more important points to remember about stone fruits:

- Collectively, the stone fruits represent about \$1 billion to the agricultural economy of the US, which is a sizable chunk, but less than either apples or oranges.
- The fruit type, a drupe, derives from a flower with a superior, simple ovary, which is different from other members of the Rosaceae. The flower is similar to that of pome fruits in many respects (number of petals, sepals, stamens, presence of a hypanthium), except the hypanthium (floral cup) is not fused to the ovary wall as it is in pome fruits. You may find it useful to review the flower structures in the Introduction to fruit crops chapter at this point.
- Stone fruits have a broader geographic origin than do pome fruits, with main species extending from eastern Europe to China. However, all grow and produce the best when grown in Mediterranean climates like California, except sour cherry. Sweet cherry performs exceptionally well in the cool, temperate desert climate of eastern Washington.
- Plums are the most diverse of the stone fruits, having genes incorporated from many wild species, including the North American plums. They have the greatest range of adaptability, greatest number of improved (and clonal) rootstocks, and greatest variation in fruit size, color, and shape of all stone fruits.
- All stone fruits are extremely perishable, unlike pome fruits which can be stored for several months. Thus, growers usually have several cultivars in their orchards which ripen at different times so their marketing season is extended over a long time period. This makes management of stone fruit orchards very complex compared to apple or citrus, where we generally see only one or a few cultivars grown. There are hundreds of cultivars of peaches, plums, cherries, etc., worldwide, partially as a result of the need for many cultivars to extend the market season. In peach, and to a lesser extent in plum and cherry, we lose “cultivar identity” at the retail level, as there are so many cultivars that look and taste almost exactly the same, yet ripen at different times. Contrast this to apple, where we are always given the cultivar name.
- Stone fruits are attacked by some of the same diseases/insects, because they are all closely related. A major problem is brown rot, a fungus which attacks fruit as they soften and mature. Common insect problems include plum curculio, cat-facing insects (plant and stink bugs), and Oriental fruit moth. Accordingly, the spray programs are similar in many respects across species. Stone fruits are very difficult to cultivate “organically” due to the many problems that arise, particularly in rainy climates.
- Stone fruits bloom earlier as a group than pome fruits, and are therefore more prone to frost losses. At a given location, Japanese plums bloom first, followed by apricot, peach, European plum and sweet cherry, and lastly, sour cherry.