

Rootstocks for stone fruit

Controlling size, vigor

For more than 75 years, UC Davis has been involved in testing and identifying superior rootstocks for stone fruits. Early research focused on selecting seedlings of various species for graft/rootstock compatibility and tree vigor, along with resistance and tolerance to the insect pests, diseases, and soil conditions specific to California.

In the 1930s, Leonard Day was instrumental in identifying **Myrobalan 29C** and **Marianna 2624** plum rootstocks as being particularly suitable for plum and prune culture. He also noted the compatibility of **Marianna 2624** with apricots and selected almond cultivars.

An extension of the initial work with **Marianna** rootstocks resulted in the 1998 release of **M40** rootstock by Claron Hesse, Robert Fenton, and James Doyle. This **Marianna** rootstock has performance characteristics similar to **Marianna 2624** but is much less prone to developing adventitious stems from root suckers.

Other work by Carl Hansen, Dale Kester, and Tom Gradziel identified several selections of peach-almond hybrid rootstocks as imparting high vigor and yields to almond trees, and the **Hansen** and **Nickels** rootstocks were released for almonds.

More recent research on rootstocks for stone fruits has focused on decreasing tree vigor and size of peach and nectarine trees in an attempt to reduce labor costs associated with ladder-work, such as pruning, fruit thinning, and harvesting.

Recently a collaborative effort between USDA-ARS and UC Davis



UC Controller 5 reduces tree size to aid in pruning and picking.

researchers (David Ramming, Ted DeJong, James Doyle, and Scott Johnson) resulted in the release of two new size-controlling rootstocks for peach and nectarine (**Controller 5** and **Controller 9**).

Several promising new selections from research more recently initiated by Fred Bliss (formerly with UC Davis) and Ali Almehdi are currently being tested.