

Zee-Stem a Bridge to Successful Cherries®

Tom Spellman

Dave Wilson Nursery, 19701 Lake Road, Hickman, California 95323

Email: tom@davewilson.com

In the world of adaptable fruit taxa, cherries have to be one of the most problematic. Not only has it been a challenge to find cultivars that fruit reliably out of USDA Zones 6 to 9, it's also been challenging to find compatible rootstocks that adapt to heavy and/or wet soil conditions. Zaigers, the fruit hybridizers out of Modesto California, are successfully challenging both.

Floyd Zaiger's fruit breeding roots run deep. In the 1950s, Floyd worked with fruit breeder Fred Anderson. Fred has long been considered the "Father of the Nectarine." In his early years, Fred worked with the famous breeder Luther Burbank. Mr. Burbank (who needs no introduction) is known for many hybrids in the world of horticulture, including the Santa Rosa plum, the Russet potato and the first, true plum-cot, an F1-plum-apricot hybrid. When Floyd Zaiger began his career in fruit breeding more than 50 years ago, he used the work of Burbank and Anderson as stepping stones and continued even deeper into the world of interspecific hybrids. Floyd's accomplishments speak for themselves, having introduced dozens of cultivars in trademarked categories like: pluots (hybrids between plum and apricot), aprium [see plumcot (hybrids between plum and apricot)], necta-plum (hybrids between nectarine and plum), and cerium (hybrids between cherry and plum), as well as many interspecific rootstocks like 'Atlas', 'Citation', and 'Viking' hybrids of peach, plum, apricot, and almond.

One of Floyd's ongoing projects has been compatibility and adaptability of *Prunus avium* — the sweet cherry. With the introduction of selections like 'Minni-Royal' and 'Royal-Lee', we now have cherry cultivars that will fruit well in USDA Zones 9, 10, and 11, including the lower deserts of California and Arizona. Considering this the real focus, the last few years have been utilized searching for rootstocks that will take the adverse soil conditions. Old-line rootstocks like mazzard (*Prunus avium*) and mahaleb (*P. mahaleb*) do not adapt well to heavy, wet, or salty soil. With many years of work invested, Zaiger has determined that the best approach to sweet cherry adaptability is a double bridge graft. The bridge-graft method allows one to combine the best of both worlds. It allows the combination of a *Prunus* rootstock that is adaptable to diverse soil and weather conditions, with the top of a sweet cherry cultivar that produces the best quality fruit specific to geographic area.

"Zee Stem" is that bridge, being compatible with a multitude of *Prunus* rootstocks, almond, apricot, peach, and plum as well as *P. avium*, sweet cherry. The breeding took years of trial and observation to come up with the right combination of adaptability, compatibility, precocity, and growth habit.

The propagation technique is a double graft procedure. For nursery field-row production, the rootstock is lined out in the winter season (either seedling or a clonal cutting). The rootstock takes root and pushes a healthy spring flush, in approximately 4 to 5 months. In late spring, the first graft or bud of the Zee Stem hybrid is inserted into the rootstock and begins to grow. As soon as the bud shows vigor, the nurse branch is removed and the Zee Stem bud is staked and tied straight. The sweet cherry bud can be inserted in the fall or the following spring and with one

more growing season, the tree is ready for transplant to the orchard or nursery container. Total production time is approximately 22 months.

For greenhouse production, the Zee Stem bud can be inserted into a dormant, nonrooted cutting in winter. Once potted, the cutting will take root and the bud will heal in and grow out, simultaneously. With this early establishment of the Zee Stem bud under greenhouse conditions, the sweet cherry bud can be inserted in the early summer using stored dormant or fresh season budwood. With this process, the tree will be a finished product by the following winter. This 12-month production method produces a quality tree of smaller caliper, approximately $\frac{5}{16}$ in. to $\frac{3}{8}$ in. and ready for spring planting.

Other attributes to the Zee Stem trees are precocity and dwarfing character. The double graft method adds just a touch of additional slight incompatibility, producing a tree that fruits early in its life and is held back to approximately 75% of standard.

Zee Stem trees' climate and soil adaptability allow commercial growers to produce fruit in early maturing zones, enabling them to have the first crops to market. And farming first crop to market always translates to higher profits.