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NEWS RELEASE

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Fukumoto Navel Trees Still Declining

The climate of the southern end of the San Joaquin Valley of California favors the development of early maturity in navel orange. Growers are able to further capitalize on this favorable climate by planting one of a limited choice of early-maturing navel orange varieties such as the Beck, Fukumoto, Newhall, and Thompson Improved. The Fukumoto navel, released to growers from the California Citrus Clonal Protection Program in the late 1980s, has been especially popular with orange packers and consumers because of its round shape, large size, and deep orange color. Many growers, however, have mixed feelings about the Fukumoto navel. Although the fruit is in demand, the trees have been difficult to grow with problems in the orchard ranging from the presence of a few stunted trees to the loss of the whole orchard. The most consistent problem with Fukumoto navel is slow and aberrant growth of the tree. The area of the graft union, where the scion is attached to the rootstock, usually presents the first signs of abnormal growth. Scion shoots often proliferate within two inches of the graft union. Most of these shoots must be pruned from the tree to prevent overcrowding in the lower tree canopy. As a result of this growth pattern, the tree demonstrates a squat appearance with several thin diameter trunks forming near ground level. The resulting branches are often week and collapse under large fruit loads. There appears to be incompatibility between the scion and rootstock which contributes to this growth pattern and which probably prevents carbohydrate produced in the leaves from being transported back to the roots. The roots appear to starve, resulting in severe stunting and in some cases, the death of the tree. Other growth abnormalities have been noted such as off-type fruit resembling Valencia orange, excessive thorniness, and navel orange fruit that mature later than is typical for Fukumoto. Fukumoto grown on most of the common rootstock varieties demonstrate these growth abnormalities. Affected Fukumoto trees have been examined for presence of disease and no consistent patterns of infections have been found. Studies made by U.C. researchers for the past 5 years, suggest that the problem is genetic, and resides in the budwood of the source trees for all of the Fukumoto navels propagated in the San Joaquin Valley. Efforts are underway to find a more original source of Fukumoto budwood in hopes that it is free from the genetic problem. In the meantime, growing Fukumoto navel is something of a risky proposition. Growers that have found the Fukumoto navel to be profitable have been more than willing to continue growing this variety and replace stunted trees as required. However, growers that have lost entire orchards are understandably disappointed with the Fukumoto navel and have opted for replanting with other early-maturing navel orange varieties. Since the choice of early-maturing navel orange varieties is limited, the allocation of research resources toward fixing the problem of Fukumoto tree decline appears to be warranted.

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