

# 'DaisySL' Mandarin

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'DaisySL' is a mandarin selection developed by the University of California Riverside from an irradiated bud of the diploid mandarin cultivar 'Daisy', a mid-season maturing variety. 'DaisySL' distinguishes itself by being very low seeded (2.2 seeds/fruit) in all situations of cross-pollination, differing from 'Daisy' which will set from 16-25 seeds/fruit in cross-pollinated situations. In winter 2010 (after release) we discovered some branches on 'DaisySL' trees that produce seedy fruit. The overall percentage of seedy fruit is low (1-2%), but this problem should be considered before planting this variety. In Riverside, California 'DaisySL' matures in winter (mid-December) and holds its fruit quality characteristics into February. Fruit size is moderately large (68 mm) averaging 135 grams/fruit. Fruit are slightly obconate in shape with a very deep orange rind color and an extremely smooth rind texture. Flesh color is very deep orange and finely textured; fruit are very juicy with a rich, sweet and very distinctive flavor when mature. Fruit are only moderately easy to peel. Tree growth habit is spreading with excellent production commencing in the third year after planting. Alternate bearing can be a problem in trees that are not culturally managed to reduce this tendency. In summary, 'DaisySL' is a mid-season maturing mandarin that combines medium-large sized fruit of excellent quality and production with a low seed content, even in mixed plantings. It may be suitable for a mid-season marketing window that currently has very few low-seeded cultivars.

**Fruit Characteristics:** Fruit of 'DaisySL' are slightly obconate in shape with no neck (Figure 1). The fruit is large-sized for a mandarin (classified as Jumbo by State of California standards and Size 21 for industry packing standards) averaging 68.0 mm in diameter, 60.1 mm in height, and 135 grams in weight with a very smooth, deep orange rind color (RHS Red-Orange N30C) and slightly conspicuous, slightly raised oil glands. The rind is moderately adherent at maturity and relatively thin, averaging 3.0 mm in thickness. This rind thinness is implicated in the tendency of 'DaisySL' and its parent variety 'Daisy' to occasionally experience a moderately high level of splitting of fruit, sometimes as high a 20% of the total crop. The fruit interior has a fine flesh texture with 10-11 segments and a semi-solid axis of medium size at maturity. The fruit are very juicy averaging 47% juice. Fruit from trees on Carrizo and C35 citrange rootstock average 11.9-12.8% soluble solids and 0.89-1.28% acid in mid-December at six trial sites in California, increasing to 14.2-15.8% soluble solids and 0.77-0.92% acid in early February at the same trial sites. The fruit average 2.2 seeds/fruit in the presence of substantial cross-pollination pressure across all trial sites, but some trees have branches that produce fruit with more than 10 seeds. Averaged over all 83 trial trees, only 1-2% of all fruit are seedy. 'DaisySL' trees produce a relatively normal crop if screened during flowering. Screening trees during flowering does not seem to affect crop (one year of data), but this observation leads us to predict that screening will not prevent production of seedy fruit by off-type branches. More details on production of seedy fruit by 'DaisySL' are available at [http://plantbiology.ucr.edu/faculty/DaisySL-seedy fruit 032310.pdf](http://plantbiology.ucr.edu/faculty/DaisySL-seedy%20fruit%20032310.pdf).



Figure 1: Fruit of 'DaisySL' from Riverside



Figure 2: Fruit cluster from young 'DaisySL' tree on Carrizo citrange at Santa Paula

**Tree Characteristics:** Tree size, growth and fruit production characteristics and rootstock comparisons have been evaluated in trials of 'DaisySL' in comparison to 'Daisy' mandarin from the same field blocks. Six-year-old 'DaisySL' trees in trials at Riverside, and four-year-old trees at the other six sites have been evaluated for two to four years of fruiting. Tree size and growth characteristics of 'DaisySL' have been consistent with 'Daisy' throughout the evaluations. Growth of both 'Daisy' and the 'DaisySL' selection have been quite spreading (characterized as 'leggy') in the first several years of growth followed by a tendency to grow into a more spherical, slightly drooping shape in ensuing years. The nine-year-old 'DaisySL' tree at Riverside on Carrizo citrange rootstock is 3.3 m high and 3.7 m wide with a normal upright growth habit, yielding a canopy volume of 23.65 m<sup>3</sup>. In comparison, nine-year-old 'Daisy' trees averaged 3.2 m tall and 3.6 m wide, yielding a canopy volume of 21.7 m<sup>3</sup> on Carrizo rootstock. 'DaisySL' is not thorny. 'DaisySL' pollen has about 10-20% germination and fruit from hand pollinations onto Clementine or W. Murcott had only 1-2 seeds per fruit. 'Daisy' has a strong tendency to alternate bearing and this is likely to be more severe if fruit are held late. Trees with severe alternate bearing can decline and die. Pruning or fruit thinning may be necessary to reduce crop in some years.

**Release and Distribution:** 'DaisySL' was released for propagation in California in September 2009 and has been submitted for patenting by the Regents, University of California. A license to propagate and sell the variety is can be purchased by any CDFA licensed California citrus nursery. Budwood for 'DaisySL' is distributed to licensed nurseries from registered, screen-protected trees by the University of California Citrus Clonal Protection Program. A three year exclusive propagation period for California nurseries will be enforced. Licenses for propagation outside the USA are being negotiated, but will not take effect until September 2012.