

## **Performance of short-day cultivar Palomar at the South Coast R.E.C. (Irvine), Santa Maria, and Watsonville Strawberry Research Facility in 2004-2006**

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**Highlights:** The new short-day cultivar Palomar shows exceptional promise in field evaluations throughout California.

The short-day cultivar Palomar (previously designated C221 or Cal. 00.259-2) has performed well in trials conducted in the three major production regions of California during the past two years and was released to California nurseries for commercial propagation in spring of 2007.

For all trials, plant material was propagated at a high elevation nursery in Macdoel, CA. For the Irvine trials, plants were harvested on September 27 and planted on October 1, while planting stock for Santa Maria and Watsonville were harvested on October 15 and planted October 23. The harvest season differed depending on trial location, with harvest through May at Irvine, to August 4 at Santa Maria, and to August 20 in Watsonville.

In 2004-05 and 2005-06, Palomar produced similar early yield to Ventana at all locations, and exceeded seasonal yield for Ventana at Santa Maria (Table 1). Palomar had substantially lower cull rates and/or higher appearance scores than Ventana in all trial locations, with fruit size similar to that of Ventana. Importantly, firmness, and the subjective evaluations of flavor and post-harvest fruit quality were excellent for Palomar. In Irvine in 2005-06, Palomar had 26% greater early-season yield than Ventana, albeit with less total yield, but with greater fruit size and improved firmness. Preliminary results of 2006-07 field trials in Irvine indicate that Palomar produced 78% greater yield than Ventana (995 and 558 crates/acre for Palomar and Ventana, respectively) to January 18, 2007, with higher fruit appearance scores and a lower cull rate.

An additional feature of selection Palomar is that plant size is substantially smaller than that of Ventana, a factor that will permit increased planting density and facilitate harvest efficiency. However, with less vegetative vigor and a marked tendency to fruit heavily early in the season, growers in southern California may need to consider management practices that encourage plant vegetative growth, such as the use of clear polyethylene bed mulch and careful soil moisture and fertility management.

One caution regarding this selection is the tendency to produce fruit with a dry calyx during the very early part of the fruiting season (see photos). The extent of this problem varies with production site and year, and appears to be a physiological problem rather than a disease issue. At the present time, we do not have a solution for this problem. Another caution is that Palomar is susceptible to *Phytophthora cactorum* root and crown rot (Table 2), and preventative treatments should be applied as pre-plant dips as well as at regular intervals throughout the fruiting season.

Table 1. Performance of Ventana and Palomar evaluated at the Watsonville Research Facility, Santa Maria, and South Coast REC, Irvine, averaged for 2004-06.

<b>Location</b>	<b>Item</b>	<b>Early Yield<sup>1</sup></b> (C/A)	<b>Yield</b> (C/A)	<b>Cull Rate</b> (%)	<b>Appearance Score</b> (5=best)	<b>Fruit Size</b> (g/fruit)	<b>Firmness</b>
Irvine	Ventana	1,417	5,729	28.6	3.6	33.3	3.6
(Oct 1)	Palomar	1,514	4,976	26.1	3.8	34.8	3.8
Santa Maria	Ventana	1,206	4,978	29.1	---	---	---
(Oct 23)	Palomar	1,137	5,006	20.9	---	---	---
Watsonville	Ventana	1,917	6,970	---	3.4	30.6	8.8
(Oct 23)	Palomar	1,668	6,316	---	3.7	30.2	10.2

<sup>1</sup> Early yield calculated to March 1, April 10, and May 1 for Irvine, Santa Maria, and Watsonville respectively.

Table 2. Disease resistance scores for Palomar and cultivars evaluated in 2004 and 2005.

<b>Genotype</b>	<b>Phytophthora Resistance Score</b> (5=best)	<b>Verticillium Resistance Score</b> (5=best)	<b>Colletotrichum Resistance Score</b> (5=best)
Camarosa	3.7	2.6	2.7
Camino Real	4.3	4.4	3.1
Ventana	2.7	3.0	2.8
Palomar	2.3	3.1	3.2



**Fruiting plants of short-day cultivar Palomar dug Sept. 28 and planted Oct. 1, 2005 in Irvine, California (photo taken Dec. 22, 2005).**



**Fruiting plants of short-day cultivar Palomar dug Sept. 27 and planted Oct. 1, 2006 in Irvine, CA (photo taken Dec.13, 2006).**





**Fruiting plants of short-day cultivar Palomar dug Sept. 27 and planted Oct. 1, 2006 in Irvine, CA (photo taken April 7, 2007.)**



**Dry calyx (photos taken Dec 2005).**