Performance of Strawberry Cultivars In The North San Joaquin Valley – 1997 Trial

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Even though strawberries have been grown commercially for many years in the San Joaquin Valley (SJV) and acreage for processing fruit has expanded recently, there is still very little data on the performance of cultivars and plant types in this region. Most current recommendations for varieties and planting systems are based on field observation or trial and error. Three years ago, Cooperative Extension Farm Advisors began collecting data on cultivar performance and began exploring new cultural practices.

In this study we compared the yields of four commercially available frigo cultivars: Camarosa, Carlsbad, Chandler and Cuesta. The standard practice is to use frigo plants planted in August or early September in soils that are fumigated every three or four years in July. In the event frigo plants are in short supply, we were interested if green plants could be substituted.

MATERIALS AND METHODS

The site was a deep Delhi Sand in Merced County that received a solid, tarped methyl bromide fumigation mid-July 1996. The green plants used were freshly dug with leaves on, and received less than one month of cold storage. The cultivars chosen were the most commonly planted in the SJV – Chandler and Camarosa. To provide some diversity in planting material, the green plants were selected from three different high elevation locations. Planting dates were determined by when the material became available for planting. All materials were planted fall 1996 on 24" wide beds, spaced 52" center to center. The plants were in staggered double rows spaced 12" down the row and 10" apart, which gave a plant density of 21,000 plants/acre. The materials used, source and planting date are shown in Table 1.

Table 1. Plant materials and planting dates

Plant Material	Planting date	Nursery location
Green Camarosa	22 October	McArthur
Green Camarosa	22 November	Shasta
Green Camarosa	22 October	Macdoel
Green Chandler	22 October	Macdoel
Frigo Camarosa	5 September	
Frigo Carlsbad	5 September	
Frigo Chandler	5 September	
Frigo Cuesta	5 September	

The plot consisted of 120 foot rows with two replications per treatment. During the fall, all flowers were removed to prevent fruiting. All selections were irrigated and fertilized the same. Harvesting commenced 11 April and continued through 23 May 1997. Eight feet of row (16 plants) from the center of each rep were harvested 2-3 times per week. The fruit was graded according to processing fruit standards with good and bad fruit weights recorded. Each selection was sampled periodically for soluble solids.

RESULTS AND DISCUSSION

Fruit weights for the season are presented in Table 2. The four frigo cultivars yielded similarly, producing the same amount of marketable fruit per acre. Cuesta had the highest total yield, followed by Chandler, Carlsbad and Camarosa. In a previous trial, Camarosa yielded statistically more than Chandler, Cuesta and Seascape. Under this growing system and with these planting dates, yields from the green plants were less than half the yield of the frigo selections.

Average soluble solids (degrees Brix) for the year are also shown in Table 2. Samples were taken weekly from only one replication and statistical analysis was not done. Fruit soluble solids from the green plants were higher than from the frigo plants. I believe this to be a function of the much lower yield resulting in a much higher leaf to fruit ratio.

Table 2. Yield and quality of green and frigo cultivars, 1997.

Material	Total yield (g)	Good fruit (g)	Bad fruit (g)	°Brix
Frigo Cuesta	9204a	8655a	550a	6.7
Frigo Chandler	9026ab	8622a	404ab	7.7
Frigo Carlsbad	7947 bc	7828a	255ab	7.5
Frigo Camarosa	7673 c	7270a	154 b	7.8
Green Macdoel Chandler	3606 d	3386 b	220 b	8.7
Green McArthur Camarosa	3425 d	3272 b	153 b	8.4
Green Macdoel Camarosa	3260 d	2995 b	165 b	9.1
Green Shasta Camarosa	3111 d	2935 b	213 b	8.4

Significant at the 1% level