UC Cooperative Extension in Fresno, California

Strawberry Variety Trial
Fresno, CA – 2001

Richard Molinar and Michael Yang, UC Cooperative Extension, Fresno County

Cooperator: T. Vang family farms - Clovis, California

Introduction:

Strawberry acreage in Fresno has declined over the past several years to a low of 210 acres in 2001. Approximately 80% of the berries are sold to a local processor (J. R. Wood) and the rest at a roadside stand. The variety of choice in the Central Valley for the processor and roadside stand is *Chandler*, with a small percentage planted to *Camarosa*. Planting dates are usually between August 10 to August 31, although some plant as early as August 1 and as late as September 15. Planting is most commonly done on beds spaced 54-60" apart, two rows per bed. Plants are spaced 12" apart in a triangular pattern down the bed.

Report Highlights

- *Red Crest*, *Sweet Charlie*, and *Totem* yield poorly in the Valley.
- *Camarosa* and *Diamonte* yielded the largest berries.
- *Red Crest* and *Totem* berries are sweeter.

Some growers will fumigate the ground with methyl bromide for weed, disease, and nematode control (cost is around $1,800/acre). This fumigation will usually last for two seasons, although some growers will try for a third season. The cost is becoming prohibitive, and some are trying metham sodium and/or solarization. If weeds are known to present a problem between fumigations, some growers will apply a black plastic over the bed after planting, burning holes for the plants.

A trial to evaluate six varieties of strawberries was initiated on a strawberry grower's field in 2001. The grower farms about 10 acres.

Field Conditions:

Bed spacing:	54 inches
Plot size:	22 feet (44 plants)
Soil preparation:	Solarized four weeks
Transplanting date:	August 22, 2000
Replications:	Three
Plant spacing:	12 inches, two rows per bed
Soil type:	Greenfield sandy loam
Location:	On Shaw Avenue east of Locan Avenue

Treatments:

1. Camarosa
2. Diamante
3. Red Crest
4. Sweet Charlie
5. Totem
6. Chandler

Results and Discussion:

YIELD: Plants were harvested once a week beginning April 12 and ending May 22, 2001. Cooler weather in the spring resulted in a delay of the harvest by a week to ten days. Berries were harvested from 44 plants in each of the varieties/replications, and culls were separated from marketable berries. Total weight and marketable yields were recorded. Analysis of the data (ANOVA) revealed a significant difference between the treatments, $p < 0.01$. *Camarosa* and *Chandler* (40 and 32 lbs., respectively) gave the highest yield with no significant difference between the two. The other four varieties were significantly lower in yield with no difference between those four – *Diamante*, *Red Crest*, *Sweet Charlie*, and *Totem*. The *Camarosa* yield was over 25% greater than *Chandler* (usually a 10% increase is not uncommon).

BERRY SIZE: Berries from each replication (10 berries total) were collected and weighed using a digital tabletop scale. The season average for all the harvests in the table below shows that *Camarosa* was the largest berry for the season at 29.2 grams per berry, followed by *Diamante* (27.6), *Chandler* (24.0), *Sweet Char*lie (19.9), *Red Crest* (16.8), and finally *Totem* (15.3 the smallest).

BRIX: After the 10 berries were weighed, they were pureed, and a soluble solid (BRIX) measurement was taken using a hand held refractometer. The season averages for all harvests are shown in the table below. The highest soluble solid measurement was the *Red Crest* variety (Brix 10.8), followed by *Totem* (10.1), *Sweet*

Charlie (9.4), *Chandler* (8.2), *Camarosa* (7.4), and *Diamante* (6.7). Berries start the season with a lower Brix measurement and gradually increase as the seasonal temperatures rise.

Variety	Total Yield (means)	Marketable Yield (means)		10-Berries Size (grams)		Brix	
Camarosa	48.5	40.0 lbs.	A	292	highest	7.4	
Chandler	40.1	31.9	A	240	3rd	8.2	
Diamante	22.3	15.1	B	276	2nd	6.7	
Red Crest	24.6	15.1	B	169	5th	10.8	highest
Sweet Charlie	18.8	14.4	B	199	4th	9.4	
Totem	21.0	13.8	B	153	6th	10.1	

LSD marketable yields (0.01)	14.2
C.V. (%)	25.3

FRUIT COLOR: Another important factor in variety selection is the interior fruit color and cavity size, particularly for processing. Totem had a nice dark red color and little to no hollow cavity. Chandler was also dark red, and no hollow cavity was present. Red Crest was medium red, with a white elliptical band around an obvious hollow cavity. The other three varieties (Camarosa, Sweet Charlie, and Diamante) had significantly whiter interior colored flesh with Diamante being the lightest in color. Camarosa had a small cavity present inside. Diamante and Sweet Charlie had similar sized hollow cavities comparable to Red Crest.

Summary:

Based on this trial, the varieties *Diamante*, *Red Crest*, *Sweet Charlie*, and *Totem* are not recommended for the Central Valley of California because of low season yields, approximately 50% of the *Chandler* and *Camarosa* yields. While the *Diamante* was the second largest berry in size, the yield was very low. *Red Crest* had very high soluble solids but again a very low yield. *Chandler* and *Camarosa* are still the preferred varieties for the Central Valley.

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