# Performance of Strawberry Cultivars in the North San Joaquin Valley – 1998 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, there is still relatively little data on the performance of cultivars in this region. Most current recommendations for varieties and planting systems are based on grower experiences and limited trial data. Three years ago, Cooperative Extension Farm Advisors began collecting data on cultivar performance and began exploring new cultural practices. This is the third year of cultivar evaluation.

The standard practice in the SJV is to use frigo plants planted in August or early September in soils that are fumigated every three or four years in July. Harvest typically extends from the first week of April through the first week of June.

## MATERIALS AND METHODS

The site was a deep Atwater loamy sand located in northern Merced County. The test plot was part of a larger field grown for processing fruit. In this study, we compared the yields of four frigo cultivars: Camarosa, Carlsbad, Chandler and Gaviota. Camarosa and Chandler have performed well in previous trials and Carlsbad performed moderately well in last year's trial. Gaviota was a cultivar that, based on trials elsewhere, may have potential for this region.

All materials were planted 12 August 1997 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. Five whole-row replications of each variety were planted in a randomized complete block design. At harvest time, ten feet of row were picked two or three times per week. The fruit was separated into good and bad fruit based on criteria supplied by the processor. Samples from each replication were sent to the processor for soluble solids (Brix) determinations.

## RESULTS AND DISCUSSION

Harvest began on 21 April and was terminated on 15 June. The harvest began later than normal and continued well into June because of unseasonably cool weather. Yield peaked around 1 May and declined sharply in mid and late May due to rain and cold weather. Yields recovered somewhat during June but never returned to the peak levels at the beginning of the season.
Yield and soluble solids data are presented in Table 1.

Table 1. Total, good and bad fruit yields in grams. Soluble solids in degrees Brix.

| Cultivar | Total yield | Good fruit | Bad fruit | Brix |
|---|---|---|---|---|
| Chandler | 14,612 a* | 12,348 a* | 2,264 a | 7.0 |
| Camarosa | 13,970 a | 11,399 b | 2,631 a | 7.0 |
| Carlsbad | 12,295 b | 9,761 c | 2,534 a | 6.8 |
| Gaviota | 10,372 c | 9,277 c | 1,054 b | 7.0 |

*Significant at 1% level n.s.

Subjective assessments of plant color and relative vigor were made on 9 March and are shown in Table 2. The cultivars are ranked from most to least vigorous .

Table 2. Relative vigor and color. 4 = most vigorous.

| Cultivar | Rank | Appearance |
|---|---|---|
| Camarosa | 4 | light green |
| Chandler | 3 | light green |
| Carlsbad | 2 | dark green |
| Gaviota | 1 | dark green |

In this trial and year, Chandler produced the highest total and marketable yields followed by Camarosa, Carlsbad and Gaviota. Camarosa, Carlsbad and Chandler produced similar amounts of cull fruit. There was no difference in soluble solids which indicates that yield differences did not come at the expense of soluble solids, which is important for processing fruit.

If this trial is a true indication of cultivar performance, Gaviota does not demonstrate much potential for this region. The mediocre performance of Carlsbad in this and last year's trial does not recommend it as a commercial variety either. Limited data so far suggest that Chandler and Camarosa will continue to be the primary varieties grown for processing. Chandler is considered the premium variety because of its quality and flavor intensity.