

# A comparison of three methods of pruning Gewürztraminer

John H. Foott

## "Machine"-pruned vines had best yields

**G**ewürztraminer grapevines have traditionally been head-trained and cane-pruned, because growers believed this method gave the highest yields. Cordon training with spur pruning would be preferred, however, because it is a cheaper, easier method and makes machine pruning possible. A three-year trial was therefore conducted to compare cane, spur, and simulated machine pruning.

### Pruning trial

The trial was in a vineyard in the Edna Valley of San Luis Obispo County. The vines had originally been trained on a vertical three-wire trellis with wires 32, 42, 52 inches from the ground. To allow increased air movement and light exposure, these vines were retrained, using only the wire at 52 inches for either tying the canes or supporting the cordon. The vines were cropped for two years under this system before the trial began.

The vines has been planted 7 feet apart in rows 10 feet apart for a planting density of 622 vines per acre. In the cane- and spur-pruning plots, 72 buds were retained per vine. The vines in simulated-mechanical-pruning plots had a trapezoidal configuration with the base at the level of the cordon about 18 inches wide and apex approximately 5 to 7 inches wide; the

height was about 6 inches. The number of buds retained was not counted but exceeded 100 per vine. The trial was designed as a randomized complete block with six replications, each replication consisting of six vines.

The vines were pruned in the same manner for three consecutive years. Just before harvest, berry clusters were sampled from the six vines in each replication for maturity determination. The yields for each replication were taken by hand and calculated on a per-acre basis.

### Results

The cane- and spur-pruned vines had similar yields (table 1). Vines pruned by the simulated mechanical method outyielded both of the others in each year. The three-year average yield of the mechanically pruned vines was about one-third greater than that of either cane- or spur-pruned vines.

At harvest, grape clusters were sampled randomly from each replication in each treatment for a composite quality analysis. Fruit maturity, as reflected in soluble solids and titratable acidities, was similar in the cane- and mechanically pruned plots, although pH was slightly lower in the mechanically pruned plots. Spur-pruned vines, with higher soluble solids and pH and lower titratable acidity, had slightly more mature fruit at harvest than did the other vines.

No observable problems were associated with the 52-inch single wire trellis. Wind had little or no adverse effect. Sunburning of clusters was no different than with the 32-inch head wire with two foliar support wires. Neither powdery mildew nor bunch rot was ever a problem on the vines trained to the single high wire.

### Conclusion

Cane- and spur-pruned vines produced comparable yields over a three-year period. Vines pruned by a simulated mechanical method significantly outyielded both cane- and spur-pruned vines: the three-year averages showed the simulated mechanically pruned vines to be about one-third higher in yield.

*John H. Foott is Farm Advisor, Cooperative Extension, University of California, San Luis Obispo County. The author thanks Jack Niven, Jim Efird, and Napoleon Ruiz, Edna Valley Vineyard, San Luis Obispo County, for their cooperation.*

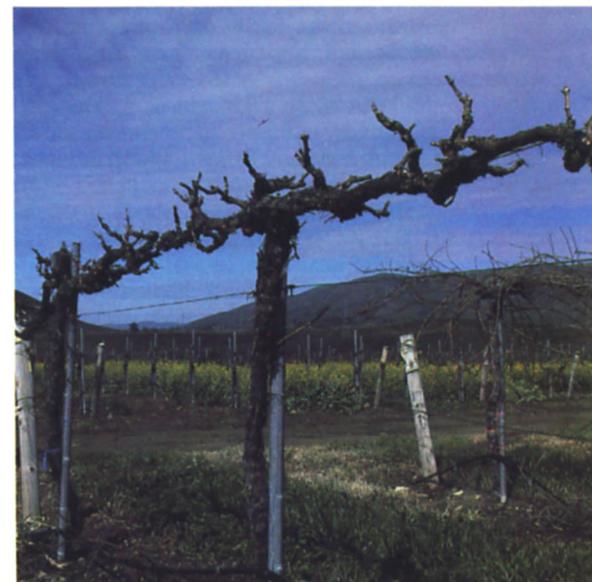
**Table 1. Gewürztraminer grape yield and maturity resulting from three pruning methods.**

Year and pruning method	°Brix	Titratable acidity	pH	Yield
				<i>tons/acre</i>
1983				
Cane	23.7	.83	3.80	3.5 b
Spur	23.5	.90	3.75	3.6 b
Simulated mechanical	23.9	.78	3.70	5.5 a
1984				
Cane	20.5	.60	3.58	9.4 a
Spur	22.5	.57	3.73	8.8 a
Simulated mechanical	20.0	.70	3.38	10.7 a
1985				
Cane	21.8	.72	3.52	7.8 b
Spur	23.2	.55	3.74	6.8 c
Simulated mechanical	20.2	.64	3.45	9.4 a
Average (1983-85)				
Cane	21.8	.72	3.63	6.9 b
Spur	23.1	.67	3.74	6.4 b
Simulated mechanical	21.4	.71	3.51	8.5 a

\*Mean separation by Duncan's multiple range test. Numbers followed by different letters are significantly different at the 1% level.



Cane-pruned (upper) and spur-pruned vines (lower) had similar yields in three-year test.



Simulated mechanically pruned vines outyielded both of the other types by about a third.