

TABLE GRAPE TRIALS

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1. EFFECTS OF BLOOM GIBBERELLIN AND FRUIT SET GROWTH REGULATORS ON FIESTA - AN OBSERVATION TRIAL

Summary

Fiesta grapes destined for table usage were effectively thinned with a one ppm gibberellin bloom spray and were enlarged by 10 and 20 ppm fruit set sprays. The vines tolerated the 10 ppm treatment. The 20 ppm treatment produced foliar evidence of toxicity but did not appear to reduce fruitfulness the next year.

The material, pCPA, sprayed at fruit set at two and one-half ppm, did not increase berry weight but did reduce the shatter potential. The vines tolerated this concentration.

A few growers produce Fiesta table grapes. Applications of typical Thompson Seedless gibberellin concentrations at fruit set, such as double 30 or 40 ppm sprays, are not tolerated. Phytotoxic reactions are produced following applications and the fruitfulness the season after usage is

severely reduced. Growers are now using much lower amounts of gibberellin at fruit set.

In non-replicated treatments, gibberellin was applied in bloom at 1, 2, and 3 ppm. At fruit set GA was applied at 10 and 20 ppm, and pCPA at 2½ ppm. The vines were also trunk girdled and cluster and berry thinned. Berry samples were taken just before harvest. The fruit was harvested and separated into packable and non-packable catagories.

Results:

1. Bloom sprays - One ppm provided satisfactory thinning. Two and three ppm produced excessive shot berries and smaller berries than one ppm.

2. Fruit set sprays - Ten ppm increased berry weight by five percent and 20 ppm increased berry weight 10 percent. The vines tolerated the 10 ppm treatment but 20 ppm produced evidence of leaf and shoot toxicity so that concentration may not be safe. Flower cluster counts in the spring of 1983 did not show differences between 10 and 20 ppm.

The material, pCPA, applied at two and one-half ppm, did not increase berry weight but increased the strength of the attachment of the berry to the capstem thus reducing the shatter potential. It also appeased to slightly delay maturity.

Conclusion:

A one ppm bloom spray followed by a ten ppm fruit set spray thins Fiesta clusters and enlarges the berries. These concentrations appear to be tolerated by the variety.

Note:

In 1981, a Delano grower used a fruit set gibberellin treatment of 20 ppm and produced good quality fruit. The vines showed foliar toxicity

symptoms. In 1982, the fruitfulness did not appear to be reduced but the crop failed to ripen. The vines are now being budded over to Flame Seedless.

Table 1. Summary of bloom applications of gibberellin on Fiesta.

<u>Bloom treatment</u>			<u>Berry Wt. gms</u>	<u>°Brix</u>	<u>Packable Yield per vine lbs.</u>	<u>Flower Clusters per vine April, 1983</u>
1.	1 ppm	GA	3.93	16.6	41	25
2.	2 ppm	GA	3.68	16.6	44	32
3.	3 ppm	GA	3.59	16.7	36	23

Table 2. Summary of fruit set growth regulator applications on Fiesta.

<u>Bloom treatment</u>			<u>Berry Wt. gms.</u>	<u>°Brix</u>	<u>Packable Yield per vine lbs.</u>	<u>Flower Clusters per vine April, 1983</u>
1.	Check		3.66	17.8	46	34
2.	10 ppm	GA	3.84	16.5	37	21
3.	20 ppm	GA	4.04	16.7	45	27
4.	2½ ppm	pCPA	3.69	15.7	41	25

2. EFFECT OF THOMPSON SEEDLESS BLOOM STAGE ON EFFECTS OF GIBBERELLIN THINNING SPRAYS

Thompson Seedless were sprayed in bloom with 10 ppm gibberellin. On the date of spraying, a number of clusters were selected and tagged that were in bloom stages of 0 to 100% in increments of 10%.

Second shoulders were harvested on August 25. The number of berries per centimeter of lateral was determined along with soluble solids, acidity, berry weight, berry width and length.

The numbers of shoulders for each bloom stage varied from seven to 18 due to losses.

Berry weight, soluble solids, berry length and berry width tended to increase from 0 to 100% bloom while acidity declined. The number of berries per centimeter of stem length was the lowest in the 60-80% bloom stage.

This study, although not at all definitive, supports the belief that bloom sprays in the range of 50-80% bloom are the most effective overall.

3. THE EFFECTS OF TIME OF GIRDING THOMPSON SEEDLESS

Table Thompson Seedless were trunk girdled in an unreplicated trial on six dates. On the first date the vines were in 70% bloom. Vines were girdled twice a week with the last girdling about four days after fruit set.

By observation, only the first girdling in bloom appeared less desirable than the other dates. Evaluation of the berry and shoulder samples were inconclusive.

The necessity of delaying girdling until fruit set may not be as critical as concluded in previous studies. The time of girdling should be evaluated in replicated trials.