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The Effects of Two Ethephon Formulations on Cardinal Grapes

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SUMMARY

Two formulations of ethephon, Ethrel® and GAF 141®, were compared. Equivalent rates gave similar results.

Adjuvants added to Ethrel did not modify the response nor did addition of a calcium material. The appearance of the fruit, however, was judged unsightly due to these additions.

Cardinals respond to ethephon applications applied at color break with increased color development, lower acidity, and usually some increase in soluble solids. A new formulation of ethephon, GAF 141, was compared with Ethrel. Additionally, a calcium material was mixed with Ethrel to determine whether or not it might offset the response.

Methods

The trial was located at the Kearney Horticultural Field Station at Parlier. The design was a randomized complete block with eight replications of each treatment, single vines serving as replications.

The vines were handled conventionally with a crop load of 36 clusters per vine. The vines were girdled on July 1 when 2 percent of the berries showed some color development. The Ethrel was applied to Treatments 2, 3 and 4 on July 3 while the GAF 141 was not applied until July 8 because the material was not received until that time. The treatments were applied at a rate of 200 gallons per acre.

The fruit was sampled on July 23 by taking 100 berries per replication. Estimates of percent of cluster that could be harvested (based on color) were made that same day.

Results

The summary of results in Table 1 shows few differences among the ethephon treatments. The ½-pint rate of GAF 141 was intermediate in response being not significantly different from either the check or the 1-pint per acre treatment. The later application of the GAF 141 could have affected the results. Addition of adjuvants or Link Calcium plus adjuvants to Ethrel did not alter the response. However, in both cases, the alteration of bloom was judged undesirable. The addition of the Link Calcium produced more alteration of bloom than did the two adjuvants alone.

Berry firmness tests were run on all the fruit. These were done incorrectly, however, so that the potential differences between treatments could not be determined.

Notes

Link Calcium - Six percent calcium derived from calcium lignosulfonate. Charge - a positively charge surfactant. Both products are produced by Wilbur-Ellis.

Triton B 1956 was used with the Charge because Charge alone did not wet the fruit or leaves very well.

Table 1. The effects of two ethephon formulations on fruit characteristics of Cardinal grapes plus the effects of adjuvant and a calcium material.

	Treatment	Date applied	July 23			
			Berry weight gms	°Brix	Total acidity	% clusters harvestable based on color
1.	None	-	7.14 a	13.5 a	.66 a	48 a
2.	Ethrel®, 1 pt/acre	July 3	7.30 a	14.3 a	.66 a	88 b
3.	Ethrel®, 1 pt/acre + 2 ozs. TB1956 & 8 ozs. Charge per 100	July 3	7.37 a	14.8 a	.67 a	82 b
4.	Ethrel®, 1 pt/acre, 2 ozs. TB1956, 8 ozs. Charge + 2 qts. Link Calcium per 100	July 3	7.27 a	14.2 a	.66 a	80 b
5.	GAF 141®, ½ pt/acre	July 8	7.25 a	13.8 a	.67 a	69 ab
6.	GAF 141®, 1 pt/acre	July 8	7.22 a	13.9 a	.67 a	82 b