

corrected
IMPROVING SET OF GRAPES WITH CHLORMEQUAT

The growth regulator, chlormequat (Cycocel[®]), offers a good possibility of increasing yields in those varieties where low yields have been the result of a poor set of berries. The increased fruit set is thought to be due to the improved nutrition of the fruit. Chlormequat is a growth retardant. By restricting tip growth, more metabolites are diverted to the cluster which during prebloom or bloom, is a weak sink as compared to the shoot tip. Little or no beneficial effect of chlormequat was obtained on vines where shoot tips were removed in bloom, at the 50-95% stage preferably.

Timing of the application has been stated not to be critical within the range of 1-3 weeks before bloom begins. Most applications have been made 1-2 weeks before bloom. Some benefits have been secured later (6).

Concentrations required for increased set have varied from a 100 to 1000 ppm, sometimes more. Most commonly, rates between 250 and 750 ppm have been effective. Trials might be conducted with something like 300 and 600 ppm, or 250, 500, and 750 ppm. An untreated check and a tipped treatment (remove tip 2") should be included for comparison.

The chlormequat treatment should retard shoot growth to some extent but concentrations which are effective in promoting set may not retard growth very much.

There are no toxic effects of chlormequat reported in the literature. Vines treated for three consecutive years showed no adverse effects. Prebloom sprays may increase inflorescence on lateral shoots (second crop), especially on those varieties which are prone to form them. Where yields are increased with chlormequat, weight per berry and soluble solids are generally reduced.

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February 7, 1977

To: Don Luvisi
Bill Peacock
Fred Swanson
Pete Christensen ✓
George Leavitt
Jack Foott

From: *Fred* Frederik L. Jensen
Extension Viticulturist

Re: Increasing Fruit Set with Chlormequat (Cycocel®)

Enclosed is a brief summary of the use of chlormequat for improving set of grapes, and two of the most useful references which are not easily available to you. Experimental supplies of material will be available. Let me know if you wish a small supply.

The prospects for registration are certainly a long way off even if beneficial usage can be documented. However, we may be able to manage vines better if the factors involving poor set are more clearly understood.

FLJ:sf

Enclosures

The growth regulator, chlormequat (Cycocel[®]), offers a good possibility of increasing yields in those varieties where low yields have been the result of a poor set of berries. The increased fruit set is thought to be due to the improved nutrition of the fruit. Chlormequat is a growth retardant. By restricting tip growth, more metabolites are diverted to the cluster which during prebloom or bloom, is a weak sink as compared to the shoot tip. Little or no beneficial effect of chlormequat was obtained on vines where shoot tips were removed at the time of chlormequat application.

Timing of the application has been stated not to be critical within the range of 1-3 weeks before bloom begins. Most applications have been made 1-2 weeks before bloom. Some benefits have been secured later (6).

Concentrations required for increased set have varied from a 100 to 1000 ppm, sometimes more. Most commonly, rates between 250 and 750 ppm have been effective. Trials might be conducted with something like 300 and 600 ppm, or 250, 500, and 750 ppm. An untreated check and a tipped treatment (remove tip 2") should be included for comparison.

The chlormequat treatment should retard shoot growth to some extent but concentrations which are effective in promoting set may not retard growth very much.

There are no toxic effects of chlormequat reported in the literature. Vines treated for three consecutive years showed no adverse effects. Pre-bloom sprays may increase inflorescence on lateral shoots (second crop), especially on those varieties which are prone to form them. Where yields are increased with chlormequat, weight per berry and soluble solids are generally reduced.

Directions for Mixing

Chlormequat, Cycocel[®], 11.8% active ingredient, (2-chloroethyl) trimethylammonium chloride, contains 1 pound active ingredient per gallon. Material is also known as CCC and chlorocholine chloride.

<u>ppm</u>	<u>ml per gallon</u>	<u>Amount per 100 gallons</u>
100	3.15	10.7 ounces
150	4.7	1 pint
250	7.9	1 pint, 10.7 ounces
300	9.5	1 quart
500	15.8	3 pints, 5.3 ounces
600	18.9	2 quarts
750	23.7	5 pints
900	28.4	3 quarts
1000	31.5	3 quarts, 10.7 ounces
1200	37.8	4 quarts

Cycocel 500A, 46% active ingredient, 500 gm active ingredient per
liter.

<u>ppm</u>	<u>1-4 Dilution^{1/}</u>	<u>Full strength</u>
	<u>ml per gallon</u>	<u>Amount per 100 gallons</u>
100	3.0	2.6 fluid ounces
150	4.5	3.8 " "
250	7.6	6.4 " "
300	9.1	7.7 " "
500	15.1	12.8 " "
600	18.2	15.4 " "
750	22.7	19.2 " "
900	27.3	23.0 " "
1000	30.3	25.6 " "
1200	36.3	30.7 " "

1/ One part Cycocel 500 A and 3 parts water.

References

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