NO.17 CHEMICAL CONTROL OF WEEDS UNDER VINES.

by A.J. Antcliff+

Mechanical weeding under vine rows presents problems, and is likely to be very laborious or damaging to the vines or both. If weed control is ineffective harvesting operations are impeded. Hence a simple, effective, chemical means of weed control under vines would be very welcome.

The experiment described in this paper was started by Mr. W.J. Webster when he was an officer of the Commonwealth Research Station, Merbein. It was a 5 x 5 Latin square layout in a field of currants. A 2 ft. 6 in. wide strip under the vines was sprayed, over a length of six vines (54 ft.) per plot. The four herbicidal treatments were monuron, diuron, and "Polyborchlorate", each at 1¼ lb. per acre, and a "Pentapine-Creomuls" spray containing 2 fluid oz. of "Pentapine" and 2.4 fluid oz. of "Creomuls" per gallon applied at the rate of 200 gallons per acre. The larger weeds were removed from under the vines on August 21 and the sprays were applied on September 16, 1959, shortly after bud burst. The area between the rows was cultivated normally through the season but there was no further cultivation under the rows. The first irrigation was a fortnight before the spraying and the second six weeks after it. A total of about two inches of rain fell within a month of treatment.

Weed growth under the vines was evaluated on February 10, 1960, and the fruit harvested from the vines on the following day. Each half-plot was rated on a scale from 0 = no weeds to 3 = thick cover of weeds, plot means calculated and the data statistically analysed. The main weeds present were Setaria verticillata (L.) Beauv., Lactuca serriola L., Chenopodium album L., and Xanthium spinosum L. The mean weed ratings and weights of fresh fruit harvested for each treatment were as follows :-

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Treatment.	Weed Rating.	Weight of Fresh Fruit (lb).
Control ...	2.24	37.6
"Pentapine & Creomuls"	2.08	43.9
"Polyborchlorate"	2.12	35.9
Diuron ...	0.78	42.5
Monuron ...	0.68	43.6

Only diuron and monuron had a significant effect on weed growth and they did not differ from each other. The degree of control given by them was quite adequate and gave excellent conditions for harvesting except across the bottom 30 ft. of the field, where water lies for some time after an irrigation. Weed growth in most plots of the other treatments was serious enough to interfere with picking. There were no significant differences in vine yield but there was certainly nothing to suggest that the effective herbicides had any deleterious effect on the vines. The yield of the whole field including the trial was very poor in this season.