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Weed control in vineyards

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2.—Weed Control in Vineyards

CHEMICAL weed control trials commenced last year are so promising that it may be possible to do away with the practice of strip-digging in vineyards. Satisfactory weed control which will last throughout the winter and spring can be obtained with chemicals. However, further information is required concerning possible damage to the vines through a build-up of the chemicals in the soil.

The setting of the crop is greatly influenced by the soil moisture relations existing at the time of flowering. Weeds compete strongly for moisture so that their control from this aspect alone is important, particularly in the spring. Weeds also compete for plant nutrients and are often a harbour for insect pests and plant diseases.

STRIP-DIGGING

Strip-digging is carried out because it is not possible to cross-cultivate owing to the trellising system. An offset plough or disc must therefore be used to kill weeds in the trellising row.

This close cultivation is known to cause damage to roots of established vines as well as vine trunks and trellis posts.
Strip-digging may take up valuable time at a busy period of the year, and is not always possible because of the condition of the land. It is generally accepted therefore that it would be an advantage to do away with the need of strip-digging.

**EFFECTIVE CHEMICALS**

Of three chemicals tested, C.M.U. (3-p-chlorophenyl-1, 1-dimethylurea) and Amino triazole gave complete weed control for a period of at least 12 to 14 weeks. After this period odd weeds began to appear but only on plots receiving the lowest rate of C.M.U.

**TREATMENTS**

Eighty per cent. C.M.U. was applied at the rate of 2, 4 and 8 lb. per acre.

Ninety per cent. Amino triazole was applied at 8 and 16 lb. per acre.

All treatments were applied as a spray in water at the rate of 200 gallons per acre on May 13, 1958.

These treatments were applied within a week of the first winter rains to a strip approximately two feet wide down each row of vines. The strips were first cleaned of any rubbish present, to allow an even application of the chemicals to the surface of the soil. This method was used so that...
the top layer of soil could be impregnated with the weedkilling chemicals with the view to killing the seedlings as the seeds germinated.

RESULTS

No weed growth appeared on any plot for a period of 12 weeks. After this time, a few weeds began to appear on the strips treated with 2lb. of C.M.U., but they were very scattered and not in sufficient numbers to cause concern. Both C.M.U. and Amino triazole gradually break down in the soil, and with C.M.U. it is generally accepted that after about eight weeks approximately 40 per cent. of the chemical is still present. This means that the low rate of application of C.M.U. could be sufficiently reduced to allow weed growth towards the end of the season. With the higher rate of C.M.U. sufficient remains to give effective control over the whole season. Both rates of application of Amino triazole remained effective throughout the whole season.

WEEDS CONTROLLED

The weeds controlled included Capeweed (Cryptostemma calendula), wild radish (Raphanus raphanistrum), wild oats (Avena fatua), stagger weed (Stachys arvensis), annual veldt grass (Ehrharta...
longiflora), Barley grass (Hordeum leporinum), brome grass (Bromus spp.) and Subterranean clover (Trifolium subterraneum). It is possible that other winter annual weeds could be more resistant.

EFFECT ON VINES

No attempt was made to avoid spraying the trunks of the vines. The higher rates of C.M.U. and Amino triazole were applied in order to accentuate any detrimental effect these chemicals had on the vines. No symptoms could be detected either on the foliage or the berries.

Although it is generally accepted that both these chemicals once applied to the soil have a limited time during which they remain active, the trials will be continued for at least another season. This will enable any effects due to the accumulation of the chemicals either in the soil or in the vines to be detected.

COST OF TREATMENT

The cost of both chemicals is very economical. Using 4 lb. 80 per cent. C.M.U. or 8 lb. 90 per cent. Amino triazole per acre the cost of the chemical for treating a strip 18 inches wide and 10 chains in length would be approximately 5s. These rates would give complete control. Lower rates of both chemicals would probably give sufficient control to warrant their use.

CONCLUSION

Although the treatments described have given control of the weeds present it is too early to recommend the general use of C.M.U. or Amino triazole in vineyards. At least another season’s experience with the application of these chemicals to vines is required to prove that they do not affect the vines.

SUMMARY

(1) A trial was undertaken in an endeavour to control the growth of weeds in a narrow strip along rows of vines. This could do away with the need of strip-digging.

(2) Four pounds of C.M.U. or 8 lb. of Amino triazole per acre applied within a week of the first winter rains gave complete weed control.

(3) The usual winter growing annual weeds such as capeweed, staggerweed, wild radish, wild turnip, wild oats, barley grass, brome grass, veldt grass and subterranean clover were controlled for a period of 14 to 16 weeks.

(4) No harmful effects could be seen on the foliage or berries of the vines throughout the trial and as late as eight months after the treatments were applied.

(5) Because of the possibility of deferred injury to the vines vigneron are recommended not to use these treatments on a large scale for at least another season.

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