

Insecticides for Alfalfa Aphid

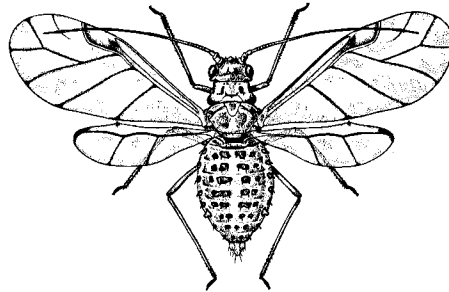
chemical control of spotted alfalfa aphid essential until natural enemies or resistant alfalfa varieties available

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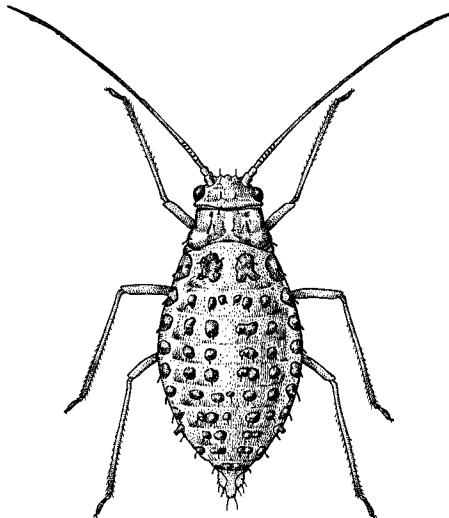
Many insecticides will kill the spotted alfalfa aphid—*Therioaphis maculata* (Buckton)—but even the most effective chemicals provide only a temporary relief from aphid attack. In most infested areas chemical control of the aphid is essential for successful alfalfa production. Furthermore, chemical control will continue to be essential until highly promising research on resistant alfalfa varieties—adapted to California growing conditions—can be completed or until fungus diseases or imported beneficial insects provide a more permanent control. Unchecked, this aphid can hamper alfalfa production, reduce the yield, and impair the quality of alfalfa hay, but it can be controlled economically by the careful use of chemical treatments that are properly applied.

The spotted alfalfa aphid infests over 75% of the state's alfalfa acreage and the entire state will probably become infested during 1956. At times of the year when spotted alfalfa aphid populations are high, the aphid is able to reinfest an alfalfa field soon after chemical treatments. Reinfestation is largely due to three reasons:

1. The aphid is able to multiply rapidly in warm weather. A female can produce five offspring per day and these young can be reproducing in about a week.
2. Many chemical treatments are not made properly. Any skips in application leave aphid islands in the field from where the aphid is able to spread out and quickly re-create high infestation levels over the field. Ground and air treatments must be applied so the spray swaths overlap slightly, and areas around fences, pole



Above—Winged adult spotted alfalfa aphid. Below—Wingless adult female spotted alfalfa aphid. Drawn by Celeste Greene.



lines, trees, ditches, and similar potential aphid islands must be treated.

3. Perhaps the most common reason for rapid reinfestation is the winged aphid's ability to move in huge numbers from heavily infested fields to neighbor-

ing alfalfa fields which have been recently treated. An alfalfa grower who does not take care of his fields greatly intensifies his neighbor's problem. Therefore, all heavily infested fields should be treated or destroyed.

Since the spotted alfalfa aphid appeared in California, it has settled into annual patterns of abundance so periods of high populations can be predicted with a certain degree of accuracy. In the Imperial, Coachella and Palo Verde Valleys the aphid is most destructive in the spring and again in the fall of the year. In inland areas of southern California and in the San Joaquin and Sacramento valleys the aphid is a problem from early summer to mid-fall. In coastal areas population peaks generally occur in late summer. In some coastal areas the aphid may not reach pest proportions at all unless there is a period of hot, dry weather.

Proper timing of insecticide application
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Insecticides and Rates per Acre for Spotted Alfalfa Aphid Control*

Material	Rates per acre	Remarks
Malathion	8-10 oz. by ground 10-12 oz. by air	Must not be applied within 7 days of cutting nor used at all on seed alfalfa.
Parathion	2-3 oz. by ground 3-4 oz. by air	Must not be applied within 14 days of cutting nor used at all on seed alfalfa. Preferred material on small seedling stands.
Demeton (Systox)**	2-4 oz.	For use on seed alfalfa only. Straw must not be fed to livestock. Where spider mites are also a problem, a rate of 6 oz. per acre is effective.
TEPP	1 pint 20% concentrate	For use in special cases only, and within 7 days of cutting when it is not possible to cut a few days early. Useful occasionally when chopping a little at a time for green feed. Not to be applied within 2 days of cutting.

* Warning: Parathion, demeton, and TEPP are hazardous materials and permits for their purchase and use must be obtained from the Agricultural Commissioner. Precautions stated on the label must be followed.

** Toxaphene as used for lygus bug control may be combined with demeton. Toxaphene alone will help suppress, but will not control heavy aphid populations. Toxaphene, 15% + DDT, 5% + Sulfur, 40% as used on seed alfalfa in a few areas will give adequate aphid control.

Ground sprayer with 16 low volume nozzles mounted on adjustable boom applying spotted alfalfa aphid treatment in southern California.



