

Ant Control in Citrus Groves

Argentine ant controlled for about six months by thorough spring application of chlordane spray

Paul D. Gerhardt

Ants—particularly Argentine ants—often interfere with the normal activities of beneficial insects attacking certain scale and mealybug pests. Therefore the chemical control of ants in citrus groves has sometimes been of value in encouraging the spread and multiplication of these beneficial insects.

Because of disadvantages in the use of ant-cup baits and bands, the application of sprays and dusts of the newer insecticides was investigated.

Results indicated that dust applications last only three to four weeks before losing their effectiveness, whereas sprays may last up to six months or more. The lower application cost of dust was outweighed by the much longer residual action of sprays. Therefore, attention was turned to sprays for ant control. The experimental sprays described below were applied with a regular hand-type citrus spray gun.

Chemicals Tested

A dosage of two pounds of actual chlordane—four pounds 50% wettable powder or five pounds 40% wettable powder—per 100 gallons of water was found to give control of ants on orange and lemon trees for as long as six months. An emulsifiable concentrate of chlordane, applied at the rate of two pounds actual chlordane per 100 gallons of water gave about the same degree of control.

Parathion—applied at the rate of one pound actual—four pounds 25% wettable powder—per 100 gallons of water, gave good initial control of ants and retained its effectiveness for approximately three months. After that, reinfestation occurred very rapidly.

Toxaphene used at the rate of two pounds of actual toxaphene—five pounds 40% wettable powder—or an equivalent amount of emulsifiable concentrate per 100 gallons of water, proved ineffective against the Argentine ant. Three weeks after treatment with toxaphene the ant infestation was reduced only approximately 50%.

Two other new materials, aldrin and dieldrin, were applied as sprays for ant control. Both were applied at the rate of two pounds of actual toxicant per 100 gallons of water, using both emulsifiable concentrates and wettable powders. Re-

sults to date indicate that the emulsifiable form of both materials will give longer residual action than the wettable powder. Six months is about as long as one application of either of the above materials will keep the ants from a grove. These two materials will require further evaluation before they can be recommended for use.

In all experiments reinfestation usually occurred on trees around the border of the ant-control plots, and sometimes on a few scattered trees inside. This indicates that after a complete treatment of the grove, only the borders and a few isolated trees inside require subsequent treatments.

Control Program

Chlordane is recommended as a spray, applied at the rate of two pounds of actual chlordane to 100 gallons of water—four pounds of 50% or five pounds of 40% wettable powder, or 1½ pints of 45% emulsifiable concentrate. It controls ants in citrus groves for approximately six months.

To achieve satisfactory ant control a thorough application of the chlordane spray must be obtained. The following places should be sprayed: 1, the trunk of the tree until run-off occurs; 2, the skirts where touching the ground, both inside and out, but never higher than one to 1½ feet from the ground; and 3, the litter beneath the tree. A regular type citrus gun and a number seven disc, with 300 to 400 pounds pressure, should be used. Between 200 and 300 gallons of spray per acre are required, the quantity depending upon the size of the tree, the density of the foliage, and the amount of litter beneath the tree.

Sprays for ant control may be applied in the spring as soon as the ants become active—normally, during the last part of April or the first part of May. If the spring treatment is missed, a summer spray for ants can be applied. Another satisfactory time for applying ant sprays is in the fall—in September or during the first part of October. If only one spray is to be applied each year, the spring treatment is the more desirable.

The timing of spray applications with relation to cultural practices is very essential. Sprays applied just prior to irriga-

tion or cultivation lose their effectiveness rather soon; it is better to spray just before the ground will remain undisturbed for a long interval.

Experience to date has indicated that spray materials applied for control of other citrus pests are compatible with ant sprays.

The spray materials used in these experiments are poisonous chemicals, and precautions recommended by the manufacturers must be observed rigorously.

Paul D. Gerhardt is Assistant Entomologist, University of California College of Agriculture, Riverside.

Heavy infestation of Argentine ants on the trunk of a lemon tree.

