

Aphicide Trial on Cabbage

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INTRODUCTION

It is important for vegetable growers to keep their crops as clean as possible by eliminating any type of insect damage. Aphid populations usually build in the Yuma area during early spring, between the cool temperatures in winter and the extreme hot summer weather. During this time when the crops are being harvested it is important to have materials which are effective and have a short preharvest interval.

Phosdrin (mevinphos) is a material widely used for aphid control on vegetables and has a 1 day preharvest interval. There is grower interest concerning other materials which are currently registered or may be registered in the near future that are both effective and have a short preharvest interval.

Two materials were chosen to compare with Phosdrin and an untreated control plot. Dibrom (naled) is currently registered on many of the vegetable crops and has a 1 day preharvest interval. A potential material is a new pyrethroid from FMC named Brigade which is a 10 WP formulation of Capture 2E.

METHODS AND MATERIALS

Cabbage seedlings were transplanted to the test site at the Yuma Valley Agricultural Center on December 17, 1986. They were planted in a single row on the east side of the 40 inch beds at an 8-10 inch spacing. The plots were 6 beds by 25 feet long replicated 4 times in a randomized complete block design.

The following treatments were applied on March 23, 1987: Phosdrin 4EC at 1/2 pint per acre, Dibrom 8E at 1 pint per acre, Brigade 10WP at 1 pound per acre, and an untreated control plot. These rates are of formulated material applied in 10 gallons of water per acre.

The materials were applied by hand using a CO₂ backpack sprayer with a 2 nozzle boom. The materials were applied to the 4 center rows of each plot leaving the outside rows as a buffer between treatments.

Aphid counts were made by removing 12 inner leaves per plot from around the cabbage head. Because of the high aphid population in the field at the time of the test, the samples were rated on a scale of 1 to 5 with one being few or no aphids and 5 representing a heavy infestation. Both cabbage and green peach aphids were present, but no differentiation was made between the two types in the rating. The high and low counts from each plot were eliminated, leaving 10 samples per plot for statistical analysis.

A precount was made before application of the aphicides on March 23, with additional counts taken 1,3,4, and 9 days after application.

RESULTS AND DISCUSSION

A comparison of the aphicides tested is provided in Table 1. The precount indicated no statistically significant differences between plots before treatment. Phosdrin was the only material that produced statistically significant differences in aphid populations with the untreated control plots during the entire 9 day period. Dibrom provided statistically significant control compared to the untreated plots the day after application, but that significance was gone by the third day. Although the aphid populations were always less, the plots treated with Brigade never showed statistically significant differences with the untreated plots.

One year of data is not adequate to draw any definite conclusions, but under the conditions of this test, Phosdrin provided the best aphid control, while Dibrom and Brigade provided similar results which were somewhat less than the control provided by Phosdrin.

Table 1. Comparison of aphicides tested on cabbage for the control of cabbage and green peach aphids.

Treatment	Precount	Day 1	Day 3	Day 4	Day 9
Phosdrin 4EC 1/2 pt/A ^x	2.2 ^y a ^z	1.1 a	1.0 a	1.4 a	1.9 a
Dibrom 8E 1 pt/A	2.8 a	1.5 ab	1.6 ab	1.8 ab	3.0 b
Brigade 10WP 1 lb/A	2.2 a	1.9 bc	1.6 ab	1.8 ab	2.6 ab
Untreated Control	2.5 a	2.3 c	1.9 b	2.5 b	3.5 b

x Amount of formulated material at 10 gallon of water per acre

y Scale of 1 to 5 with 1 = few to no aphids and 5 = heavy infestation

z Treatments followed by the same letter are not statistically different from one another at the 5 percent level using the Student-Newman Keuls Test for comparison of multiple means.