CONTROL OF APHIDS ON RUTABAGA
AT TWO LOCATIONS IN FLORIDA

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ABSTRACT

Control of *Myzus persicae* (Sulzer) and *Brevicoryne brassicae* (L.) on
rutabaga was studied at Hastings and Sanford, Florida using similar test
conditions during 1968-69. Populations of aphids were higher at Has-
tings, where cabbage aphids predominated, than at Sanford, where green
peach aphids were most prevalent. Differences between treatments and lo-
cations were highly significant. Best control at both locations was given
by monocrotophos, Monitor®, and mevinphos.

About 17,600 acres of cabbage with an estimated value of $13,655,000
were grown in Florida during 1968 (Anonymous 1968). Cabbage aphids,
*Brevicoryne brassicae* (L.), and green peach aphids, *Myzus persicae* (Sul-
zer), are important pests of the crop. When aphids are uncontrolled,
plants become distorted and do not produce marketable heads. Aphid num-
bers increase during the winter months to peak in March, then drop off
rapidly (Wilson 1957). Populations of the aphids on cabbage vary from
year to year and, often, not all plants of a field will be infected. Other
crops such as brussels sprouts, rutabaga, kohlrabi, broccoli, and collards
have been found to attract consistently high and uniform populations of
cabbage aphids through May at Hastings. Pimentel (1961) reported higher
numbers of cabbage aphids on brussels sprouts, kale, and broccoli than on
cabbage in New York State. This paper reports the results of insecticide
tests on cabbage and green peach aphids at 2 locations in Florida during
the winter of 1968-69.

PROCEDURE

For purposes of uniformity, test conditions were standardized as much
as practical between the 2 locations similar to tests for other cabbage in-
sects (Greene et al. 1969). American purple top rutabaga plants were
transplanted to field plots at the Central Florida Experiment Station at
Sanford and the Potato Investigations Laboratory at Hastings. Plots were
50 ft long by 4 rows wide, with data collected from the center rows. Border
rows were planted to cabbage at both locations. Pesticides, of the same
batch number where possible, were applied at 250-300 psi and 100 gal per
acre with tractor-powered sprayers. Six nozzles per row were used to
apply the spray to the tops, sides, and under surfaces of the leaves. Seven
applications were made at Hastings and 12 at Sanford at a 7-day interval
except for mevinphos and naled which were applied twice weekly at Has-
tings. Treatments were replicated 4 times in a randomized-block design.

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Data were collected at plant maturity by rating the aphid numbers on 10 plants from each of the 4 replicates. Each plant was rated from 1-7 as follows: 1 = 0, 2 = 1-2, 3 = 3-10, 4 = 11-25, 5 = 26-50, 6 = 51-100, 7 = over 100 aphids per plant.

Chemical definitions of the proprietary compounds used in the test are as follows:

DuPont 1642—methyl N-(carbamoyloxy) thioacetimidate
Fundal—N-(4-chloro-o-tolyl)-N, N-dimethylformamidine hydrochloride
Monitor®—0, s-dimethyl phosphoramidothioate
Niran®—6 lbs. ethyl parathion plus 3 lbs. methyl parathion per gallon
Phosvel®—0-(2,5-dichloro-4-bromophenyl) 0-methyl phenylthiosphophonate
UC-34096—4 [[(dimethylamino) methylene] amino ]-m-tolyl methylcarbamate hydrochloride

RESULTS

Results are listed in Table 1. Populations of aphids were higher at Hastings (where untreated plants were nearly all killed) than at Sanford. Cabbage aphids predominated at Hastings while green peach aphids were

| TABLE 1.—APHID CONTROL ON RUTABAGA AT 2 LOCATIONS IN FLORIDA DURING 1969. |
|-------------------------|----------|-----------|----------|
| Treatment and AI/acre (lb.) | Aphid rating* | Sanford a | Hastings b | Average c |
| Monocrotophos 0.75 | 1.22 a | 1.05 a | 1.14 a |
| Monitor 0.75 | 1.18 a | 1.23 ab | 1.21 a |
| Mevinphos 0.5 | 2.48 bed | 1.05 a | 1.77 ab |
| Niran 0.5+0.28 | 2.92 def | 1.55 ab | 2.24 bc |
| Naled 2.0 | 1.82 abc | 2.75 cd | 2.29 bc |
| Methomyl 0.5 | 1.72 ab | 2.48 d | 2.60 e |
| Parathion 0.5+Toxaphene 2.0 | 3.52 f | 1.98 bc | 2.75 c |
| Phosvel 1.0 | 2.60 cde | 6.55 e | 4.58 d |
| Fundal 0.5 | 2.35 def | 0.33 e | 4.50 d |
| DuPont 1642 0.5 | 2.88 def | 6.78 e | 4.83 d |
| UC-34096 0.5 | 3.30 ef | 6.95 e | 5.13 d |
| Untreated | 5.10 g | 7.00 e | 6.05 e |

* Means followed by same letter are not significantly different at the 5% level (Duncan’s MRT).

most prevalent at Sanford. Statistical analyses showed that differences between treatments and between locations were highly significant. The best control at both locations was given by monocrotophos, Monitor, and mevinphos. Other insecticide treatments, except those with parathion, gave
better control at Sanford than at Hastings. The poorer control of green peach aphids with parathion may have been related to the resistance shown by this aphid on potatoes (Workman 1963). Lack of control of high populations of cabbage aphids was shown by Phosvel, Fundal, DuPont 1642, and UC-34096 at Hastings.

LITERATURE CITED


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