

PEA LEAF ROLL VIRUS CONTROL
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MATERIALS AND METHODS

Plots were located one mile southwest of the sugar factory, Twin Falls, Idaho. The plot strip was located directly adjacent to and east of an established alfalfa hay field. Plot size was 25' (8m) x 12' (4m) with a 5' (1.6m) border hoed out between plots to five 20' (6.6m) of row length per plot. The peas (variety = Salvo) were planted on four 30" (.8m) beds with 5-6 rows of peas per bed. Each treatment plot was replicated five times in a randomized complete block design. The treatments were an untreated check (UTC), aldicarb broadcast applied at 1.5 lbs ai/A (1.68 kg/ha) one day before planting, aldicarb as mentioned plus one dimethoate spray on May 26, one aldicarb spray May 26, and multiple dimethoate sprays on May 26, June 9, and June 23. Dimethoate was applied at 0.167 lbs/A (0.17 kg/ha). Aphids were counted by pulling 10 plants per plot on a weekly basis and counting the number of aphids per plant. Virus counts were taken by recording the number of diseased plants in two 100-plant samples per plot on 6/17 and 7/21. The plants on the center two beds of each plot were threshed to obtain yield data. Only three replications were used for yield data analysis because the thresher plugged in the first two replications and seed from several plots was mixed.

RESULTS AND DISCUSSION

Definite differences in aphid numbers were realized with the various control samples. The Temik, Temik + Cygon, and multiple Cygon sprays provide good pea aphid control. The single Cygon application was not effective because the application was made when the first winged aphids were detected in area alfalfa fields. Virus incidence reductions were not as substantial between the various treatments as were the aphid numbers. Virus incidence reduction was much better in our 1981 trials than in this one. However, some of the virus incidence recorded on 7/21 could have been slight or introduced into the plants late enough to not cause any yield reductions. This is perhaps the case if you look at this year's yield data. The table summarizes aphid control, virus reduction, and yield in the 1982 test plots. Highest yields were obtained in the multiple Cygon plots and the yields were significantly different from the untreated check and single Cygon application. Temik at planting also had yields significantly greater than the check. The plots with Temik and one Cygon spray would have been expected to provide yields comparable to Temik. The lower value may be due to small plot size again or other factors. Plots treated with Temik or multiple Cygon applications provided a 25% yield increase compared to the untreated check. It appears, therefore, that one extra Cygon spray plus Cygon with weevil sprays, or Temik applied at planting can provide a stopgap protection to reduce leaf roll virus incidence until resistance is bred into susceptible lines.

Section 1
Mites and Sap-Sucking Insects

Table 1. % Pea aphid control, % pea leaf roll virus reduction, yield, and % increase over check.

Treatment	% Aphid control	% Virus reduction	Yield cwt/A	% Increase over UTC
UTC	--	--	13.2	--
TEMIK 1.5P ^{1/}	79	26.8	16.3	23.5
TEMIK + CYGON 6/26 ^{2/}	82	28.9	15.4	16.6
CYGON 5/26 ^{2/}	28	22.5	13.5	2.3
CYGON 5/26, 6/9, 6/23 ^{2/}	96	25.1	16.9	28.0

^{1/} Applied or broadcast, 1.5 lbs ai/A 1 day prior to planting

^{2/} Cygon applied at 0.167 lbs ai/A in 25 gals H₂O/A