

## POTATO LEAFHOPPER CONTROL IN ALFALFA, 2002

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Five insecticides were tested against the potato leafhopper (PLH) in alfalfa near Wooster, OH. Tests were designed as a RCB with 7 treatments and an untreated check plot, and 3 replications. Plot size was 30 ft x 30 ft. Alfalfa was approximately 6 to 7 in tall at the beginning of the experiment. Insecticides were applied using a bicycle sprayer with a 10 ft boom on 1 July. Spray nozzles were TeeJet 80015 spaced at 20 in, spray pressure at 30 psi, and spray output at 26.9 gpa. Eight 10-sweep samples were taken across the field the day before insecticide application to obtain a pre-treatment count. Post-treatment samples were taken a 2, 7, 14, and 21 DAT by taking a single sample (10 sweeps per sample) from each plot. Observations were taken each time on PLH injury, i.e., hopperburn. Potato leafhopper data were transformed prior to analyses by square root of  $(x + 0.5)$ . All data were analyzed with ANOVA and means separated using LSD. Yield data were collected on 24 July by cutting and weighing a 6 ft by 20 ft swath.

The pre-treatment PLH count was  $22.6 \pm 1.85$  (SEM) adult leafhoppers per sample. No nymphs were collected at that time. All insecticides significantly reduced PLH adult and nymph populations on all sampling dates with the only exception occurring for PLH adults with Warrior at 1.92 oz/acre on 14 DAT. While the untreated check plot suffered extreme yellowing or hopperburn and stunting, the treated plots showed little if any injury until 21 DAT. At that time, the lower rates of Warrior and Mustang began to show a little yellowing, albeit slight. Extremely hot and dry weather during the trials resulted in uneven growing conditions across the field. While check yields were low in all three replications, those of treated plots were very uneven across the area making the yield data meaningless; thus, yields are not presented.

Table 1.

| Treatment/<br>formulation | Rate<br>oz/acre | PLH adults per 10 sweeps |        |          |         | PLH nymphs per 10 sweeps |        |        |        |
|---------------------------|-----------------|--------------------------|--------|----------|---------|--------------------------|--------|--------|--------|
|                           |                 | 2 DAT                    | 7 DAT  | 14 DAT   | 21 DAT  | 2 DAT                    | 7 DAT  | 14 DAT | 21 DAT |
| Warrior 1                 | 1.92            | 0.00 b                   | 5.3 b  | 66.3 ab  | 56.3 b  | 0.0 b                    | 0.0 b  | 1.7 b  | 1.3 b  |
| Warrior 1                 | 2.56            | 0.30 b                   | 0.7 c  | 27.3 c   | 22.3 c  | 0.0 b                    | 0.0 b  | 0.0 c  | 0.7 b  |
| Mustang                   | 2.40            | 0.30 b                   | 3.0 bc | 43.7 abc | 30.3 c  | 0.0 b                    | 0.0 b  | 0.0 c  | 2.0 b  |
| Mustang                   | 3.20            | 0.00 b                   | 1.3 c  | 33.3 bc  | 25.0 c  | 0.0 b                    | 0.0 b  | 0.0 c  | 0.7 b  |
| Baythroid 2               | 0.80            | 0.00 b                   | 1.0 c  | 13.7 c   | 13.3 c  | 0.0 b                    | 0.0 b  | 0.0 c  | 0.0 b  |
| F0570 0.8                 | 3.20            | 0.00 b                   | 3.0 bc | 22.0 c   | 17.7 c  | 0.0 b                    | 0.3 b  | 0.0 c  | 0.0 b  |
| XR225 0.5                 | 2.56            | 0.00 b                   | 0.0 c  | 19.3 bc  | 25.7 c  | 0.0 b                    | 0.0 b  | 0.3 c  | 2.7 b  |
| Untreated Check           | --              | 31.3 a                   | 75.3 a | 88.3 a   | 157.7 a | 6.7 a                    | 21.7 a | 25.7 a | 37.7 a |

Means in a column followed by the same letter are not significantly different (LSD, P = 0.05).