

Section I. Forage Insects

ANAPHES IOLE FOR CONTROL OF LYGUS BUGS ON ALFALFA SEED

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This study was designed to evaluate Anaphes iole, an egg parasite of lygus bugs, for control of lygus bugs on alfalfa seed.

A 2-acre (95 feet x 0.15 miles) commercial field of alfalfa seed located at Touchet, WA was used for the experiment. The field did not receive a pre-bloom insecticide. Adult parasites were obtained from a commercial source, Biotactics (Riverside, CA) and they came in small vials. When released the lid was taken off the vials and the vial placed in the lower canopy of the alfalfa foliage. At each parasite release date half of the parasites were released at the west end of the field and the other half at the east end of the field. The number of parasites and date released were: 15,000 at 10 am on 6 May; 15,000 at 10 am on 13 May; 15,000 at 5 pm on 17 May; 30,000 at 5 pm on 19 May; 30,000 at 8 am on 26 May; 30,000 at 8 am on 2 June; and 30,000 at 9 am on 9 June. The total number of adult parasites released on the field was 165,000 at a cost of \$1,314.00 for the parasites.

On several occasions, the number of dead iole adults were counted in the vials after release.

Evaluations for lygus bug control were made on 7, 13, 24 and 31 May and 8, 14, 22 and 29 June and 7, July by taking 5 (180 degree) sweeps per plot with a 15-inch diameter sweep net and recording the number of insects.

Results:

Two vials were received on 6 May and on 12 May (after release) there were 64 dead adults remaining in the 2 vials. Three vials were received on 13 May and on 19 May (after release) there were 62 dead adults remaining in the 3 vials. Four vials were received on 19 May and on 24 May (after release) there were 189 dead adults remaining in the 4 vials.

By 7 July it was very evident that almost no seed was being set in the field and most of the bloom was stripped from lygus bug feeding and the test was terminated.

Conclusion:

In this test, releases of iole did not provide commercial control of lygus bugs. There could be a number of explanations for this failure such as: Were enough iole released?, Were they released at the appropriate timing?, Were they released at the right time of day?, etc. These questions point to the fact that we need to know a lot more for iole to be a successful biological control of lygus and further research is necessary.

Table 1. Effects of *A. iole* egg parasite releases to alfalfa on lygus bug adults (LA), small lygus bug nymphs (instars 1-3), large lygus bug nymphs (instars 4-5), pea aphid (APH), and predators (PR). Touchet, WA. 1994.

| <u>Mean No./5 sweeps on 24 May</u> | | | | | |
|-------------------------------------|-----------|------------------|------------------|------------------|-----------|
| | <u>LA</u> | <u>1-3</u> | LN <u>4-5</u> | LN <u>APH</u> | <u>PR</u> |
| Parasite Field | 3 | 18 | 6 | 188 | 2 |
| <u>Mean No./5 sweeps on 31 May</u> | | | | | |
| | <u>LA</u> | LN <u>1-3</u> | LN <u>4-5</u> | <u>APH</u> | <u>PR</u> |
| Parasite Field | 12 | 15 | 14 | 275 | 6 |
| <u>Mean No./5 sweeps on 8 June</u> | | | | | |
| | <u>LA</u> | LN <u>1-3</u> | LN <u>4-5</u> | <u>APH</u> | <u>PR</u> |
| Parasite Field | 25 | 35 | 50 | 1,250 | 13 |
| <u>Mean No./5 sweeps on 14 June</u> | | | | | |
| | <u>LA</u> | LN <u>1-3</u> | LN <u>4-5</u> | <u>APH</u> | <u>PR</u> |
| Parasite Field | 21 | 32 | 45 | 1,733 | 8 |
| <u>Mean No./5 sweeps on 22 June</u> | | | | | |
| | <u>LA</u> | LN <u>1-3</u> | LN <u>4-5</u> | <u>APH</u> | <u>PR</u> |
| Parasite Field* | 20 | 24 | 44 | 16 | 14 |
| Field sprayed with Pirimor | | | | | |
| <u>Mean No./5 sweeps on 29 June</u> | | | | | |
| | <u>LA</u> | LN <u>1-3</u> | LN <u>4-5</u> | <u>APH</u> | <u>PR</u> |
| Parasite Field | 12 | 22 | 31 | 20 | 10 |
| <u>Mean No./5 sweeps on 7 July</u> | | | | | |
| | <u>LA</u> | LN <u>1-3</u> | LN <u>4-5</u> | <u>APH</u> | <u>PR</u> |
| Parasite Field | 17 | 13 | 19 | 15 | 13 |