

# Lygus Bugs on Seed Alfalfa

## specific treatments recommended for lygus bug control in alfalfa seed fields at three stages of plant growth

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**Successful control of lygus bugs** on alfalfa requires properly timed applications of insecticide.

Correct timing prevents damaging numbers of the pest and avoids serious harm to beneficial insects.

Lygus bugs—of various species—are the most important insect pests attacking alfalfa seed and—when present in high numbers—may completely destroy the crop.

Insecticide should be applied when population counts reveal the presence of definite numbers—depending on the growth stage of the alfalfa—of lygus bugs in the field.

The lygus-bug counts given in this article—for the various stages of the alfalfa—are the numbers which indicate the proper time for insecticide applications, and are not, necessarily, the population density at which economic damage occurs. Treatments are made at these levels to avoid later populations which may cause economic damage.

Lygus-bug counts are based on two-sweep counts taken at 10 to 20 stations over a field. At least three two-sweep counts are made at each station. The sweeps are taken with the standard sweep net, which has a 15" opening and a handle 26" long. Each sweep describes an arc of 180° with the net striking the upper eight to 10 inches of the plants. The margins of the field, spots with heavy growth, and other areas of the field may have a significantly higher count than the remainder of the field. In general, all counts in a field are averaged and treatment is based on this average population. Occasionally it is practical to treat only portions of a field.

### Protection of Pollinators

Pollinators and predators—the beneficial insects—must be protected. Improper use of even a relatively safe material may cause severe losses of these beneficial insects. To avoid harm to pollinators, treatments are restricted to the time in late evening when the bees leave the field until the time in the early morning when they return.

DDT or toxaphene at the recommended time of application and dosage rates cause the least damage to the alfalfa-seed pollinators. Chlordane, BHC, lindane,

parathion, or dieldrin must not be applied at any time to alfalfa fields in bloom. Before spraying or dusting seed fields, it is advisable to notify beekeepers whose bees are in the vicinity. To avoid harm to predators, insecticide treatments are made only at the recommended time, dosage and concentration.

### Choice of Insecticide

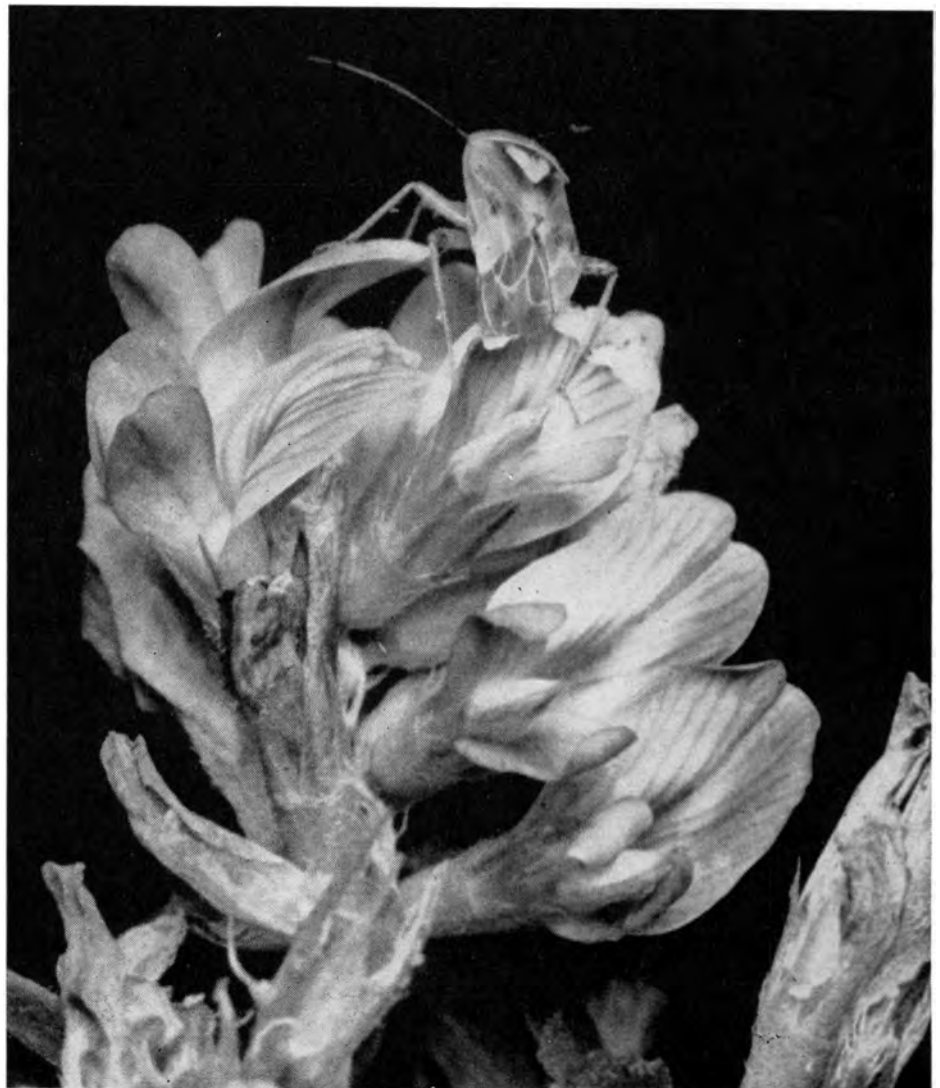
DDT is the preferred material for lygus-bug control except when grasshoppers or stink bugs are also present in

economic numbers. In the hot southern California desert areas during July and August, DDT dusts may not give satisfactory control, and sprays will be more reliable. Usually DDT sprays give more effective control of lygus bugs than dusts. However, the early bloom treatment is always a dust and includes at least 75% sulfur to aid in the control of mites. A DDT-sulfur dust may also be used in bloom but some flower burn may occur.

Effective lygus-bug control may be obtained by either ground or air applica-

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**A greatly magnified alfalfa flower cluster with an adult lygus bug at the top. Note the characteristic pale triangle on the back of the insect.**



## LYGUS

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tions. With both types of application, full coverage of the field must be obtained. Untreated areas about fences, buildings, ditches, power lines, trees, or those created by improper spacing of swaths are areas of reinfestation for the whole field and should be cleaned up. Care should be taken to slightly overlap each pass and to treat the margins of the fields. Dusting swaths are approximately 40' wide and spraying swaths about 35'. These widths may be slightly narrower with certain types of aircraft.

Flagmen are always used with air applications of both dust and sprays.

The dosages of DDT and toxaphene recommended here may leave a residue on the plants. Consequently, straw remaining after harvest in fields treated with these materials must not be fed to dairy animals or those being finished for slaughter.

### Treatment in Early Bloom

Early bloom is the period in the growth of the seed crop when the first light scattering of flowers occurs. Alfalfa in this stage is treated when the lygus-bug count

reaches one insect per sweep. A 5% DDT-75% sulfur dust is the recommended treatment at this time. The sulfur is included as a control for the Atlantic mite and as a depressant of the other species.

When adjacent hay fields or other crops containing lygus bugs are near harvest, treatment may be delayed as long as a week to insure a kill of any lygus bugs that may migrate from the harvested field. Thorough application is essential in this treatment.

### Period of Seed Set

The period of seed set extends from early bloom to about 30 days prior to mowing or defoliating for harvest, or until the honey bees are normally removed from the field. During this period the alfalfa is usually in heavy bloom, but in many fields several successive periods of maximum bloom occur.

During the period of seed set, the fields are treated when the count of lygus bugs reaches six per sweep. Counts are determined by doubling the nymphal count and adding it to the adult count. For example, two adults and two nymphs per sweep equal a count of six; four adults and one nymph also equal a count of six;

and similarly, three nymphs or six adults equal a count of six.

### Maturing Fields

Maturing fields are those in which the seed set is complete and honeybees usually have been removed. If lygus bugs have been kept under control during the period of seed set, there is seldom any need for treating the maturing field. If the pest appears to be unusually abundant, the count for treatment is ten per sweep, determined in the same manner as described above. Lygus bug populations normally decline during this period. However, other pests, such as stink bugs and chalcids, may do considerable damage.

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## Recommendations for the Control of Lygus Bugs in Alfalfa Seed Fields in California

| Insects                     | When to Treat                                                                      | What to Use                                                                                                                                                            | Amount per Acre                                                                                                                          |
|-----------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Lygus bugs alone            | Early bloom—when count averages one per sweep                                      | 5% DDT—75% sulfur dust                                                                                                                                                 | { 25 pounds by ground<br>30 pounds by air                                                                                                |
|                             | Period of seed set—when count averages six per sweep and each nymph counts as two. | 25% DDT emulsifiable concentrate<br>or<br>5% DDT—75% sulfur dust. Sulfur may cause some flower injury. DDT dust may not give satisfactory control in hot desert areas. | { 2-3 qts. in 5 gals. of water by air<br>or 10-20 gals. of water by ground<br>25 pounds by ground<br>30 pounds by air                    |
|                             | Maturing field—when count averages ten per sweep and each nymph counts as two.     | DDT dust or spray as above. DDT dust may not give satisfactory control in the hot desert areas.                                                                        |                                                                                                                                          |
| Lygus bugs and grasshoppers | When both are present in damaging numbers.                                         | toxaphene emulsifiable concentrate<br>or<br>10% toxaphene—50% sulfur dust                                                                                              | { 3 lbs. actual toxaphene in 5 gals. of water by air or in 10-20 gals. of water by ground.<br>25 pounds by ground<br>30 pounds by air    |
| Lygus bugs and stink bugs   | When both are present in damaging numbers.                                         | 20% toxaphene—40% sulfur dust<br>or<br>toxaphene emulsifiable concentrate. A dust is preferred in lodged stands.                                                       | { 25 pounds by ground<br>30 pounds by air<br>6 lbs. actual toxaphene in 8-10 gals. of water by air or in 20-25 gals. of water by ground. |
| Lygus bugs and armyworms    | When both are present in damaging numbers.                                         | Treat with DDT as for lygus bugs alone.                                                                                                                                |                                                                                                                                          |