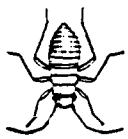
Fresno County

Seed Crop Notes

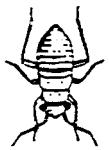
University of California Cooperative Extension June 1992

Lygus Alert

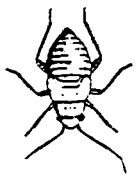
Unlike the past two production seasons, spring scouting data indicate that Lygus are, and will continue to be, a significant problem this year. As early as mid-May, I heard reports of economically damaging lygus populations in alfalfa seed fields. Growers should be monitoring their fields and preparing to treat as necessary.



The adult brown lygus bug is about 1/4 inch long, oval and somewhat flattened. General body color is pale yellow to brown with darker brown, black and red markings. The green lygus bug is smaller than the brown lygus bug (3/16 inch) with pale green body color. Both brown and green lygus bugs have a distinctive "V" marking on the middle of the back. The green lygus mark is usually a solid triangle, while the brown lygus bug has more of a true "V".



Immature lygus bugs (nymphs) look like miniature adults without wings, especially in the later stages. Although all nymphs are wingless, in the 4th and 5th instars wings appear as small pads. Nymphs are lighter in color than adult forms and have several small black spots on their backs which become evident in the 3rd instar and appear most distinctly in the 4th and 5th instars.



Approximately 10 to 30 days are required from the time an egg hatches until the lygus reaches the adult stage. High temperatures reduce the time required for lygus development. In general, nymphs remain in the first four stages of development for 2-7 days and remain in the fifth stage for 4-10 days. With an average generation time of 6 weeks, we usually see about 5 generations per year in this area.

The greatest period of lygus bug activity is from June through August. Lygus are very mobile in both the nymphal and adult stages and can migrate to seed fields from safflower, cotton, beans, or weedy onion or lettuce fields. Seed fields should be monitored on a weekly basis. The monitoring technique for alfalfa seed is different than the method used for sampling cotton. Lygus populations are determined from counts that consist of two 180° sweeps at each of 10 or 20 locations throughout the field. At least three such counts are made in each place. The margins of the field and spots with heavy growth may have significantly higher counts than the remainder of the field. Typically, all counts in a field are averaged and treatment decisions are based on the average number of insects per sweep, but occasionally it is practical to treat only portions of a field. *(Continued on Page 2)*

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The first chemical applications to control lygus typically occur in early June when the populations reach 4-6 lygus per sweep. During bloom and seed set, treatment levels range from 8-10 lygus per sweep. 10-15 lygus per sweep can be tolerated late in the season when the seed is maturing. Pesticide applications should be timed to coincide with the hatching of lygus broods. Treatment can be delayed until egg hatch is complete, but should take place before the nymphs reach the 4th and 5th instar stage since late instar stages and adults are more tolerant of many insecticides.

There are several insect predators which assist in controlling the population levels of lygus. They are: Minute Pirate Bugs (*Orius*), Big-eyed Bugs (*Geocoris*) which only prey on young nymphs, and Damsel Bugs (*Nabis*) which are effective against both nymphs and adults. Lygus can sometimes be difficult to distinguish from big-eyed bugs and damsel bugs. Big-eyed bugs are browner and have large brownish-black eyes which are larger than their head. Damsel bugs are tannish-green and more slender than lygus.

Very few materials are available for the control of lygus in alfalfa seed fields. Because of the limited number of options, it is critical to maintain the efficacy of currently registered materials. Lygus are quickly able to develop resistance to chemicals applied to control them because of several characteristics: 1) they have a short life cycle with many generations per year, 2) they have a wide host range, and 3) they are exposed to many insecticide applications each year. Furthermore, insecticide applications generally eliminate or greatly reduce naturally occurring beneficial organisms such as parasitic wasps and predatory insects that help keep the Lygus population somewhat in check. Without beneficial insects, even more pressure is placed upon the insecticide in terms of control.

Last season, a 24-C registration for Capture® insecticide was granted for alfalfa seed. The material was extremely effective in controlling insect pests during the pollination season. To prevent the development of resistance to this insecticide, it is recommended that growers continue to use their standard clean-up materials (i.e. Monitor® or Supracide®) and restrict the use of Capture to one application per year. With labels for Capture in both cotton and alfalfa seed, allowing multiple applications per year, we would expect to see resistance develop very quickly in California if growers are not judicious in using this material. Growers in Arizona reported that after only one year of Capture use, they saw reductions in the level of control as a result of resistance development. This year, I will be monitoring the development of resistance to several insecticides in cooperation with Bill Brindley from Utah State University. Results will be reported at the Alfalfa Seed Symposium in March.

As a side note related to the use of Capture, this spring, the 11 month harvest/grazing restriction was reduced to 8 months following application of Capture. Although FMC is collecting data to support further reductions in the harvest restriction, growers should time their final application with the current 8 month restriction in mind.

The best insurance against development of insecticide resistant is rotating chemical controls and maintaining the insect's natural enemies in the field. If control by insecticides is necessary, the best way to reduce resistance development and in some cases even allow pest populations to become more susceptible is to alternate insecticides. By continuous monitoring of predators and pests in the field, an assessment can be made that will result in reduced use of chemicals and improved timing of applications.