

## Lygus Bug in Faba Bean

By Bruce Barker, P. Ag

Lygus bugs infest several crops in Saskatchewan, including faba beans, canola, and alfalfa. They pose a significant threat to human consumption faba bean production, as grading factors are very low for lygus bug damage – less than one per cent damage for Grade No. 1.

Lygus bugs use a needle-like mouthpart to penetrate the pod and suck on plant sap from the developing seed. This causes dark spots on the seeds that can result in downgrading of seed intended for the edible bean market. Yield may also be impacted.

### Life Cycle

The species of lygus bugs that infest faba beans are thought to be the same as those that infest canola. *Lygus lineolaris*, *L. borealis*, *L. elisus*, and *L. keltoni* have been observed on canola. In central Alberta, *L. lineolaris* and *L. keltoni* have been observed on faba beans. On the short grass Prairies, *L. elisus* and *L. keltoni* are more common while *L. lineolaris* is more common in the Parkland.

Adult lygus bugs overwinter under plant debris and emerge from hibernation soon after the snow melts in spring. Adults then feed on early growing plants, mate, and move to host crops to lay eggs. Egg-laying usually lasts about 3-4 weeks. Eggs take about 10 days to hatch and may happen from mid-May through August depending on the region and the year. Development from egg to adult depends on temperature and may take 30-40 days, going through five nymphal instars.

In southern regions, the new generation adults first appear near the end of June. Typically there are two generations of lygus bug in southern regions and one in northern regions. In central regions such as Saskatoon, Lacombe, and Edmonton, there may be a partial second generation.

### Scouting and Thresholds

Scouting for lygus bugs in faba beans is similar to canola. The [Alberta Faba Bean Producer's Manual 1.0](#) suggests scouting should start in mid-July. Use a standard 15 inch (38 centimetres) sweep net and take 10, 180-degree sweeps at 10 spots in the field. Scout regularly in a representative number of spots in the field making sure to include thick areas of the field.

In canola, economic thresholds have been set, and are 1-2 lygus bugs per sweep, on average, depending on canola price and application cost. No economic threshold level has been set in faba beans. Current research has found no economic benefit for applying an insecticide for lygus control in faba beans in a three-year trial at two locations in northwest Alberta from 2001-2003. Matador® was applied at four different treatment timings of July 2, July 2 and 15, July 2, 15, and 30, and July 2, 15, 30, and August 13.

The research found a decrease in lygus punctures with Matador® applications when compared to the control. However, the samples were still downgraded from No. 1 Canada, even with four applications of the insecticide.

Although insecticide application was not enough to maintain quality, it appeared to have contributed to yield increases in some instances. This increase in yield appears to be associated with increases in seed size. However, the observed yield increases did not pay for the Matador® applications.

### Control Options

Since insecticide application has not proven to be economically effective for lygus bug control, faba bean growers should rely on cultural practices to help reduce the economic impact of lygus bugs. Early planting may help faba beans escape the peak flushes of lygus bugs that occur later in the growing season. This may also help faba beans mature earlier and avoid the migration of lygus bugs from harvested canola fields.

Pre-seed and in-crop weed control and tillage of host plants such as volunteer canola may help to reduce food sources for early emerging, overwintering adults and early hatching first generation nymphs.

Hector Carcamo, Research Scientist – Insect Pest Management and Syama Chatterton, Research Scientist, with Agriculture and Agri-Food Canada in Lethbridge, Alberta, are conducting research on whether there is an increase in chocolate spot with lygus infestations. If confirmed, the relationship would only be mechanical (feeding damage allows the pathogen to penetrate the plant). They are also looking at the benefit of spraying insecticide and fungicide to reduce losses, and have a greenhouse study to look at more detailed interactions between the insect and the pathogen.

Lygus bugs also have many natural enemies, including parasitic wasps and predators. A survey near Lethbridge in 2005/2006 found four species of parasitoid wasps (*Hymenoptera: Mymaridae*) that feed on lygus eggs. The average combined rate of parasitism by these wasps was nine per cent.

There are several other parasitoids of lygus bugs noted in other crops that could contribute to higher parasitism levels. Predators like ladybird beetles, lacewing larvae, and crab spiders all play a role in suppressing lygus bugs in canola, and may also play the same role in faba beans.

Protecting these natural enemies of lygus bug by avoiding unnecessary insecticide applications may also help to reduce the impacts of lygus bugs.



**Figure 1:** *Lygus bug on faba bean leaf (left). Lygus damage (black spots) on one seed in the centre of the photo (right).*