

Management of Lygus Bugs and Cabbage Seedpod Weevil in Canola

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Lygus bugs and cabbage seedpod weevils are serious insect pests of canola in southern Alberta. In 2000 and 2001 a plot insecticide trial was conducted to develop a chemical management strategy for the two pests. Results from the study showed that a single spray application at late bud (bolting) or early pod stage provided similar yield protection to multiple applications.

Lygus bugs and cabbage seedpod weevils are serious insect pests of canola in southern Alberta. Economic thresholds for lygus control had been established for early and mid-pod stages of canola, however researchers were still trying to assess potential damage at earlier growth stages.

In 2000 and 2001 a plot insecticide trial was conducted near Lethbridge, Alberta to develop a chemical management strategy for the two pests. The objectives of the study were: 1) to determine the timing and frequency of insecticide application to maximize canola yields in relation to lygus and cabbage seedpod weevil pressures, and 2) to determine canola yield losses caused by a range of combinations of lygus bugs and cabbage seedpod weevils at densities below their individual economic thresholds.

Results from the insecticide timing study showed that a single spray application at late bud (bolting) or early pod stage was as effective as multiple applications to protect yields. However, the study also found that single applications at the bud stage were not adequate for control of lygus bugs. The yield protection from the late bud stage results from control of cabbage seedpod weevils and the early pod stage, from lygus bug control.

During both years of the study, canola crop development was delayed because of drought and flea beetle feeding and caused plants to escape damage from cabbage seedpod weevil. Insecticide application had little impact on cabbage seedpod weevil infestation levels and the results indicated that late-planted fields should not be sprayed for weevils. Observations from commercial fields and other ongoing plot trials confirmed that only early-seeded canola field may need spraying against weevils.

A second study was performed in 2000 and 2002 to determine the impact of a range of lygus and weevil densities on canola yield in cages. The study suggested that seed yield can be lost when densities of lygus and weevils reach 2 of each pest per plant. At lower abundances equivalent to 1 of each pest per sweep net during the flower stage, these

insects are not expected to cause damage and should not warrant spraying. More field level studies are needed to validate a combined pest threshold. A more refined threshold should also include presence of beneficial natural enemies of these pests.

Scientific Publications

Cárcamo, H.A., L.M Dosedall, D. Johnson, O. Olfert. 2005. Evaluation of foliar and seed-coated insecticides for control of the cabbage seedpod weevil (Coleoptera: Curculionidae) in canola. *Canadian Entomologist* 137: 476-487

Cárcamo, H. A., R. Dunn, L. M. Dosedall, O. Olfert. 2007. Managing cabbage seedpod weevil in canola using a trap crop – a commercial scale study in western Canada. *Crop Protection* 26: 1325-1334