

# FIELD DAY 2010

REPORT OF PROGRESS 1034



KANSAS STATE UNIVERSITY  
AGRICULTURAL EXPERIMENT  
STATION AND COOPERATIVE  
EXTENSION SERVICE

SOUTHWEST  
RESEARCH-EXTENSION  
CENTER



# Insect Pests of Winter Canola in Kansas

*A. Joshi, L. Buschman, P. Sloderbeck, J. Holman, and M. Stamm*<sup>1</sup>

## Summary

Potential insect pests of winter canola were monitored by using pheromone traps and yellow sticky cards. Diamondback moth (*Plutella xylostella*) was continuously present throughout the winter at low levels. Their population spiked in May when warm temperatures returned. Aphid populations were recorded as 519 per raceme of canola later in spring. Tarnished plant bugs (*Lygus* spp.) and false chinch bugs (*Nysius raphanus*) were also present in low numbers.

## Introduction

Winter canola has captured interest of growers and researchers in the southern Great Plains. Canola is an oilseed crop that can add diversity to the rotational cropping system, provide herbicide options for controlling weedy grasses and oil for cooking and biodiesel, and be used as a feed protein supplement for livestock. It also has a yield advantage over spring canola because the flowering stage escapes some of the high summer temperatures. Agronomic trials have been initiated at three locations in Kansas to evaluate various factors limiting canola production in the region. This survey was conducted to identify potential insect pests of canola in Kansas.

## Procedures

This insect pest survey mainly focused on diamondback moth, false chinch bugs, and harlequin bugs (*Murgantia histrionica*) on canola grown for other agronomic research at the Southwest Research-Extension Center in Garden City, KS, and Agronomy Research Farm at Manhattan, KS. However, aphids, crucifer flea beetles (*Phyllotreta* spp.), and other insect pests were recorded when present.

We visited the two locations within 2 weeks of canola emergence (Sept. 29 to Oct. 1, 2008) to visually inspect plants and install diamondback moth pheromone traps and yellow sticky traps. These traps were replaced and pest numbers were recorded weekly; pheromone lure was replaced every 3 weeks. These traps were maintained through June 2009. Number of plants and number of damaged plants in a 10-ft row were randomly sampled three times in each of the four locations to calculate the percentage of damaged plants. Percentage of canola defoliation was measured by observing 10 random plants four times in each of the monitoring plots (see North Dakota State University Extension bulletin E-1234).

In the first week of June 2009, canola pests were also sampled at Garden City by beating the plants in 1 ft<sup>2</sup> on a clean plastic beat sheet. Plants were randomly selected at four locations in each plot. Four racemes were observed in each plot to record aphid numbers. Additionally, four whole plants from each plot were placed in large 76-liter Berlese funnels. The resultant alcohol samples were filtered on ruled white filter paper, and aphid populations were estimated by weight.

---

<sup>1</sup> Kansas State University Department of Agronomy and Oklahoma State University Department of Plant and Soil Sciences.

## Results and Discussion

Up to 25% of canola seedlings had damage at Garden City, but defoliation was minimal (3.9%). At Manhattan, damage was less than 3.5% and defoliation was negligible. No canola flea beetles were observed.

The pheromone trap at Garden City registered the continuous presence of diamondback moth through the winter season. A total of 441 diamondback moths were collected in the pheromone trap with a peak catch of 121 diamondback moths on June 1, 2009. At Manhattan, the pheromone trap was not monitored during winter; nevertheless, a season total of 802 diamondback moths were collected during the growing season with a peak catch of 231 diamondback moths on May 14, 2009.

Yellow sticky cards revealed the presence of aphids, diamondback moths, tarnished plant bugs, and imported cabbage worm (*Pieris rapae*) at both locations. In late spring, aphid populations increased to 519 per raceme of canola, up to 15,600 aphids per foot of row, and up to 8,600 aphids per plant in Garden City. The aphid populations were a mix of turnip (*Lipaphis erysimi*) and cabbage aphids (*Brevicoryne brassicae*), and they were difficult to separate. Populations of tarnished plant bugs and imported cabbage worm were relatively low, possibly because the fields had adequate populations of predators and parasitoids. Harlequin bugs were not seen during this season at Garden City. In Manhattan, false chinch bugs were present during late spring. Large populations of false chinch bugs were seen in some plots. False chinch bugs were recorded during bloom and early pod and can hurt canola yield. Clearly, sticky card was not the best method for monitoring false chinch bugs. Cabbage seedpod weevil (*Ceutorhynchus assimilis*) was noticed at Manhattan.

Poor canola emergence and winterkill at Garden City and in variety trials at Manhattan may have influenced this initial attempt at identifying potential pests of canola in Kansas. We can, however, conclude that aphids, diamondback moth, and false chinch bugs warrant further study.

# FIELD DAY 2010

Copyright 2010 Kansas State University Agricultural Experiment Station and Cooperative Extension Service. Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, give credit to the author(s), Field Day 2010, Southwest Research-Extension Center, Kansas State University, June 2010. Contribution no. 10-293-S from the Kansas Agricultural Experiment Station.

## **Chemical Disclaimer**

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned. Experiments with pesticides on nonlabeled crops or target species do not imply endorsement or recommendation of nonlabeled use of pesticides by Kansas State University. All pesticides must be used consistent with current label directions. Current information on weed control in Kansas is available in *2010 Chemical Weed Control for Field Crops, Pastures, Rangeland, and Noncropland*, Report of Progress 1027, available from the Distribution Center, Umberger Hall, Kansas State University, or on the World Wide Web at: [www.ksre.ksu.edu/library](http://www.ksre.ksu.edu/library) (type Chemical Weed Control in search box).

Publications from Kansas State University are available on the World Wide Web at: [www.ksre.ksu.edu](http://www.ksre.ksu.edu)

KANSAS STATE UNIVERSITY AGRICULTURAL EXPERIMENT STATION  
AND COOPERATIVE EXTENSION SERVICE