



# Pest e-alerts



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## Scouting for and Managing Diamondback Moth in Canola, 2017

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Josh Bushong, and Heath Sanders, OSU Area agronomists, have seen some heavy diamondback moth (DBM) infestations in canola. They both asked about DBM management as our canola begins to bolt and treatment thresholds.

Diamondback moth is a small, gray and brown moth that measures  $\frac{1}{2}$  inches. They fold their wings over their body in a roof like position at rest. Male moths display three diamond-shaped markings on the forewings when folded together, which is how it got its name (Figure 1). Female moths lay oval flattened eggs measuring 0.44 mm in groups of 1-8 eggs which will hatch in 5-6 days. One female will lay an average of 150 eggs.



Newly hatched larvae are light green with a green head, and become progressively darker as they mature. They develop through four instars. A full grown DBM caterpillar measures about 0.5 inches long. One distinct feature of this caterpillar is that they will thrash violently back and forth and drop from the plant on a silk strand when disturbed. They pupate in a loose, silken cocoon that they attach to the plant. They can complete a lifecycle in about 32 days, depending on temperature. Typically, a scout will find all life stages at the same time within a field.



Larvae are the damaging stage. Newly hatched larvae feed by leaf mining. As they grow they feed on the outside of the leaves. Small larvae chew small irregular windowpane areas on a leaf (Figure

2) but as they get larger, they chew entire leaves leaving only the veins. Although leaf feeding looks bad, it doesn't result in notable yield loss. However, significant yield loss is associated with flower and seedpod injury. Larvae feeding in flowers cause them to abort and seedpod feeding reduces seed production. Larval feeding on flowers and seedpods can also cause a delay in plant maturity.

First, let me try to answer Josh and Heath's question about DBM management as our canola begins to bolt. Diamondback moth populations can cause problems in canola during bloom and pod fill if they reach damaging numbers. We have not encountered enough consistent spring infestations in Oklahoma to be able to develop research-based, local treatment thresholds. However, our experienced neighbors in North Dakota and the prairie provinces of Canada have developed some usable treatment thresholds for DBM based on a shake bucket method for scouting.

Scout for diamondback moth by pulling plants from a 1-square foot area, shake the collected plants into a white bucket and count larvae. Count larvae that are dangling on the plant from silk threads as well. Take counts in at least five locations to get an average number of larvae per square foot. North Dakota thresholds for DBM larva in canola are:

**10-15 larvae per square foot during early flowering (1-2 per plant)**

**20-30 per square foot during pod stage (2-3 per plant)**

In the past week, I visited some heavily infested fields, that had already been treated two to three times with a registered pyrethroid insecticide. I cannot say with any certainty that the poor control obtained in these fields is a result of poor coverage, dry climate conditions that inhibit pyrethroid activity, pyrethroid-resistant DBM populations or a combination of reasons. However, if a canola field treated with a pyrethroid insecticide resulted in poor control, consider using Coragen or Prevathon, which contain the active ingredient chlorantraniliprole. This active ingredient is effective on diamondback moth as well as other caterpillars. I personally sampled a field that was overrun with diamondback moth caterpillars even though the producer had treated twice with two different pyrethroid insecticides. He obtained excellent control after spraying the field with Prevathon. Current recommendations for control of diamondback moth in canola are listed in *CR-7667, Management of Insect and Mite Pests in Canola*, which can be obtained online at:

<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-3045/CR-7667web2009.pdf>

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**Co-Editors: Eric Rebek and Justin Talley; Oklahoma Cooperative Extension Service**

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