



# Apple Pest – Codling Moth

## What is an Apple Codling Moth?

Apple codling moths (*Cydia [Laspeyresia] pomonella*) originated from Europe over 200 years ago. Adult moths are relatively small (0.5 to 0.75 inch wingspan), grey with dark brown to golden bands on the tips of the forewings, distinguishing it from other moths found in apple orchards. Larvae are pale-colored with dark heads and reach up to 0.8 inch in length.



1. Pale-colored larvae cause severe fruit damage. 2. Apple with small piles of droppings produced by a codling moth larva.

## What is the damage caused?

Codling moth larvae enter into the fruit through the sides, stem end, or calyx end and feed within the fruit cavity. Larvae activity causes two types of fruit damage: stings –where larvae bore a short distance into the flesh– and deep entries –where larvae bore to the core and feed in the seed cavity. Larvae burrow deep into the apple fruit, rendering the apple unsuitable for market. The excretion or “frass” left on the outside of the fruit is an easily identified sign of codling moth infestation. Heavy infestations often require insecticidal use to avoid serious economic loss.

## How to manage Codling Moth in apples?

### Cultural Management:

- Collect all fallen fruit from the ground weekly and place in plastic bags for disposal to remove codling moth larvae inside fallen fruit.
- Cut corrugated cardboard into 8 cm strips and tie tightly around apple tree trunks and heavy branches in June and August and leave them there until winter. The moths will create cocoons underneath the cardboard which can be removed and destroyed before spring emergence.
- For small, organic orchards is hand thinning to remove all infested fruit during each generation, before worms leave fruit, and removal of dropped fruit.

**Pesticide Treatment Options:** Repeated pesticide applications may be required from the point of petal fall until a week before harvest. In order to avoid pesticide resistance, pesticides with different modes of action must be rotated throughout the season. Apply treatments every 10 to 14 days. Proper pruning will improve spray coverage.

- Phosmet (Imidan\*) 70WP at 3.9-6 kg/ha (3.5-5.33 lb/acre). Dilute 465-710g with 100L water. Typically apply 850L of mixture per ha. Residual effects may last up to 14 days at the highest application rate. Do not apply within 7 days of harvest. Wait 3 days after application before reentering the orchard.
- Neonicotinoid: Acetamiprid (Assail\*) 70WP at 120-240g/ha (1.7-3.4oz/acre). Dilute 14-28g with 100L water. Typically apply 840L of mixture per ha. Residual effects may last up to 14 days at the highest application rate. Should not be used in orchards with history of mite problems. May cause mite outbreaks. To help prevent resistance only use against one moth generation per year. Do not apply within 7 days of harvest. Wait 12 hours after application before reentering orchard.

For more treatment options visit [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu)

\*Commercial name. The authors make no endorsement towards commercial brands mentioned in this document nor are the absence of other brand names an implication of our disapproval.

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**References:** Statewide IPM Program, Agriculture and Natural Resources, University of California <http://www.ipm.ucdavis.edu/index.html>; Ohio State University Extension, <http://ohioline.osu.edu/hyg-fact/2000/2203.html>

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