

## Navel Orangeworm - NOW - (*Amyelois transitella*)



Figure 1: Adult Navel Orangeworm NOW (*Amyelois transitella*)

Where is it currently found in the World?

This pest is endemic in the USA and Canada where it causes damage to almond, pistachio, walnut, fig and orange crops. It has also been known to attack macadamia and grapes. Current management techniques for the pest requires well-timed applications of organophosphates and costly monitoring.

The Navel Orangeworm, NOW (*Amyelois transitella*) feeds on a variety of fruits and nuts and is the most damaging caterpillar in pistachio. NOW rapidly becomes a major moth pest wherever it has established. The pest will attack the nuts of almond, pistachio, macadamia and walnut, as well as damaging citrus. The pistachio nut is susceptible to infestation as soon as hull split occurs with the first signs of an infestation being small, pinhole-size entrances into the developing nut.

NOW larvae reduce crop yield through consuming the developing nut. As worms grow in size, the entire nut is devoured and extensive amounts of webbing and frass (insect excrement) is created which increases the likelihood of infection by aflatoxin-producing fungi. The aflatoxins will further reduce nut/crop quality and cause food safety issues. As NOW larvae are concealed within the shell, nuts-in-shell can continue to be spoilt post-harvest.

NOW larvae overwinter in mummy nuts left on the trees or on the ground. In spring, moths emerge and lay the first pink to orange eggs on or near other 'sticktight' nuts on the tree. Eggs may also be laid on new crop nuts after hull split. Larvae bore into the nuts or kernels damaged by sunburn or other pests.

Young worms are reddish orange and later appear cream-colored, although their diet can influence coloration. They have a crescent shaped sclerite on each side of the second body segment behind the head. As the worm matures, the head becomes reddish brown.

Adult moths range from 1/2 to 1 inch (1.5-2.5 cm) long with a snoutlike projection at the front of the head. Most moths have gray forewings with black markings, though actual shades of grey vary from light grey to almost black, and the black markings (or wing scales) often rub off when moths get old or get caught in pheromone traps. Females begin egg laying about 2 nights after emergence. Eggs are laid on mummy nuts or on new crop nuts.



Figure 2: Navel Orangeworm NOW (*Amyelois transitella*) larvae surrounded by frass.

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