



TURNING INFORMATION INTO PROFITS

Insects

Manual



METOS[®]

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1. INSECT DETAILS



Codling moth (*Cydia pomonella*)

Photo: Ben Sale, CC BY-SA 2.5, via Wikimedia Commons.

- 9-12 mm long;
- wingspan 14-22 mm;
- ashy grey wings with narrow dark brown transverse bands;
- copper-colored rounded band at the end of the wings.

Hosts: apple, apricot, cherry, English walnut, hawthorn, quince, pear.

- 6-8 mm long;
- wingspan 10-12 mm;
- wings are light creamy colour with black, brown and grey mottling;
- the second pair of wings is grey with a fringed border.

Hosts: blackberry, grapevine, olive.



European grapevine moth
(*Lobesia botrana*)

Photo: Ben Sale, CC BY-SA 2.5, via Wikimedia Commons.

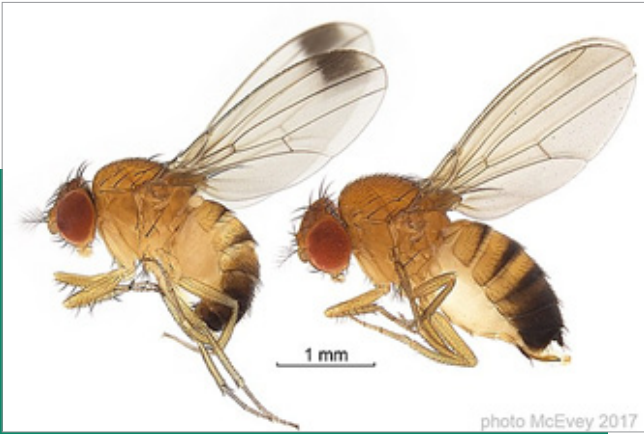
- 5-7 mm long;
- 5 dark stripes on the upper body;
- slender, have longer legs, than a house fly;
- when at rest, they keep their wings folded one over the other.

Hosts: chive, garlic, leek, onions.



Onion maggot (*Delia antiqua*)

Photo: K. Schrameyer, 2019, rb.gy/qsgmad, via oekolandbau.



Spotted-wing drosophila (*Drosophila suzukii*)

Photo: Shane F. McEvey, Australian Museum, CC BY 4.0, via Wikimedia Commons

- 2-3 mm long;
- red eyes;
- yellow to light brown;
- males have a dark spot on each wing.

Hosts: blackberry, blueberry, cherry, elderberry plum, raspberry, strawberry.

Hosts: apple, apricot, blueberry, cherry, corn, grape, pea, pear, peach, soybean, tomatoes.



Brown marmorated stink bug (*Halyomorpha halys*)

Photo: Georg Buzin, CC BY-SA 3.0, via Wikimedia Commons.



Cotton bollworm (*Helicoverpa armigera*)

Photo: Ben Sale, CC BY 2.0, via Wikimedia Commons.

- 12 to 17 mm;
- brown body with reddish hues, covered with tiny black dots that give the appearance of a marbled pattern;
- white bands on antennae and legs;
- alternating dark and light bands on the margin of the abdomen;
- emits pungent odour if disturbed.

Hosts: corn, cotton, peppers, soybean, sorghum, tomato.



Turnip moth (*Agrotis segetum*)

Photo: *Agrotis segetum*, 2017, rb.gy/fozlkc, via British Lepidoptera

- wingspan 40 -55 mm;
- wings are brown mixed with pale grey;
- second pair of wings is white with a dark fringe at the tips;
- black, dagger-like mark on each wing.

Hosts: beans, broccoli, cabbage, carrot, Chinese cabbage, corn, egg plant, flowering white cabbage, green beans, head cabbage, lettuce, mustard cabbage, potato, spinach, sugarcane, sweet potato, tomato, turnip.

- 18-22 mm long;
- wingspan 40-55 mm;
- wings are brownish yellow to dark grey;
- in the middle of the wings are two dark-bordered spots, round and kidney-shaped;
- the second pair of wings is light grey (females) or white (males).

Hosts: asparagus, bean, beet, cabbages, coffee, castor bean, cotton, grape, lettuce, maize, onions, peanut, potato, pepper, radish, rice, rye, spinach, squash, strawberry, tobacco, tomato.



Black cutworm (*Agrotis ipsilon*)

Photo: Gailhampshire, CC BY 2.0, via Wikimedia Commons

- 3.5-5 mm;
- upper body is creamy white to yellow and has a characteristic black pattern;
- oval lower body with two narrow transverse light bands;
- reddish eyes (fluoresce green, turning black within 24 hours after death);
- wide brownish yellow band across the middle of the wing.

Hosts: avocado, banana, bittermelon, carambola, coffee, guava, lemon, mango, orange, papaya, peppers, persimmon.



Mediterranean fruit fly (*Ceratitidis capitata*)

Photo: Treegrow, CC BY 2.0, via Wikimedia Commons



Tomato leafminer (*Tuta absoluta*)

Photo: Marja van der Straten, CC BY-SA 3.0, via Wikimedia Commons

- 5-7 mm long;
- wingspan 8-10 mm;
- antennae are long, with black and brown scales;
- brown or silver wings with black spots.

Hosts: potato, sweet pepper, tobacco, tomato.

- 17-22 mm long;
- wingspan 40 mm;
- brown with a white coloured stripe that runs across the leading edge of each wing;
- small, light-coloured circular spot in the middle of the wings;
- buff-coloured, boomerang-shaped spot near the end of the stripe.

Hosts: beans, corn.



Western bean cutworm (*Striacosta albicosta*)

Photo: Woolcarderbee, CC BY 2.0, via Wikimedia Commons

- wingspan 40-50 mm;
- brown wings with dark cross lines;
- white or white bordered kidney shaped spot on the front half of the wing;
- the second pair of wings is light brown.

Hosts: cabbage, corn, lettuce, peas, sugar-beet, tomato.



Cabbage moth (*Mamestra brassicae*)

Photo: Ben Sale, CC BY 2.0, via Wikimedia Commons.



Diamondback moth (*Plutella xylostella*)

Photo: Judy Gallagher, CC BY 2.0, via Wikimedia Commons.

- 9 mm long;
- wingspan: 12-15 mm;
- greyish brown moth;
- when the wings are folded, the moths have a line of three diamond-shaped markings along the middle of the back.

Hosts: brussels sprouts, cabbage, Chinese cabbage, cauliflower, collard, kale, kohlrabi, mustard, radish, turnip, watercress.

- 10 mm long;
- wingspan 15-22 mm;
- brownish wings marked with a variable dark-brown pattern;
- males are more brightly coloured than females.

Hosts: apple, apricot, cherry, peach, pear, plum and other fruit trees.



Summer fruit tortrix (*Adoxophyes orana*)

Photo: Ben Sale, CC BY 2.0, via Wikimedia Commons

2. ISCOUT - USAGE

INSECT	CODLING MOTH <i>(Cydia pomonella)</i>	EUROPEAN GRAPEVINE MOTH <i>(Lobesia botrana)</i>	ONION MAGGOT <i>(Delia antiqua)</i>	SPOTTED-WING DROSOPHILA <i>(Drosophila suzukii)</i>	BROWN MARMORATED STINK BUG <i>(Halyomorpha halys)</i>
Type of trap	iSCOUT® Pheromone	iSCOUT® Pheromone	iSCOUT® Color Trap	iSCOUT® FruitFly / iSCOUT® Pheromone	iSCOUT® Bug
Nr. traps per ha	1-2	1-2	2	2	2
When to place	Before the flowering period or based on degree-day accumulations.	Before the flowering period or based on degree-day accumulations.	Mid-April, May	Early stages of fruit development until the end of harvest.	April
Where to place	Higher parts of the tree canopy. To assess if moths are migrating from outside sources or overwintering within the orchard, hang at least one trap on the edge and at least one near the centre of the orchard.	Place iScout at the same height as the crops. Moths prefer hot sunny locations sheltered from wind.	Field edges, just above the growing onion foliage.	Place iScout at the same height as the crops.	1.8 m above the ground. One trap in the centre of the field, one on the border.
Number of generations per year	2-4 (depending on location)	2-4 (depending on location)	3-4	10	1-5 (depending on location)
Use cases for iScout	Use iScout to establish biofix and later in the season for population monitoring.	Use iScout for population monitoring.	Use iScout for trapping and monitoring in combination with visual scouting for maggots.	Use iScout for trapping and population monitoring.	Use iScout to determine the presence and the population cycle within the orchard.
Maintenance and Glue board replacement	Change glue boards, monthly or when the sticky bottom gets covered with debris and moths. Change lures according to manufacturer's recommendations.	Change glue boards, monthly or when the sticky bottom gets covered with debris and moths. Change lures according to manufacturer's recommendations.	Change glue boards every 3-4 weeks, if it is raining heavily even before.	Check the traps at least once a week. Change tank for feeding lure according to manufacturer's recommendations.	Change glue boards monthly or when the sticky bottom gets covered with bugs.

These recommendations are provided only as a guide.

Make sure the trap is parallel to the prevailing wind and keep leaves and branches out of the trap entrance (to prevent birds from hopping into trap).

INSECT	COTTON BOLLWORM <i>(Helicoverpa armigera)</i>	TURNIP MOTH <i>(Agrotis segetum)</i>	BLACK CUTWORM <i>(Agrotis ipsilon)</i>	MEDITERRANEAN FRUIT FLY <i>(Ceratitis capitata)</i>	TOMATO LEAF MINER <i>(Tuta absoluta)</i>
Type of trap	iSCOUT® Pheromone	iSCOUT® Pheromone	iSCOUT® Pheromone	iSCOUT® FruitFly / iSCOUT® Pheromone	iSCOUT® Pheromone
Nr. traps per ha	1-2	3	1-2	1	3
When to place	March	Soon after germination.	March, April	Early stages of fruit development, until the end of harvest.	2 weeks before planting.
Where to place	At 1 meter in height, above the crop or at the edge of the crop.	1-1.5 m above ground in crops.	At 1 meter in height or just above the crop.	In the tree canopy, at height of min. 1.5m.	At the same height as the crop, 0.8m - 1m max.
Number of generations per year	2-6 (depending on location)	1-4	2-6 (depending on location)	6 (depending on location)	10 - 12
Use cases for iScout	Use iScout for population monitoring in combination with visual scouting for larvae.	Use iScout for population monitoring in combination with visual scouting for larvae.	Use iScout for population monitoring in combination with visual scouting for larvae.	Use iScout for trapping and population monitoring.	Use iScout for population monitoring.
Maintenance and Glue board replacement	Use iScout for population monitoring in combination with visual scouting for larvae. Change glue boards every 4 weeks or when the sticky bottom gets covered with debris and moths. Change lures according to manufacturer's recommendations.	Use iScout for population monitoring in combination with visual scouting for larvae. Change glue boards every 4 weeks or when the sticky bottom gets covered with debris and moths. Change lures according to manufacturer's recommendations.	Use iScout for population monitoring in combination with visual scouting for larvae. Change glue boards every 4 weeks or when the sticky bottom gets covered with debris and moths. Change lures according to manufacturer's recommendations.	Use iScout for trapping and population monitoring. Change glue boards every 3-4 weeks. Change tank for feeding lure according to manufacturer's recommendations.	Use iScout for population monitoring. Change glue boards every 4 - 6 weeks or when the sticky bottom gets covered with debris and moths. Change lures according to manufacturer's recommendations.

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INSECT	WESTERN BEAN CUTWORM <i>(Striacosta albicosta)</i>	CABBAGE MOTH <i>(Mamestra brassicae)</i>	DIAMONDBACK MOTH <i>(Plutella xylostella)</i>	SUMMER FRUIT TORTRIX <i>(Adoxophyes orana)</i>
Type of trap	iSCOUT® Pheromone	iSCOUT® Pheromone	iSCOUT® Pheromone	iSCOUT® Pheromone
Nr. traps per ha	1	1	2-4	1
When to place	June	April, May	May	Before the flowering period or based on degree-day accumulations.
Where to place	Place traps between 1.2 and 1.8 metres above the ground.	1-1.5 m above the ground, at the top of crops.	Place iScout just above the crop.	Place iScout at a height of 2 m above the ground in a shaded part of the canopy.
Number of generations per year	1	1-3 (depending on location)	up to 15 (depending on location)	2-4 (depending on location)
Use cases for iScout	Use iScout for population monitoring in combination with visual scouting for eggs and larvae.	Use iScout for population monitoring in combination with visual scouting for larvae.	Use iScout for population monitoring.	Use iScout for population monitoring.
Maintenance and Glue board replacement	Change glue boards every 4 - 6 weeks or when the sticky bottom gets covered with debris and moths. Change lures according to manufacturer's recommendations.	Change glue boards every 4 - 6 weeks or when the sticky bottom gets covered with debris and moths. Change lures according to manufacturer's recommendations.	Change glue boards monthly or when the sticky bottom gets covered with debris and moths. Change lures according to manufacturer's recommendations.	Change glue boards every 4 - 6 weeks or when the sticky bottom gets covered with debris and moths. Change lures according to manufacturer's recommendations.

These recommendations are provided only as a guide.

Make sure the trap is parallel to the prevailing wind and keep leaves and branches out of the trap entrance (to prevent birds from hopping into trap).

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