

# True Armyworm (*Mythimna unipuncta*)

June 2018

True armyworm (*Mythimna unipuncta*, formerly *Pseudaletia unipuncta*) is a North American agricultural pest in the insect family Noctuidae. During April and May, true armyworm moths may migrate from southern USA and Mexico on wind currents to parts of Southern Canada including B.C., Manitoba, and Ontario. True armyworm is not known to overwinter in Canada.

## Hosts

True armyworm prefers grass crops such as cereals, pasture, grass hay and corn. However, under high populations, true armyworm larvae may also feed on broad leaf plants. Adults feed on flower nectar or other sweet sources.

## Damage

Young larvae will skeletonize grass foliage and eat small holes in leaves. From the third instar and older, larvae will devour entire leaves. Larvae will also sometimes feed on developing seed heads and corn tassels and ears. Once an area is sufficiently defoliated, larvae will move in a group to other grass stands to resume feeding. True armyworms can cause significant but often patchy crop damage in only a few days, and can cause rapid crop devastation when the larvae population is high. In southwest B.C., the first generation of larvae, feeding in June and July, can cause significant crop loss to grass hay and cereals. The second generation of larvae in August and September can be even more destructive, affecting both grass and corn crops. 2017 was the first year damage was recorded for this pest in B.C.



Figure 1. Significant feeding damage in grass by first generation larvae in July.



Figure 2. Extensive larval feeding on corn in August. Grass weeds are completely defoliated, as are some corn leaves.

## Biology

True armyworm moths may migrate to B.C. in April-May in unpredictable numbers, influenced by weather, temperature, winds, and conditions in their originating locations, which are more southerly locations in North America. Moths can live for weeks, and seek lush green grass for egg laying. Eggs are laid deep within folded grass blades and are nearly impossible to find in fields. Both egg masses and larvae can be abundant in localized areas.

There are 6 larval instars, with the last two instars causing the majority of feeding damage (Figure 3). The larvae stage lasts approximately 1.5 months, depending on temperature, in which time the larvae grow from 4 mm up to 35 mm. Young larvae mostly feed during the day and are well hidden by grass blades. Older larvae are nocturnal feeders and move up the plants, and rest at the base of plants and under grass canopy during the heat of the day. Larvae are marked with stripes running the length of their body, with a yellow/brown head capsule with a netted appearance (Figure 5), while the body colour ranges from pale green while young, to nearly black when full sized. When larvae are ready to pupate, they burrow into the soil just below the surface where they remain for 1-2 weeks (Figure 6).

Adult moths emerge from the soil and a second generation occurs in late summer (August-September). Adult moths are about 2cm long with brown, delta-shaped bodies and have a distinguishing white dot on each wing (Figure 4). Adult moths are nocturnal and may be seen flying around outdoor lights at night, while hiding at the base of plants or other dark protected areas during the day.



Figure 3. True armyworm larvae feeding on corn tassel



Figure 4. True armyworm adult moth with characteristic white spots on wings



Figure 5. Close up of netted pattern and 'V' on head of larva



Figure 6. Armyworm pupa in soil

## Monitoring

Adult moths can be seen around lights at night and can also be monitored using pheromone baited bucket traps or wing traps from April to August. Set traps in areas of concern, such as next to fields that had heavy larvae infestation earlier in the summer or in previous years. Monitoring adults help indicate whether the insect is moving into your area and if pest numbers may be high enough to be of concern. Trap catches are useful to show when the moths are present, and help with planning when and where to scout fields for larvae. In general catching a few moths per week may not cause alarm but if more than 30 are caught per night or over a few days, then larvae searches in that area beginning 2 weeks afterwards would be recommended.

In fields of concern, scouting for larvae should start in mid to late June by checking at least 5 areas of a field. During the day, larvae tend to be on low parts of the plant or in the crown area of the plants. To more easily see and count the larvae, scouting can be done in the evening when the larvae are more active. Shaking plants over a drop-sheet or panel will dislodge larvae and enabling counting. To estimate field density, take the average number of larvae per square foot (30x30 cm) over all the sampling sites in that field. The population may be higher in some areas than others within a field.

## Management

### Prevention

- Modifying harvest plans may be necessary to limit losses. Consider cutting, baling, or grazing earlier, as well as irrigation and fertilization to encourage regrowth, to help limit losses in hay fields.
- Remove grass weeds by mowing or other methods in spring to limit potential egg-laying host plants for adult moths and food sources for larvae.

### Chemical Control

- There are insecticides available for control of true armyworm (see Table 1)
- The action threshold for insecticide treatment in forage grass/hay is 5 larvae per 30 x 30 cm (1 square foot).
- The action threshold for insecticide treatment in annual cereals is lower at 2-4 larvae per 30 x 30 cm (1 square foot).

- For a foliar application to be most effective, apply before most of the larvae reach 25 mm (1 inch) in length.

### Biological Control

- There are naturally occurring biological control agents that feed on or kill true armyworm larvae, including parasitic wasps and flies, ground beetles and rove beetles, and fungal, bacterial, and viral diseases. Several bird species will feed on true armyworm larvae.
- These agents do not prevent an outbreak but may curtail damage to a limited extent.

**Table 1.** A summary of insecticides registered for control of armyworm in forage, grass, and corn. Please refer to Health Canada's [Pest Management Regulatory Agency](http://www.hc-sc.gc.ca/pest/management/regulatory/agency/) website for insecticide label information.

PCP #	Product Name	Active Ingredient	Crops	Pre-harvest or pre-grazing interval	# applications/year
28982	Coragen	chlorantraniliprole Group 28	Corn (field, sweet), grass forage, fodder, and hay group, non-grass animal feed group, oilseeds and cereals.	Forage grass: 0 days Forage corn: 14 days	Up to 4 apps, 7 days apart; use high rate
5821	Malathion	malathion Group 1	Cereals, grasses, legumes, alfalfa, clover for hay	7 days	1 app
27876	Sevin	carbaryl Group 1A	Forage, pasture, cereals	1 day	Up to 2 apps, 8 days apart
24984 26837	Matador Warrior	lambda-cyhalothrin Group 3	Cereals, corn	Corn for silage: 14 days Cereals: 28 days Sweet corn: 1 day	Up to 3 apps, 4-7 days apart
28778	Delegate	spinatoram Group 5	Cereals, field/forage corn	Cereals: 21 days Forage corn: 7 days	Up to 3 apps, 5 days apart

### For Further Information

- Manitoba Ministry of Agriculture:  
<http://www.gov.mb.ca/agriculture/crops/insects/print,true-armyworm.html>
- Ontario Ministry of Agriculture, Field Crop News:  
<http://fieldcropnews.com/tag/true-armyworm/>
- University of Florida:  
[http://entnemdept.ufl.edu/creatures/field/true\\_armyworm.htm](http://entnemdept.ufl.edu/creatures/field/true_armyworm.htm)

### Prepared by:

Tracy Hueppelsheuser, Entomologist,  
Abbotsford Agriculture Centre,  
British Columbia Ministry of Agriculture,  
Abbotsford, B.C.