

# VEGETABLES

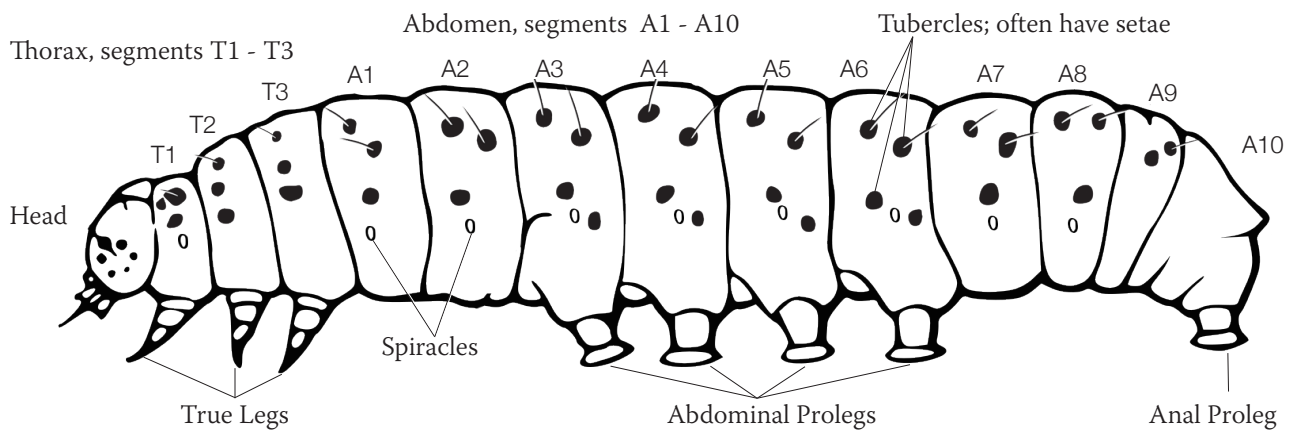
## Sweet Corn Larval Pest Identification

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### Introduction

There are four major pests of sweet corn that regularly occur in New York. They are European corn borer (*Ostrinia nubilalis*) both the E and Z race, fall armyworm (*Spodoptera frugiperda*), corn earworm (*Helicoverpa zea*) and western bean cutworm (*Striacosta albicosta*). All four are moths as adults that lay eggs on sweet corn, where their larvae feed on

the ear, resulting in yield and quality loss if untreated. Because the management options and thresholds vary among the four pests, it is important to be able to differentiate them when found in harvested ears to adjust management practices appropriately. Newly hatched larvae can be difficult to identify. As larvae get larger, distinguishing features are easier to see.

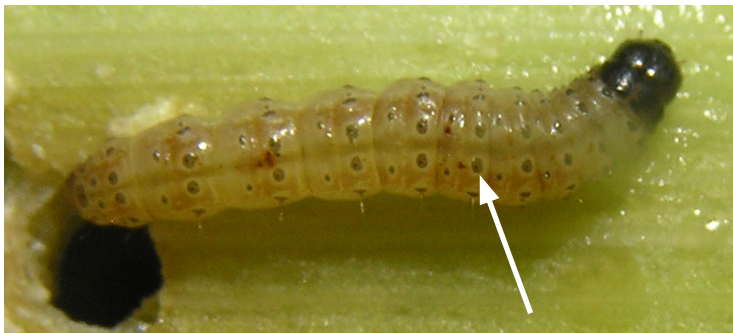


**Image 1.** The external morphology of the caterpillar. Tubercles may or may not be present on all segments; spiracles are present on T1, and A1-A8. Illustration: Lukas3, Creative Commons CC0 1.0.

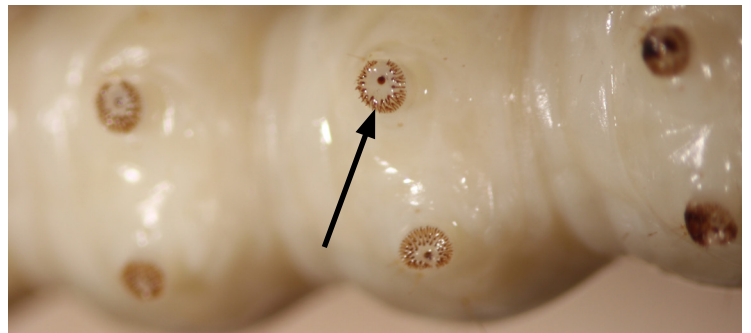
### European Corn Borer (ECB)

This pest overwinters as larvae in corn stubble and adults emerge in spring. Flat white eggs are laid on the underside of leaves in clusters of 5-50, overlapping like fish scales. Larvae feed on leaves, tassels, stalks, and corn ears. The fully grown larva is ¾ inch long, with a dark head capsule and a pink

to cream colored body. Of the four larvae, ECB is the only one having crochets, small hooks, arranged in a circle on its abdominal prolegs (the fleshy appendages, not the true legs). This is visible with the use of a hand lens.



**Image 2.** The body is covered with dark rounded projections (tubercles) on each segment.



**Image 3.** A dark spot is in the center of the crochets.

## Fall Armyworm (FAW)

FAW is unable to survive freezing temperatures and overwinters in Southern Florida, Texas and Mexico. It usually arrives in New York in early August with peak flight occurring in early to mid-September. The eggs are often laid on the underside of leaves and are covered in hairs from the female. The larvae will feed on corn leaves and the corn ear, entering the ear either through the side or through silk channels. Mature

larvae are 1.5 inches long and can vary in color from tan to green to nearly black. FAW have an inverted Y on the head capsule and four distinct tubercles on abdominal segment A8. Both of these features can be seen with the unaided eye or with a hand lens. In addition to these two features, FAW can be distinguished from ECB by the arrangements of the crochets on the prolegs.



**Image 4.** The first distinctive characteristic of this pest is an inverted, light colored Y on the head capsule.



**Image 5.** The second distinctive characteristic is four brown tubercles on the 8th abdominal segment (A8 on diagram), forming a square when viewed from above.



**Image 6.** Where ECB has a full circle of crochets (Image 3), FAW has what is termed a meseries or single line and does not have the dark spot in the center.

## Western Bean Cutworm (WBC)

WBC is native to north America and has migrated east from its historical range in the Great Plains region. It arrived in New York in 2009, and populations reached economically damaging levels in 2015. It overwinters as larvae, especially in areas with sandier soil, and adults emerge in late July to early August with peak flight occurring the first week of August.

Eggs are laid on the top surface of leaves closest to the tassel. Larvae will feed on leaves, but the primary damage is seen in the corn ear. It can enter in through the side of the ear or the silk channels. Larvae are not cannibalistic; often more than one occurs in an ear. The crochets are in a meseries similar to FAW and CEW.



**Images 7a and 7b.** The mature larvae are 1.5 inches in length have an orange or tan head with two dark rectangles behind the head capsule.

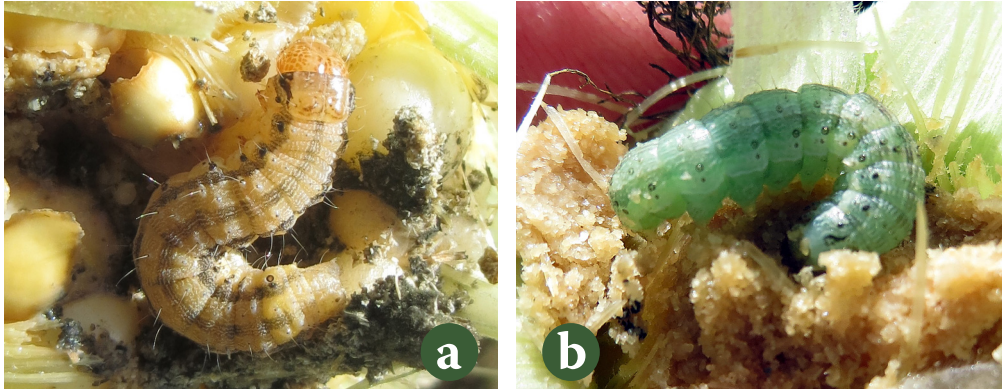


**Image 8.** Their bodies are cream colored and smooth, lacking tubercles, which are present on the other three pests.

## Corn Earworm (CEW)

CEW overwinter as pupae as far north as southern Pennsylvania and southern New Jersey, though New York seems to have small overwintering populations in Erie and Onondaga Counties. Peak flight in New York occurs late August into

early September. Female moths will lay eggs singly on fresh corn silks. The larvae feed on silks as they make their way into the corn ear through the silk channels. CEW larvae are cannibalistic resulting in usually just one mature larva per ear.



Images 9a and 9b. The mature larvae are 1.5 inches in length, can vary greatly in color with longitudinal stripes running the length of the body.

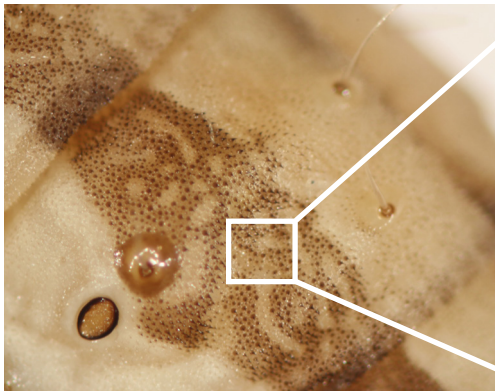


Image 10. The key distinguishing feature of this pest are the microspines that cover the body giving the larvae a slight sandpaper feel. These microspines are visible with a hand lens.

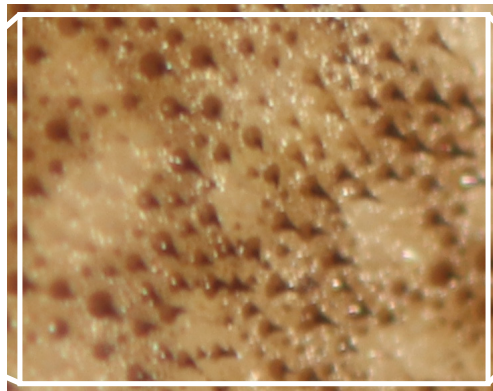


Image 11. Detail of microspines.

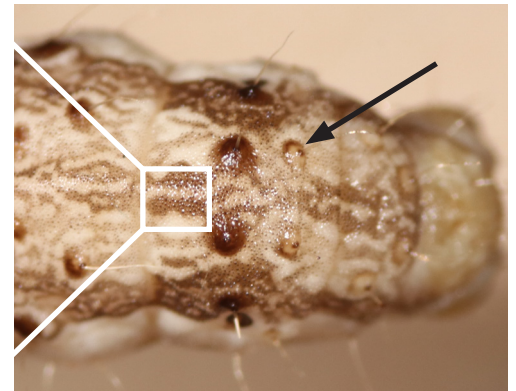


Image 12. CEW also has tubercles like FAW, but they are not always as dark in color. If they are prominent (usually in darker larvae), CEW can be distinguished by the presence of microspines on the skin, and the lack of an inverted Y on the head capsule. CEW also has its crochets arranged in a mesoseries (Image 6).

## Additional Resources

For additional help with identification, please contact your local Cornell Cooperative Extension office, [cce.cornell.edu/localoffices](https://cce.cornell.edu/localoffices)

Cornell Integrated Crop and Pest Management Guidelines for Commercial Vegetable Production, <https://cropandpestguides.cce.cornell.edu>

European corn borer fact sheet, [hdl.handle.net/1813/42367](https://hdl.handle.net/1813/42367)

Fall armyworm factsheet, [hdl.handle.net/1813/42368](https://hdl.handle.net/1813/42368)

Corn earworm factsheet, [hdl.handle.net/1813/42364](https://hdl.handle.net/1813/42364)

Western bean cutworm factsheet, [https://ipm.illinois.edu/vegetables/insects/western\\_bean\\_cutworm.pdf](https://ipm.illinois.edu/vegetables/insects/western_bean_cutworm.pdf)

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