

I d e n t i f y i n g

c a t e r p i l l a r

in Corn and Sorghum

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I N T R O D U C T I O N



Caterpillars (the larvae or immature stages of moths and butterflies) are among the more important pests of field crops. Proper identification is necessary for good management of these insects. This factsheet is designed to help you identify the common caterpillars collected on corn and sorghum.

The identifying characters used are found on full-grown or nearly full-grown caterpillars and may not occur on newly hatched or young caterpillars. Also, to make the factsheet easier to use, some of the less common soil-inhabiting cutworms are omitted. For their identification, you should refer to other publications (Rings and Musick 1976; Capinera 1986). Loopers can be identified to species using Eichlin and Cunningham (1969).

Caterpillars can be separated from the immatures or larvae of other groups such as beetles by their prolegs (with hooks) on abdominal segments 3 to 6 and 10, but the prolegs may be absent on abdominal segments 3 and 4 (see Fig. 1). The only larvae closely resembling them are those of some sawflies, which usually have prolegs on all abdominal segments, but no hooks are present on the underside of the prolegs.

To carry out the sequence of steps in identification, begin at the first illustrations for the crop from which the caterpillar was collected and decide which alternative fits the specimen best. You need to magnify some characteristics 10-20X with a hand lens or other means. Each choice is illustrated by one or more drawings of the characteristics described. Definitions of terms used are given to help you use the descriptions, and the labeled drawing of a caterpillar in Figure 1 will help you become familiar with a specimen.

When you reach a point where you identify a caterpillar, go to the photograph for that species and its description. If the picture and description fit the caterpillar you are looking at, the identification is probably correct. If the picture and description do not fit the caterpillar, you may have misidentified the specimen or it may be a species not included in this factsheet. The characteristics used in this factsheet apply to both live and preserved caterpillars, but body color characteristics given in the description do not apply to alcohol-preserved specimens.

PRESERVATION OF SPECIMENS

You can preserve specimens collected in the field for future identification in two ways. The best way is to put live caterpillars into boiling water for 3 minutes. Then let them cool and put them into 70% ethyl alcohol or rubbing alcohol. Another less desirable method is to put live caterpillars directly into 70% ethyl alcohol or rubbing alcohol. This results in discoloration and makes identification more difficult.

SUMMARY

This fact sheet should allow you to identify caterpillars collected from corn and sorghum. If you are unable to do so or think you have a species not included in the fact sheet, ask your local or state research and extension personnel for assistance.

REFERENCES

- Capinera, J.L. 1986. Field key for identification of caterpillars found on field and vegetable crops in Colorado. Bull. 535A, Coop. Ext. Serv., Colorado State Univ., Fort Collins, 13 pp.
- O'Day, M., A. Becker, A. Keaster, L. Kabrick, and K. Steffey. 1998. Corn insect pests: A diagnostic guide. Manual 166, Outreach & Ext., Univ. Missouri, Columbia, 48 pp.
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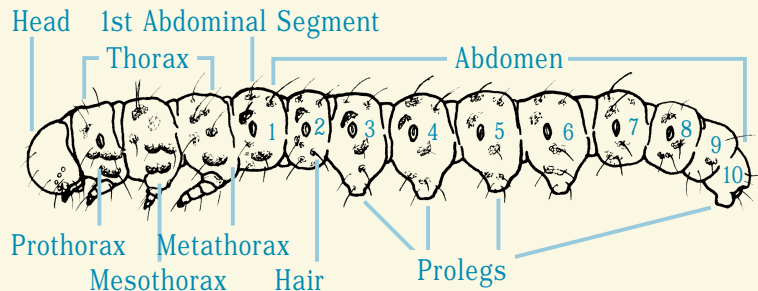


Fig. 1. Side view of caterpillar showing structures used in fact sheet.

DEFINITIONS

Abdomen—Portion of the insect behind the true leg-bearing segments. Usually 9 or 10 abdominal segments are apparent on caterpillars.

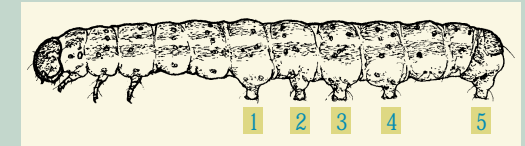
Breathing pore—Structure through which caterpillar breathes. Located on prothorax and segments 1-8 of abdomen.



4 pairs of prolegs on abdomen,
in sorghum head.

Sorghum Webworm

(Photo 10)



5 pairs of prolegs on abdomen.

side view

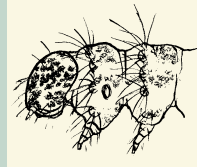
Long hairs
present on body
segments.



Short hairs
present on body
segments.



side view



Sparse covering of
long hairs on body.
Cattail Caterpillar
(Photo 3)



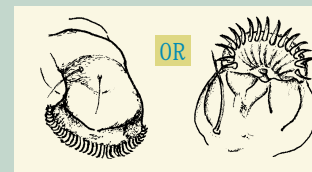
Thick covering of
long hairs on body.
Woollybear
(Photo 16)

side view



Hooks on
bottom of
prolegs in
complete
circle.

Hooks on
bottom of
prolegs in
almost
complete
circle.



Hooks on bottom of prolegs
in half circle or curved band.

bottom
view of
proleg



Head dark brown.
European Corn Borer
(Photo 6)



Head light brown.
Webworm (Photo 14)

side view

Larva—Immature growing form quite different in appearance than adults of the same species.

Mesothorax—Second segment behind the head. It has a pair of true legs.

Metathorax—Third segment behind the head. It has a pair of true legs.

Microspines—Numerous tiny spines or thorns on the skins of some larvae. Visible ONLY with magnification, best at 20X or more.

Proleg—A fleshy leg-like projection found on the underside of some abdominal segments of caterpillars.

Prothorax—The first body segment behind the head. It bears the first pair of true legs and a breathing pore on each side.

Reticulation—Pattern of narrow lines looking like threads of a net.

Segment—A portion of an insect separated from adjacent, similar parts by an indentation. The head usually appears as one segment, the next three segments make up the thorax, and the last several segments constitute the abdomen.

Suture—A dividing line or crease separating parts of an insect's surface.

Thorax—The parts of an insect just behind its head and consisting of three leg-bearing segments.

DESCRIPTIONS OF COMMON CATERPILLARS ON CORN AND SORGHUM

Armyworm—Body generally greenish to greenish-brown with light stripes on sides and back; each proleg with a brownish or dark band on outer side. Head with reticulation. Mature length 1 1/2 inches.

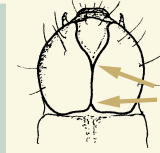
Black cutworm—Body greasy gray to brown, lighter on underside; skin with irregularly sized granular structures visible under magnification. Head brown with heavy dark markings and some reticulation. Mature length 1 1/2 inches.

Cattail caterpillar—Body with moderately dense long hairs and usually with some yellowish-orange to orange markings. Head brown with dark spots. Usually found late in season. Mature length 1 3/4 inches.

Corn earworm—Body usually with stripes; colors highly variable, with tints ranging from reddish-brown to yellow to green; dark tint in stripes due to presence of tiny, dense, dark microspines or thorn-like projections of the skin; presence of microspines separates the corn earworm from other caterpillars. Head yellowish without spots. Mature length 1 1/2 inches.



Body with some color; V-shaped sutures on top of head almost meet.
Lesser Cornstalk Borer (Photo 8)



Body with no color, with or without distinct spots; V-shaped sutures on top of head widely separated.
Southwestern Corn Borer (Photo 11)

top view



Tiny microspines on back and side between hairs, magnification necessary.
Corn Earworm (Photo 4)

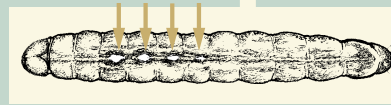
No tiny microspines on back and side between hairs.



side view



Distinct spot above breathing pore on first abdominal segment.
Yellowstriped Armyworm (Photo 17)



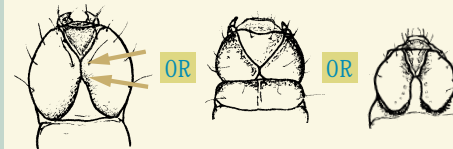
4 or more distinct whitish or yellowish spots down center of back.
Variegated Cutworm (Photo 13)



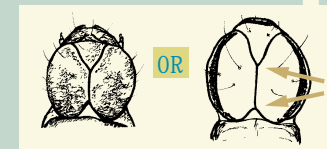
Double row of triangular dark spots on back below which runs a whitish or yellowish line.
Yellowstriped Armyworm (Photo 17)



No distinct spots as described in any figures to the left.



V-shaped sutures on top of head meet or almost meet.



V-shaped sutures on top of head widely separated.

top view

Dingy cutworm—Body grayish with broad, faint, lighter brownish band along back; faint inverted V-shaped pattern on top of each segment when viewed from rear without magnification. Head brown with dark markings and some reticulation. Mature length 1 1/4 inches.

European corn borer—Body cream to pale gray, sometimes with pinkish tints and faint stripes. Head dark brown. Mature length 1 inch.

Fall armyworm—Body colors usually shades of brown, but variations occur ranging from greens to nearly black; body with 4 distinct spots on top of the 8th abdominal segment. Head with distinct reticulation. Mature length 1 1/2 inches.

Lesser cornstalk borer—Body slender, greenish to bluish-green, with brownish markings on top of prothorax. Head brown. Mature length 3/4 inch.

Pale western cutworm—Body cream to grayish-cream with semitransparent skin. Head light brown with sutures bordered by brown bars. Mature length 1 1/4 inches.

Sorghum webworm—Body with yellowish to reddish-brown stripes and covered with fuzzy hair. Head brown. Mature length 3/4 inch.

Southwestern corn borer—Body white with a group of 8 rounded spots on larger forward part of each segment and 2 spots on smaller rearward part of each segment; late-season or overwintering larvae are without spots. Head light brown. Mature length 1 1/4 inches.

Stalk borer—Forward half of abdomen characteristically black on immature larvae; remainder of the body with reddish-brown and light stripes; mature larvae pale with indistinct stripes. Head light color. Mature length 1 3/4 inches.

Variiegated cutworm—Body grayish-brown with yellowish to white spots down center of back. Head brown. Mature length 1 1/2 inches.

Webworm—Body green to yellowish-green, with or without noticeable stripes; 3 dark spots on the side of each segment. Head light colored. Mature length 1 inch.

Western bean cutworm—Body light tan to pale grayish-brown; prothorax with 4 distinct heavy stripes. Head light brown. Mature length 1 1/2 inches.

Woolybear—Body with dense long hairs; color variable, ranging from shades of cream or yellow to reddish-brown or brown to gray or black; sometimes with red and black bands. Usually occur late in growing season. Mature length 2 inches.

Yellowstriped armyworm—Immature caterpillars with a distinct spot above the breathing pore on the 1st abdominal segment; mature caterpillar with two dark triangular spots on top of most segments and a yellowish stripe down each side. Mature length 1 1/2 inches.

Head with markings other than those bordering sutures; body with at least some markings.



Sutures on head bordered by brown bars (only markings on top of head); body pale or cream colored. **Pale Western Cutworm (Photo 9)**

top view



Four spots equal in size on back of each abdominal segment; breathing pore on prothorax oval, about 1 1/2 times as long as wide.

Dingy Cutworm (Photo 5)

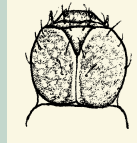


Front pair of spots half the diameter of back pair on each abdominal segment; breathing pore on prothorax elongate, about twice as long as wide.

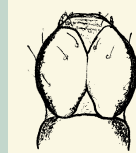
Black Cutworm (Photo 2)

top view

Top of head with distinct reticulation forming a mosaic pattern over part or most of top of head.



Top of head with no distinct reticulation; side of head may have a stripe, and mouth parts may be dark



top view



Four distinct spots on top of abdominal segment 8.

Fall Armyworm (Photo 7)



No distinct spots on top of abdominal segment 8.

Armyworm (Photo 1)

top view



Stripe on side of head; no distinct stripes on top of prothorax.

Stalk Borer (Photo 12)



No stripe on side of head; distinct stripes on top of prothorax. **Western Bean Cutworm (Photo 15)**



1. Armyworm
Pseudaletia unipuncta (Haworth)



2. Black Cutworm
Agrotis ipsilon (Hufnagel)



3. Cattail Caterpillar
Simyra henrici Grote



4. Corn Earworm
Heliothis zea (Boddie)



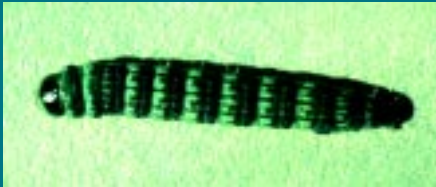
5. Dingy Cutworm
Feltia ducens Walker



6. European Corn Borer
Ostrinia nubilalis (Hubner)



7. Fall Armyworm
Spodoptera frugiperda (J.E. Smith)



8. Lesser Corn Stalk Borer
Elasmopalpus lignosellus (Zell.)



9. Pale Western Cutworm
Agrotis orthogonia (Morrison)



10. Sorghum Webworm
Celama sorghibella (Riley)



11. Southwestern Corn Borer
Diatraea grandiosella (Dyar)



12. Stalk Borer
Papaipema nebris (Guenee)



13. Variegated Cutworm
Peridroma saucia (Hubner)



14. Webworm
Several species



15. Western Bean Cutworm
Loxagrotis albicosta (Smith)



16. Woollybear
Several species



17. Yellowstriped Armyworm
Spodoptera ornithogalli (Guenee)



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