



I d e n t i f y i n g
a t e r p i l l a r
in Soybean

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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 wheat.

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 factsheet should allow you to identify caterpillars collected from soybean. If you are unable to do so or think you have a species not included in the factsheet, 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.
- Eichlin, T.D. and H.B. Cunningham. 1969. Characters for identification of some common plusiine caterpillars of the southeastern United States. Ann. Ent. Soc. Amer. 62: 507-510.
- Rings, R.W. and G.J. Musick. 1976. A pictorial field key to the armyworms and cutworms attacking corn. Res. Circ. 221, Ohio Agr. Res. and Dev. Center, Wooster, 36 pp.

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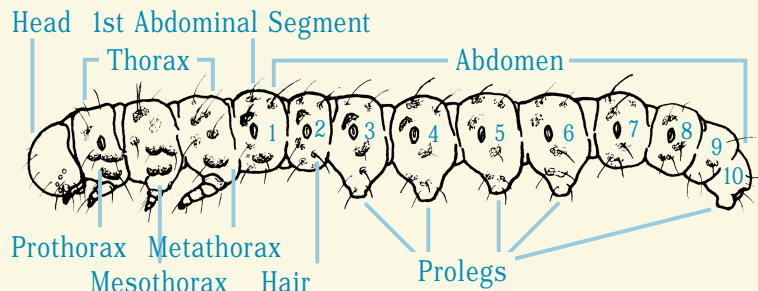


Fig. 1. Side view of caterpillar showing structures used in factsheet.

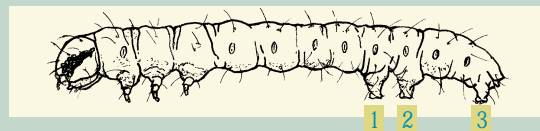
DEFINITIONS

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.

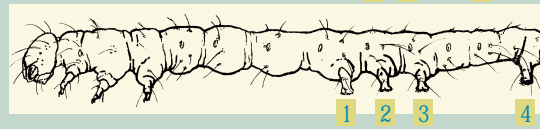
Larva—Immature growing form quite different in appearance than adults of the same species.

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

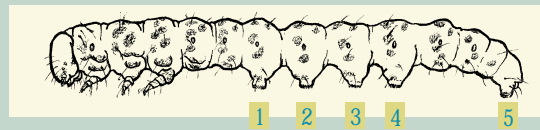


3 pairs of prolegs on abdomen.
Looper (Photo 5.)

side view



4 pairs of prolegs on abdomen.
Green Cloverworm (Photo 3.)



5 pairs of prolegs on abdomen.



Body with spiny projections.
Painted Lady
(Photo 7.)



Body flattened, covered with many short hairs.
Lycaenid
(Photo 6.)



Body with thick covering of long hairs.
Woollybear
(Photo 10.)



Body with only a few hairs.

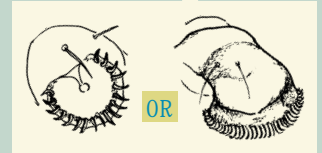
side view



Hooks on prolegs in complete circle.
Lesser Cornstalk Borer
(Photo 4.)



Hooks on prolegs in almost complete circle.
Webworm
(Photo 9.)



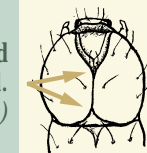
Hooks on prolegs in half circle or curved band.

bottom view of proleg

top view

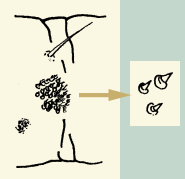


No microspines on body; V-shaped sutures on top of head almost meet.
Black Cutworm (Photo 1.)



No microspines on body; V-shaped sutures on top of head widely separated.
Velvetbean Caterpillar (Photo 8.)

Body with tiny microspines on back and side between hairs; magnification necessary.
Corn Earworm
(Photo 2.)



side view

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 SOYBEAN

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.

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 thornlike projections of the skin; presence of microspines separates the corn earworm from other caterpillars. Head yellowish without spots. Mature length 1 1/2 inches.

Green cloverworm—Body yellowish-green when small but later darker green with narrow white lines running along the length; 4 pairs of prolegs. Mature length 1 1/2 inches.

Lycaenid—Body flattened, green to yellowish-green, with numerous tiny short hairs. Head black and small in relation to body width. Mature length 3/4 inch.

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

Looper—Body usually greenish, sometimes with light stripes; 3 pairs of prolegs. Mature length 1 1/4 inches.

Painted lady—Body with many, widely spaced, projecting spines. Head black. Mature length 2 inches.

Velvetbean caterpillar—Body green to almost black, with a faint white stripe along each side. 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.

Woollybear—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.



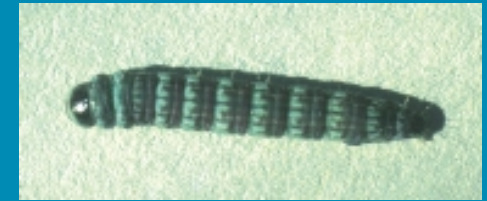
1. Black Cutworm
Agrotis ipsilon (Hufnagel)



2. Corn Earworm
Heliothis zea (Boddie)



3. Green Cloverworm
Plathypena scabra (Fabricius)



4. Lesser Cornstalk Borer
Elasmopalpus lignosellus (Zell.)



5. Looper
Several species



6. Lycaenid
Several species



7. Painted Lady
Vanessa cardui (L.)



8. Velvetbean Caterpillar
Anticarsia gemmatilis (Hubner)



9. Webworm
Several species



10. Woollybear
Several species



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Photo credits: Marlin Rice, Iowa State University, photos 1, 5, and 7; Kermit O. Bell, Kansas Department of Agriculture, photos 2, 3, 6, 8, 9, and 10; Leroy Brooks, Kansas State University, photo 4.

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