



Identification of Early Season Insects in Corn

Table 1. Timing of plant injuries from early season corn pests.

| Early Season Corn Pests, VE to V8 | | | | | | | | |
|--------------------------------------|---------|--------------------|--|----|-----|-----|----|----|
| Corn Growth Stage When Injury Occurs | | | | | | | | |
| VE | V2 | V4 | V6 | V8 | V10 | V12 | VT | R1 |
| Below Ground Pests | | | | | | | | |
| Seedcorn maggot | | | | | | | | |
| Seedcorn beetle | | | | | | | | |
| Sugarcane beetle | | | | | | | | |
| White grub | | | | | | | | |
| Wireworm | | | | | | | | |
| Sandhill cutworm | | | | | | | | |
| | | | Corn rootworm larva | | | | | |
| Above Ground Pests | | | | | | | | |
| Sod webworm | | | | | | | | |
| Grape colaspis | | | | | | | | |
| Black, dingy, and claybacked cutworm | | | | | | | | |
| Chinch bug | | | | | | | | |
| | Billbug | | | | | | | |
| | | Common stalk borer | | | | | | |
| | | | 1 st generation European corn borer | | | | | |
| | | | 1 st generation Southwestern corn borer | | | | | |
| | | | 1 st generation Southern stalk borer | | | | | |
| Above Ground Non-Insect Pests | | | | | | | | |
| Millipede | | | | | | | | |
| Slug | | | | | | | | |

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Table 2. Diagnostic Injury of Common Early Season Corn Pests.

| Pest | Diagnostic Injury |
|---------------------------|---|
| Billbug | Usually feeds on meristem on small plants and can result in death, surviving plants will be twisted, stunted, and have rows of transverse holes |
| Black cutworm | Smaller plants cut, larger plants may be mined |
| Chinch bug | Red discoloration at point of feeding, continuing to wilting and stunting |
| Claybacked cutworm | Smaller plants cut, larger plants may be mined |
| Common stalk borer | Wilting and/or dying of the upper leaves or ragged irregular holes chewed in newly unrolled leaves |
| Corn rootworm | Root scaring, pruned roots |
| Dingy cutworm | Leaf feeding, this species is not a “cutting” cutworm |
| European corn borer | First-generation injury is primarily due to tunneling in leaf midribs and the stalk |
| Grape colaspis | Root feeding, mined channels on roots |
| Millipede | Injury to exposed seed, can feed on emerging leaves |
| Sandhill cutworm | Cuts plants below the soil surface, resulting in wilted leaves followed by plant death |
| Seedcorn beetle | Hollowed out seed, seed coat usually not consumed |
| Seedcorn maggot | Hollowed out seed, seed coat usually not consumed |
| Slug | Epidermis scraped off leaves, leaving a “windowpane” appearance |
| Sod webworm | Leaf feeding, holes and ragged edges; to smaller seedlings being cut, showing holes, and ragged edges |
| Southern corn stalk borer | Wilting and/or dying of the upper leaves or ragged irregular holes chewed in newly unrolled leaves |
| Southwestern corn borer | First-generation larvae feed within the whorl, then larvae move down the stalk and tunnel into the stalk. Produces numerous holes in a “shot hole” pattern in the emerging leaves and leaf breakage due to midrib tunneling; heavy damage on small plants may cause stunting and prevent ear production |
| Sugarcane beetle | Larval feeding on mesocotyl causing jagged scars, usually at a depth of ½ to 1 inch below soil |
| White grub | Larval feeding on mesocotyl and roots, usually resulting in death of seedling |
| Wireworm | Hollowed out seed, seed coat usually not consumed |

Where to Find Insect Pests

Early season insects can be found attacking the seed (seedcorn maggot, seedcorn beetle), the seed and below-ground parts of the seedling (wireworm, sugarcane beetle), the roots (white grubs), or the underground stem (sandhill cutworm). A small garden trowel or pocketknife are handy tools to use when searching for below-ground pests.

Two examples of below-ground pests that might be found while digging are corn rootworm larvae and white grubs. Corn rootworm larvae may be present during the later stages of early season growth, but may be too small to readily detect. If detected, they will have a brown to black head and a brown to black anal plate (Figure 4, Table 2). White grubs—a generic term for the larval stage of insects like the Japanese beetle, rose or sand chafer, and May or June beetles, though true white grubs are the larval stage of May and June beetles—can be identified by the raster pattern, or the setae (hair) pattern on the posterior end (Figure 13, Table 2). Michigan State University has developed an excellent publication that can be used to help identify white grubs in the field: <https://www.canr.msu.edu/news/severe-grub-damage-spotted-in-northern-michigan-grass-hay-field>

Some of these insect pests feed above ground but can also be found below ground. For example, the cutworm species feed above ground at night but spend the day under soil clods.

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Reference Images



Figure 1. Black cutworm. Image courtesy of Roger Schmidt, University of Wisconsin-Madison, Bugwood.org.



Figure 2. Claybacked cutworm. Image courtesy of James Kalisch, University of Nebraska, Bugwood.org.



Figure 3. Common Stalk Borer. Image courtesy of James Kalisch, University of Nebraska, Bugwood.org.



Figure 4. Corn rootworm larvae. Image courtesy of Scott Bauer, USDA Agricultural Research Service, Bugwood.org.



Figure 5. European corn borer. Image courtesy of Frank Peairs, Colorado State University, Bugwood.org.



Figure 6. Maize billbug. Image courtesy of Clemson University - USDA Cooperative Extension Slide Series, Bugwood.org.



Figure 7. Millipede. Image courtesy of Joseph Berger, Bugwood.org.



Figure 8. Sandhill cutworm. Image courtesy of James Kalisch, University of Nebraska, Bugwood.org.



Figure 9. Seed corn maggot.

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Figure 10. Southern corn stalk borer. Image courtesy of Clemson University - USDA Cooperative Extension Slide Series, Bugwood.org.



Figure 11. Southwestern corn borer. Image courtesy of Frank Peairs, Colorado State University, Bugwood.org



Figure 12. Sugarcane beetle. Image courtesy of Clemson University, USDA Cooperative Extension Slide Series, Bugwood.org.



Figure 13. White grub. Image courtesy of Alton N. Sparks, Jr., University of Georgia, Bugwood.org.



Figure 14. Wireworms. Image courtesy of Frank Peairs, Colorado State University, Bugwood.org.

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Performance may vary, from location to location and from year to year, as local growing, soil and environmental conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on their growing environment.

The recommendations in this material are based upon trial observations and feedback received from a limited number of growers and growing environments. These recommendations should be considered as one reference point and should not be substituted for the professional opinion of agronomists, entomologists or other relevant experts evaluating specific conditions.

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