



Insects and Mites

Early-season insects in your corn field

by Marlin E. Rice, Department of Entomology

Many of you will be walking your fields during the next couple of weeks inspecting corn emergence, determining plant population, and maybe scouting for black cutworm injury. During the month of May, it is not uncommon to find a variety of insects in the field, but not all of them will be pests. I was digging for white grubs in Ringgold County (south-central Iowa) on May 10 and uncovered several species of insects. Because all of these insects will occur across the state, I wanted to help you correctly identify them in case you also encountered them.

Black cutworm—pest

Black cutworms can cut young corn through the V5 plant stage. The best character for identifying the black cutworm is to inspect the tubercles (warts) on either side of the midline running down the back of the insect. On each body segment there will be four tubercles on the top; the pair that is closer to the head (to the right in this photo) will be about half the diameter of the pair immediately behind it.



Black cutworm (Marlin E. Rice)

True white grub—pest

Two groups of white grubs occur in corn: the true white grub and the annual white grub. The true white grub, whose adults are known as June beetles, is a devastating pest and can significantly reduce plant stands. It has a three-year life cycle, but I found both larvae and an adult, indicating that there are overlapping generations or two different species in the field. True white grubs are best recognized by inspecting the underside of the “tail” and looking at the raster (all the hairs) for two parallel rows of short, thick hairs. This is called the “zipper,” and it identifies all species of true white grubs, of which there are 32 in Iowa.



True white grub (Marlin E. Rice)



June beetle (Marlin E. Rice)

Annual white grub—neutral

The other group of grubs is known as the annual white grubs. I have conducted experiments in the greenhouse during the spring with annual white grubs, and they did not kill either corn or soybean plants.

The best I can determine, the larval stage is nearly finished in May, and they will soon pupate and transform into adults, which are known as masked chafers. If you believe you have early-season stand loss from annual white grubs in Iowa, then I'd appreciate knowing about it. Annual white grubs are best recognized by an absence of any pattern (i.e., zipper) on the raster; all the hairs are scattered.



Annual white grub (Marlin E. Rice)

Ground beetle—predator

These large and predominantly black beetles are predators of anything they can catch and kill, including black cutworm larvae. Surprisingly, some species also eat weed seeds such as foxtail and pigweed. They may be found on the soil surface or burrowing underneath crop residue. The adults have a very foul odor, so I advise not picking them up as the chemical will stay on your hands for a while. The larvae may be confused with wire-worms, but ground beetle larvae have two projections on the end of the body that resemble tails.



Ground beetle (Marlin E. Rice)



Ground beetle (Marlin E. Rice)



Ground beetle (Marlin E. Rice)

Soil centipede—predator

All centipedes are predaceous on other small creatures in the soil. They have large jaws (for their size) for grasping and injecting poison into their victims. They may eat very small black cutworms and newly hatched white grubs, but most likely they feed on springtails and other micro-invertebrates in the soil. Centipedes are recognized by having only one pair of legs per body segment; millipedes have two pairs of legs per segment and lack the large jaws.



Soil centipede (Marlin E. Rice)

Marlin E. Rice is a professor of entomology with extension and research responsibilities in field and forage crops.