

INTEGRATED CROP MANAGEMENT

True white grubs and early-season corn problems

True white grubs may cause early-season stand reduction in corn. Because the past winter was extremely mild, survival of many soil dwelling insects may be much higher than during an average or colder-than-average winter.

As with most soil insects, it is difficult to predict when and where true white grubs will be found. Problems can be expected in cornfields following pasture or grassy Conservation Reserve Program ground. But stand loss also occurs in both continuous and rotated corn, and in Iowa the problem is usually, but not always, found adjacent to areas bordered by cottonwood or willow trees. Sometimes true white grubs are found far from trees and the reason for their occurrence in a field remains a mystery.

Three groups of white grubs are found in Iowa croplands: the true white grub, which can cause significant stand loss in corn, and the annual white grub and *Aphodius* or "manure" grub, which do not cause stand loss. True white grubs kill seedling plants by feeding on the roots. They have a 3-year life cycle and can cause stand loss during 2 years of their 3-year cycle.



Stand loss in first-year corn from true white grubs.

[Enlarge](#) [1]

Annual white grubs have a 1-year life cycle, and the grubs are nearly finished feeding in the spring about the time that corn is planted. I have never been able to confirm that annual white grubs cause stand loss in either Iowa corn or soybean, but University of Illinois entomologists consider them a problem in central and southern parts of Illinois.

The *Aphodius* or manure grubs are common in fields that have been heavily manured. They are not known to cause stand loss in corn. The size of manure grubs makes them easy to identify; they are very small, relative to the true white grub.



***Aphodius* grubs, or manure grubs, may be common in heavily manured fields. They rarely, if ever, cause stand loss..**

[Enlarge](#) [2]

If white grub stand loss has occurred in a field then dig in the soil a couple of days before planting, especially near these wooded areas and where previous stand loss was noticed. Spring tillage also can expose white grubs on the soil surface, and birds landing in the field is a good indicator that there is some insect that they are eating. If grubs are found, collect and correctly identify them to determine their potential for economic damage to corn. Both kinds of white grubs are C-shaped, creamy white, and covered with tiny bristles. True white grubs can be separated from annual white grubs by examining the pattern of hairs on the raster (the bellyside of the last tail segment). The raster of the true white grub has a narrow, smooth space with two rows of parallel bristles (patterned like a zipper). Also, there are many scattered bristles on either side of the zipper. Annual white grubs have scattered bristles on the raster, but no distinct pattern like the zipper.



True white grub.

[Enlarge](#) [3]



True white grub with zipper-like parallel row of hairs on underside of tail.

[Enlarge](#) [4]

Entomologists at North Dakota State University have estimated that one or more true white grubs per cubic foot of soil can cause stand loss in seedling corn. This threshold is also reasonable for Iowa. If true white grubs are found, use a soil insecticide at planting. There are no rescue treatments after true white grub damage occurs. If a corn stand is severely damaged and must be replanted, use a soil insecticide that is labeled for white grubs during the replanting. Unfortunately, there are no good data that would suggest which insecticides are best for true white grub control.

Insecticides labeled for true white grub control in corn include Aztec, Capture, Counter, Force, Fortress, Lorsban, Prescribe (seed treatment), ProShield (seed treatment), Regent, and Thimet. Read and follow the label directions regarding amount of product per acre and chemical placement.

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<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2002/4-15-2002/whitegrubs.html>

Links:

[1] http://www.ent.iastate.edu/imagegal/plantpath/corn/whitegrub/white_grub_stand_loss.html

[2] http://www.ent.iastate.edu/imagegal/coleoptera/scarabaeidae/manure_grubs.html

[3] http://www.ent.iastate.edu/imagegal/coleoptera/scarabaeidae/white_grub_larva.html

[4] <http://www.ent.iastate.edu/imagegal/coleoptera/scarabaeidae/phyllophaga3936-61.html>

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