

Fall soil sampling method for white grubs in corn

Curt Laub, Rod Youngman, Tim Jordan, and Tom Kuhar

Annual white grubs are early-season pests attacking corn seeds and seedlings (Figure 1). Because grubs occur in the soil, their presence in fields and subsequent damage to corn may go unnoticed until too late. Insecticidal seed treatments (see [Field corn insecticide seed treatment chart](#)) are effective for controlling soil insect pests. Growers typically must decide whether to purchase insecticide-treated seed well in advance of spring planting.



Japanese beetle



Asiatic garden beetle



Masked chafer

Figure 1. White grubs commonly found in Virginia corn fields.

The Compact Method (CM) is a fall soil sampling strategy that provides timely, field-specific information for white grub management decision-making. Using the CM for spring soil sampling of white grubs before planting corn is as useful as fall sampling with the CM. However, keep in mind that sampling in the fall gives you more time to make a decision about white grub management than sampling in the spring.

To use the CM, dig several 8-inch square by 6-inch deep holes in a field that will be planted in corn, and hand sift the soil on a dark-colored plastic leaf bag (Figure 2).



Figure 2. Compact method: 8 inch square by 6 inch deep sample.

Count all white grubs and calculate the average number of grubs per hole. The more holes you sample, the more accurate your estimate of the white grub population will be. Take at least 3 samples per field, and more if the average number of grubs is close to the action threshold (AT). **Thresholds:** The fall AT is 1.6 or more white grubs per CM soil sample. The spring AT is 1.04 or more white grubs per CM soil sample.

One point of caution: although soil sampling for white grubs works well in most soils: it is easier to hand sift lighter, sandier soils than heavier soils which do not break apart easily. No data is available for muck soils.

For more information on fall sampling for white grubs and action thresholds see the 2014-15 Virginia Cooperative Extension Pest Management Guide for Field Crops, Insect Section: <http://pubs.ext.vt.edu/456/456-016/456-016.html>