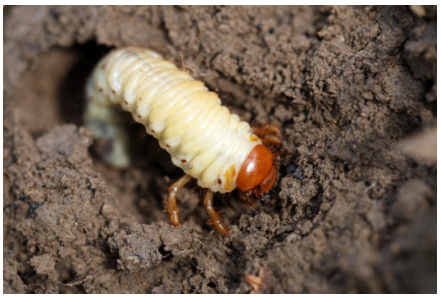
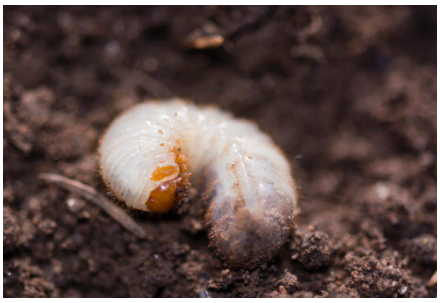
WHITE GRUBS

Soybean Pests


Overview

Several species of white grubs can be found in soybean fields including May/June beetle (*Phyllophaga* spp.), masked chafer (*Cyclocephala* spp.), and Japanese beetle (*Popillia japonica)*.

White grubs can be occasional pests of soybean seedlings. Soybean fields with white grub injury are often previously in sod or some other cover crop, in set-aside, or in soybean the previous season. May/June beetles and the masked chafer prefer to lay their eggs in grasses. The Japanese beetle will lay its eggs in grasses, soybean, and, to a lesser degree, corn.

May/June beetles have a two to three-year grub cycle (grub stage from August through the next year and sometimes during part of third year), while masked chafer and Japanese beetle have a one-year life cycle (grub stage from late July through mid-June the following year).

Scouting

Identification

Grubs are typically 1/4 to more than 1 inch long, are white with brown heads, and have six prominent legs. Their bodies typically are curved into a “C”-shape (Figure 1).

Figure 1. White grub larvae are typically C-shaped.

Sampling Method

Before planting

If soybean is to be planted into a high risk field, such as ground previously in sod or set-aside, soil samples should be taken and examined for white grubs before planting. In 5 randomly selected areas, dig up a 2 feet long by 1 foot wide by 6 inches deep sample of soil. Place the soil on a piece of black plastic or cloth and carefully search through the soil, counting the number of white grubs found. Two or more live grubs per cubic foot of soil prior to planting may signal a potential problem.

After planting

White grub damage typically appears as gaps in rows where plants fail to emerge and/or as wilted, discolored, or dead seedlings. Sampling is similar to pre-plant sampling. Look for evidence of root pruning. Also estimate the plant stand that remains in the field.

Management

Before planting
In no-till or limited-till situations, white grubs may become established on existing vegetation and move to emerging soybean seedlings once this vegetation is controlled. Risk of white grub attack can be greatly reduced by destroying all existing vegetation by cultivation or herbicides, including a burn-down and pre-plant residual herbicide, two to four weeks before planting. Removing existing vegetation prior to planting will also provide better penetration of insecticide spray or granules.

Starting off with a good seed treatment is an excellent way to control insects and protect soybean plants above and below ground. Thiamethoxam is a seed treatment that is currently labeled for white grub control. If only Japanese beetle grubs are found, it should be safe to plant soybean as long as it is not extremely early (however, continue to watch infested fields).

After planting
There are no rescue treatments available for white grubs in soybean. The decision to replant should be based on the remaining healthy plant population, the date, yield expectations, etc. Where planting in wide rows, it may be feasible to replant down the middle of the rows without destroying the healthy plants in the original planting. The result would be the equivalent to narrow row soybean.

The following table may help in making replanting decisions.

Yield Effects of Reduced Stands

Plant spacings	Yield as % of Normal
2 foot skips - 50% of row	94
3 foot skips - 50% of row	87
4 foot skips - 50% of row	85

Source: Purdue University

If control is necessary, contact your state Cooperative Extension Service for available materials and rates. Always read and follow label recommendations.

Resources

White Grubs
Purdue University

https://extension.entm.purdue.edu/fieldcropsipm/insects/soybean-white-grubs.php

This website is funded by the soybean checkoff