

SEEDCORN MAGGOT



Soybean Pests



Overview

The seedcorn maggot (SCM) (*Delia platura*) is widely distributed in the corn/soybean growing regions of the world and has been reported in the United States since at least 1855. Seedcorn maggot has a very wide host range, commonly feeding on seeds of beans, peas, and corn, as well as roots of cabbage, radish and onion sets. In fact, many seeds and roots are at risk if this insect is present.

The larvae (maggots) develop in the soil and feed on decaying organic matter. They also will attack newly planted seeds both before and after emergence. If feeding occurs before germination the seeds will die. This causes reduced plant populations in the form of 'skips' in the field. If feeding occurs after germination, the resulting damage will vary depending upon the number of maggots present and plant age.

Minor feeding damage may simply slow plant development. Moderate feeding damage to the growing point may result in two stems. Severe damage often kills the plants. Infestations are most often found when full season soybeans are planted into cool, wet soil using reduced tillage. The greater the crop residue, the higher the potential for infestation.

Scouting

Identification

The adult stage of the SCM is a small grey fly about 1/5 inches long with black legs (Fig. 1). It looks very much like a small house fly. The SCM larva is a slender, yellowish-white worm (maggot). It is legless, about 1/4 inches long. The maggot lacks a defined head and legs, but has small black mouth hooks at the front of its body (Fig. 2).



Figure 1. Adult Seedcorn Maggot



Figure 2. Seedcorn maggot larvae feeding on soybeans.

The SCM has at least three generations each year, but it is only the first generation in the spring that attacks soybean seeds and young plants. In scouting, look for skips in the row. Soybean seeds attacked by SCMs may never emerge, thus reduced stands may be noted. The maggots burrow into the seed, often destroying the germ. The seeds fail to germinate leaving large gaps in the stand. When infested seeds do germinate, the seedlings are weak and may die (Figure 3). Any condition that delays germination may increase damage from this pest. Maggot damage, unlike wireworm damage, usually covers most of a field (an exception might be in a field where manure was not spread throughout the field or levels of crop residue vary). Land that is heavily manured, or where a cover crop is lightly turned under, may be attractive in the spring to egg-laying flies.



Figure 3. Feeding damage from seedcorn maggot on a soybean seedling plant. Injured plants often die. Photo Credit: Howard F. Schwartz, Colorado State University, Bugwood.org

Examine soil by digging in areas where plants have failed to emerge. Check ungerminated seed for injury and presence of maggots. Dig up 2 linear row-feet in each of 5 areas in a field. Examine seeds for damage. Record the number of plants, good ungerminated seeds, and hollowed-out or otherwise damaged seeds in each area sampled.

Management

There are no rescue treatments for SCM. Once SCM injury is noticed, it is too late to use any control methods. All management decisions need to be made prior to planting and should be based on the risk of economic infestation.

Risk for economic infestation by SCM is greater in:

- Fields with a history of infestation by this pest.
- Fields with fresh organic matter, such as animal manure or green plant material (cover crops, weeds, etc.), that has been recently incorporated into soil.

- Cool, wet soils that delay emergence and increases the time that the seed and emerging plants are susceptible to attack by soil pests.

Cultural control

- Delay planting until soil temperatures promote rapid seed germination.
- Avoid planting at least two weeks after fresh organic materials are incorporated into soil.
- Degree–day models can guide decisions about adjusting planting date to avoid periods with high larval abundance. Seedcorn maggot development is estimated using a base temperature of 39°F (3.9°C) for degree–day calculation.
 - Planting should be avoided during peak fly emergence for the first generation, which occurs when 354 degree–days have accumulated.
 - To calculate degree days for your area, visit the University of Wisconsin Extension [Degree Day Calculator](#)

Chemical control

Rescue treatments are not available for this pest. Preventative use of seed–applied or in–furrow insecticides may be considered for fields with high risk for economic infestation by SCM (see above for risk factors). Always read and follow the label directions.

Estimation of stand loss and replant decisions

Fields should be inspected for stand loss during seedling growth stages. Soybean is a resilient crop, able to tolerate relatively high levels of stand loss. However, when significant stand loss occurs, replanting may be required, but this option should be considered carefully.

Resources

Seedcorn maggot

Northern Plains IPM Guide

[https://wiki.bugwood.org/NPIP:Delia_platura_\(soybean\)](https://wiki.bugwood.org/NPIP:Delia_platura_(soybean))

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