

Seedcorn Maggot

Key Points:

- Seedcorn maggot (*Delia platura*) larvae damage corn and soybeans by feeding on germinating seeds or seedlings.
- Pest pressure is common in fields with a history of infestation, or that have been recently tilled or have high organic matter, including manure, cover crops, or weeds.
- Insecticide seed treatments can provide effective protection against seedcorn maggot in both corn and soybeans.

Pest Facts

- Seedcorn maggot (*Delia platura*) was introduced from Europe and was first found in the United States in the mid-1800's. It is now present across the U.S. and in Canada.
- It feeds on germinating seeds or seedlings of corn and soybeans and decaying organic matter.
- Unlike many other insect pests, seedcorn maggot tends to affect whole fields rather than just localized patches.



Seedcorn maggot feeding on soybean cotyledons.



Mature seedcorn maggot larvae found in the soil.

Impact on Corn and Soybean

- This pest is damaging in the larval stage when it feeds on germinating seeds or emerging seedlings.
- Seeds and seedlings attacked by seedcorn maggot can have a range of symptoms and severity. Damage may include destroyed seed or cotyledons from feeding. Fields severely impacted by seedcorn maggot may need to be replanted.
- Injury from seedcorn maggot may also serve as an entry point for pathogens. In combination with other conditions that delay germination, damage can slow plant growth in the early vegetative stages or cause additional stand loss.



Poor stand establishment in a soybean field due to seedcorn maggot damage.

Life Cycle

- Overwintering in the soil as pupae, seedcorn maggot is difficult to detect in the fall before it causes damage.
- Adults emerge in the spring after the ground thaws and enough heat units have been accumulated. Females will then mate and lay eggs in freshly plowed fields at the soil surface.
- The eggs will hatch within a few days and develop into their larval stage.
- In the upper Midwestern United States, seedcorn maggot will complete three to four generations in the growing season, with each life cycle taking three to four weeks. However, they are only a pest during planting season and later generations are not a concern.



Pupae of seedcorn maggot found in a soybean field.

Key Characteristics

Egg

- Eggs are elongated and white; however, they are generally not visible on the soil surface.
- Eggs will hatch a few days after being laid.

Larvae

- Seedcorn maggot larvae have a pale, yellowish color and are ¼ inch long when fully grown.
- They have a long, narrow, cylindrical, tapered body with no head or legs. Maggots have a small black mouth with hook-shaped mouth parts.

Pupae

- The pupa stage has a wheat seed-like appearance, with a caramel brown color and a hard, football shaped casing.

Adult

- Like the larva, the adult is ¼ inch in length and is similar to a house fly in shape with a grey-brown color and red eyes.



Adult seedcorn maggot.

Scouting

- Scouting should be done in freshly planted fields from emergence to early seedling stages.
- Scouting should be prioritized on fields that are at higher risk of have a history of infestation.
- Seedcorn maggots are most prevalent in fields with high organic matter and decaying vegetation. Populations are also generally higher following soybeans than following corn.
- Because infestation is likely to occur across the whole field, it is important to check multiple places when scouting.
- If seedlings are damaged, check for the presence of maggots by digging around plants and looking for larvae or damage to the seed.



Seedcorn maggot larvae feeding on a kernel of corn.

Management Considerations

- There are no effective rescue treatments available for control of seedcorn maggot, making prevention and minimizing risk critical.
- Insecticide seed treatments can provide effective protection against seedcorn maggot in both corn and soybeans.
 - LumiGEN® premium seed treatment packages available for Pioneer® brand corn provide above average protection against seedcorn maggot.
 - LumiGEN® premium seed treatments for Pioneer® brand soybeans include two available insecticide modes of action against seedcorn maggot.
- In-furrow insecticides may also be considered in fields with a high risk of infestation.
- Replanting is the only management option after damage has occurred.
- Replant decisions should consider the remaining stand, date, and potential yield.
- Cultural practices that may be helpful in reducing the severity of seedcorn maggot damage include:
 - Delay planting until the soil is warmer to promote rapid germination and emergence.
 - Higher seeding rates.
 - Earlier termination of cover crops.
 - Wait two weeks following tillage or manure application to plant.
 - Avoid planting during peak fly emergence.
 - Avoid planting before cool and wet periods.

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