

Management Alternatives

Seed Corn Maggot

Use insecticide seed treatment at planting. To reduce attractiveness of a cornfield to egg-laying females, disc or plow early in the season, incorporating residues from a previous crop and destroying weed growth.

Wireworm & White Grub

If losses due to wireworm are severe, consider practicality of replanting (disk and treat the field with a soil insecticide). No rescue treatments exist for white grub. Note: White grub is seldom an economic problem for New York's field corn production. Planter box seed treatments do not protect corn from pests that occur after emergence such as cutworms, armyworms, and corn rootworm. Rescue treatments such as replanting are rarely economical.

Implementation

To select insecticides for seed or soil, consult the Cornell Guide for Integrated Field Crop Management. Incorporating plant residues and manure may reduce attractiveness to seed corn maggot adults.

Reevaluation

Check fields for corn emergence problems after planting. Record information on management actions taken and their effectiveness for future reference.



We develop sustainable ways to manage pests and help people to use methods that minimize environmental, health, and economic risks.

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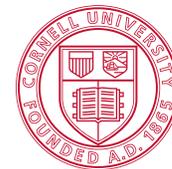


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Early Season Insect Pests of Corn Management Guide



Cornell University
Cooperative Extension

Identification

Seed corn maggot

Seed corn maggot adults resemble the common housefly. Females lay eggs in moist soil cracks, high organic matter, decomposing plant material, and germinating seeds. Maggots are pale yellowish-white, tapered, legless, appear to be headless, and reach a length of about ¼ inch. They burrow into germinating seeds to feed. Seed may not germinate; seedlings are weak and often die. You may see small shot hole injury on cotyledons and first true leaves. Damage is more severe in cool, wet spring weather that delays seedling emergence. Maggots attack corn, soybeans, dry beans, and other large seeded crops.



Life stages of the seedcorn maggot, *Delia platura*, showing the egg, larva, pupa, and adult fly. Illustration by Art Cushman, USDA; Property of the Smithsonian Institution, Department of Entomology, Bugwood.org

Wireworms

Wireworms are the larval forms of click beetles. Adults are brown to black, bullet-shaped, hard-shelled beetles 1 inch long. The larvae are hard, smooth, slender, yellow to reddish-brown, wirelike worms ½ inch-1 inch long. Wireworms can be a problem in first year corn after sod and (depending on the species) may persist for 2-6 years. They feed on seed and roots of corn. Symptoms are hollowed-out seed at germination and missing, wilted, or stunted seedlings.



Conoderus species; larva (wireworm) on left; photo by Clemson University - USDA Cooperative Extension Slide Series, Bugwood.org. Adult form (click beetles) on right; photo by Steve L. Brown, University of Georgia, Bugwood.org.

Whitegrubs

White grubs are the larval forms of several scarab beetles: Japanese beetles, May or June beetles, or European chafers. White grubs are thick, white, soft-bodied larvae about ¼ inch-1 inch long that curl into a C-shape when disturbed. They feed on corn roots and are normally a problem in first year corn after sod. Symptoms are hollowed-out seed, gaps in corn rows at time of emergence, and wilted or stunted seedlings.



Scarab beetles; larva (white grub) on left, adult (European chafer) on right. Photos by J. Ogrodnick, NYSAES Photo.

How to Distinguish the Three Pests in the Field

Likely Field Conditions			
	Seedcorn Maggot	Wireworm	White Grub
Missing or wilted plants	✓	✓	✓
High organic matter, manure	✓		
Following sod		✓	✓
Hollowed-out seed	✓	✓	✓

Key Larval Characteristics			
	Seedcorn Maggot	Wireworm	White Grub
Headless	✓		
Hard, smooth, yellowish		✓	
Thick, curls into a "C" shape			✓

Sampling

Monitor early season insect pests while you assess plant populations and survey for spring weeds. Missing, wilted, or stunted seedlings can indicate an insect or disease problem. (They can also indicate problems with your planter: calibration, seed depth, seed furrow closure, etc.) Examine plants and seed closely. Seed should be about 1½ inch deep and 6-9 inches apart.

Analysis

Take action if 5 percent or more of seed or seedlings are damaged or missing.