Implementation

Seed Treatments

Most purchased seed is pre-treated with a fungicide to protect it while in storage. To protect from insect and disease problems after planting, use a planter box treatment with a recommended insecticide / fungicide. Here's how:

- Fill half the planter box with seed.
- Add half the amount of chemical required for the entire planter box.
- Stir thoroughly with a stick—not your bare hands.
- Fill the planter box with seed.
- Add the remaining half of chemical.
- Stir again thoroughly.
- Read and follow the fungicide label and wear protective clothing.

Reevaluation

Evaluate after crop emergence for signs of disease, insect problems, or other early season problems.

Monitor for mid-season foliar diseases and other pest problems.

Following pollination, monitor for stalk rot and lodging. Early harvest may minimize losses if significant problems exist.

Review your crop plan for the previous and coming year to ascertain potential problem fields.

New York State Integrated Pest Management Program

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

Produced by the New York State Integrated Pest Management Program, which is funded through Cornell University, Cornell Cooperative Extension, the NYS Department of Agriculture and Markets, the NYS Department of Environmental Conservation, and USDA-NIFA. Written by Ken Wise, Keith Waldron, and Mary Woodsen, New York State IPM Program. Design by Karen English, New York State IPM Program. Cornell Cooperative Extension provides equal program and employment opportunities. NYS IPM Publication No. 335.

www.nysipm.cornell.edu

Find this brochure online at:
http://hdl.handle.net/1813/42378

Find more information about IPM for Field Crops at:
nysipm.cornell.edu/agriculture/livestock-and-field-crops

Diseases of Corn

Management Guide

NEW YORK STATE Integrated Pest Management PROGRAM

Cornell University Cooperative Extension

Corn Diseases in NYS

include:

Pythium Damping Off	Southern Leaf Blight
Rhizoctonia Damping Off	Northern Leaf Spot
Anthracnose Leaf Blight	Anthracnose Stalk Rot
Eye Spot	Common Rust
Gray Leaf Spot	Common Smut
Yellow Leaf Blight	Gibberella Stalk Rot
Northern Leaf Blight	Fusarium Stalk Rot

Corn diseases aren't always easy to identify—yet may reduce grain and silage yields and quality.

Accurate disease identification is crucial in selecting resistant hybrids.

- Consult the IPM Field Corn Pocket Guide, p. 71 to 93, for guidance in corn disease identification.
- Different diseases may have similar symptoms—if in doubt, consult the CCE diagnostic lab.

Principles of Sampling

Scout for corn diseases while monitoring for other pests and overall crop condition.

Analysis

There are no thresholds for corn diseases in New York. If you find clear symptoms, identify the problem. Management options may be limited for this year's crop, but correct ID will lead the way to proper management in next year's crop. Follow recommendations in the Pocket Guide.

Sound crop management is the key to managing corn disease. Healthy, vigorous plants have less chance of being infected.

Management Alternatives

Cropping sequence

Contaminated crop debris may harbor many types of diseases. Moldboard plowing may prove helpful in reducing disease severity.

Southern, northern, and yellow leaf blights, eyespot, gray leaf spot, and anthracnose are debris-borne diseases that can build up in continous corn or low-and no-till culture.

Selection of planting site

To manage seed rots and seedling blights, avoid planting in cool, wet, or poorly drained soils.

To manage leaf diseases, avoid planting corn in low-lying, shaded fields with poor air circulation and high relative humidity.

Seedbed preparation

Thoroughly incorporate previous crop debris—especially in fields of continuous corn and in fields where you've previously had serious disease problems.

Manage stalk rot, common smut, and leaf blights (among others) by correcting soil pH (to 6.0 or above) and fertilizing according to soil test results. Optimize crop growth and development. Balanced fertility is key: avoid too-high N and too-low K.

Date of planting

Grain that is thoroughly mature at harvest is least likely to become moldy—so plant early unless soils are too cold and wet.

Plant population

Dense stands can increase risk of stalk rot, particularly under high-N conditions. Reduce plant populations in fields with a history of stalk rot. Follow current plant population recommendations in the Cornell Guide for Integrated Field Crop Management.

Hybrid maturity

Early maturing hybrids and timely harvest alleviate ear rots associated with immature grain and early frost—provided they are harvested promptly after maturity and not allowed to stand until late fall.

Seed Treatments

Fungicide seed treatments control seed decay, seedling blight, and dampening off.

Disease-Resistant Hybrids

- Several hybrids are generally resistant to some corn diseases—but none are resistant to all.
- Review your records to double-check which diseases have been prevalent in your fields.
- Even a moderate level of resistance is enough to prevent losses to certain diseases.
- "Tolerance" is the ability to produce acceptable yields although the plant shows symptoms.
- Strong stalk rind characteristics may be as important as, or more important than resistance to internal stalk-rotting organisms. Select hybirds with good standability.
- Leaf blights can be devastating if they develop during or before the first four weeks after pollination.
- Most resistance in corn is based on a single gene. If a fungus develops a new race the corn can become susceptible again. Breeders are working on multiple gene resistance to improve hybrid resistance.