

The level of disease resistance you need depends on the nature of the disease, the site, and which diseases prevail in your locale.

For added protection, varieties resistant to potato leafhopper are now available.

To select resistant varieties, refer to the current *Cornell Guide for Integrated Field Crop Management*.

Implementation

Vascular wilts (*Fusarium* wilt, *Verticillium* wilt and bacterial wilt) pose the greatest threat in New York. Minimize leaf and stem diseases with timely harvest. Minimize root, crown, and stem rots with sound crop management.

Fungicide seed treatments may help minimize risk of *Pythium* damping-off and *Phytophthora* root rot disduring stand establishment.

Reevaluation

Evaluate after alfalfa is planted and has started to emerge. Continue to monitor the field throughout each growing season for diseases.

Review your crop plans for previous and coming years to identify potential problem fields.

For additional help contact your local Cornell Cooperative Extension Educator.

For pesticide recommendations please consult the current issue of *Cornell Guide for Integrated Field Crop Management*.

Always remember to read and follow the pesticide label.

For additional help contact your local Cornell Cooperative Extension Educator.

Cornell Cooperative Extension provides equal program and employment opportunities.

New York State Integrated Pest Management (IPM) Program

We encourage people to adopt a sustainable approach to managing pests, combining methods that minimize economic, health, and environmental risks.

The IPM strategy integrates the use of several pest-suppression technologies, including

- Biological control: beneficial organisms, such as insect predators
- Cultural techniques: practices such as crop rotation, sanitation
- Mechanical and physical methods: screens, traps, cultivation, and temperature modification
- Chemical control: judicious use of pesticides and other chemicals
- Genetic control: traditional selective breeding and new biotechnology practices that produce pest-resistant varieties
- Regulatory control: state and federal regulations that prevent the spread of pest organisms.

The New York State IPM Program funds projects to improve IPM strategies and offers educational programs and resources.

Many organizations and individuals assist in this effort. Cornell University, Cornell Cooperative Extension, the New York State Department of Agriculture and Markets, the New York State Department of Environmental Conservation, and USDA-CSREES jointly fund the NYS IPM Program.



**New York State
Agricultural Experiment Station**
Geneva, NY 14456
(800) 635-8356 FAX: (315) 787-2360
<http://www.nysipm.cornell.edu/>

diseases of alfalfa *leaf spots* management guide

Did you know...

Relative Risks of Diseases on Alfalfa		
Disease	New Seeding	Established Stand
<i>Leptosphaerulina</i> leaf spot	low	medium
spring black stem	low	medium
downy mildew	medium	medium
common leaf spot	medium	high

Identification

Leptosphaerulina Leaf Spot (Lepto)

Symptoms: lesions usually start as small black spots and enlarge to oval or round “eyespot” 1/16 to 1/8” across. Lesions are light brown or tan with dark brown borders; often surrounded by a chlorotic (yellow) area.

Common warm weather foliar disease, particularly as alfalfa becomes taller and the canopy closes.

Primarily attacks young leaflets; may attack petioles and other plant parts.

Favored by cool moist weather in early spring and late summer to early fall.

Spring black stem (SBS)

Symptoms: small, irregularly shaped dark brown to black tarlike spots on leaf petioles. Spots may enlarge and coalesce. Black areas may be present on lower portions of stems and petioles.

In severe infections, may cause crown or root rot, or both.

Most common during the first half of the season; sometimes occurs during cool, moist weather in autumn.

Downy mildew (DM)

Symptoms: leaves blotched with light green or yellow; young leaflets distorted. Dark purplish-gray fungal mat often covers undersurface of leaves.

Plants are stunted or growth distorted.

Common during the first half of the season.

New seedlings may be severely affected if the disease goes systemic.

Systematically infected stems may be a larger diameter than normal; they often produce a bunched rosette of growth at the stem tip.

Common or Pseudopeziza leaf spot (CLS)

Symptoms: small brown to black circular spot with “gear sprocket” edges on the leaflets. Fully developed spots measure 1/16 to 1/8”. Spots don’t coalesce.

Frequent from mid-summer on.

Small, light brown raised dots (apothecia) on upper surface of leaves are fruiting structures. Over time, infected leaves turn yellow and drop.

Sampling

Scout your fields to stay on top of diseases. (Works well in conjunction with scouting for other pests.)

Correct identification is important—otherwise you may opt for the wrong management.

Analysis

There are no thresholds for alfalfa diseases. Leafspot diseases should be evaluated for their effects on leaf loss.

Crown and wilt diseases should be evaluated for their severity and their impacts on total stand health and productivity.

Management Alternatives

There are no pesticide rescue treatments to manage diseases in forage alfalfa. Use cultural practices and resistant varieties to minimize disease problems.

Sound crop management limits the development and impact of diseases. Any practice that reduces crop stress (biotic or abiotic) and promotes vigor will help extend the productive life of the stand. This becomes even more critical in the presence of serious disease organisms.

Site selection:

Avoid poorly drained soils to reduce losses caused by *Phytophthora* root rot and other soilborne diseases.

Cropping sequence:

Avoid planting alfalfa in fields recently cropped to legumes. If you’ve had *Verticillium* wilt or *Sclerotinia* crown and stem rot, wait three or more years before replanting to alfalfa.

Stand establishment

Good seedbed preparation, weed control, pH to 6.5 or above, and balanced fertilization are essential for vigorous stands.

Sanitation procedures

Harvesting young stands before older stands reduces potential spread of pathogens. In areas where Anthracnose, *Verticillium* wilt, or other infectious diseases occur, removing debris from harvest equipment before moving to other fields can reduce risk of spreading the disease.

Harvest schedules

Harvesting before full bloom—which allows for replenishment of root reserve carbohydrates—often reduces losses from leaf blights. Vigorous, nonstressed plants are better able to resist pest problems.

Selection of Disease-Resistant Varieties

Forage varieties are mixed populations that vary for many traits, including disease resistance.

Forage crops can tolerate some damage without significant yield reduction.

Resistance to a given disease varies from susceptible (less than 6 percent of plants are resistant) to highly resistant (greater than 50 percent of plants are resistant).