



Northern Corn Leaf Blight in Northern New York

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Symptoms of northern corn leaf blight (NCLB) are seen across New York State and Northern New York, as well as the US Corn Belt, each season. Severity of symptoms varies widely, from insignificant to devastating, for some fields in some years. NCLB can cause yield loss if it develops early enough in the season. Corn hybrids differ in their resistance to NCLB; cropping practices and weather patterns also influence disease progression.

NCLB is a foliar disease caused by the fungus *Exserohilum turcicum* (syn. *S. turica*) which overwinters in NNY in infected corn residues. Spores are produced when warmer temperatures and humidity conditions are favorable in spring and early summer of the following season. Fungal spores are subsequently transferred from residues on the soil surface up and onto leaves and stems by rain and wind. Infections and lesions first appear on lower leaves and progress up the plant. Spores also are spread from plant to plant and from field to field, sometimes over long distances, with wind and weather systems. The disease develops under wet conditions and moderate temperatures (64-81 °F). The fungus needs just 6 to 18 hours in the presence of moisture on the leaf surface to infect a leaf. Symptoms are often observed following long periods of heavy dew and overcast days. Moderate temperatures and wetter than normal summer can cause the disease to develop earlier. Hot, dry summers limit disease development and spread, as do very cool summers.

The characteristic cigar-shaped leaf lesions are 1-6 inches long and run parallel to the leaf margins. Lesions begin as a gray-green color and become a pale gray or tan when they fully develop. When conditions are moist, lesions produce dark gray spores that give the lesions a dirty appearance. As the disease progresses, the lesions combine to form larger areas of dead tissue on the leaves. Hybrids that are partially resistant to NCLB usually produce fewer and smaller lesions and produce fewer spores.

If an NCLB infection begins early in the season, before or during the tasseling and silking stages, a significant loss of yield can occur. The later the lesions occur, the less impact the disease will have on yield. Foliar lesions reduce the leaf area available for photosynthesis, however, the relationship shown between the amount of the leaf tissue that is covered by lesions and the amount of yield loss. NCLB lesions can also lead to stalk rot development and lodging, which also effects yield.



Foliar Northern Corn Leaf Blight lesions found on field corn in Jefferson (above) and Lewis (below) Counties, in August 2018. Photos by Amanda Bond.

Control measures

Select resistant varieties – Corn hybrids with moderate resistance to NCLB are available across a range of maturities. Lesions will develop on these hybrids, but disease progress will be delayed sufficiently, and yield loss is less likely. Seed companies often indicate the degree of resistance with a numerical scale. It is important to pay attention to these scales because not all are the same.

Manage Residue – Continuous corn and no-till or reduced-tillage systems are at a higher risk of disease because residues are left on the soil surface. A one-year rotation away from corn, followed by tillage prevents disease development in the next years corn crop. In a no-till or reduced tillage field that has a history of NCLB, a two-year rotation out of corn may be best to reduce the amount of disease in the next corn crop.



A foliar
in August

The corn hybrid on the left is moderately resistant to NCLB while the hybrid on the right is susceptible. Photo courtesy of Chris Daum.

Fungicides – Fungicides are registered for use on NCLB in NYS and may be necessary in certain situations. Farmers must remember that it is another cost to corn production and economic factors must be considered when deciding to apply the fungicide for NCLB treatment. When scouting reveals disease presence on tasseling to early silking fields and weather forecasts predict conditions favorable for disease development, fungicide applications have the greatest likelihood of economic return. It is important to protect the ear leaf and the leaves above it as the plants enter reproductive stages.

References and Further Reading

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For more information about field crop and soil management, contact your local Cornell Cooperative Extension office or North Country Cornell University Cooperative Extension Regional Field Crops and Soils Specialists, Mike Hunter and Kitty O’Neil.

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