

## Managing northern leaf blight in sweet corn

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Northern leaf blight (NLB), also known as Turcica leaf blight, is a disease that occurs occasionally on susceptible varieties of sweet corn. Outbreaks of NLB (turcica) are dependent on the presence of spores in crop residue or soil and suitable weather conditions. Only if these conditions are met will disease development take place.

### Cause

The disease is caused by a fungus, *Exserohilum turcicum*.

### Symptoms

This fungus causes elongated brown lesions on the leaves. If allowed to progress, the lesions can cover all of the leaf and subsequently reduce photosynthetic area and thus reduce yields.

### Source of infection

The fungus is spread by spores from nearby crop residue and if infection occurs early enough cob fill is reduced.

### Spread

Wind can carry spores from an infected site to a non-infected site. Rain splash and wind will increase the spread of disease within infected crops by moving spores from plant to plant.

### Favoured by

Infection occurs when conditions are moist because of rain and especially dew. Dew periods are enough to spread the disease and allow infection. For the production of spores (conidia), the fungus needs a minimum dew period of 14 hours at 20–25°C; however this does not need to occur in

one stretch. There may be a break in the middle of this period – for example, it may start one night then break, then finish the next night.

After the formation of conidia, one hour of leaf wetness is necessary for the fungus to infect the leaf. In Australia wet summers can promote this disease and dry summers will reduce the disease levels. Overhead irrigation will increase the chance of the disease.

Figure 1. Typical lesion of NLB on a partially resistant variety.



## Disease management

Management of NLB is difficult, particularly when conditions are favourable for the disease. However, a wide range of control options are available to help control this disease. An integrated approach to disease management is required for successful NLB control, including awareness of conditions conducive to disease development, early detection of the disease, use of resistant varieties, good stubble management, and chemical control.

## Early detection

If NLB develops before silking, yield loss can be high. Yield losses are significantly lower if it develops after silking. Early detection of the disease is therefore an important step in controlling NLB. Having someone independent look through your crop is a good idea, especially if that person has a good background in pest monitoring. If suspicious leaf spots are detected, your local agronomist can submit samples on your behalf to a suitable plant pathology diagnostic laboratory for identification.

## Resistant varieties

Where available, using suitable resistant varieties is the most successful method of controlling this disease. However there is the chance that the resistance can be broken down by new races of NLB. Many new varieties have partial resistance that may still express some symptoms of the disease especially on the lower leaves. Matching resistant varieties to regions that best suit the correct maturity group or sweetness needs to be carefully planned.

## Stubble management

Corn stubble is a source of the fungus and the most common source of disease from season to season. Any infected crop residue should be ploughed in as soon as possible after harvest to encourage breakdown. If possible, plant new crops several kilometres from previously infected sites.

## Chemical control

Chemicals are available for control of NLB in sweet corn. The method of chemical application is important and label directions must be strictly followed. When using fungicides, good leaf coverage is essential, as any untreated leaf will be susceptible to disease. A number of sprays will be necessary to control NLB so the economics of the number of sprays should be considered. Early detection of the disease and monitoring of its spread are important when undertaking a chemical control program. Currently chlorothalonil is registered for NLB control and at the time of writing a permit is approved for propiconazole (PER7677, expires 31 December 2010). The latter fungicide has more curative and systemic activity than chlorothalonil.

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