CAUSAL ORGANISM
Fungus: Exserohilum turcicum (Setosphaeria turcica) or previously Helminthosporium turcicum

COMMON NAMES
NCLB; ET; HT; maize leaf blight; Turcicum leaf blight

HOST RANGE
Primary hosts: Zea mays (maize), Zea mays subsp. mays (sweet corn), Sorghum bicolor (sorghum), Pennisetum glaucum (pearl millet).
Wild hosts include: Sorghum halepense (Johnson grass), Panicum miliaceum (millet), Pennisetum purpureum (elephant grass), Sorghum sudanense (Sudan grass).

IMPORTANCE
Northern corn leaf blight (NCLB) is a common leaf disease and occurs in all maize growing areas of the world. It is currently probably the most widespread leaf disease on maize in South Africa and although especially severe in the eastern parts of the country e.g. KwaZulu-Natal and Mpumalanga, it is common and causes serious yield losses, even in the drier western parts, but particularly under irrigation. Yield losses as high as 70% have been attributed to this disease. Typically, however, yield losses range from 15-30%. Yield loss is caused predominantly through the loss of photosynthetic leaf area due to blighting. If NCLB establishes before silking and spreads to upper leaves during grain filling, severe yield losses can occur. An early or preventative fungicide application is therefore the most effective way of controlling this disease in the absence of resistance. Crop lodging (Fig. 6) is a particular concern where maize is mechanically harvested.

SYMPTOMS
Initially small, water-soaked spots appear on the lower leaves and progress upwards (Fig. 5). Lesions elongate becoming elliptical or cigar-shaped and are typically grey-green in colour (Fig. 1). As the lesions mature, they become tan with distinct dark zones of fungal sporulation (Fig. 2). Lesions are often surrounded by a pale green, water-soaked border (Fig. 3). In the final stages, lesions are straw-coloured to grey, coalescing and killing large parts of the leaves and in severe cases the whole plant.

DISEASE INFORMATION
The fungus overwinters as mycelium and conidia in and on leaf debris. During warm, moist weather in early summer, new conidia are produced on the old residue and the conidia are carried by the wind or rain to lower leaves of young maize plants. Secondary spread within fields occurs by conidia produced on the leaf tissues. NCLB is favoured by moderate temperatures between 18-27°C and prolonged periods of leaf wetness.
Northern corn leaf blight

**Figure 3.** Pale green water-soaked border surrounding lesion.

**Figure 4.** Both susceptible and resistant lesions on the same leaf.

**Figure 5.** Symptoms progressing from bottom leaves upward.

**Figure 6.** Lodging as a result of NCLB & GLS infection.

**Figure 7.** Sprayed control.

**CONTROL**

**Cultural control:**
- Deep ploughing reduces the amount of initial inoculum carried over. It is, however, unlikely that reduced tillage practices will be abandoned to assist with the management of NCLB because of the agronomic advantages provided.
- Crop rotation with crops such as soybeans, beans and sunflower will effectively reduce inoculum levels. Sorghum rotation is not recommended.
- Use of resistant or tolerant cultivars is the most cost-effective means of managing NCLB. However, the pathogen is also known to produce new races that can overcome existing resistance (Fig. 4), therefore scouting for disease even on resistant hybrids remains important (refer to the PANNAR Catalogue for information on resistance of PAN hybrids).
- An integrated approach using maize hybrids with rate-reducing resistance, crop rotation, tillage practices and the judicious use of fungicides, is often relied on to reduce the rate of disease development.

**Chemical control:**
- Several fungicides are registered for use on maize for NCLB control. The spray schedule should start when the first lesions appear on the leaf below the ear. A spray programme aimed at collectively controlling other major fungal leaf diseases in the area of production should be considered.
- There is no evidence that NCLB is seed transmitted, thus seed treatment will provide no protection against this disease.