

# PANNAR PITKOS

## GROW YOUR HEALTHIEST, MOST VIGOROUS CROP EVER

– *Christin English, Media Officer and Stephanie Tweer, Plant Pathologist: PANNAR*

There is little more appealing to a maize producer than row upon row of lush, green, healthy plants. PANNAR Plant Pathologists Dr Rikus Kloppers and Ms Stephanie Tweer have compiled a manual to assist producers in achieving just that.

The maize plant is susceptible to many diseases that affect both the yield and quality of the crop. The PANNAR Maize Disease Manual is intended to assist with the identification, differentiation and control of the principal diseases and disorders of maize in South Africa. Most diseases covered were selected on the basis of their potential for economic damage.

This publication is aimed at agricultural technicians and maize producers. “It is not meant to be the definitive resource on maize diseases,” says Dr Kloppers, “but a handy reference that provides informative coverage of important leaf, stalk, ear and tassel diseases as well as an outline of common physiological disorders”. This manual has a very strong emphasis on Southern Africa and reference is often made to local experiences over the last decade working on maize diseases.

With the frequent discovery of new diseases, this manual is designed as a ‘living document’ to which new disease or physiological disorder fact sheets can be added. Current fact sheets will also be updated with relevant information with regard to control strategies, hybrid/cultivar resistance and chemical recommendations where applicable. Producers are therefore also encouraged to share their experiences of diseases, both common and rare, so that this information can be included in updated versions.

The individual disease fact sheets (Fig.1) are written in an understandable and engaging style with the avoidance of highly technical theoretical jargon. The information is laid out in concise and organised manner with colour photographs of diseased plants included as an aid to visual identification.

All PANNAR agronomists and sales representatives are equipped with this valuable tool and are eager to assist in the success of your maize crop by

sharing this coveted information. Also, keep an eye on our website [www.pannar.com](http://www.pannar.com) for a chance to get hold of your very own copy.

Similar manuals are currently being compiled for other crops, including wheat, sunflower, soybeans, dry beans and grain sorghum. This manual will also be made available in Afrikaans.

### ENQUIRIES

Contact your nearest PANNAR representative or agronomist, or for more detailed information contact Stephanie Tweer (Plant Pathologist at PANNAR) at: [stephanie.tweer@pannar.co.za](mailto:stephanie.tweer@pannar.co.za). Head office contact details: tel. no: (033) 413-9500; e-mail: [infoserve@pannar.co.za](mailto:infoserve@pannar.co.za). Also visit the Web site at [www.pannar.com](http://www.pannar.com).



Figure 1: Example of a disease fact sheet.

# SEED FOR THOUGHT

## NORTHERN CORN LEAF BLIGHT (NCLB)

**Causal organism:** Fungus: *Exserohilum turcicum* (*Setosphaeria turcica*)

**Symptoms:** Lesions elongate becoming elliptical or cigar-shaped; grey-green becoming tan in colour with distinct dark zones of fungal sporulation; lesions often surrounded by pale green, water-soaked border.

**Favourable weather:** NCLB is favoured by moderate temperatures between 18°C - 27°C and prolonged periods of leaf wetness. Conidia are produced on old residue and are carried by the wind or rain to lower leaves of young maize plants.

Leaf diseases covered include Bacterial leaf streak (BLS), Common rust, Diplodia leaf streak, Eyespot, Grey leaf spot (GLS), Maize streak disease (MSV), Northern corn leaf blight (NCLB), Phaeosphaeria leaf spot, Polysora rust and Sorghum downy mildew.



Figure 2: Typical elliptical lesions (right) and resistant flecks (left).

## CHARCOAL ROT

**Causal organism:** Fungus: *Macrophomina phaseolina*

**Symptoms:** Black discolouration of lower stem internodes; shredding of interior; numerous minute black specks (microsclerotia) visible on vascular strands.

**Favourable weather:** High soil temperatures (30°C - 42°C) and low moisture or when unfavourable environmental conditions stress the plant, especially during post-flowering period.

Stalk diseases covered include Charcoal rot, Diplodia stalk rot, Erwinia stalk rot, Fusarium stalk rot and Gibberella stalk rot.



Figure 3: Black specks (microsclerotia) on the vascular bundles.

## HEAD SMUT

**Causal organism:** Fungus: *Sphacelotheca reiliana*

**Symptoms:** Floral structures partially or completely replaced by sac-like structures containing masses of black spores; tassels proliferate to form bizarre leafy structures; ears are smutted or aborted, small, round to teardrop-shaped, with no evidence of a cob or kernels inside and lack silks.

Ear and tassel diseases covered include Boil smut, Crazy top, Diplodia ear rot, Fusarium ear rot, Gibberella ear rot and Head smut.



Figure 4: Head smut.