The YieldBoost™ fungicide and insecticide spray programmes are PANACEA™ initiatives that enable the farmer to benefit from the value of PANNAR SEED’s research in this discipline firsthand, under commercial planting conditions.

YieldBoost™ fungicide spray programme

PANNAR SEED recognises the fact that high potential maize hybrids are often more susceptible to certain diseases. At PANNAR, we test all of our commercial maize hybrids every season in various environments for their fungicide response and have developed unique fungicide spray programmes accordingly.

The primary aim of fungicide application should always be to control disease to foster a better yield, although an additional advantage is that plants usually remain green and healthy for a longer period of time, which is advantageous for standability and the grain quality of the harvest. Results indicate that there are significant differences between hybrid responses to various spray programmes. The risk profiles of certain hybrids indicate that some may need two or even three sprays, depending on the seasonal conditions, where others may require only one, or even no spraying at all.

The YieldBoost™ fungicide programme also highlights the fact that fungicide applications should be a cost-effective management tool in maize production and supports responsible rather than indiscriminate spraying. The most significant differences are discernible among the ultra early and medium early maize hybrids and the most effective spray programme comprises a combination of various tested fungicides.

More information regarding hybrid sensitivities and the fungicide spray programme is available from PANNAR’s representatives.

Fungicide spray programmes:

The most effective fungicide spray programme comprises two fungicide sprays during the growing period. For each spray, the farmer may select either of the recommended options according to his/her own preference.

**Time of Spraying (timing is of the essence)**

<table>
<thead>
<tr>
<th>Option*</th>
<th>Fungicide</th>
<th>Dose/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Spray</td>
<td>1 AmistarTop</td>
<td>500 ml/ha</td>
</tr>
<tr>
<td></td>
<td>2 Abacus</td>
<td>1,6 litres/ha</td>
</tr>
<tr>
<td></td>
<td>3 Nativo</td>
<td>1 litre/ha</td>
</tr>
<tr>
<td></td>
<td><strong>Second Spray</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Artea</td>
<td>500 ml/ha</td>
</tr>
<tr>
<td></td>
<td>2 PunchXtra +</td>
<td>800-1 000 ml/ha</td>
</tr>
<tr>
<td></td>
<td>500 ml BP Crop Oil (Optional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 PunchC +</td>
<td>500 ml/ha</td>
</tr>
<tr>
<td></td>
<td>500 ml BP Crop Oil (Optional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 Duett</td>
<td>1-1,2 litres/ha</td>
</tr>
</tbody>
</table>

*Select one of the proposed options for each spray

Abacus: L8048, 62,5 g/l Pyraclostrobin (strobilurin), 62,5 g/l Epoxiconazole (triazole) (BASF)
Amistar Top: L7897, 200 g/l Azoxystrobin (strobilurin), 125 g/l Difenoconazole (triazole) Syngenta
Nativo: L8942, 100 g/l Trifloxystrobin (strobilurin), 200 g/l Tebuconazole (triazole) (Bayer)
Artea: L6820, 80 g/l Cyproconazole (triazole), 250 g/l Propiconazole (triazole) Syngenta
Duett: L5791; 125 g/l Epoxiconazole (triazole), 125 g/l Carbendazim (benzimidazole) (BASF)
PunchC: L3626, 250 g/l Flusilazole (silicone triazole), 125 g/l Carbendazim (benzimidazole) (DuPont)
PunchXtra: L4243, 125 g/l Flusilazole (silicone triazole), 250 g/l Carbendazim (benzimidazole) (DuPont)
MINI-DISEASE FIELD GUIDES (“BAKKIE BUDDY”)

PANNAR’s exclusive maize disease field guide in a handy, pocket size is now complemented by two new releases, sunflower and wheat “Bakkie Buddies” and will also soon be extended to sorghum, dry beans and soybeans.

The mini-pocket guides are ideal for the identification of the most important crop diseases. A comprehensive disease guide with detailed descriptions and guidelines for control is available on the PANNAR website.

The field guides, like the comprehensive guides, include all the important and well-known diseases and some pests and disorders of all agronomic crops in South Africa marketed by PANNAR. They include colour photos that clearly show the noted problems and also provide information on diseases’ causative organisms (or the cause of disorders), briefly describe the symptoms thereof and provide general notes on each topic. Most diseases were selected on the basis of their economic significance to the industry.

The guides are compiled by Dr Rikus Kloppers, PANNAR plant pathologist and technical services manager and Ms Vicky Knight, also a plant pathologist at PANNAR in Greytown.

The comprehensive disease fact sheets (available on PANNAR’s website), focus primarily on Southern Africa and often refer to local case studies of diseases that have occurred over the past decade, but also show some of the diseases, disorders and pests that have not yet occurred here, but farmers should look out for.

It includes aspects such as new control measures, disease resistance (see agronomic tables) and agrochemical recommendations. You can download the PANNAR Grain Crop Disease Guide App free of charge from the Apple App Store, Google Play Store (for Android devices) or BlackBerry App World. Just search for PANNAR or follow the link from our mobisite www.pannar.mobi.

PANNAR encourages farmers to convey their personal plant disease experiences, both typical and exceptional cases, to the editors for inclusion in updated versions.

SEED TREATMENT

The products currently applied to the seed as seed treatments in the PANNAR factories consist mainly of fungicides and insecticides, or a combination of both.

These products offer the following advantages:

- Protect the seed and seedling at the most vulnerable maturity stages, protect the most exposed plant parts and contribute to seedling vigour.
- Top quality chemical products, in combination with the correct polymers and dyes, are the most environmentally-friendly way of protecting the seed against early-season insect infestation and seed- or soil-borne disease.
- Seed treatment is particularly important where seed is planted in cold, wet conditions which delay emergence.

Maize seed fungicide treatment is standard practice in PANNAR’s factories. In most cases, seed is treated with an insecticide as well. When other seed treatment options are available, the farmer carries the cost of the product and PANNAR will apply the treatment free of charge.

Fungicide:

Broad-spectrum fungicides are used to protect the seed and seedlings against disease in the early stages of the plant’s development. Seed and seedlings are incredibly vulnerable at these early stages and require extra attention and protection. It is therefore necessary to apply it to the seed.

The effects of a fungicide are threefold:

- It keeps in check the fungi and disease residing on the surface of the seed.
- It controls soil-borne fungi and fungi inside the seed.
- It gives the seedling a good springboard to success.

Celest®XL: L6353; Fludioxonil and Mefenoxam (Syngenta). Combines well with other seed treatments.

Insecticide:

Insecticides are used to control insects that normally feed on the seed or seedling. Poncho® provides the maize plant with effective systemic protection against several of the most important soil insects that cause stand loss. At 1,4 ml/1 000 seeds, it also offers effective control of leafhoppers which spread the Maize Streak Virus. The seed treatment by PANNAR’s factories ensures even and reliable application.

Poncho®: L8581; Clothianidin (Bayer CropScience)

Polymers and Dyes:

The function of polymers and dyes stretches far beyond just a colour on the seed. At PANNAR, safety is of the utmost importance, not only for our employees and customers, but for the environment too.

Polymers and dyes have the following characteristics and benefits:

- The dye gives the seed an attractive appearance.
- It indicates that the seed is chemically treated and thus cannot be used for human consumption or animal feed.
- It serves as an adhesive for the other important seed treatment products that are also applied to the seed.
- It limits the amount of “chemical dust” that comes off the seed during handling.

The Peridium polymer from Bayer CropScience is applied by PANNAR as a protective layer on the seed. It boasts the following advantages:

- The seed is safer for the handler and limits pollution by the “chemical dust” that can be detrimental to the environment.
- It ensures a smooth finish of the seed, improving seed flow and plantability.
- It improves the flow of seed through the planter for an accurate plant stand. An optimal plant population is fundamental to and synonymous with good production.

Peridium®: EV26001: L 8669 (Bayer CropScience)