**Fusarium ear rot fungal disease in maize**

*Fusarium verticillioides* syn. *Fusarium moniliforme*

### Prevention
- Plant certified seeds treated with a systemic fungicide to prevent infection by *Fusarium* from the soil (see yellow list)
- Plant tolerant varieties such as SC 637
- Keep 70–90cm inter-row spacing, and 30-50cm between plants
- Follow fertilizer recommendation for maize (Basal: 200 to 300 Kg/ha D-compound; and Top dressing: 200–250 urea/ha). This helps maize defence against *Fusarium*
- Keep stalkborers at low level as they carry the fungus
- Avoid bird damage of cobs, as this provides fungi with an entry point. Scare birds with plastics placed in the field on sticks
- Harvest the grain as soon as it matures, and not later to avoid disease spread
- Rotate maize with a legume like beans and soyabees after 3 years of continuous maize cultivation or after any season with ear rot
- Do not rotate with other cereals, such as sorghum as this disease is also found there.

### Monitoring
- This fungal disease can affect any plant stage, but mainly occurs on the cobs.
- Inspect the field weekly during cob setting,
- Check for white streaks on the surface of individual grains (early symptom)
- Take action as soon as 2 - 3 in 50-100 plants have early ear rot symptoms.
- Check for whitish to pink cottony (web-like) powder on grains. At this stage, action is too late.
- Inspect field for young stalkborer larvae in leaf sheaths. They carry the disease, will later damage the maize cobs and may infect cobs with the fungus. If stalkborers are in the cob, control action is too late. Therefore consider early controls of young stalkborer larvae when 3 – 10% of young plants are damaged.

### Direct Control
- Remove infected cobs and bury deep in the soil.
- Spray with extracts of neem tree seeds (*Azadirachta indica*) to kill young stalk borer larvae when they attack leaf sheaths and again during cob formation: Finely grind 1 cup of dry neem tree seeds without pulp. Soak powder in 2 litres of water. Sieve extract and add to 10 L of water and a tablespoon of soap or 2g. Thoroughly mix and spray by drenching directly on stalkborers near or in the leaf sheaths or on the cobs
- Seed dressing at planting with systemic fungicides only little prevents fungal infection, as infections often happen much later on the cobs.
- Seed dressing can only be done by trained personnel. Do not treat seeds yourself, as the chemicals are highly concentrated and toxic.

### Restrictions
- When using a pesticide or botanical, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, pre-harvest interval, max number of sprays, restricted re-entry interval. Do not empty into drains and water sources.
- WHO toxicity class II pesticides might not be allowed in local IPM schemes.
- WHO toxicity class II (moderately acute hazardous); Do not eat treated grains and do not feed to animals even not if washed.
- Slight acute toxicity (WHO class III), Apply soon after preparation; pre-harvest interval 1 day; restricted re-entry interval (r.e.i.) 1 d, min retreatment 7 d, max 3 sprays per season. Effective if it does not rain in the next 24hrs.

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**Zambia**

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