Information Sheet

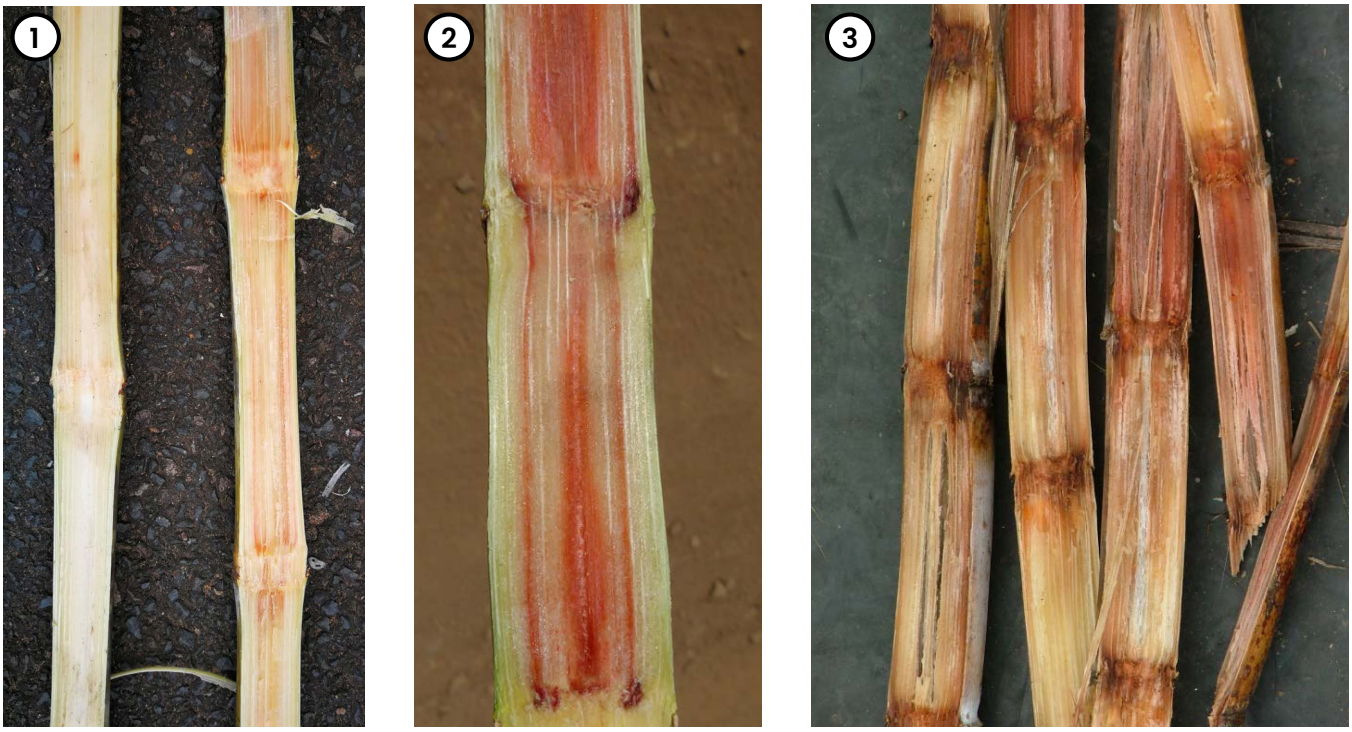
9.5 Sour rot

Importance

Sour rot, caused by *Phaeocytostroma sacchari*, is a common fungus and usually a weak pathogen. It can, however, cause substantial reductions in purity when mature cane (usually 15 months and older) is stressed. It is most common in the high-altitude inland areas of KwaZulu-Natal where cane is grown on a longer cutting cycle. The disease does, however, occur periodically in other parts of the industry, particularly when cane is stressed, over-mature or lodged.

Symptoms

- Newly infected internal stalk tissue has a water-soaked appearance (Figure 1).
- As the disease progresses, the stalk tissue turns orange (Figures 2 and 3).
- The rind of infected stalks may have a mild 'blush' (Figure 4) or an orange-black discolouration (Figure 5).
- Infected stalks have a characteristic sour odour.
- When infections are severe, coiled black masses of spores (pycnidia) eventually erupt through the rind of infected stalks (Figures 6 and 7).
- Pycnidia may also be visible on leaf sheaths, midribs and lower areas of the leaf blades although this is rare.



▲ Figures 1-3: Internal symptoms of sour rot.

▲ Figures 4-7: External symptoms of sour rot.

Spread

By wind-blown and rain splashed spores.

The fungus tends to enter the stalk in the region of the third and fourth internodes, through leaf scars, buds or root primordia. Infection does not require external damage to the rind, although insect borings provide an easy point of entry.

Varietal susceptibility

Sour rot infects a wide range of varieties. High yielding varieties grown on marginal or shallow soils tend to be more prone to severe infections. The disease is common in lodged cane.

Effect on cane quality and yield

- Sour rot causes the internal tissue of infected stalks to rot, reducing cane quality. Purities as low as 65% have been recorded in severely infected fields, and in some cases, cane consignments have been rejected by the mill.
- The production of sarkaran by the fungus may reduce mill efficiencies.
- Severe infections may cause the disease to extend down the stalk and kill the entire stool, resulting in reduced cane yield. This is uncommon.

Note: Internal stalk damage does not disappear after stress is reduced through irrigation or rainfall but further damage may be limited. However, if dry conditions persist, portions of the stalk above the infected internodes will continue to deteriorate.

Management strategies

Over-mature cane should be avoided, especially when grown on marginal soils or where water is limiting.

Affected fields should be flagged for early harvest. Note that the level of eldana infestation takes precedence when making decisions on time of harvest, but sour rot severity should be used to prioritise the harvest of other fields.

Cane that is infected with sour rot should not be ripened (refer to Information Sheet 4.6 Principles underlying chemical ripening and late-season quality maintenance), because this will place additional stress on the crop and is likely to increase sour rot incidence and severity.

Since drought stress is a trigger for sour rot infection, excessive drying-off in irrigated areas, particularly in fields treated with ripeners, must be avoided.

Do not use seedcane from fields where sour rot is widespread and stalks are severely damaged. Infected stalks will not germinate. Should there be a shortage of seedcane, and if sour rot incidence is less than 10% in the field, infected stalks can be identified by trained staff members based on external symptoms and discarded.

When harvesting commercial fields, removing infected stalks will help to improve cane quality. The quality improvement is often sufficient to warrant the extra labour cost of this operation (and avoids the risk of rejection of the entire field).

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