PACHYMETRA ROOT ROT RESISTANT VARIETIES

The following table summarises Australian varieties that are resistant to Pachymetra root rot.

It is important to note that not all varieties are recommended for planting in all regions - consult the SRA website (sugarresearch.com.au) for recommended varieties to plant in each growing region.

In addition, the table highlights the resistance ratings of the varieties to sugarcane smut (Sporisorium scitamineum).

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### TECHNOTE

**CONTROLLING SUGARCANE SMUT IN PACHYMETRA ROOT ROT RESISTANT VARIETIES**

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<th>Pachymetra root rot resistant</th>
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</table>

Sugarcane smut ratings key:
- **R** = Resistant
- **I** = Intermediate
- **S** = Susceptible
- **HS** = Highly susceptible

### CONTROLLING SUGARCANE SMUT

Sinker is an invaluable crop management tool to control sugarcane smut in susceptible varieties selected for their resistance to Pachymetra root rot, and complements protection against sugarcane smut in varieties that have varying degrees of resistance to smut.

### THE DISEASE

Sugarcane smut (Sporisorium scitamineum) is a systemic fungal disease that is spread by wind-blown spores and by planting infected material. It is currently the most serious disease of the Australian sugarcane industry, with detrimental impacts on yield from potential production losses of 20-30% in susceptible varieties.

For more information on Sinker, contact your local Nufarm Territory Manager.

nufarm.com.au

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Figure 1. (Source: BSES Woodford QLD)

**CHARACTERISTICS**

Smut infected plants produce a long black “whip” - it is this whip which contains the black spores of the fungus (Figure 1).

**COMPATIBILITY**

Sinker is compatible with: Chlorpyrifos 500EC, Shirtan®, Senator® 700WG and Astral® 250EC.

**APPLICATION**

For the prevention of primary infection of sugarcane smut and pineapple disease in plant material used for cane production, apply Sinker:

- as a spray onto setts in the planting chute at a rate of 500 mL/ha* (or 7.5 mL/100m row) in a minimum of 350 L water/ha. Spray the setts via whole stalk or billet planters fitted with spray equipment in the planting chute.

For the prevention of sugarcane smut spread in infected planting material used for the production of seed cane ONLY, apply Sinker:

- as a 5-10 minute ambient dip treatment (at a concentration of 50 mL/100L water) prior to planting

* The application rate is based on single row cane with a 1.5 m row spacing. If row spacing varies from 1.5 m then apply at the use rate according to mL/100m row.

For either application method, the use of a non-ionic wetting agent (eg. Activator®) at recommended rates will enhance coverage of the fungicide on the planting material.
Pachymetra root rot

*Pachymetra chaunorhiza*

**Introduction**

Pachymetra root rot is a sugarcane disease unique to Australian cane fields. The disease is not seen in any other country, or in fields where sugarcane has not been previously grown. The disease greatly reduces root growth and yields in susceptible varieties. Pachymetra root rot is a major disease in many parts of Queensland and New South Wales. It is important that appropriate controls are implemented to minimise losses.

**Causal organism**

The disease is caused by a fungus-like organism, *Pachymetra chaunorhiza*.

**Symptoms**

Affected root systems typically exhibit a soft, flaccid rot of the larger roots, and are much smaller than healthy root systems. The fungus invades individual roots, usually near the root tip, and breaks down the internal root tissues. These roots either stop growing, or are completely destroyed. This leads to a poorly developed root system and a loss of stool anchorage, which may give rise to excessive stool tipping. Root reddening may accompany the early stages of Pachymetra infection.

**Yield loss**

Yield losses of up to 40% in susceptible varieties have been associated with the disease.

**Management**

Pachymetra root rot control is based on strategic planting of resistant varieties. Some Australian varieties have good resistance to the disease, and, in the production of new commercial varieties, use is made of resistant parents. All varieties are screened for resistance before release, and highly susceptible varieties are not considered for commercial production in badly affected districts.

The resistance ratings for all approved varieties are available from your nearest SRA office, or from the SRA website (sugarresearch.com.au) and select the QCANESelect™ tab on the menu.

Short-term fallows (<12 months) have minimal effect on Pachymetra root rot; exposing soil to direct sunlight also has a minimal effect on Pachymetra. Pachymetra spores are long lasting and can survive for more than five years in the soil. Rotation crops such as soybean do not directly affect Pachymetra but have other beneficial effects on soil health. No fungicides are effective against Pachymetra at economical rates.

Pachymetra can spread from field to field in soil carried on machinery or attached to stalks of cane. If your farm or district is free of Pachymetra you should wash down machinery before it enters your farm. Unlike other Peronosporomycetes, Pachymetra is not carried long distances in water.