

It's planting time and diseases are waiting to attack



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With spring planting approaching, it is important that growers are aware of the soil-borne diseases that could affect their overall crop performance. The two diseases that could have the most impact are pineapple sett rot and pachymetra root rot. By understanding the diseases, you can plan to prevent and control the diseases to maximise emergence and crop yield.

A new registered fungicide for pineapple disease (also controls smut in plant cane) is available.

Use proven strategies to control both diseases:

1. Pineapple sett rot

Cultural practices and registered fungicide

2. Pachymetra root rot

Rotate with resistant varieties



Above: Pineapple sett rot. Note the central blackening.

Pineapple sett rot

The main disease that affects crop emergence is pineapple sett rot.

This soil-borne disease is favoured by conditions such as cold, wet soil or excessively dry soil that slows germination of the cane. The fungus (*Ceratocystis paradoxa*) is present in all sugarcane soils and can multiply on any organic matter such as stubble and billets left over from the previous crop. The fungus enters through the end of the sett or damaged parts of the sett.

When infected setts are freshly split, they smell like an overripe pineapple (hence its name). You can also identify this disease by the reddening and central blackening of the internal sett - the blackening is caused by the massive number of spores.

Prevention and control

- > Use a registered fungicide to thoroughly cover the sett, particularly the cut ends.
- > If possible, plant when the weather

favours rapid germination and soil temperatures are above 18°C.

- > Try to reduce the number of spores to limit the potential of the disease - use a rotational crop or a bare fallow between crops.
- > Do not plough out replant because it creates an ideal environment for the fungus to multiply in the soil.
- > Plant two or three bud setts to increase the likelihood of germination. The nodes act as a barrier which can slow the spread of the fungus in the sett. They also protect the buds sufficiently until they germinate.
- > Optimise the harvest by synchronising the rollers and cutters. This helps avoid crushing setts - a very important way to reduce harvest damage. Rubber coating rollers is another modification used to reduce sett damage.
- > Ensure soil has a good tilth and that there is good soil-sett contact - try pressing the rollers to compact the drill after planting.



Table One: Registered fungicides for Pineapple sett rot.

Trade name	Active ingredient	Rate	Remarks
Sinker®	500 g/L flutriafol	500 mL/ha or 7.5 mL/100 m row	<p>For the prevention of primary infection of sugarcane smut and pineapple disease in sugarcane.</p> <p>Apply as a spray onto setts in the planting chute. The spray should be applied with a minimum of 4 nozzles arranged in the planting chute to give thorough coverage of all surfaces of the setts before they are planted in the furrow. Apply in a minimum water volume of 350 L/ha and calibrate the planter prior to application and planting to give the correct rate of fungicide (500 mL/ha or 7.5 mL/100 m row).</p> <p>The use of a non-ionic wetting agent at recommended rates will enhance coverage of the fungicide on the planting material.</p> <p><i>* The 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/100 m of row.</i></p>
<p>Sinker® is a new registered fungicide for the control of pineapple sett rot. This product also controls smut in the plant crop.</p> <p>Note: It does not replace smut-resistant varieties. It is used only as a management tool.</p>			
Tilt® 250ec, Bumper® 250ec, Throttle®	250 g/L propiconazole	20 mL/100 L water	Ensure thorough coverage of the cut ends of sugarcane setts.
Tyrant® 500	500 g/L propiconazole	10 mL/100 L water	Ensure thorough coverage of the cut ends of sugarcane setts.
Bayfidan® 250ec	250 g/L triadimenol	20 mL/100 L water	Apply to setts by dipping or spraying. Ensure thorough wetting of cut ends.
Sportac®	450 g/L prochloraz	40 mL/200 L water	Apply as a dip or spray to setts at planting. Ensure thorough coverage of all cut ends.
Shirtan®	120 g/L mercury (Hg) present as methoxy ethyl mercuric chloride	250 mL/200 L water	For dipping of small quantities use wire mesh baskets or crates to contain the cut setts and dip for approximately 30 seconds. Move the setts about in the solution to ensure thorough wetting. The solution should be discarded after completion of the dipping. If the solution changes in colour from red to black it should be discarded. For use in spray or dip planters. Ensure thorough wetting of cut ends or setts. If solution colour changes from red, or it becomes contaminated with soil, it should be discarded.



Above: Poor emergence caused by pineapple sett rot.

Sugar matters

Stopping the spread of unwanted pests and diseases

Plant material or machinery that has been in contact with a sugarcane plant, or soil on which a sugarcane plant is or has been growing must have an Inspector's Approval to move between pest quarantine areas.

In the past Inspector Approvals were managed by BSES.

If you need to move a machine between pest quarantine areas you should contact your nearest Plant

Protection Act Inspector. In most areas some productivity service staff have been appointed Inspectors by the Department of Agriculture, Fisheries and Forestry Queensland (DAFFQ) for the inspection of machinery.

For approval to move sugarcane plants between pest quarantine areas or for further information visit the DAFFQ website www.daff.qld.gov.au or call 13 25 23.

Pachymetra root rot

Pachymetra root rot (*Pachymetra chaunorhiza*) greatly reduces root growth and yield in susceptible varieties. It is a major disease in many parts of Queensland and the Condong mill area in New South Wales. To minimise losses, appropriate controls must be used.

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. Expect yield losses of up to 40 per cent from this disease.

Prevention and control

The only strategy for controlling pachymetra root rot is the use of resistant varieties. Some Australian varieties have good resistance to the disease and all varieties are screened for resistance before release.

Pachymetra spores are long lasting and can survive for more than five years in the soil. Short-term fallows (less than 12 months) have minimal effect on pachymetra root rot, and exposing soil to direct sunlight also has a minimal effect.

A soil assay for pachymetra root rot, based on counting spores of the fungus in field soil, can be used to determine the likely severity of the disease in commercial fields.



Above: Damage caused by pachymetra root rot.



Above: Pachymetra root rot effect on root growth. A more resistant variety (left) is not as damaged as the more susceptible variety (right).

Table Two: Soil assay for pachymetra root rot.

Probable disease severity	Fallow field	Standing crop
Low	0 - 30,000 spores/kg	0 - 50,000 spores/kg
Medium	30 - 60,000 spores/kg	50,000 - 100,000 spores/kg
High	> 60,000 spores/kg	> 100,000 spores/kg

The resistance ratings for all approved varieties are available from your local Productivity Service Officer, or from QCANESelect™ on the SRA website.

For our growers in New South Wales

New soil management guidelines to help you manage costs and farm more sustainably

On-farm nutrient management should be based on a sound understanding of soils.

Soil type influences decisions on the variety to plant and the amount of fertiliser to apply. It also has an impact on the choice of tillage practices, planting techniques, drainage and harvest schedule.

A good understanding of the different soil types, including their appearance in a landscape, can help growers farm more precisely.

If you haven't already picked up a copy of the *Soil-Specific Nutrient Management Guidelines for Sugarcane Production in New South Wales* from the Ag Office at your local mill, make sure you collect one during your next visit.

Developed in conjunction with the NSW Sugar Mill Co-operative Limited (NSW Sugar), the booklet combines

the SIX EASY STEPS program with unique aspects of growing cane in NSW to produce nutrient management guidelines specific to the soils of the three cane-growing districts.

Soil management guidelines for Isis and Mackay will be released by the end of the year, followed by guidelines for the Wet Tropics in early 2014.

