

## A healthy crop starts with clean seed



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*One of the cornerstones of producing a high-yielding sugarcane crop is the use of approved clean seed or its progeny.*

### Why use *approved* clean seed?

Diseases such as ratoon stunting disease (RSD), Fiji leaf gall, smut, leaf scald, chlorotic streak and mosaic can be transmitted in planting material from one block to another, reducing the crop yield significantly.

Because disease can be transmitted via plant material so easily, we **never advocate** planting approved seed into plough out replant blocks.

A particular variety is ordered for its characteristics. By planting approved seed into a plough out replant block, you end up with a mixed selection of varieties and, possibly, infected planting material from the previous crop of sugarcane.

**Instead, we always advocate that clean seed is planted into blocks that have had legumes, small crops or bare fallows. It is important to keep the fallows free from sugarcane volunteers.**

**An example:** If RSD were to be spread through infected planting material it could cut the crop yield by between 5 and 60 per cent, depending on the susceptibility of the variety and the weather conditions. Yield losses are higher when the cane is suffering moisture stress. Over a range of conditions, the average yield loss is 15 to 20 per cent.

### Sourcing clean seed

Approved seed is produced under strict quality assurance guidelines by your local productivity services group in their propagation and distribution blocks. All cane planted into seed plots for multiplication is supplied by SRA to the productivity service groups. Before release, it is treated and screened for diseases.

Standard treatments for some diseases for whole-stick and billet supplies:

- > RSD and smut: long hot-water treatment (LHWT) for 3 hours at 50°C.
- > Leaf scald: cold-soak, long hot-water treatment (CSLHWT): 40 hours in cold water, followed by hot water at 50°C for 3 hours (within 6 hours of the cold-water soak).
- > Chlorotic streak: short hot-water treatment (SHWT) for 30 minutes at 50°C.

Tissue culture is another way of obtaining approved seed. This, as well as clean seed, is distributed through your local productivity services group. It is an effective way of obtaining unlimited quantities of a new variety for early propagation and bulking up for commercial production.



### Bulking up clean seed

As a general guide, a factor of 10 can be used when bulking up clean seed.

One tenth of 1 ha planted to whole stick, billets or tissue culture will produce 1 ha of seed.

If the 1 ha block produces 100 TCH, it will supply 10 ha worth of seed if your planting rate is 10 TCH in billets.

Ideally, only material from plant and 1<sup>st</sup> ratoon can be used for propagation material.

If 2<sup>nd</sup> ratoon material has to be used, ask your local productivity services officer to inspect the block for any pests or disease before planting.

- > Infected planting material will reduce yields significantly.
- > Always use planting material from an approved seed plot.
- > Source approved clean seed and tissue-cultured plantlets through local productivity services group.
- > Never plant approved clean seed into plough out replant blocks.

**Left:** Tissue culture seedlings.

**Top:** Healthy crop of approved seed cane.