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## SPECIAL EDITION



### ***2023: The road to seedcane regulation***

One of the key aspects of ensuring a profitable, healthy sugarcane crop is the planting of good quality seedcane. This crucial practise has numerous benefits which include significant reductions in pest and disease outbreaks, varietal purity and improved germination. In order to preserve the success of the industry, a law has just been passed which ensures that every grower should either establish their own seedcane nurseries, OR that they arrange to purchase their seedcane from a LPD&VCC registered co-operator by the year 2023.



Unlocking the potential  
of sugarcane



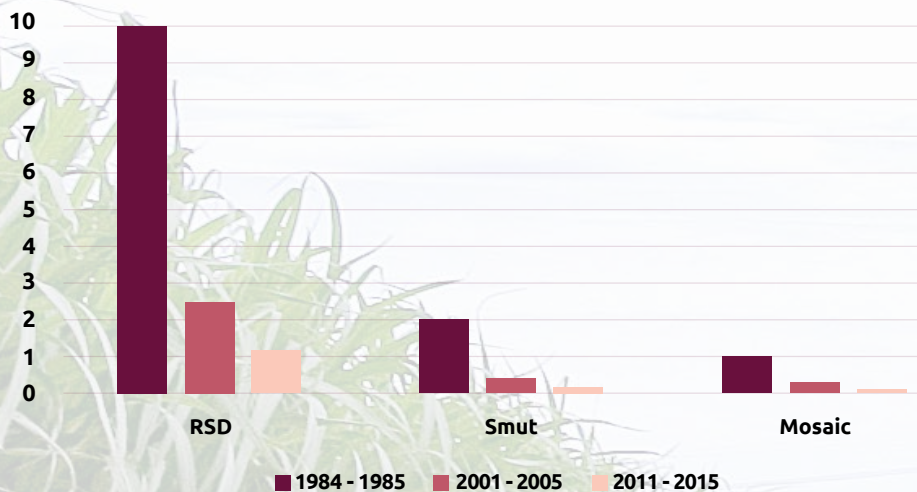
# 2023 | The road to seedcane regulation

 Rowan Stranack (*Extension and Biosecurity Manager*) and Sharon McFarlane (*Sugarcane Pathologist*)

The impact of pests and diseases on sugarcane production has led to significant losses in the South African sugar industry. The impact of eldana alone is conservatively estimated to be about R 1 billion per annum while smut, mosaic and RSD are currently estimated to cause losses of R51 million per annum. In the early 1980s, when Local Pest Disease and Variety

Control Committees were first introduced, these three diseases caused losses of approximately R412 million per annum (in current Rand terms). Since then, there has been a marked decline of the impact of these diseases. One of the factors that has contributed to this reduction is improved seedcane health.

**Declining incidence of diseases (%) over the years**



**Improvement in estimated annual economic loss due to diseases over the years:**



**1984 - 1985 R412 million**  
**2001 - 2005 R130 million**  
**2011 - 2015 R51 million**



Apart from natural and physical methods of spreading diseases and pests (wind, insect vectors and harvesting), the planting of disease or pest-infested seedcane is unfortunately one of the most common and aggressive means by which biosecurity threats are spread across the industry.

For example, the recent appearance of the longhorn beetle (*Cacosceles newmannii*) highlighted the need to exercise control over seedcane movement, to the point where farms have had to be quarantined due to the

risk of spreading this pest through infested seedcane. This was a huge financial loss and inconvenience to the affected growers.

Appreciating the risk of spreading pests and diseases in seedcane some time ago, the industry included two clauses in the Sugar Industry Agreement (SIA) which require growers to have seedcane approved by their Local Pest Disease and Variety Control Committee (LPD&VCC), prior to use or sale or movement.





## Clauses

**72.** No grower shall sell or otherwise dispose of any seedcane without the prior approval of the Local Pest, Disease and Variety Control Committee having jurisdiction over the land on which the cane is grown.

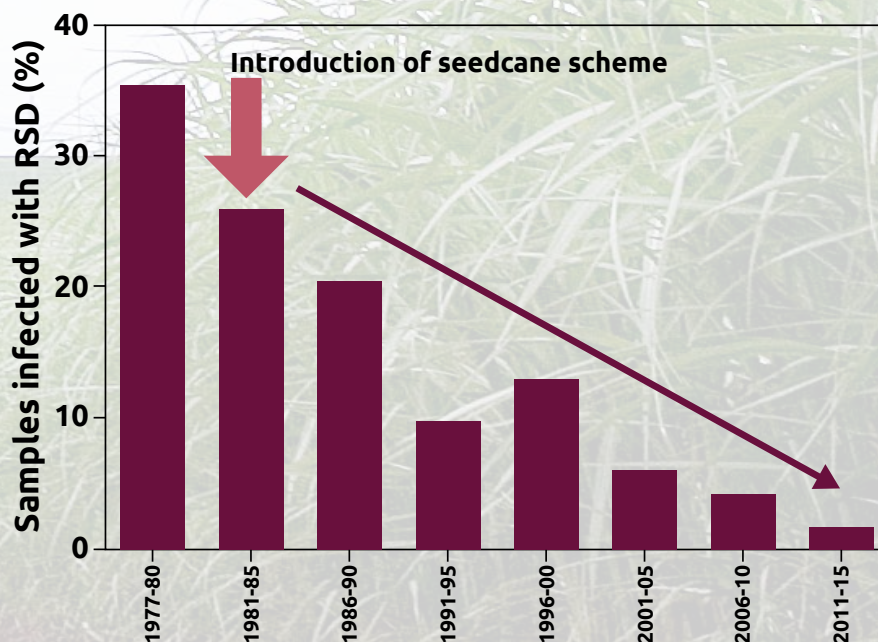
**73.** A Local Pest, Disease and Variety Control Committee may require a grower within its jurisdiction who intends to use his or her own cane for seedcane on his or her own land to obtain the Committee's prior approval therefor.

Apart from the contribution to biosecurity, planting good quality, clean seedcane from a properly regulated seedcane nursery makes sound agronomic and economic sense.

Benefits include varietal purity, good germination and a healthy, vigorous crop which is likely to be productive for many ratoons.

Planting clean seedcane also ensures that the industry is protected from the financial losses caused by pest and disease incursions. For example, the introduction of a seedcane scheme in the Felixton LPD&VCC control area led to a dramatic reduction in the incidence of RSD in commercial fields in that area.

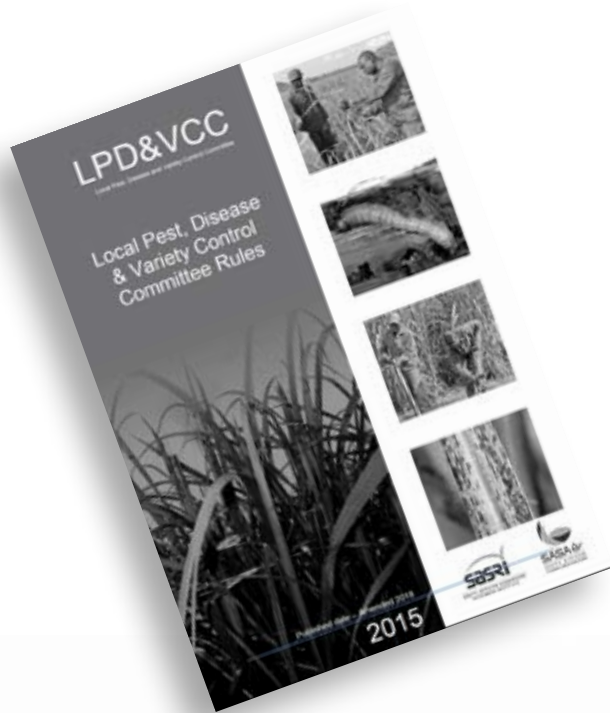
### RSD Incidence at Felixton





# So where are we now?

With the LPD&VCC function being reinstated under SASA in 2015, new rules were approved by SASA Council to standardise the implementation of pest, disease and variety management across the industry. A vital aspect of these rules related to the monitoring and control of seedcane. This aspect is covered under Section 11 of the LPD&VC Committee rules:



## Section 11. REGULATING SEEDCANE

*“Except where a Committee permits the use of Emergency Planting Material, in writing, the Committee shall ensure that Growers only use Certified Seedcane or Approved Seedcane to plant commercial fields of sugarcane”*

However, some areas within the industry were not in a position to immediately implement these requirements. Therefore, it was agreed that an eight-year grace period from 2015 be allowed for growers to comply. **This is the origin of the 2023 deadline which is now widely spoken about.**

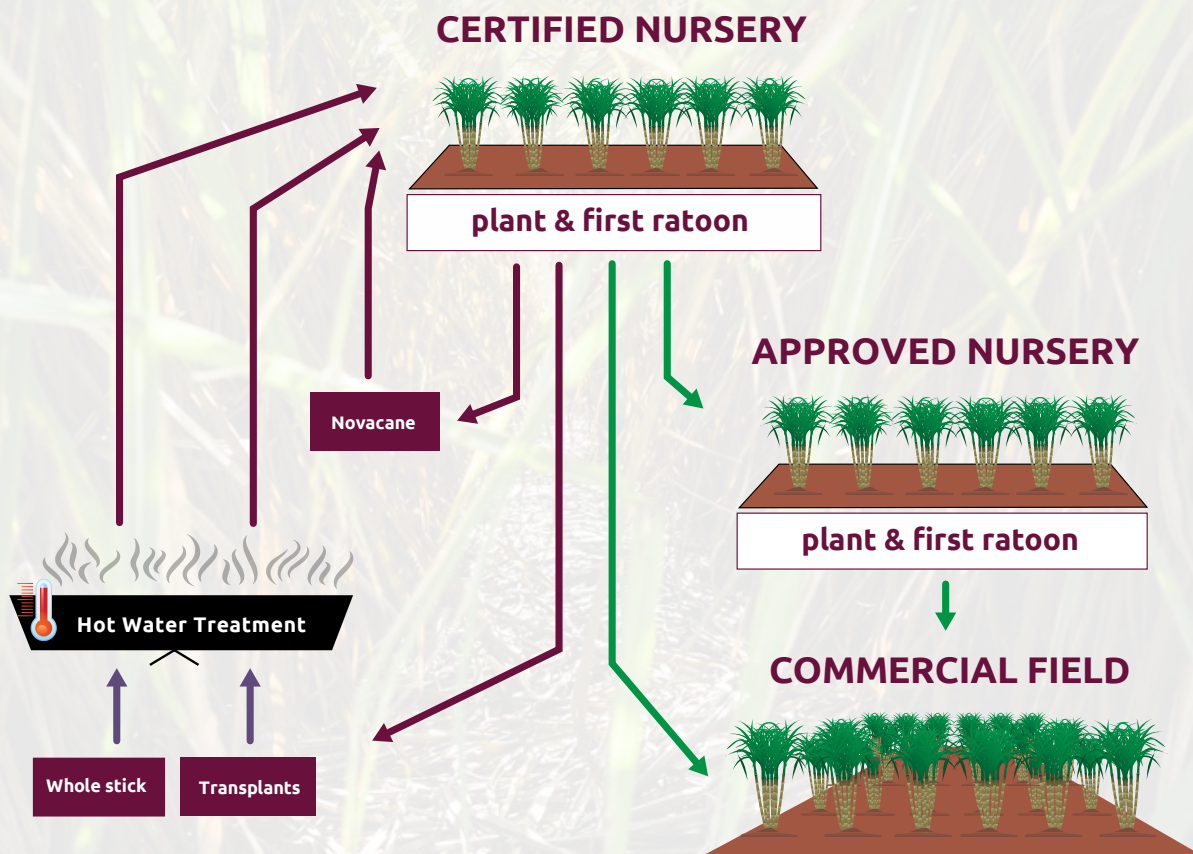
## So what must be done before 2023?

*Every grower should ensure that they either establish their own seedcane nurseries, OR that they arrange to purchase their seedcane from a LPD&VCC registered co-operator.*



# What is LPD&VCC Certified and LPD&VCC Approved Seedcane?

The process starts with Certified Seedcane. This is the nucleus seedcane material from which Approved Seedcane Nurseries (previously either second stage or farm nurseries) are established. These in turn produce the seedcane to plant commercial fields of sugarcane.



A Certified Seedcane Nursery may therefore be established either using hot water treated (HWT) Certified (whole-stick) Seedcane, or HWT single-budded sett transplants, or NovaCane® plantlets.

In some areas of the industry Certified Seedcane is produced by individual co-operators or in a dedicated central nursery facility such as the Sezela Transplant Nursery, or in a large seedcane mother block such as in the Lowveld or the Maidstone Seedcane Scheme.

Individual growers may establish their own Certified Nurseries on their farms if they have their own heat-treatment tanks, or access to one nearby. In most instances however, growers tend to leave the production of Certified Seedcane to co-operators or other centralised operations and prefer to purchase Certified Seedcane to plant their Approved Nurseries.



# What are the requirements to establish a nursery?

Firstly, identify the potential nursery site at least one year in advance and inform the local Biosecurity Officer or Technician of your intention to establish a nursery. This is **vital** as all LPD&VCC Certified and Approved Nursery sites need to be registered with the LPD&VCC. They will carry out all the necessary fallow period inspections and assist, if necessary, with the sourcing of seedcane to plant in the nursery.

It is important to note that tillage of the nursery site, other than to eradicate the crop and to plant the cover crop, is not permitted. All lime applications must therefore be carried out at the beginning of the fallow period.



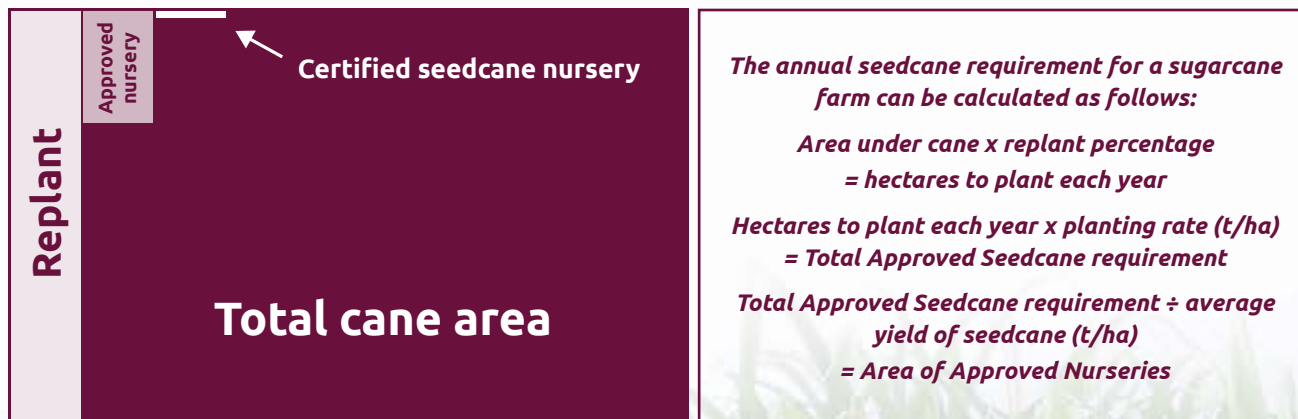
## Description of the required standards for the two classes of nursery (or seedcane) registration.

Class of seedcane		Certified seedcane and Certified seedcane nurseries	Approved seedcane and Approved seedcane nurseries
Source to establish nurseries		HWT Certified whole-stick seedcane OR HWT transplants cut and grown from Certified seedcane OR NovaCane® plantlets	Certified seedcane
Fallow period		Overall the period to be not less than 12 months with a minimum of 6 months totally free of sugarcane	Overall the period to be not less than 9 months with a minimum of 6 months totally free of sugarcane
Disease, off-type and pest limits	Smut, Mosaic, Off-types	Less than local area hazard levels when inspected on the last of THREE consecutive LINE BY LINE inspections	Less than local area hazard levels when inspected on the last of TWO consecutive RANDOM inspections
	RSD	NIL when tested (with cane being at least nine months old)	NIL when tested (with cane being at least nine months old)
	Eldana/100	Less than local area hazard levels when inspected at least two months before harvest date	Less than local area hazard levels when inspected at least two months before harvest date
Maximum age at harvest		Irrigated North and KZN Coastal <500 m above sea level: 9-12 months Midlands > 500 m above sea level: 12 –18 months	Irrigated North and KZN Coastal <500 m above sea level: 9-12 months Midlands > 500 m above sea level: 12 –18 months
Harvests permissible		Plant and 1 <sup>st</sup> ratoon only	Plant and 1 <sup>st</sup> ratoon only



# How much seedcane will I need?

The production of seedcane for planting commercial fields is a bulking-up process. The diagram below gives one an idea of the area required for seedcane nurseries relative to the whole farming area



As an interim measure, Approved Nurseries may now be harvested twice (plant and first ratoon crops). Once there is an adequate supply of Approved seedcane in all areas, this may be reviewed. Therefore the annual requirement of Certified Seedcane to plant these Approved Nurseries = Total area of Approved Nurseries ÷ 2 x the seedcane planting rate.

**Two typical examples of seedcane requirements for 100 ha rainfed and irrigated farms replanting 10% per annum, are as follows:**

#### **Rainfed (1m row spacing, average yield 60 t/ha)**

100 ha x 10% replant per annum  
= 10 hectares x 12 t/ha planting rate  
= 120 tons Approved Seedcane required each year

120 tons Approved Seedcane ÷ 60 t/ha yield  
= 2 hectares of Approved Nurseries (1ha Pl, 1 ha 1R)

Therefore each year 1 ha of the 2 ha Approved Nurseries will be replanted requiring...

**12 tons Certified Seedcane to be sourced every year.**

#### **Irrigated (tramline spacing, average yield 85 t/ha)**

100 ha x 10% replant per annum  
= 10 hectares x 17 t/ha planting rate  
= 170 tons Approved Seedcane required each year

170 tons Approved Seedcane ÷ 85 t/ha yield  
= 2 hectares of Approved Nurseries (1ha Pl, 1 ha 1R)

Therefore each year 1 ha of the 2 ha Approved Nurseries will be replanted requiring...

**17 tons Certified Seedcane to be sourced every year.**

**The rate of growth of varieties may influence the timing of planting of nurseries, particularly in the Midlands.**

However, as there is a two-year bulking up process to get to the point where commercial fields can be planted with Approved Seedcane, some forward planning is required to ensure the correct varieties are chosen. In this decision, a local SASRI Extension Specialist can be of considerable help in selecting the most suitable varieties for a farm, as well as in calculating the exact quantities of seedcane required.



# What are the options for seedcane on my farm?

Seedcane schemes are often promoted as an effective method of ensuring seedcane supplies are available on an area-wide basis. Whilst this is probably true, ultimately it is up to the individual grower to comply with the requirements of the LPD&VCC Rules. A grower therefore has the following options:

1. To produce Certified and Approved Seedcane themselves.
2. To source their Certified Seedcane from a local LPD&VCC registered co-operator, or from a seedcane facility such as a transplant nursery for planting an Approved Nursery on their farm.
3. To source their Approved Seedcane for planting commercial fields from a fellow grower.

Growers will, over the next four years, be required to settle on one of these three options and notify their LPD&VCC of their intentions.

It is very important to remember that all movement of seedcane in the industry must be approved by the LPD&VCC within the local control area relative to where the requestor's (grower's) farm is situated. Furthermore, if seedcane is to be moved between LPD&VCC control areas, this must be with the approval of **BOTH** sending and receiving LPD&VCCs.

*Ultimately these seedcane regulations are aimed at ensuring the sustainability of all growers in South Africa. This contributes to the continued survival of the sugar industry in the face of a number of very serious and potentially damaging biosecurity threats.*



# Success story: The Felixton Seedcane Scheme

✍️ Rowan Stranack (*Extension and Biosecurity Manager*) and Tshifhiwa Radzilani (*Extension Specialist: Zululand North*)

*The Felixton Seedcane Scheme is a successfully run campaign established in 1985. The initial aim of the scheme was to assist in reducing disease incidence in the Felixton LPD&VCC control area. This resulted in the successful reduction of RSD and smut in the area, the latter largely due to the decrease in the area planted to NCo376 and the adoption of newer, smut-resistant varieties. One of the key success factors of the scheme is the mandatory participation of all growers. This has ensured that all plant crops are disease-free and the entire area is at the least possible risk of pest or disease incursions.*

## How does the scheme work?

This compulsory seedcane scheme requires that all large-scale growers order enough Certified seedcane to replant a minimum of 5% of their area under sugarcane each season. Co-operators of the scheme then heat-treat and plant the Certified seedcane based on these orders. To ensure that the co-operators produce sufficient Certified seedcane of each variety, growers have to order the **correct amount** and the **best suited variety** for each commercial field that is to be planted, at least two years in advance.

On individual grower's farms the Certified seedcane obtained from the co-operators is first planted into farm

nurseries (Approved Seedcane Nurseries) where it is bulked up to sufficient quantities to be planted into commercial fields. The success of the scheme depends on forward planning on the part of the grower, correct matching of varieties to field conditions and a consideration of variety disposition. These processes are facilitated greatly by the local SASRI Extension Specialist and Biosecurity Officer who assist each grower in assessing their variety disposition, deciding on the best variety for each field that is to be replanted in two years' time, and then assist him/her in ordering sufficient seedcane.

## Introducing new varieties

When a new variety is released from SASRI into the Felixton mill supply area, it is grown in one or two of the co-operators' Certified seedcane nurseries. The following year the variety is given to the remainder of the co-operators, who hot water treat (HWT) the seed and plant it into their Certified seedbeds. This is also the year that the first Certified seedcane orders for that variety will be taken. In the following year, growers will plant this variety into their farm nurseries, and after another year, this variety will be planted into commercial fields. The first commercial cane from the new variety will therefore be sent to the mill four years after it was planted to the bulking plots. This has proven to be a highly effective means of rapidly bulking up high potential new varieties and getting them into commercial production.

Co-operators are guaranteed payment for the production of Certified seedcane through a cession at the mill which growers sign each season. This authorises a once-off deduction in August each year. The price of the seedcane is determined by a committee which administers the scheme and they base the seedcane price on the predicted final RV price.

The scheme has resulted in a number of positive outcomes:

- Through farm visits, the local Extension Specialist obtains valuable feedback on the performance of varieties under commercial conditions.
- New varieties are either rapidly accepted or discarded.

The scheme contributes greatly to crop protection by ensuring disease-free seedcane is planted into commercial fields.

### Key success factors:

- ✓ The scheme is compulsory.
- ✓ Every grower required to produce sufficient seedcane in his farm nursery for a minimum replant area.
- ✓ Strict quality control by SASRI Biosecurity.
- ✓ Set time-frames for the ordering, payment and uptake of seedcane.



# Felixton Outreach Committee

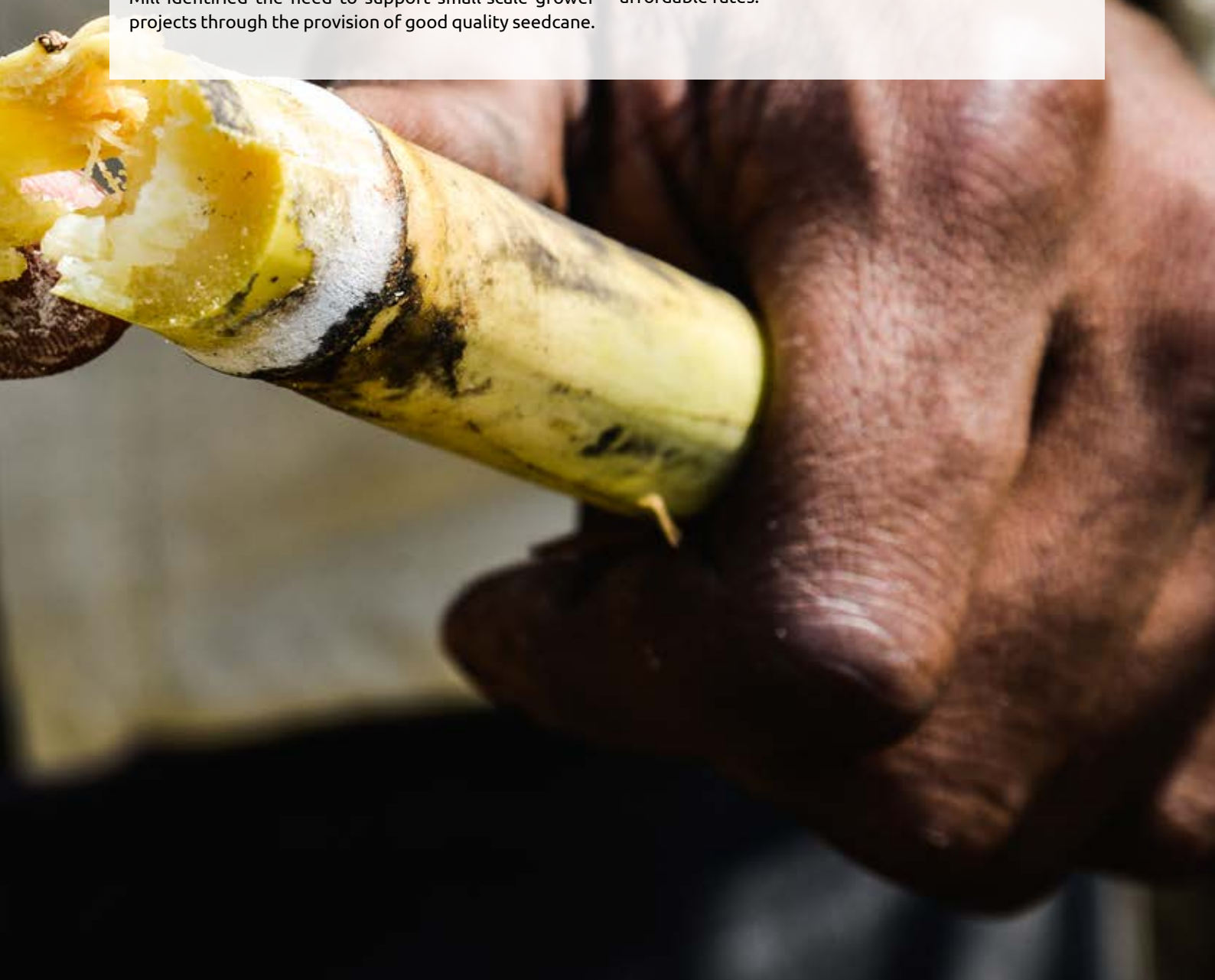
In 2000, close to 80% of the sugarcane grown in small-scale grower (SSG) farms in the Felixton mill supply area was NCo376 – a variety known for its high susceptibility to smut. One of the reasons for this was due to the fact that SSGs did not always have the benefit of obtaining newer disease resistant varieties, mainly due to the fact that there were insufficient quantities available and long haulage distances resulted in excessively high seedcane prices.

In the 2002/03 season, three one-hectare plots were established through funding from three large-scale growers. In addition, the Felixton Canegrowers' Association (FCA) and the Tongaat-Hulett Felixton Mill identified the need to support small-scale grower projects through the provision of good quality seedcane.

This led to the formation of the Felixton Outreach Committee (FOC) – a body consisting of both grower and miller committee members, with their own constitution.

With the formation of the FOC, large-scale growers who supply cane to the Felixton mill agreed to contribute to the development of good quality seedcane for SSG's which was then matched with funding from the milling company.

To date, close to half a million rand has been raised through these two funding channels to establish over 65 ha and provide over 3000 tons of good quality seedcane of new varieties for use by small-scale growers at affordable rates.





# WEATHER

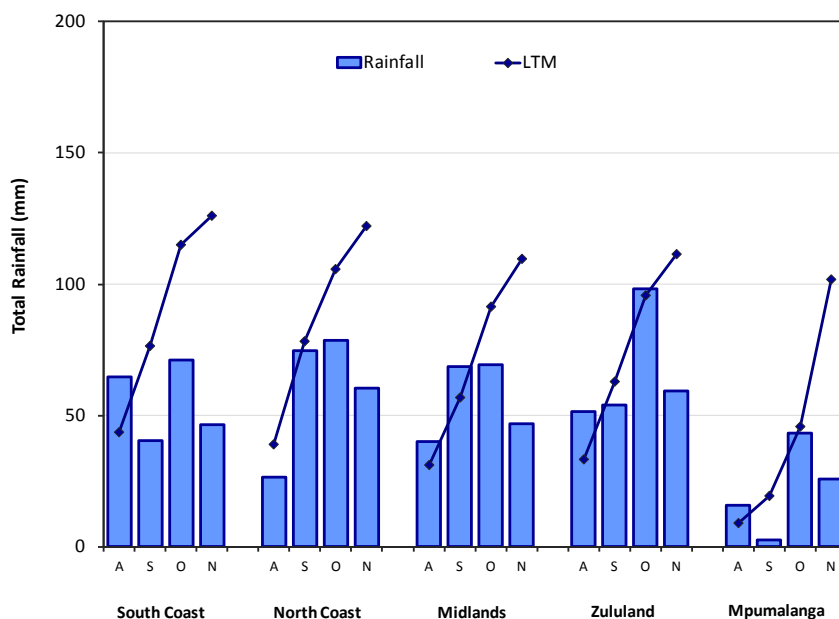
Phillemon Sithole (Agrometeorologist)  
Abraham Singels (Principal Agronomist)

## Review

The 2018 spring rainfall (August to September) was generally near normal for most of the KwaZulu-Natal region but below normal in Mpumalanga, while early summer rainfall (October to November) was well below normal across most parts of the industry (Figure 1). Irrigation water supplies over the same period were generally stable, except for supplies from the Goedertrouw dam in Zululand which remained severely restricted.

## Outlook

The El Niño-Southern Oscillation (ENSO) stayed in the neutral phase throughout the 2018 spring and early summer, but is expected to develop into a weak-moderate El Niño during the mid to late summer. The *South African Weather Service (SAWS)*, *International Research Institute for Climate and Society* and *European Centre for Medium-Range Weather Forecasts* all predict drier and warmer late summer (January to March, 2019), especially for the northern parts of the industry.



**Figure 1:** Regional average monthly total rainfall from August to November, 2018, compared to the monthly long-term mean (LTM).

Please visit the Weatherweb available via the SASRI website: [www.sasri.org.za](http://www.sasri.org.za) for links to up-to-date seasonal climate forecasts and also for the latest rainfall and other weather data.

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