

Control and Production of Secondary Seedcane

Introduction

Seedcane production remains one of the critical areas the sugar industry uses to ensure sustainable sugarcane production. The production of disease free varietal pure seedcane is key in ensuring crop establishment. Proper planning is required to ensure that there is adequate supply to meet replanting and new development requirements. Growers are encouraged to prepare short and medium term replanting programmes to enable them to plan for timely seedcane production. The use of pest and disease free, varietal pure certified seedcane is a first step towards the good uniform cane stand and long ratoons.

Secondary nursery field establishment

1. Application for the establishment of a secondary nursery **MUST** be made to Technical Services at least 3 months before the proposed planting date. A map, clearly showing the location of the nursery, must be submitted together with an application form.
2. Nurseries must be established on virgin land, on land previously planted to a crop other than sugarcane, or land that has been kept free of sugarcane re-growth for at least 3 months immediately prior to planting. This is to allow verification by Technical Services.
3. The establishment of registered secondary nurseries may be done only with primary seedcane, except when such seedcane is not available.
4. When primary seedcane is not available, permission must be obtained from Technical Services to establish a secondary nursery with seedcane from a secondary nursery that has been hot water treated for 2 hours at 50°C. Then followed by a cold water dip for at least 10 minutes with a fungicide added at the prescribed rate.

Distribution of secondary seedcane

1. Quota holders who do not establish their own nurseries must obtain their seedcane requirements from Growers with certified nurseries.
2. The movement of seedcane between quota holders is prohibited unless the necessary movement certificate is obtained in advance from Technical Services. **It is the responsibility of the buyer of the seedcane to obtain and complete the movement permit.** Multiple quota holders operating under the same management do not require a

movement certificate.

3. Prior approval from Technical Services is required for the movement of all seedcane between Growers in the Big Bend Mill Group and Growers in the Mhlume and Simunye Mill Groups. Movement of seedcane from the rest of the industry to Malkerns is prohibited.

Re-registration of secondary nurseries

- The first ratoon crop of a secondary nursery may be registered only with approval of the Extension Committee. **Application to re-register a nursery must be made not later than two weeks after the start of harvesting of the plant crop.** Re-registration will be granted only if the nursery is approved by Technical Services and a certificate signed by the Chairman of the Extension Committee with further approval once inspections are complete and found favourable. The principle is that re-registered seedcane is only used as own seed and as a last resort ensuring that the Primary seedcane scheme is not jeopardised in the process. The principle of next best source applies at all times.

This means that growers must always source seedcane from the primary nurseries first, followed by the plant crop of secondary nurseries. It is only in circumstances where these sources of seedcane cannot meet the growers' demand that re-registration can be considered. Where there is evidence of lack of planning on the part of the grower, re-registration application shall not be approved.



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Weather Outlook for the 2018-19 Spring/Summer Season

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**PROPERLY
SCHEDULE
YOUR
IRRIGATION**

Weather outlook

"Growers are being reminded of the drought management guidelines..."

Waterlogging & salinity

"...a twin problem threatening the sustainability of irrigated agriculture"

Control & production of secondary seed

"...growers must always source seedcane from the primary nurseries first..."

Introduction

Weather projections for the six-month period (October 2018 to March 2019) have been released by the National Rainfall and Climate Outlook Forum (NARCOF) in conjunction with the Meteorology Department. This follows the regional conference held in August 2018 in Lusaka, Zambia where climate experts met at SADC regional level to project and discuss the expected trends in climate for the upcoming Spring/

Climate outlook

The continued rise in sea temperatures in the central and eastern tropical Pacific Ocean has created increased chances of Normal-to-Above-Normal Rainfall from October 2018 to December 2018 for Eswatini as shown in **Figure 1**.

The likelihood of El Niño condition is expected to increase from January 2019 to March 2019. The month of December 2018 is expected to be the transition month in terms of rainfall

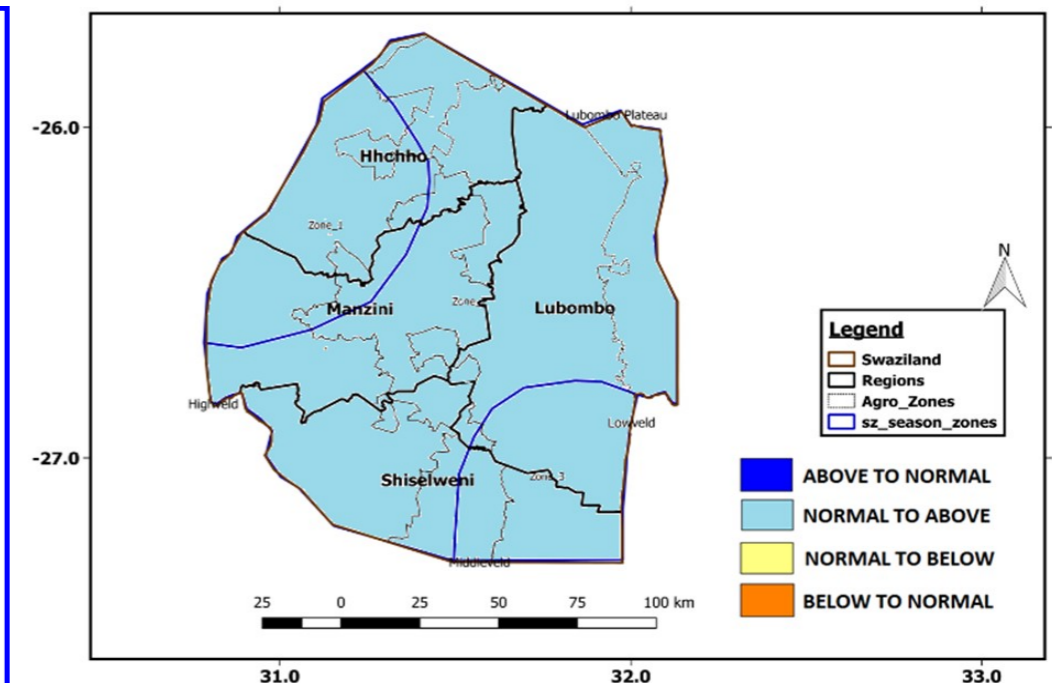


Figure 1: October-November-December 2018 Rainfall Outlook *

Summer season. The Meteorology Department has then downscaled the predictions that were done at regional level to country level. These climate projections are to allow timely planning by all stakeholders affected by rainfall.

amounts. A graphical illustration of the predicted rainfall for the period of January to March 2018, is presented in **Figure 2**. Rainfall is expected to be normal with a bias towards below normal.

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Weather Outlook ... CONT.

The Malkerns area is likely to receive rains below 390mm while the North and South are expected to receive below 350mm during this period.

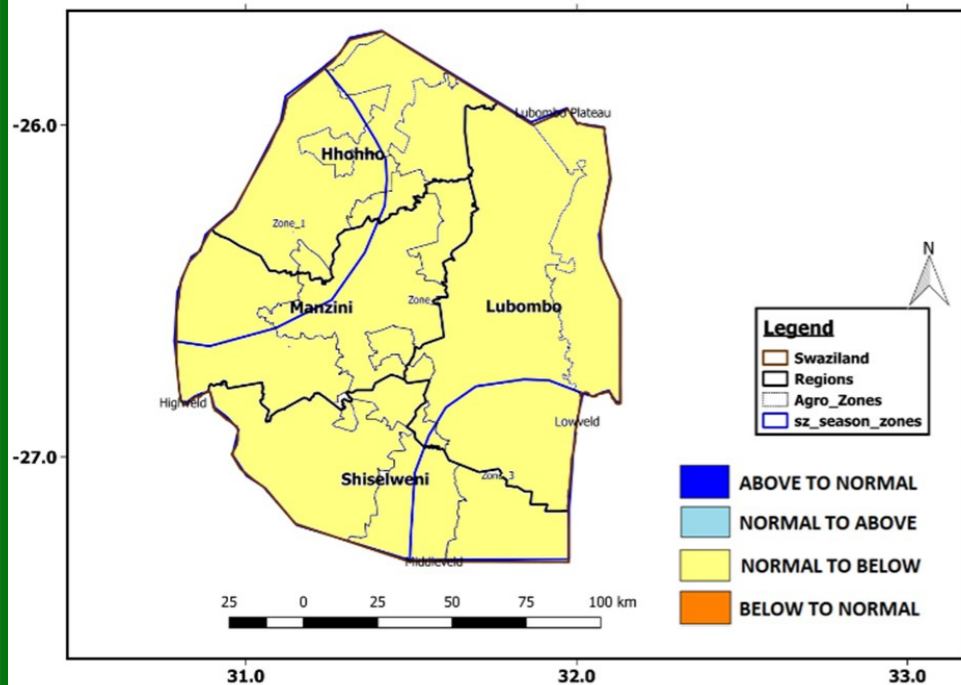


Figure 2: Forecasted rainfall for January-February-March 2019 *

Implications of the forecast for the Sugarcane Industry

Storage dams in the country are currently at reasonable levels, but with the likelihood of low rains, water use need to be optimized to spread it even throughout the projected below-normal rainfall periods. More water must be stored during the October – December periods where rains are expected to be higher. Growers are being reminded of drought management guidelines as these may need to be implemented. Monitoring of river and dam levels are key actions including timely onset of irrigation water rationing where necessary.

*(Source: Swaziland Meteorological Service)

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Waterlogging & Soil Salinity

Introduction

Waterlogging and soil salinity is a twin problem threatening the sustainability of irrigated agriculture. A lot of studies have been done on this problem, but it still affects the productive capacity of irrigation schemes as drainage remains a forgone factor in irrigation investments and developments. The International Commission on Irrigation and Drainage defines waterlogging as the saturation of the soil with water, to a point where the water table is too shallow to permit agricultural activity. Waterlogging is associated with soil salinity, the presence of salts in the root zone, because waterlogged soils do not support leaching and drainage. Soil salinity is estimated to affect 10 – 16% of the global 300 million ha of irrigated agriculture lands and this results to 0.5 million ha of productive land lost on an annual basis. Literature indicates that the rate of loss of production land is estimated to surpass the rate of expansion of irrigation development.

Local Context

A study carried out to determine the waterlogging

and salinity status of irrigated sugarcane fields in the Lower Usuthu Small Holder Irrigation Project, revealed that small scale growers are affected. Results showed that 6 % (37.9 ha) of the sampled area was saline, with rootzone salinities ranging from 2 – 6.8 dSm⁻¹, while 7% (2.7 ha) of the saline soils was found to be sodic. An area of 4.7% had a perched water table within 1m of the rootzone. The salinity and waterlogging conditions were so bad in some growers, such that complete crop failure was observed at salinities between 3 – 6.8 dSm⁻¹ (Figure 3). Salts were projected to accumulate by 0.34dSm⁻¹ per season, for one particular grower. This salt accumulation was further projected to decrease yield by 3.2 TCH per season (Figure 4). Compared to observed yield trend (5 TCH seasonal decline) for the past five years (2012/13 - 2016/17), the projections could be considered reliable in depicting the picture moving forward.

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Waterlogging & Soil Salinity... CONT.



Figure 3: Complete crop failure due to waterlogging and salinity

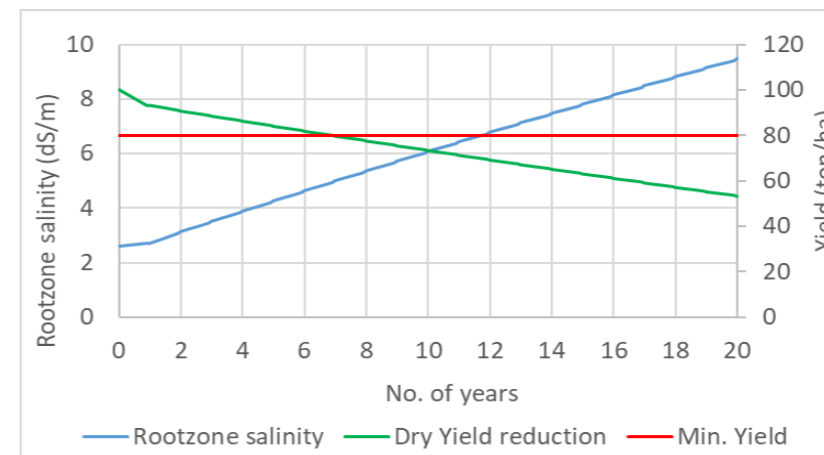


Figure 4: Effect of salinity on cane yield

Causes of poor drainage and salinity

According to literature, the soils of the sugarcane industry in Swaziland are naturally not saline but some are susceptible to poor drainage, salinity and sodicity under irrigation. Based on this premise, it could be said that the areas of saline soils are a product of irrigation management shortcomings such as poor irrigation scheduling, poor maintenance



Figure 5: Leaking riser which has resulted in serious waterlogging

nance and inadequate drainage infrastructure.

The lack of commitment to proper irrigation scheduling was found to be amongst the causes of waterlogged soils. Poor/non-existent maintenance of pipes and open drains (in instances where they exist) was another observed factor contributing to the rising incidences of poor drainage. Open drains are left with over-grown vegetation.

This results in sediments being trapped and silt accumulating in the drain, compromising the efficiency of the drain.

Figure 5 shows a leaking riser and the area within the vicinity of the riser, where a portion of a field has been turned into a wetland. The cattails (*libhuma*) and the algae on the riser are signs that the leak had been going on for a very long time without being repaired.

What can growers do?

Growers are encouraged to make good use of technical support being offered by SSA in terms of irrigation scheduling. The first steps towards addressing the problem is adjusting irrigation according to the needs of the sugarcane crop, considering the soil types. Timely repairs of leaks is another niche for improvement by growers. The extent of damage in some areas require artificial drainage to reclaim affected soil. SSA is available as well to offer technical assistance.

Growers are not well capacitated on soil salinity and its management hence it is not in their operations agenda. Out of all the growers that formed part of the research, none of them ever took soil samples for salinity test, yet fertility tests are done almost on a seasonal scale. Salinity test should form part of the soil test growers conduct on a regular basis.

For more information growers should contact their respective Extension Officers or SSATS.

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