

RAINFALL AND WATER OUTLOOK

Introduction

The rainfall forecast released by the Eswatini Meteorological Services for the 2021/22 rain season (October to March) indicates a generally increased chance of Normal-to-Above-Normal for December to March period over the entire country. Substantial rainfall above long-term-mean (LTM) was received in October and November in most areas of the sugar industry (Figure 1). The rains received during the Oc-

Flooding

The Normal-to-Above-Normal forecasted rainfall for the December to March period may be associated with flooding, and the major dams might overflow. Thus, growers are advised to take warnings from weather experts seriously, and where necessary they can promptly remove movable irrigation equipment to safety to minimise losses. To prevent or minimise negative effects of floods inside and outside fields,

growers are encouraged to keep water ways and drains free of debris or any hindrances that may limit free flow of water. Water ways must be sufficiently grassed and where necessary appropriate structures be built to minimise soil losses as a result of run-off.

Over-irrigation

Over irrigation during the rainy period should be avoided to minimize run-off water. Proper irrigation

scheduling is the best approach to avoid over irrigation. Appropriately scheduling irrigation does not only help avoid over application of water but also helps save on pumping costs. Growers are advised, with or without heavy rains, to use water judiciously to save for the unknown future.

For further details about the rainfall forecast and updates, growers can contact Eswatini Meteorological Services at 2404 8859 / 2404 6274.

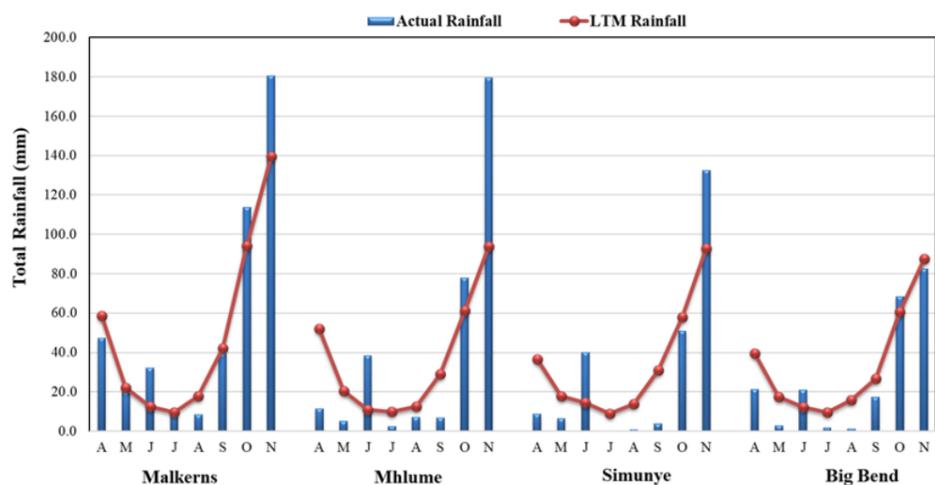


Figure 2: 2021/22 season rainfall received

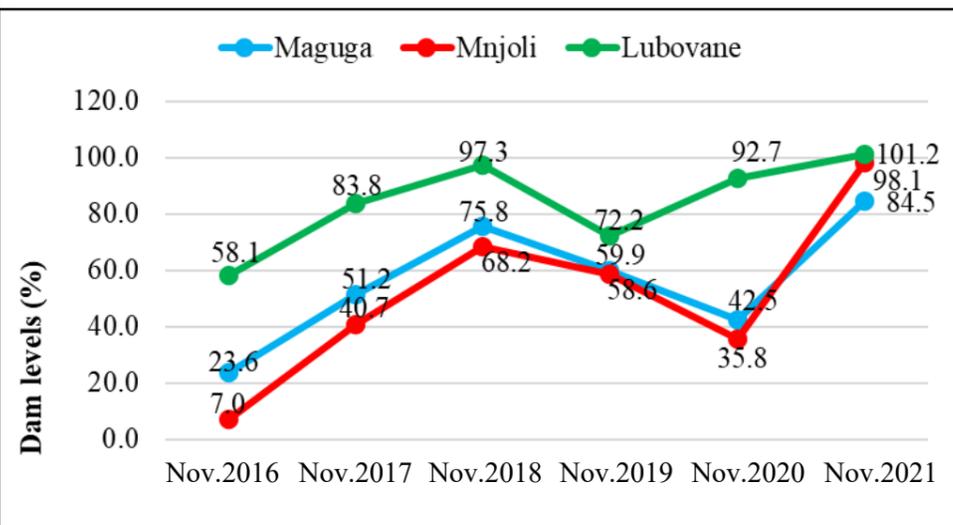


Figure 2: Five-year period dam levels during November months

tober – November period increased water levels in the three major dams used by the industry to a five-year high (Figure 2).



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EXTENSION NEWSLETTER

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FERTILIZER PRICES SOARING HIGH

Introduction

There has been a great concern from growers on the recent exponential rise in fertilizer prices. Actually, fertilizer prices for diammonium phosphate (DAP) and urea, in particular, started rising from May 2020 (Figure 1). From May 2020 to August 2021, DAP increased by 124% while Urea increased by 107%. However, potassium chloride (KCl) prices have remained stable over the period. Urea, DAP and KCl are components of most fertilizer

regions of the world have led to increase in area under cultivation and application rates of fertilizers. Information sourced from World Bank indicates that phosphates raw material costs, particularly sulfur and ammonia, have increased sharply as refinery curtailments due to COVID-19 restrictions limited supplies. Urea feedstock costs have also risen, including natural gas prices which jumped in early 2021 due to unusually cold weather. The price of Urea is strongly associated with that of crude oil as shown in Figure 1. This

Fertilizer prices

These increases are linked to increased demand for fertilizer products as well as production costs globally

Soil modification

The preliminary findings indicate that the HiProAqua product is effective in saving water without compromising yields

Recovery projects

This is testimony that Fairtrade certification is vital in the sustainability of small sugarcane growers in the industry

Procurement process

Growers must be on the lookout for unscrupulous businesses whose intention is to milk their funds with no care for their success and sustainability.

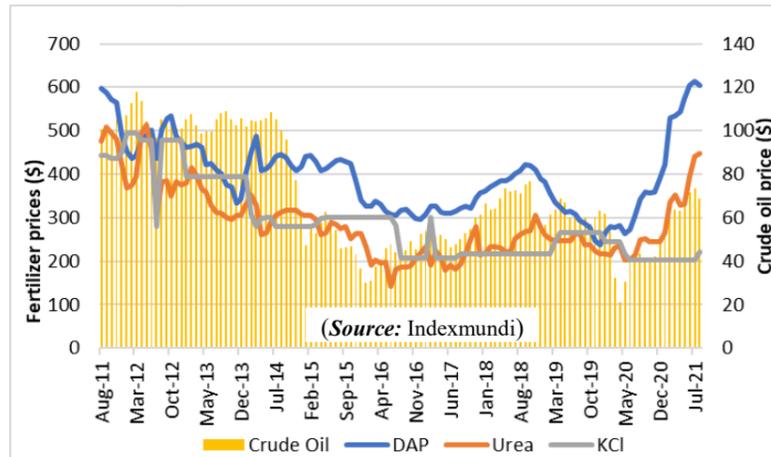


Figure 1: Fertilizer & crude oil prices (Aug 2011 - Aug 2021)

blends used in the sugar industry. Prices of other straight fertilizers carrying the major nutrients nitrogen, phosphorus and potassium are expected to assume same trends. Fertilizer costs account for 12 to 13% of small scale growers total operating costs (Grower Business Sector Analysis, 2019/20).

Causes

These increases are linked to increased demand for fertilizer products as well as production costs globally. Higher farm revenues in most crop-growing

will also affect glyphosate and glufosinate prices as well.

Outlook

Indications are that, the prices might level up some time during the 2021 season before easing in 2022. However, that will also depend on producers ability to ramp up production in response to the strong demand.

Growers are therefore encouraged:

- to base their fertilizer choices only from soil test results,
- to consider bulk buying to bolster their purchasing power,
- to use organic amendments where possible. However, these must be tested to ascertain the quantity of nutrients applied, and
- to source from reputable suppliers



**Njabulo Dlamini
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SAVING IRRIGATION WATER THROUGH SOIL MODIFICATION

Introduction

Water is one of the most important resources in sugarcane production. The effects of drought in the past years significantly decreased water levels and availability, resulting to low sugarcane yields. Use of soil modifiers like polymers have been identified as one of the water-saving strategies. Polymers are chemical compounds with molecules bonded together in long, repeating chains. HiProAqua is a trade name of one powder polymer manufactured by HiProAqua Company in Germany. It is insoluble in water and swells once it absorbs water. HiProAqua works like a buffer that binds surplus water and releases it gradually thus minimizing water loss through deep percolation, and at the same time preventing the leaching of plant nutrients.

HiProAqua trial

A trial was established in October 2018 at Simunye trial site to test the effectiveness of HiProAqua in saving water and its effect on yield. The trial is irrigated by the subsurface drip irrigation system. Variety N25 was selected for the trial based on its sensitivity to water stress and also it being a dominant variety in the Eswatini Sugar Industry. The trial is ongoing and currently on the third ratoon crop.

Treatments

Four treatments are used in this trial. Treatment A – irrigation water is applied as demanded (100%) with no HiProAqua. Treatment B - irrigation water is applied at 80% of Total Water Available (TAW) *plus* HiProAqua. Treatment C - irrigation water is applied at 60% of TAW *plus* HiProAqua. Treatment D - irrigation water is applied at 50% of the TAW *plus* HiProAqua. In the plant cane water applications were not varied in all treatments to encourage good crop establishment. From the first ratoon onward, water has been applied as per the treatments. Parameters measured in the trial are water application, leaf nutrient, stalk population, stalk height, smut infection, eldana damage, sucrose content, cane and sucrose yields.

Application of HiProAqua

Usually, HiProAqua is applied underneath the surface using machinery. In this trial the product was applied by hand at 60kg/ha in the furrow, and slightly covered by soil before the seedcane setts were planted.

Preliminary results

The results are promising as the first and second ratoon findings showed no significant differences ($p>0.05$) among the treatments for all the measured parameters. While the differences were not statistically different, the product appeared to be effective as Treatment A (no HiProAqua) had the lowest yields in both ratoons compared to the HiProAqua treated plots (**Table 1**).

Secondly, there has been water savings in all the HiProAqua treated plots (**results not shown**). A maximum water saving of up to 26% in Treatment D was observed in the first ratoon. There was also more than 70% of rainwater benefit in Treatment C and D in both ratoons. Benefiting from rainwater is good since it contains some essential nutrients. Only Treatment D was the lowest in meeting crop water demand (95%) yet its sucrose yield was among the highest.

Table 2: HiProAqua trial yields for the first and second ratoon

Treatments	1 st ratoon		2 nd ratoon	
	Tonnes cane/ha	Tonnes sucrose/ha	Tonnes cane/ha	Tonnes sucrose/ha
Treatment A	131.60	23.63	86.90	14.63
Treatment B	136.53	24.08	102.25	18.15
Treatment C	145.56	25.84	109.01	17.72
Treatment D	142.96	25.80	119.31	20.52
Mean	139.16	24.84	104.37	17.76
LSD (0.05)	37.85	8.70	41.66	8.00
CV%	8.55	11.02	12.55	14.17

Conclusion

The preliminary findings indicate that the HiProAqua product is effective in saving water without compromising yields. However, since the trial was established, it has not been assessed under severe water stress (drought conditions) due to good rains received in the past three seasons. The economics of using HiProAqua will be prepared at the completion of the trial. For a detailed report, growers are referred to the Irrigation Engineering section of Eswatini Sugar Association Technical Services (ESATS) department.



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FAIRTRADE RECOVERY PROJECTS

Background

Fairtrade's mission is to connect disadvantaged producers and consumers, promote fairer trading conditions and empower producers to combat poverty, strengthen their position and take more control over their lives. In the Eswatini sugar industry, Fairtrade was initially launched in order to improve the position of small-scale sugarcane growers and their communities, which were severely affected by the global sugar prices. Through Fairtrade certification, and by working in partnership with sugarcane millers and traders, growers get access to better remunerating international markets. To achieve this, Fairtrade through certification ensures that set standards are met in the production and supply of the sugarcane. In addition, Fairtrade ensures respect of workers' rights, safer working conditions and fairer pay after a produce has been sold.

Recovery benefits

The COVID-19 pandemic came with challenges which affected both human lives and businesses including sugarcane growers. In light of the pandemic, Fairtrade came to the rescue of small scale growers in the both north (Komati Downstream Development Programme Farmers Federation (KDDPFF), Mankontshane, Makhabeni and Ntisheni farmers (MMN) and Phakama Mafucula) and south (Mavalela and Maplotini) regions.

In ensuring that livelihoods are preserved and sustained, through a recovery fund from Fairtrade (given as a grant by their partner GIZ), the certified growers in Eswatini were given an opportunity to make proposals indicating their immediate needs to combat the effects of the COVID-19. The Smallholder Producer Organizations (SPOs) presented different proposals which were successful. KDDPFF was given 35,000 euros (\approx E602 000) which was used to source COVID-19 preventative items for all Fairtrade certified growers under her wing. These items included facemasks, sanitizers, temperature scanners, foot operated sanitizers and hand washing sinks (**Figure 2**). This enabled the growers to adequately adhere to COVID-19 protocols. This preserved the money that would have been forked-out by the growers from their coffers for purchasing all these items.

At MMN, their proposal was for 20,000 euros (\approx E344 000) for an income diversification project. The project entailed constructing a feedlot and sourcing

a herd of 19 cattle (**Figure 3**). As a separate business in itself, this will enhance revenue streams of the growers in the long run, courtesy of Fairtrade.

Phakama Mafucula was given 7000 euros (\approx E120 400) as per their proposal, which was used in procuring personal protective equipment (PPE) and financing a resilience training for women and youth during COVID-19 period.

This is testimony that Fairtrade certification is vital in the sustainability of small sugarcane growers in the industry. It is therefore of paramount importance to affiliate to Fairtrade and subscribe to Fairtrade standards as a grower to reap such benefits.



Figure 2: Hand washing sink & foot operated sanitizer pedal sourced through Fairtrade funds



Figure 3: Feedlot and cattle at MMN sourced through Fairtrade funds



*Welcome Shongwe
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