

Introduction

The sugar industry received rainfall above both long-term-mean and the 2019/20 season in the 2020/21 season. Most of the rains were received during the January to March 2021 period. River flows improved significantly, and all major dams used by the sugar industry were at full capacity. The 2021/22 season has begun, and winter is approaching as well. Winter is generally characterized by both low rainfall and temperatures.

Rainfall

The rainfall forecast released by the Eswatini Meteorological Service (EMS) for the May to July 2021 period shows a generally normal to above normal winter rainfall in most areas of the country. However, selected areas in the western (Zone I) and south-eastern (Zone III) parts of the country are forecasted to be normal to below normal rainfall (Figure 4). Even if above normal rainfall could be received in winter, trends have shown that the winter season has low rainfall when compared to the other seasons. Therefore, there is no significant improvement in the river flows that can be expected during this period hence growers are advised to use water cautiously so that there is enough water for irrigation until the beginning of the next rainy season.

Temperatures

Temperatures for the same period are forecasted to be normal to above normal at night (minimum temperatures) in the entire country, and below normal during the day (maximum temperatures) in most areas of the country except in the western part of the country (Zone I) where it is forecasted to be normal to below normal. This means the day temperatures in most of the sugarcane growing areas this winter are expected

to be cooler than normal. Cool temperatures are not favorable for active growth of the sugarcane crop. Excessive irrigation (waterlogged conditions) must be avoided at this time as it could worsen the slow growth rate of the sugarcane crop. Overirrigating in winter when temperatures are predicted to be cooler than normal could lead to frost formation as well. Frost formation has been observed in the lowveld and in some parts of the middleveld. The combined effect of frost, low temperatures and rainfall reduces sugarcane yield significantly. As such, growers are advised to stick to proper irrigation scheduling to avoid over irrigation as crop water requirement are at the lowest.

State of El Niño and La Niña conditions

El Niño and La Niña are climate patterns in the Pacific Ocean that can affect weather worldwide. Information sourced from EMS indicated that the El Niño Southern Oscillation condition is currently at neutral, with no sign of El Niño (warm and dry conditions) or La Niña (cool and wet conditions) developing yet. The current climate outlook suggest that the tropical Pacific Ocean will remain at neutral

at least up to September 2021 suggesting that there is no threat of either El Niño or La Niña during the forecasted period.

For more details on short-term weather forecast updates, growers can also contact the EMS at the Ministry of Tourism and Environmental Affairs, Box 2652, Mbabane, or call 2404 8859 / 2404 6274.



Patrick Mkhaliphi
(Irrigation Officer)

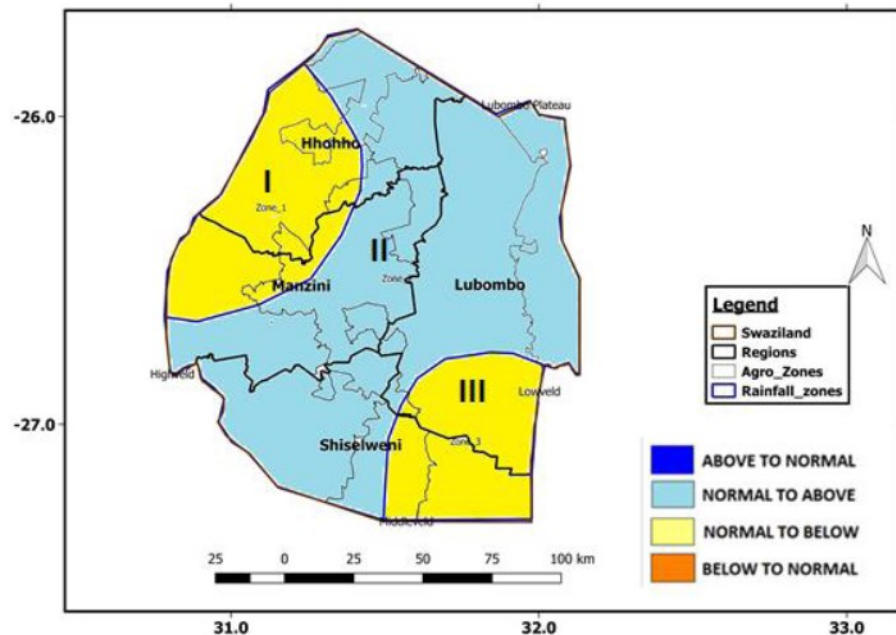


Figure 4: Forecasted rainfall outlook for May to July 2021 (Source: Eswatini Meteorological Service)



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Biosecurity threat !!!

Eldana increase

...high eldana damage and numbers have been recorded in carry over fields, abandoned fields and soil-water stressed fields

ELDANA ON THE INCREASE, A SERIOUS THREAT TO THE INDUSTRY

1 Introduction

Generally, eldana has been kept under control in the industry despite it being a common pest. However, based on the results from recent surveys, the eldana damage and numbers are on the rise and this is bad news for our industry. Possible causes for the eldana increase could be failure to adhere to best management practices and the effects of climate change. Survey results over the past four seasons show that the eldana damage has increased by 100% and the eldana populations have increased by over 400% (Figure 1).

Infestation

What has been commonly observed recently is that high eldana damage and numbers have been recorded in carry over fields, abandoned fields and soil-water stressed fields. These fields become sources of infestation since survey results from neighboring fields show similar infestation levels. The infestation level varies between the growing regions and across the season. The south (Nsoko and Big-Bend) showed higher levels than the north (Mhlume and Simunye). The primary nurseries in the lowveld were also infested and over 1000 tons of seedcane

was condemned leading to seedcane shortages, the effect of which will be realized in the next seasons.

Eldana larvae get inside the cane by boring through the stalk.

During the feeding, a fungus associated with the eldana infect the cane causing further damage which contribute to the overall loss of sucrose and increased fiber content as well as reduction in cane yield. Studies done in South Afri-

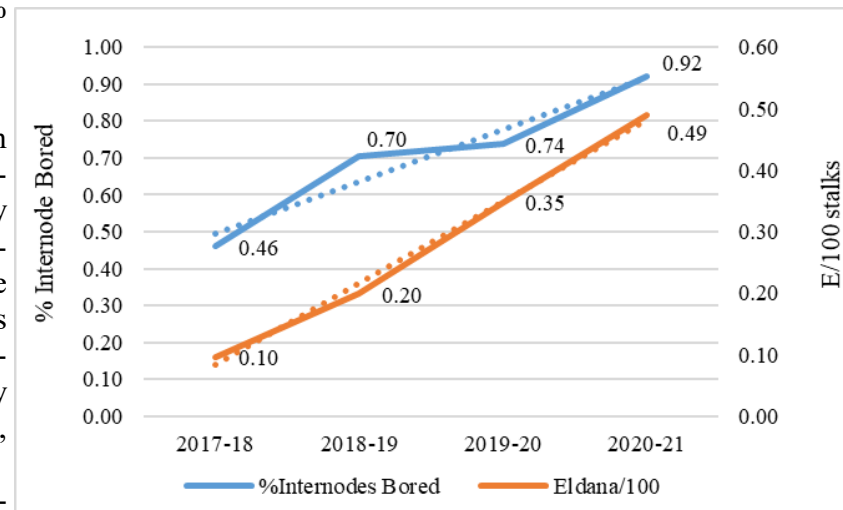


Figure 1: Eldana infestation trends - 2017/18 to 2020/21

ca estimate that for every 1% internode bored, 1,5% of recoverable sucrose value is lost, which could be loosely matched to 1,5% sucrose in the Eswatini context. The increasing levels of eldana call for urgent preventative and mitigation actions to stop further damage. The most effective eldana manage-

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ELDANA ON THE INCREASE CONT...

-ment is to follow the integrated pest management approach which involves strict adherence to best management practices (BMPs). BMPs actually guarantee a healthy and stress free crop to keep eldana attack at bay. The following must be done;

- *Use of only certified, pest and disease free seed-cane:* never use seedcane that is infested with eldana. This is the first step toward high productivity and high yields.

- *Nutrition:* do not apply excess nitrogen but stick to the recommended rates. Adjust application downwards during dry summer period and splitting nitrogen application is recommended.

- *Reduce plant stress:* susceptibility to eldana increases with stress. Identify fields with are likely to be stressed and pay more attention to them. Best practices aimed at keeping the crop as healthy as possible are critical and these include proper irrigation scheduling (to avoid over and under irrigation), weed control, ripping and liming to reduce soil acidity in low pH soils.

- *Avoid carrying over of cane:* older cane is preferred by eldana. Ratoon cane must not be carried over beyond 13 -14 month while plant cane must not exceed 14 -15 months of age. When it is beyond control to have carry over cane, avoid the susceptible varieties like N26, N36, N49, N23 and N46. However, some results obtained in autumn of 2020 and 2021 showed highly infested N53 fields despite that it was reported to be resistant. Further monitoring is on-going to assess the susceptibility of N53.

- *Field hygiene:* when harvesting, cutting at ground level and leaving no stumps is critical. Removal of all stalks during harvesting with no stubble left behind is very important in ensuring that eldana does not survive. Burning of heavily infested fields is highly recommended.

- *Conduct regular surveys:* timely detection of infestation is key to effective eldana control. Regular scouting of all fields must be done to allow time to adjust harvesting order and prioritize fields with high levels.

- *Use of chemical control:* the list of registered chemical for the control of eldana has improved. These chemicals are effective in eldana control in maturing cane where populations are present. Equally important is to control eldana in young cane and stubble after harvesting of infested fields to control below ground stool infestations. EMMA (Emamectin benzoate) is registered for that purpose.

- *Proper management of natural habitat:* conservation of wetlands is important since eldana likes the watergrasses that grow in wetlands. Avoid the degradation of natural environment and growing of sugarcane in wetlands as per the environmental legislation and guidelines.

Growers are encouraged to always report cases of high eldana damage and numbers and share the results found during the regular scouting with Extension Services.



Mphumelelo Ndlovu (Crop Protection & Extension Officer)

HARVESTING CONSIGNMENTS INFORMATION

Introduction

The supply of correct information on harvesting tickets accompanying haulage consignments is very important. Submission of wrong information to the mill creates a lot of confusion and misallocations which may result to losses to both grower and hauler. This information includes amongst others, loader number, burn date, cut date, cutting contractor, vehicle number and quota number.

Visible and well written information on the tickets makes work easy for the weighbridge and cane supply office. This in turn saves the grower from writing letters to the mill in a bid to correct the errors on

the ticket. It is therefore critical to supply all the information needed in the consignment tickets (Figure 2).

Recommendations for minimizing mistakes

- Engage zone clerks that can read and write
- Zone clerks must be sufficiently trained on filling consignment tickets
- Tickets must be filled in the field being harvested
- Only designated clerks should fill the tickets

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HARVESTING CONSIGNMENTS TICKETS CONT...

Figure 2: An example of a n incomplete cane delivery note with missing haulier details as shown by the black arrow

- Field indunas or supervisors should monitor progress and ensure that complete and correct information is being supplied



Welcome Shongwe (Extension Officer - North)

CHECKLIST FOR INSTALLATION OF A GRID CONNECTED SOLAR IRRIGATION SYSTEM

Introduction

Solar irrigation pumping system can be an attractive complementary energy source installed alongside grid energy (Figure 3). Significant energy savings can be achieved with this solution. This checklist is for any grower interested in installing a grid connected solar pumping system for their farm to ensure the basic groundwork is done.



Figure 3: Solar panels in one farm in the Malkerns area

A checklist for solar irrigation quotes

Before seeking quotations for a solar pumping system:

a. Check your existing irrigation system's energy and water efficiency. If your pump is old or not fit for purpose, consider buying a new pump. Optimising the amount of water pumped in the farm will lower demand and energy costs. Avoid all water leakages in the system. Install a Variable Speed Drive (VSD) which can produce significant energy savings of up to 30%.

b. Understand your usage of water, energy and costs: Review your monthly meter readings, and electricity bills with the help of an irrigation engineer. Understand your energy use and establish

baseline cost data including: (1) Annual water supply; (2) Power usage (kW/ha); (3) Energy cost (E/m³).

c. Shifting to daytime irrigation: Check the feasibility of shifting current pumping requirements to daytime. It will save grower to push winter irrigation to daytime and make use of solar energy.

d. Contact your power utility about your intentions: Preliminary assessments by the power utility are vital on proposed generation connections to advise on upgrading to power lines and/or transformers.

e. License issues: Generally, electricity generation requires a license from Eswatini Energy Regulatory Authority (ESERA). Exemption to applying for a generation licence is provided in the Electricity By-laws of 2016 for solar plant of a capacity of less than 100 kW.

f. Operational: The supplier should supply information on: (1) Output of energy from the sun and from the solar panels; (2) Average solar hours per day during pumping times; and (3) Maintenance, support and monitoring system.

g. Warranties and Quality Assurance: The supplier / installer should be an accredited installer to ensure that the solar system meets industry best practice standards. The expected lifespan and warranty on the solar system equipment must be explained to grower, and a report including technical drawings of the site layout for solar arrays and information on safety signs, and regulatory safety requirements must be provided.



Nkululeko Dlamini (Irrigation Engineer) & (Banele Mhlana (Irrigation Engineer-Trainee)