

Rainfall forecast for Jan-Feb-Mar 2019

Observed trends

According to the Eswatini Meteorological Service there has been no change in the weather outlook released in August this year covering the September 2018 to March 2019 period. The likelihood of El Niño condition which is expected to increase as from January 2019 to March 2019 remains a threat to the country. The month of December 2018 which was expected to be the transition month in terms of rainfall amounts, however, this seems to have shifted backwards to November as the actual rainfall received in November was the lowest in the past five years except during the drought period as shown in Figure 2. This observed trend was against a better forecast of normal to above normal rainfall condition in the October-November-December period.

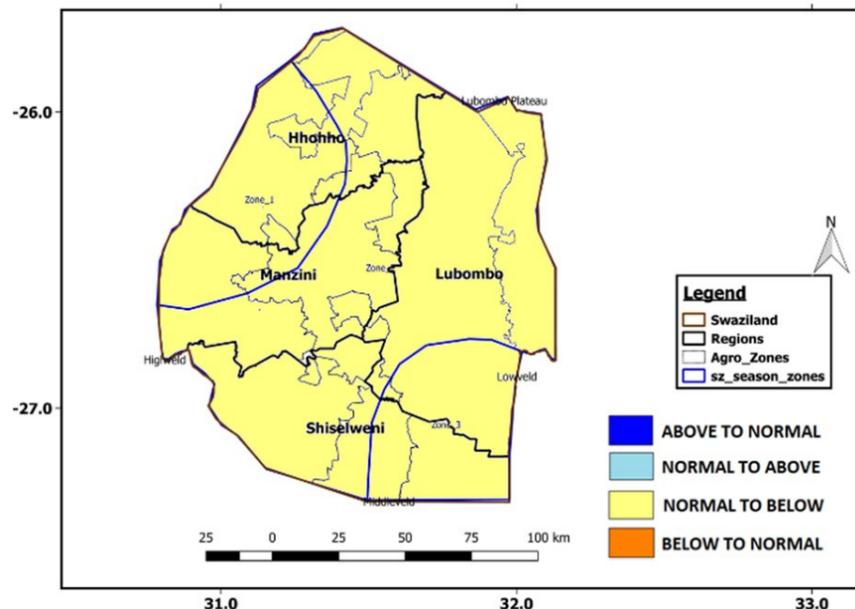


FIGURE 3: Forecasted rainfall for January-February-March 2019 (Source: Eswatini Meteorological Service)

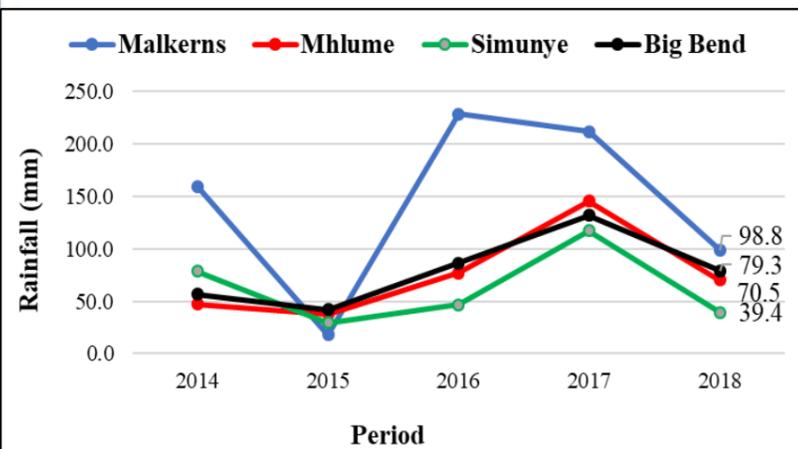


FIGURE 2: Five years period rainfall comparison for November in the four industry areas

Weather outlook

Figure 3 shows that the weather projection for the January-February-March 2019 period is normal to below normal rainfall. This means rainfall is expected to decrease as from January 2019.

Implications of the current trends and forecast

The current trend is showing that rainfall was significantly reduced in November 2018. Although storage dams in the country are still at reasonable levels, however, they are on a downward spiral due to the

low rains received. If the current situation persists, dam levels will start to decline sharply as from December 2018. Growers are advised to use water judiciously so that irrigation water is made available throughout the projected below-normal rainfall period. Growers are strongly advised to properly schedule their irrigation events at such times, leaving nothing to chance. Moreover, crop water requirement from April 2018 to November 2018 has been below the long-term mean. If growers have been scheduling properly, there should be some water saving as water required was below the expected demand. Growers are further reminded of the drought management guidelines as these may need to be implemented should the situation worsen. Monitoring of river and dam levels remains key in informing appropriate actions aimed at saving the available water while awaiting for the next rain season.



Patrick Mkhalihi
(Irrigation Officer)



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EVERY DROP COUNTS



Be the solution to soil pollution
“Combating soil pollution requires joint forces and turn determination into action”

Pests and diseases issues
“Smut is one of the diseases which will mostly be affected due to increasing global temperatures and the maintenance of spores through ratoon crops in non-burnt fields”

Rainfall forecast
“Weather projection for the Jan-Feb-Mar 2019 is normal to below normal rainfall.”

Be the Solution to Soil Pollution

Background

The United Nations (UN) designated 05 December as the World Soil Day (WSD) the purpose being to focus attention on the importance of healthy soil and advocating for the sustainable management of soil resources. 05 December 2018 was no exception, the world celebrated WSD and the theme was “Be the solution to soil pollution”.

Soil pollution

Soil pollution according to the UN’s Food and Agricultural Organization (FAO) refers to ‘the presence in the soil of a chemical or substance out of place and/or present at a higher than normal concentration that has adverse effects on any non-targeted organism’. The soil offers functions such as biological recycling of a number of atmospheric gases, filtration and storage of water as they pass through the hydrological cycle, storage of carbon, and providing a substrate for most of the food produced. Any changes in the soil’s capacity to offer these interconnected functions will certainly have tremendous negative effect on the environment and on its ability to support human and animal life on a sustainable basis.

Aspects

In the sugarcane growing business, the value of the soil can never be overesti-

mated. It is in the industry’s advantage to join the world in becoming ‘the solution to soil pollution’. The UN recognizes that combating soil pollution requires joint forces and turn determination into action. For the industry, this requires an appreciation of the activities or aspects of the sugarcane growing business that have potential to degrade the soil, and suggested mitigation measures or best practices that are aimed at reversing or ameliorating the effect thereof.



Agrochemicals usage

Agrochemicals refers to agricultural inputs falling within the families of herbicides, insecticides, fungicides, chemical ripeners and inorganic fertilizers. Indiscriminate use of any of these chemicals without following recommended best practices,

first, have potential to pollute not only the soil but other natural resources such as water and air, and some consequently find their way into the food chain. Secondly, the presence of these chemicals in the soil in excessive amounts limits the activity of microorganisms and plant life hence reducing the much needed biodiversity in the soil ecosystem. To mitigate this, growers are encouraged to use only industry approved chemicals as recommended.

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Be the Solution to Soil Pollution... CONT.

The fertilizer mixes and quantities applied in fields to enhance plant growth should be informed by a soil test report. Application of fertilizing material without soil tests may lead to over supply of certain elements (e.g. nitrogen, phosphorus) in the soil. Apart from polluting the soil, these elements may eventually find their way to water bodies (ground and surface) and the air, threatening both human and animal life. The unsystematic use of agrochemicals is cited as one contributor to the emission of greenhouse gases. Several studies have shown that where agrochemicals are used correctly and at appropriate rates, there is minimal risk of environmental pollution.

Agricultural waste

Agricultural waste, in the industry's context, refers to items such as chemical containers, fertilizer bags, used oil (e.g. tractor, vehicles) and old irrigation and drainage equipment (e.g. pipes [plastic, steel & asbestos], dripper taps, sprinkler heads and accessories). These items are not biodegradable and as such they persist in the soil for a very long. Their presence affects the well-being of those organisms that live the soil. Growers are reminded that chemical containers should be triple rinsed at spraying and the rinsate be poured into the spray or mixing tank. The containers should be perforated according to practice to avoid possible re-use and be stored in a secured place while awaiting disposal. Empty fertilizer bags and old irrigation equipment that cannot be reused on farm should be kept at isolated and secured places. Growers are encouraged to store used oil in sealable containers while awaiting proper disposal. Every grower should have a designated area where farm equipment such as tractors are washed. The wash area should be fitted with well-functioning oil-water separator drain. Where applicable, some of these waste materials can be sent off to registered recycling companies or be disposed of at approved waste disposal sites. Growers, by all means, should be able to demonstrate that these waste materials do not end up in unauthorized areas.

Monocropping

Studies on irrigated sugarcane in the region have shown that intercropping sugarcane with other crops is not a viable option, and it is a highly complex practice owing to the nature of the crop. Essentially, the crop is then subjected to continuous monocropping. The downside of monocropping includes

the buildup of pests and disease pathogens in the soil and mining of carbon and other essential plant growth elements from the soil. To counter these negative effects, growers are encouraged to adopt best practices such as mulching (retention of crop residue in the soil surface after harvesting), green manuring (the practice of planting crops mostly legumes and ploughing them back into the soil while green), planting cover or break crops in rotation with the sugarcane crop. While green manure crops return extra organic matter to the soil, cover crops are used for soil protection and weed suppression. Both (green manuring and cover cropping) are beneficial in breaking pest and disease cycles in the soil. Moreover, green cane harvesting is known to retain substantial amounts of crop residue in the soil. Addition of organic amendments

such as animal manures, compost, mill ash, and filter cake from mills is also known to promote sustainable use of the soil.

Soil acidification and salinization

Soil acidification is associated with the use of acidifying nitrogenous fertilizers coupled with nitrate and basic cation leaching under high rainfall conditions. The highveld and middleveld regions are prone to soil acidification. Growers in such areas are advised against using urea and ammonium sulphate based fertilizers. Studies have shown that lime and gypsum address soil acidity problems at the top and subsoil horizons, respectively. On the other hand, soil salinization refers to the build up of salts in the soil root zone. Soil salinization is mainly associated with the rising level of the water table and use of poor quality water for irrigation. In prone areas, the use of good quality water for irrigation and installation of subsurface drain pipes can assist mitigate soil salinization. Growers should also ensure that surface drainage structures infield and out-field are well maintained to eliminate waterlogging.

For more information, growers are encouraged to contact the Technical & Extension Services department of ESA. Let us farm responsibly and 'be the solution to soil pollution'.



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Update on Industry Pests and Diseases Issues

Smut

Smut remains one of the important sugarcane diseases in the country. High temperatures and dry conditions favour disease spread and progress. Waller, 1966 reported that smut is one of the diseases which will mostly be affected due to increasing global temperatures and the maintenance of spores through ratoon crops in non-burnt fields. The annual smut surveys by the P&D Teams are on-going and so far the results of September and October show weighted industry infection levels higher than the same period last year.

Already, a total of fourteen high smut notices have been sent out to affected growers since September and all of these are in the south region. Generally, the infection is higher in the south than the north. Infection has been recorded in almost all the locally grown sugarcane varieties. However, higher levels have been seen on varieties N41 and the dominant N25. Growers are advised to pay particular attention to these varieties.

ESA and Extension Service Providers have held a number of P&D demonstrations focusing on smut identification and roguing. Due to economic reasons, growers tend to delay the engagement of P&D teams. Growers are encouraged to assess their situation and take note of the current disease pressure and get on with scouting and roguing without any further delay. Growers must work with Extension Officers in ensuring that their inspection and roguing teams are well trained on smut identification and roguing.

Yellow Sugarcane Aphid (YSA)

Yellow sugarcane aphid inspection began in September and the infestation appears to be higher than the 2017/18 season. In the past years, peak infestation levels have been recorded in between November and February. Growers are reminded to remain vigilant and scout for the YSA. Once infestation is detected, inspection to determine the intensity thereof must be done and control measures taken. If the results of the first inspection are low, growers should monitor infestations for the next two weeks before taking action. If the populations are increasing, chemical control is recommended. Apply Allice, the registered foliar insecticide and follow instructions in the label.

Thrips

The thrips levels are also relatively higher when compared to the past two seasons. They are expected to peak between December and February. Growers are reminded to closely monitor the inci-

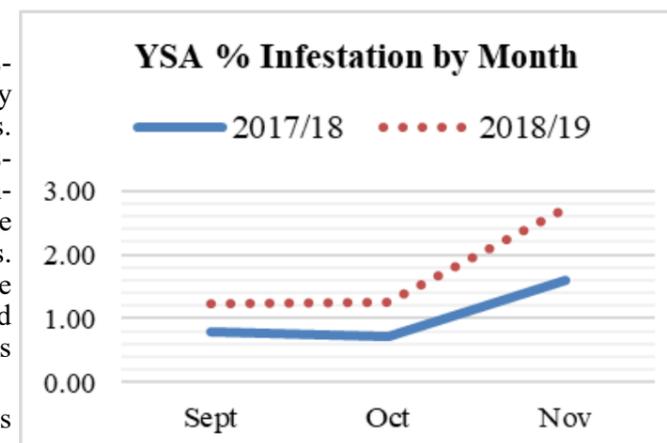


FIGURE 1: Comparison of Yellow Sugarcane Aphids infestation between 2017/18 and 2018/19

dence of this pest as the peak season approaches especially in plant cane fields which will be 3 – 5 months around this period. Chemical control is recommended where levels appear to be high. Growers must work with their Extension Officers when considering to chemical control.

Secondary seedcane establishment

The P&D nursery team in its routine inspections on registered secondary nurseries is currently recording higher incidences of off-types. This is evidence of poor crop eradication of the previous crop in these cases. According to the P&D Control Regulations, secondary seedcane nursery fields must be planted in fields which have been fallowed for at least three months prior to first planting. Complete eradication of the previous crop is a MUST to eliminate the possibility of pest and disease survival in the sugarcane material. Growers are reminded that application for secondary nursery registration must be done at least three months before the proposed planting date to allow ESA to verify that indeed the industry requirements are met prior to planting.



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