

THE Link

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In this issue...



Controlling giant *Panicum maximum* requires an effective and sustainable integrated weed management strategy. The article on **page 8** highlights ways to manage it.



The article on **page 14** highlights the threat that a stalk borer, *Chilo sacchariphagus* (Chilo) poses to the local sugar industry. Growers are encouraged to report any suspicious specimens or damage to their local Extension Specialist.



Registration is open for SASRI's Senior Certificate Course in Sugarcane Production scheduled for June. Find out entry requirements and registration details on **page 12**.



SOUTH AFRICAN SUGARCANE
RESEARCH INSTITUTE

Unlocking the potential of sugarcane

The goal of irrigation scheduling is to optimise crop yield and quality while minimising water use and avoiding water stress. SASRI Extension Specialist Marius Adendorff presented results of an irrigation scheduling demo trial at a recent grower day, illustrating some positive results. **(Page 10)**

Topical *Tips*

 **Rowan Stranack** (*Extension and Biosecurity Manager*)

Maximise RV yields and cane quality

In most areas, rainfall during the growing season has been excellent and water availability in the irrigated regions has been more than adequate. As a result, yields should be better than average, assuming nutrition and weed control have been adequate. The challenge now is to ensure this good work is not undone by inefficiencies at harvest time. Maximising RV yields is crucial to maximise income, and never before have the principles of delivering the most MATURE, CLEAN and FRESH cane to the mill been so important.

A good harvesting plan should ensure that the most MATURE fields are harvested. This implies not only the best cane yield but also optimum quality, especially if the field has not been ripened. The use of the SASRI PurEst app is appropriate, both in assessing suitability for ripening and also maturity relative to other fields available for harvest at the time.

Other important factors to consider are a variety's preference for harvest at a particular time of the season (irrigated regions), damage from pests and diseases and climatic influences such as frost and drought. All of these when it is appropriate to harvest a field. Speak to your SASRI Extension Specialist for guidance.

Losses in sucrose in the period between burn/harvest and crushing have been thoroughly researched. Deterioration sets in immediately after the cane is burnt and temperature determines the rate that losses occur. As a rule of thumb, initially, around 1% of the sucrose present will be lost every 24 hours but this will increase significantly as temperatures rise and as the delay lengthens. Every effort should be made to keep burn/harvest to crush delays to below 48 hours, after

which deterioration accelerates considerably, resulting in significant losses in income. Deliberately delaying delivery **does not** increase **RV yield**, as some believe. The apparent increase in RV% is due to the drying out of the cane stalks, but with the associated loss in mass, comes a loss of RV yield overall. Burning more frequently and paying more attention to field access and the management of haulage will go a long way to reducing the losses from deterioration.

Sending CLEAN cane is also important. Sending soil and trash to the mill is reflected in the fibre% in the CTS analysis. High levels of fibre very often can be linked to excessive soil or trash and tops in consignments.

Linked to the need to deliver CLEAN cane is the requirement to base-cut and top accurately. For example, leaving behind ten centimetres of stick over a hectare equates to five tons of cane with a high sucrose content. Equally, topping too high and including parts of the stick that have no Recoverable Value is simply incurring transport costs for no return as well as reducing the RV% for that consignment by including more non-sucrose.

Considering RV% alone as an assessment of cane quality can be misleading. Your CTS report contains a wealth of additional information which can indicate the true condition of the cane delivered to the mill. Moisture, purity, non-sucrose and fibre data reflect the overall state of the cane, and, more importantly can give an indication as to what needs to be done to *improve* cane quality. Consult your SASRI Extension Specialist for assistance in interpreting your CTS analysis report.

Regarding the harvesting of old carry over cane in the southern mill areas, it is beneficial to ensure that dead sticks, those infected with sour rot and immature bull shoots, are removed from the windrow before loading.

Under restricted allocation scenarios, it is critical to evaluate old carry over fields before harvesting and sending to the mill. This is not the time to be "wasting" valuable allocation by sending poor quality cane to the mill. Rather move on to better fields and send better quality cane. Discarding cane is always a bitter pill to swallow, but unfortunately some loss of cane tonnage is again inevitable this season, with a fair amount of excessively aged cane in the system at some mills.

During this time of the year, frosts are common and can significantly impact cane quality. Managing frosted cane is crucial in maintaining its quality since badly frosted cane can have very low quality. Different categories of frost damage require specific management responses. Should you experience a frost event and you are not sure how to proceed, contact your SASRI Extension Specialist for assistance.



Crop nutrition



Prices of fertiliser are still very high and, more than ever, soil sampling is critical to ensuring adequate and not excessive nutrients are applied to the crop. If you haven't already done so, ask your Extension Specialist to help with a soil sampling programme and submit samples to SASRI's Fertiliser Advisory Service (FAS).

Unfortunately, soil or leaf applied nutritional products that promise a 'silver bullet' type solution to poor yields are most often ineffective. They do not address the root cause of nutritional problems which often arise from poor soil health. Be very careful in expending money on products that claim a miracle cure for very little effort.

Soil sampling done immediately after harvest will enable the results to be returned in time for lime and

other soil amelioration to be carried out, as well as for an adequate fallow period prior to planting later in the year. In plant fields, take samples of both the topsoil **(0-200mm) for routine fertility and acidity analysis**, and subsoil layers **(200-400, 400-600 and 600-800mm)** to determine if subsoil acidity problems exist.

Applying fertiliser too early on certain soils could result in unnecessary losses of nitrogen from volatilisation. FAS will indicate those soils where this problem is likely to exist. In addition, plan to split applications of nitrogen fertiliser on soils that are either very sandy or poorly drained particularly if urea-based fertilisers are to be used.

Flowering in 2023!

Please note that flowering reports for 2023 are now available on the SASRI WeatherWeb for all operational industry automatic weather stations.

General indications are that there will likely be significantly more flowering this year than last year.

A flowering index has been developed by SASRI for predicting the severity of flowering that is likely to occur within a given season in the various regions of the industry. The flowering index may guide growers in the proactive adjustment of harvesting schedules of susceptible varieties in seasons where profuse flowering is predicted.

Visit the SASRI website (<https://sasri.org.za/decision-support-tools>) and click on the WeatherWeb link on this page. The Flowering Reports can be found under the Data Views & Downloads menu inside WeatherWeb.

Land preparation



In many parts of the industry, growers are planning long fallows as part of a strategy to partly counter the current uncertainties in the industry.

This is an excellent strategy and will pay dividends down the road with less disease and improved soil health. There are opportunities for planting a winter green manure

crop such as oats or one of the combination mixes. Cash crops can also be considered to generate income.

Where soil acidity has been identified as an issue in soil samples from SASRI's Fertiliser Advisory Service (FAS), deep incorporation of lime and gypsum should be done

at this time of the year when slope permits ploughing.

Top yields are only possible if the crop is adequately fed. For a crop to receive the correct nutrition it must in turn have an effective and fully functional root system and be growing where soil health issues have been corrected.

Ensuring compaction is minimised, correcting sub-soil acidity and salinity/sodicity issues, and the addition of organic matter are some of the issues which can be addressed at this time of the year. Only once these potentially limiting factors have been addressed can the crop take up fertiliser effectively.

Soil conservation and surface water management

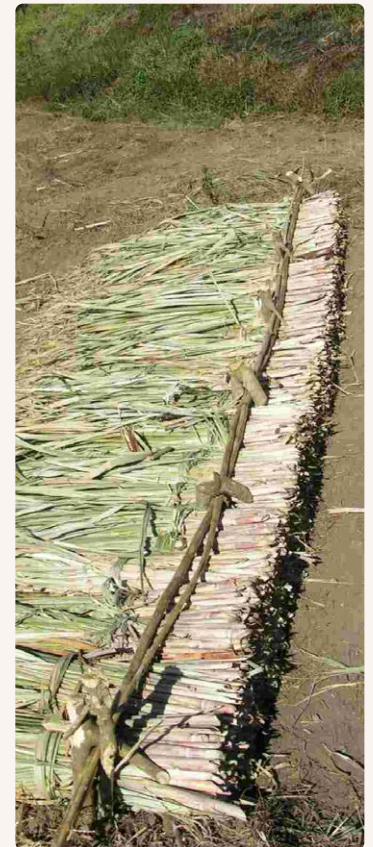
Constructing and maintaining conservation structures and waterways should be prioritised during the drier winter months to prevent damage caused by heavy rains, as recently witnessed in some areas. Implementing a Land Use Plan is crucial to determining the appropriate siting and dimensions of these structures. Don't hesitate to seek advice from your SASRI Extension Specialist.

Check existing structures so that you can face the rainy season with confidence. It's also the time to maintain drains on your farm. Regular maintenance will prevent a build-up of sediment and prevent further drainage problems from developing.

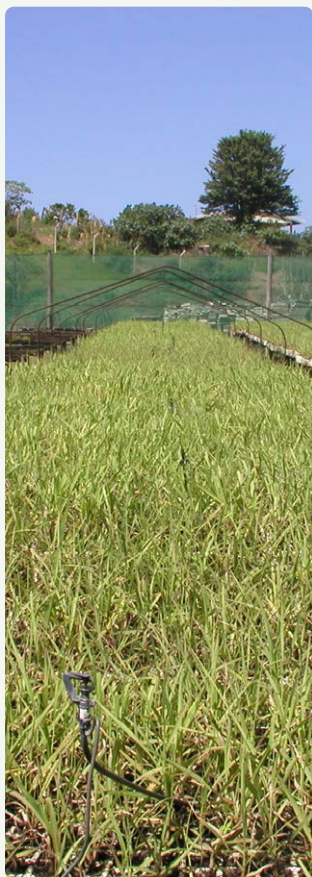
Winter is the time to establish grassed waterways. This is best done the **year before** a field is to be replanted. Use a fire tanker to water the newly planted grass until it is established.

Remember to place revetts made of bundles of cane tops across new waterways to limit soil loss in the event of a storm. In the irrigated regions, the drainage of fields has been a significant issue after the heavy rainfall, disrupting and hindering essential operations. Surface water management on these flatter farms is critical to prevent ponding of water, which takes a long time to drain away.

Much of the problems experienced stem from uncontrolled storm water entering fields from adjacent areas and poor road drainage. With the damage and problems still visible, try to find the source of the excess water and deal with those problems while it is dry, by either constructing conservation structures or mitre drains on major roads. Consult your SASRI Extension Specialist for assistance.



Seedcane and disease control



Fields to be re-established must be tested for ratoon stunting disease (RSD) prior to harvest. If found positive, fallow these fields for at least one year. Plant an appropriate green manure or cash crop during the fallow. Fields tested positive for RSD may not be used as seedcane nurseries

Cane killed using glyphosate in summer this year, in preparation for planting in winter or spring, should be carefully checked for regrowth. Unfortunately, glyphosate seldom gives a 100% kill, and you need to return at least twice to remove regrowth.

Using either Certified or Approved Seedcane to plant commercial fields is not only a legal requirement but makes good economic sense. Planting untested cane without a history of hot water treatment and inspections could lead to the need for early eradication due to poor yields resulting from the build-up of diseases such as RSD, smut or mosaic.

Seedcane requirements need to be planned far in advance. For example, fields

to be replanted in 2025 require their nucleus or first-stage hot-water treated seedcane to be planted in spring 2023. This will enable the seedcane to grow and be planted into a farm nursery in 2024 and from there, into commercial fields in 2025. So, if you have a seedcane scheme in your area from which you need to order seedcane later this year, start planning your replant programme for 2025.

Quantities of Certified Seedcane required to maintain a cycle of planting Approved Seedcane into commercial fields only requires a very small area of Certified Seedcane to be established each year. Less than 0.5 ha of Local Pest Disease and Variety Control Committee (LPD&VCC) Certified Seedcane will be required every year per 100 hectares of area under cane to ensure, once bulked up, that all commercial fields are planted with disease-free true-to-type Local Pest Disease and Variety Control Committee Approved Seedcane.



– Eldana and Yellow Sugarcane Aphid –

Great strides have been made in the last few years in the chemical control of eldana in carry-over cane. Fields for carry-over to 2024 should already have been identified and an IRAC compliant spray programme planned.

With insecticide options now available for stubble treatments, as well as the option to apply on younger cane, spray programmes need to be carefully planned. Fighting eldana is more than just chasing damaged cane.

What is required is a long-term strategy that includes variety choice, harvesting cycle, crop nutrition and insecticides. Consult your Extension Specialist or Advisor for assistance.

There have been some outbreaks of Yellow Sugarcane Aphid (YSA) recently. This is to be expected at this time of the year and there could be further peaks in winter. Whilst there are now products, and some new chemistries, registered for the control of YSA on sugarcane, spraying cane when the damage is evident is generally too late and a waste of time and money.

YSA is more prevalent on certain soils and on certain varieties. Take note of where current outbreaks have occurred and monitor and scout these areas closely over the next few months. Spraying can then be timed to be more effective in preventing a massive build-up of the pest.

Using herbicides wisely

 **Anushka Gokul** (Agrochemical Scientist)
and **Dr Stuart Rutherford**
(Principal Scientist: Integrated Pest Management)

Herbicides are widely used for weed control in sustainable sugarcane production, but their improper use can result from inadequate knowledge and training on the appropriate application techniques and equipment.

This unintentional misuse can lead to inadequate weed control and potential negative environment and human health consequences. Proper training and supervision can effectively prevent herbicide misuse.

Misapplication

Herbicides cannot differentiate between sugarcane and weed plants. When herbicides are misapplied, applied to an unintended area or applied under poor weather conditions such as high wind speeds, it can lead to herbicide drift and consequently cause herbicide damage to non-target plants or the adjacent crop.

Over-application

Additionally, over-application of herbicides may be caused by the repeat application of the same herbicide, applying rates higher than the label recommendation and the use of poor application technology.

Guidelines

Over-application may lead to consequences such as the stunting of sugarcane growth, leaf burn, reduced sugar content and the development of herbicide-resistant weeds. These herbicide symptoms may vary depending on the type of herbicide used, growth stage of the sugarcane, the rate of application and the type of exposure.

To minimise the misuse, misapplication, over-application and to improve weed control, the following steps can be used as a guidelines:

- Select an appropriate herbicide registered for the control of the target weed.
- Read and follow the label instructions, carefully. Label instructions will provide details regarding mixing, application rates, timing, frequency of application, minimum or maximum applications per season and safety precautions.
- Ensure that the herbicides are applied at the correct growth stage (pre-emergence, post-emergence) as stipulated on the label. Herbicides should only be applied to actively growing weeds.
- Use the correct application technology that has been regularly maintained and correctly calibrated. Poor application equipment dispenses incorrect dosages.
- Apply the herbicide directly to the target weed. The objective is to have the correct amount of active ingredient on the target.
- Minimise spray drift by avoiding the application of herbicide during strong wind conditions or when high temperatures are expected. Furthermore, the potential for spray drift can be reduced by using nozzles that do not produce small droplets.
- Apply the herbicide at low pressure, adjust the boom height as low as practical, avoid herbicide application at high travel speeds and apply the herbicide when soil is cool and relative humidity is high.
- Drift control additive could be used if recommended by manufacture on the product label.
- At all times, use appropriate protective clothing and equipment (PPE) and store herbicides in their original containers in a secure and locked location.

Controlling giant *P*

 **Anushka Gokul** (Agrochemical Scientist) and **Dr Stuart Rutherford**
(Principal Scientist: Integrated Pest Management)

Weed infestation is one of the main challenges to crop growth and development. It results in increased production costs, difficulties during harvesting, reduced product quality and unacceptable yield losses.

Panicum maximum (also referred to as Guinea grass, Barbi grass or uBabe) is a prominent weed in sugarcane agriculture, and is also found on disturbed sites, including roadsides, especially in untended areas. It is a perennial tufted grass with a strong and vigorous root system.

Common *P. maximum* shares the same genus and species as the **giant** *P. maximum*, yet they are physically very different. The stems of giant *P. maximum* can reach a

height of up to 3.5 m with a stem diameter of 5 mm to 10 mm. The leaf blades are long, narrow and finely tipped with a prominent mid-rib.

Panicum maximum is propagated through seeds and vegetatively. It remains green till late in winter and flowers from September to March, producing large seed heads with many fine branches. The oblong-shaped green to purple seeds can be spread easily by wind, birds, farm machinery or on the fur of mammals passing through an infested field.

Controlling giant *P. maximum* can be a challenging task, as it is a fast-growing, hardy grass species, which grows between the sugarcane rows and is as tall as the sugarcane.

The most common method for weed control in sugarcane agriculture is the application of pre-emergence herbicides. This ensures a prolonged residual effect and effective control during the critical period of competition with the crop.

The active ingredients registered for the control of *Panicum maximum* in South Africa are listed in Table 1.

Always make sure that you use only registered herbicides, and that herbicide combinations adhere strictly to product label provisions. Furthermore, herbicides with different modes of actions should be rotated to reduce developing herbicide resistance.

Table 1: Active ingredients registered for *Panicum maximum*

1	Acetochlor	19	Diuron + Hexazinone
2	Acetochlor + Ametryn	20	Diuron + Metribuzin
3	Acetochlor + Benoxacor	21	Diuron + Sulcotrione
4	Acetochlor + Dichlormid	22	Glufosinate ammonium
5	Alachlor	23	Glyphosate
6	Ametryn	24	Haloxypop-R-methyl ester
7	Ametryn + Triazines	25	Imazapyr
8	Amicarbazone	26	Indaziflam + Isoxaflutole
9	Atrazine + S-Metolachlor	27	Isoxaflutole
10	Atrazine + Sulcotrione + Triazines	28	Mesotrione
11	Benoxacor + Metolachlor	29	Mesotrione + S-Metolachlor + Terbutylazine
12	Chlorimuron-Ethyl	30	Metazachlor
13	Chlorimuron-Ethyl + Metribuzin	31	Metribuzin
14	Chlorimuron-Ethyl + Metribuzin + Pendimethalin	32	MSMA
15	Clomazone	33	Pendimethalin
16	Clomazone + Hexazinone	34	S-Metolachlor
17	Dimethenamid-P + Saflufenacil	35	Sulfentrazone
18	Diuron	36	Tebuthiuron

Panicum maximum

An effective and sustainable integrated weed management strategy should be applied, combining herbicide application with cultural, mechanical and biological control methods. Cultural control methods include proper land preparation, crop rotation and good farm hygiene, which aim to reduce seed banks and minimise soil reserves. Weed seedling cycles can be broken by implementing a fallow period or crop rotation with non-grass crops, which allow the use of herbicides which targets grass species.

Young giant *P. maximum* should be removed before it matures, thus preventing seed development and dispersal. Mature plants should be unearthed, by tightly bagging the seed heads, manually digging the root system out of the soil and

disposing the weed residues by burning in an allocated area. This is an intense and lengthy process.

Maintaining proper farm hygiene is essential, including cleaning farm machinery and vehicles between fields to avoid the spread of seeds from one area to another.

Mechanical methods such as tilling or mowing can be employed. Tilling turns the soil and buries weed seeds, thereby disrupting seed germination; this method is effective for small infestations.

Frequent mowing will prevent giant *P. maximum* from becoming too tall and spreading rapidly. Following mowing, while giant *P. maximum* is short yet actively growing, registered herbicides should be applied.

P. maximum is a forage crop, therefore controlled grazing with livestock can be used to suppress its growth. However, it is challenging to manage the amount of grazing needed to effectively suppress this weed.

Overall, an integrated weed management programme combining different management strategies should be employed to improve crop yields, reduce the development of weed resistance, reduce environmental impact and improve long term management.



Figure 1. Giant *Panicum maximum* has large seed heads with many fine branches.



Figure 2. Giant *Panicum maximum* mature seed head.

Grower day in the Lowveld



At the grower day (from left) Jan Erasmus, Sharon McFarlane, Marius Adendorff, Isobel van der Stoep and Karlien Trumpelmann.

Early in February, SASRI welcomed a multitude of growers to their grower day at the Malelane Golf Club in Mpumalanga. The event featured a number of technical presentations on issues most topical to Lowveld sugarcane farmers.

SASRI Extension Specialist Marius Adendorff presented results of an irrigation scheduling demo trial, as well as the challenging Yellow Sugarcane Aphid. Agricultural/Irrigation Engineer from RCL Isobel van der Stoep, discussed technologies to tackle the energy crisis in the long, medium, and short term, whilst SASRI Plant Pathologist Sharon McFarlane shared the latest recommendations on chemical roguing for smut.

Positive results for irrigation scheduling

Irrigation scheduling is the practice of deciding when and how much water to apply. Poor irrigation scheduling can result in either under-irrigation, leading to water stress and reduced yields, or over-irrigation which leads to the misuse of water and electricity resources, leaching of expensive fertilisers, erosion of the topsoil, and anaerobic soil conditions resulting in yield reductions.

According to SASRI Extension Specialist Marius Adendorff, irrigation scheduling is an important management practice to prevent under- and over-irrigation. Although the results are site-specific to the trial, Adendorff explained that "Irrigation scheduling increased yields and reduced irrigation application and provided substantial financial benefits (average R10 500/ha in the case of a recent study), and showed that the cost of scheduling equipment and services was recovered by the financial benefits."



Technologies to tackle the energy crisis in the long, medium, and short term


The energy crisis in South Africa is slowly crippling the sugar industry, with many growers battling to stay afloat. According to growers, the periods of rolling blackouts, which have been advanced to Stage 6 with Stage 8 in the pipeline, have negatively impacted cane production.

Isobel van der Stoep spoke about ways growers can tackle the energy crisis in the short, medium, and long term. She said that growers need to make optimal use of power available, and time required for irrigation. Some of the options growers can start looking at are diesel generators, automation of irrigation infrastructure, incorporating different sources of energy or migrating "off the grid".

To implement any of the solutions, growers need to address the cost and financing options, water availability or security, scheduling, as well as maintenance.



'yields' positive response

 **Kalisha Naicker** (Publications Officer)

Roguing for smut

SASRI Plant Pathologist Sharon McFarlane discussed manual and chemical roguing for smut. According to McFarlane, smut is a serious and widespread disease of sugarcane that causes a significant reduction in yield. "No variety is immune to smut – growers will always need to rogue," she said. Factors that contribute to high smut levels are warm dry winters that allow a build-up of spores and long dry spells followed by rain. Load-shedding may also impact on smut levels since cane is more prone to smut infection and yield loss when stressed.

She said that, although manual roguing is still the most common practice, it is labour-intensive, and the complete removal of infected plants is not always possible. "Chemical roguing is four times quicker than manual roguing, infected plants are killed regardless of soil conditions, and transport costs are lower." More information on smut can be found on the SASRI e-Library www.sasri.org.za



Yellow Sugarcane Aphid

Adendorff went on to provide a summary of the history, biology and control methods for Yellow Sugarcane Aphid (YSA). He said that YSA is distributed across all sugarcane growing regions in South Africa and originated from the USA.

"Outbreaks are mainly prevalent in spring, summer and early autumn and appear correlated with plant stress events. All varieties are affected by YSA, but at varying levels of susceptibility. YSA also infests certain grasses bordering cane fields, e.g. *Paspalum spp.*," he added.



Adendorff shared tips for growers:

- **Maintain vigilance and spot YSA early to avoid numbers increasing.**
- **Maintain diligence with in-field scouting and early spraying where necessary.**
- **Chemical control is most effective and easier to apply on young cane, but can also be used on older cane.**
- **Plant more resistant varieties.**
- **Administer effective chemical application, but avoid the overuse of insecticides to prevent resistance to the insecticides as well as to limit damage to natural predators.**

For more information on any of the topics above or grower days in your area, contact your local Extension Specialist.

Advance your career in sugarcane agriculture with SASRI



Enroll now for the Senior Certificate Course in sugarcane agriculture offered by SASRI. The five-week course will take place at the Kwa-Shukela building of the South African Sugar Association (SASA) offices in Mount Edgecombe. The course is offered once or twice a year, usually in February and June, depending on availability.

Applicants with an undergraduate degree or diploma, preferably in agriculture or the sciences, are welcome to apply.

Those who have completed their matric (Grade 12) and passed the Junior Certificate Course with a Merit Pass (65% and above) are also eligible. Students with a matric certificate will be considered based on the outcome of an assessment and interview process.

The course and assessments will be conducted in English. For further details, please see www.sasri.org.za or contact Belinda Simpson, at educane@sugar.org.za

LATEST PUBLICATIONS AVAILABLE

2023 Mech Reports

To assist sugarcane farmers, make informed decisions based on realistic costs of various operations, SASRI publishes details on mechanisation costs annually. The 2023 edition of these Mechanisation Reports are now available.

Report 1 has information and examples that will help in estimating the total cost of operating individual machines or complete machinery systems.



Report 2 deals with systems and costs of land preparation, planting and ratoon management. This report includes a directory of local and international equipment and product suppliers. Both reports are available for download from the SASRI website www.sasri.org.za/mechanisation

Herbicide selection at the touch of a button!

The SASRI Herbicide Selector has just been updated. This is an electronic (MS Excel) version where you merely enter the weed type, weed growth stage, soil clay%, and whether you are dealing with a plant or ratoon crop. The application then selects appropriate weed control treatments from the large number of registered chemical products available.

The Herbicide Selector also provides notes for each active ingredient, and lists the trade names of registered products, together with their formulation and herbicide resistance (HRAC) group.

SASRI shines at ISSCT Congress

Seen at the ISSCT Congress (from left) were Marius Adendorff, Dr Riekert Van Heerden, Dr Kitty Foxon (SMRI), Dr Sumita Ramgareeb, Dr Sandy Snyman, Dr Derek Watt, Dr Stuart Rutherford and Dr Rianto Van Antwerpen.

SASRI Researchers claimed top spots at the International Society of Sugar Cane Technologists (ISSCT) Congress which was held from 20–23 February in Hyderabad, India.

Best Agriculture Paper was awarded to Extension Specialist, Marius Adendorff (co-authors Dr Ashiel Jumman and Aresti Paraskevopoulos) for their paper on "Adoption of irrigation scheduling in the South African sugarcane industry: the use of a demonstration trial to bring about change".

Best Management Paper was awarded to Research Manager, Dr Derek Watt (co-authors Dr Rianto Van Antwerpen, William Gillespie and Dr Riekert Van Heerden) for their paper on "Promoting adoption of soil-health-related regenerative agriculture

practices amongst small-scale sugarcane grower communities in South Africa".

Last, but not least, Dr Stuart Rutherford, a Principal Scientist (with co-authors Dr Sandy Snyman and Motselisi Koetle) claimed the Best Biology Poster for their poster on "Chemically-induced epimutagenesis for sugarcane improvement".

SASRI would like to acknowledge funding from the South African Sugar Technologists' Association (SASTA) as well as Biosafety South Africa (an entity operated by the Technology Innovation Agency, Department of Science and Innovation), that enabled attendance.

Congratulations to these remarkable achievers.

The International Society for Sugarcane Technologists (ISSCT) was founded in 1924 and is committed to the economic and sustainable advancement of sugar industries across the globe by promoting innovative research, development, technology adoption and knowledge sharing among its members. Congresses are usually held at 3-yearly intervals.

 Kalisha Naicker
(SASRI Publications Officer)



Marius Adendorff




Dr Derek Watt



Dr Stuart Rutherford

'Protection through detection' –be vigilant against Chilo

 **Kalisha Naicker** (Publications Officer)

Although not currently present in South Africa or in the southern sugar estates in Mozambique, the spotted sugarcane borer, *Chilo sacchariphagus* (Chilo) poses a significant threat to the local sugar industry.

Similar to eldana and sesamia, Chilo is a type of stem borer that causes damage to sugarcane. Chilo moths deposit eggs on green leaves. After hatching, the larvae move downward to bore into and harm the upper parts of the cane stalk, often leading to side-shooting.

As Chilo is capable of causing severe damage to sugarcane crops, resulting in significant losses, growers are advised to remain vigilant to prevent its spread into South Africa.

The pest is known to have no host plants in Africa other than sugarcane. Therefore, the movement of cane out of infested regions could very likely result in the spread of the pest. Unfortunately, such instances have already occurred within Mozambique.

Helping to monitor sugarcane crops for such pests in South Africa is

leading agricultural service provider, Cropwatch.

If Cropwatch identifies a potentially problematic specimen in one of their Delta traps, which is baited with a Chilo-specific pheromone lure, they send the dead specimen to SASRI. The tissue is then subjected to DNA analysis, and the results are compared to global databases to determine whether there is a match. To date, only a small number of specimens have been intercepted, and none has been confirmed as *Chilo sacchariphagus*.

Therefore, the sugar industry remains free of the pest, for now. In light of these risks, growers are strongly advised against bringing cane from Mozambique into South Africa, even if it is believed to be free of Chilo.

Growers are encouraged to report any specimens or damage which they feel are suspicious to their local Extension Specialist or the Biosecurity hotline on 031 508 7419. Vigilance and caution are essential to prevent the spread of this pest into the South African sugar industry.



A Cropwatch Delta Trap.

Cropwatch Africa is an independent, specialised service provider, and its focus is to support government's, stakeholders', and industries' goals across Southern Africa to safeguard resources by ensuring that pests and diseases are detected as soon as possible before they have a chance to cause significant damage.

Cropwatch Africa have developed proprietary cloud and mobile based platforms to assist with the capturing, storage, and geo-graphical display of all data in near real-time coupled with satellite imagery and detailed reporting for governments, farmers, researchers, and industries to make timely and actionable decisions.

Cropwatch Africa works with various industries, for example sugarcane, macadamia, banana, grains, and avocado, in terms of pest and disease surveillance. For the past couple of years, the Cropwatch Africa team also conducted surveys on commercial forestry plantations and are currently developing livestock systems to aid with data collection for biosecurity.

Symptoms to look out for



Shot holes on leaf



Constricted internodes



Side-shooting



Stalk damage



Eggs




Moth



Larva

WEATHER

 **Phillemon Sithole** (Agrometeorologist)

Review

Rainfall during the 2022/23 summer season was generally well above-normal across the industry (Figure. 1), with an industry average of 117% of the long-term mean (LTM). This was in line with expectations due to the prevailing La Niña conditions in the Pacific Ocean over the same period (*The Link*, Jan 2023). The northern parts of the industry, amongst other parts of the country, received extremely high rainfall in early February. In Malelane 741 mm was recorded, nearly matching the annual LTM of 797 mm in just that month alone. The heavy rainfall and subsequent flooding caused extensive damage to irrigation equipment and infrastructure in Mpumalanga. The good summer rainfall came when most of the irrigation water sources were already at or near full capacity, therefore irrigation water supplies will remain stable during the upcoming winter months.

Irrigation water supply remained adequate throughout the hot and dry late spring and early summer months when irrigation demand peaks. No water restrictions were implemented in any of the irrigated areas in 2022.

Outlook

The El Niño–Southern Oscillation (ENSO), previously in a negative (La Niña) state has weakened into an ENSO-neutral state and is expected to remain in the neutral phase for most of winter 2023, with increasing chances for the development of an El Niño state from late winter. The ENSO-neutral state will have no impact on winter rainfall in eastern South Africa. However, the development of El Niño from late winter will likely result in below average rainfall during the 2023/24 summer months.

The South African Weather Service predicts slightly above-normal rainfall, while the *International Research Institute for Climate and Society* and the *European Centre for Medium-Range Weather Forecast* both predict normal rainfall, during the 2023 winter for the industry.

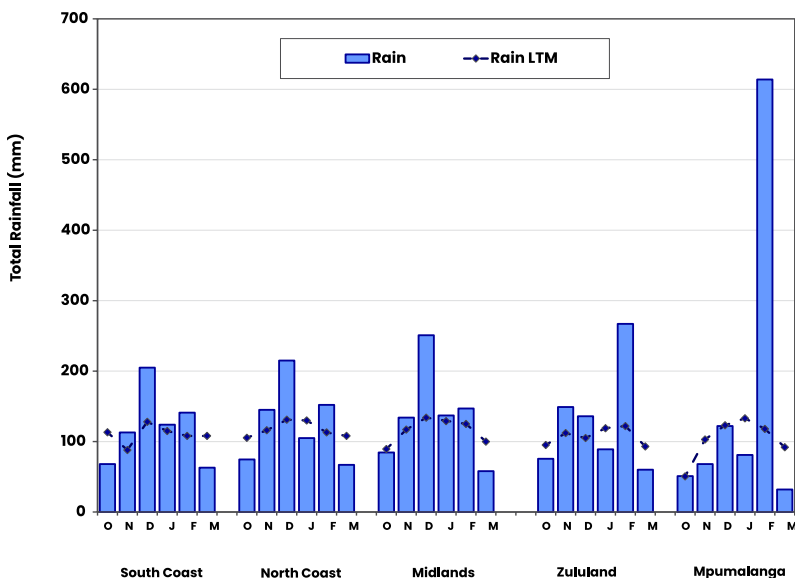


Figure 1: Regional average monthly total rainfall (Rain) for October 2022 to March 2023, compared to the monthly long-term means (Rain LTM).

Please visit the SASRI weatherWeb <https://sasri.sasa.org.za/weatherweb> for the latest industry weather reports and links to up-to-date seasonal climate forecasts.

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