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THE

PEOPLE, PASSION, SCIENCE...Leadership lessons from a grower.

Rob Gurney, a grower from Eston, shares information on managing a successful farming operation. Rob has had years of soil acidity issues on his farm which he is managing in an integrated fashion. He uses back-to-basics principles and practices that are embedded in sound science, good people management and his passion for farming *(page 17)*.

In this issue...

Beheermaatreëls vir smut

Ondervinding van 'n Laeveldse boer in die opsporing en beheer van smut en die beheer van hierdie ernsitge siekte *(bladsy 12).*



Green Manures

While there are several benefits to green manuring, some important aspects need to be considered before implementing this practice. Read **page 6** to see more.



New Sulphur Test

The FAS Agricultural Laboratory has just implemented an important new test for the often 'forgotten' macronutrient, sulphur. This will be available as part of the routine package at no extra charge to the grower (page14).







DIRECTOR'S M E S S A G E

🖉 Carolyn Baker

For any grower to achieve optimal yields from his land, it requires that all agronomic practices are aligned with agroclimatic conditions, in particular the climate, soils, water and topography of the farm. Having an up-to-date land use plan is one of the best ways of achieving this goal. This plan or map is based on an accurate portrayal of the spatial features on a farm. Not only is such a plan the foundation for SUSFARMS[®], it also serves to guide the grower into the most effective and sustainable way to manage the various parts of his farm. If the sugar industry is to remain viable in a country like ours, where water is a fragile resource and rainfall patterns are no longer guaranteed, the value in planning and aligning farming operations to optimise scarce resources is obvious.

As the foundation for each farming operation, a land use plan represents the best investment any grower can make. Once compiled, it sets out the 'master plan' for production, and can easily be updated from time to time should features in the landscape change or farm operations become diversified. Designing and drafting a single plan is a digital process that takes about a week, depending on the size of the farm. It involves acquisition of the requisite maps, digitising the various land forms and features, inserting the relevant conservation structures and extraction routes and then ground-truthing the plan through a visit to the farm. In this way, any anomalies are corrected and the plan is finalised.

Apart from its obvious value as a management tool, the increasing importance of managing our land for the future makes a land use plan a vital step in all farming operations, whether large or small. Furthermore, implementing conservation practices and environmental stewardship, towards achieving optimal productivity, should be key in driving acquisition and application of land use plans. The pressure from consumers and lobby groups for all agricultural operations to adhere to the finest codes of practice is also increasing and their voices are getting louder. In the interests of industry sustainability we therefore encourage all growers to take the first steps and at least acquire a land use plan.

For many, the first step in implementation is a massive hurdle, since reconfiguring a whole farm to be consistent with a land use plan is an overwhelming prospect and could be a very expensive exercise, depending on the extent of changes required. Nevertheless, growers should feel reassured in that all actions need not be implemented immediately, and indeed in most cases this would be completely undesirable. Rather, a step-wise journey over an extended period of many years would be far more sensible.

In the past, SASRI had the capacity to deliver a comprehensive farm planning service to growers. This function was curtailed by the industry which has resulted in SASRI now being able to offer this service on a very limited scale. Discussions are underway as to how this function can be partly restored so as to allow for the ongoing development of land use plans.





Pests, diseases and seedcane

- In eldana-prone areas, your insecticide spray programme on carry-over cane should be well under way. Apart from other sprays earlier in the season, the late moth peak over the period September to November is critical to target with diamide chemistries. Ensure that this spray application is IRAC-compliant.
- Cane that is above the local hazard level for carryover may not be carried forward and must be harvested this season. Pay particular attention to eldana-susceptible varieties. In a season where growers might wish to carry over more fields than

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usual, scouting and surveys are more critical to guide spraying to prevent unnecessary yield losses next year. Your local Biosecurity Officer or SASRI Extension Specialist can help interpret survey results and advise if spraying is necessary.

- Long-term control of eldana will only be achieved through an Integrated Pest Management (IPM) strategy involving a combination of biological, chemical and agronomic control methods. This might be a new concept to some growers and should you wish to know more consult your local SASRI Extension Specialist who will explain the principles behind IPM.
- Spring and summer are when important systemic diseases such as smut and mosaic become visible. Plan a regular roguing programme and continue this throughout the summer season. It's important to start roguing when the cane is young so that it is easier to identify the diseases. In the Irrigated North, pay special attention to the older varieties which are under pressure from smut, such as N14, N19, N25, N36 and N41.
- When buying or selling seedcane your Local Pest Disease & Variety Control Committee (LPD&VCC) must approve all such transactions and movement of seedcane. Only Certified or Approved Seedcane may be used for planting and seedcane buyers must ensure that the seedcane for sale has met the criteria. Contact your local Biosecurity Officer or Technician in this regard before any transaction is undertaken.
- There is often confusion regarding what qualifies as Certified or Approved Seedcane. There are very clear criteria for both and these are available from your LPD&VCC. Should you wish to produce either Certified or Approved Seedcane for sale or for your own use, then you must make contact with your local Biosecurity Officer or Technician who will guide you through the process.



Weeds

- The timing of herbicide application is critical. In particular, catching grasses when they are very small, before they have tillered, is critical if you want to avoid problems later on in summer. Ensure that you have sufficient spray capacity to get around the farm in a couple of weeks. Investing in additional spray capacity is well worth it, minimising the risk of flushes of weeds recurring throughout the summer.
- The creeping grass *Cynodon dactylon* is a major problem in many parts of the industry. This aggressive creeping grass, if left unchecked, will eventually expand and smother the cane, forcing an early replant. Small patches in-field, and encroachments from the field edges must be controlled. Hand hoeing is a waste of time and money. Repeated sprays of glyphosate are the only effective means of control at this stage. Growers sometimes place marker flags in patches of Cynodon within fields so that they can return to the same areas to spot-spray. If Cynodon is out of control, fields may need to be replanted and longer term imazypr-based herbicide treatments requiring a longer fallow period could be necessary. Consult your SASRI Extension Specialist for advice on the procedure to be followed.



Cane quality

Cane quality has been excellent at many mills through the winter. However maintaining cane quality into the summer months is always difficult due to the onset of growth in spring. Therefore attention to practices such as topping height, base cutting and the exclusion of extraneous matter become more important. Harvest to crush delays, and keeping these to a minimum also help greatly in maximising the maintenance of the hard-earned sucrose content in the cane. All these issues are especially critical in a year such as this where the RV price has been under pressure.



Nutrition

- On sandy soils and those prone to periodic waterlogging, split applications of nitrogen fertiliser is essential. Whilst this is challenging to do, splitting N applications are critical because under average conditions less than 60% of N applied makes it into the plant and under marginal conditions this is likely to be even less.
- Leaf samples should be taken from November onwards. The efficiency of nutrient uptake is best measured by leaf samples, enabling either top-up applications to be made or revised applications the following season.
- If not already planned, start deciding about ploughout fields for the following season, especially if these fields are likely to require lime and gypsum. Plan so the incorporation can take place in winter and that soil samples and orders for product can be done in time.
- In the Irrigated North take sub-soil samples in poor performing fields to check for possible salinitysodicity problems.







Crop eradication

- Chemical minimum tillage remains the safest and cheapest method of crop eradication. Wherever possible, this method must be used. Remember, minimum tillage is obligatory on erodible soils.
- Before applying glyphosate to replant fields first make sure there has been adequate growth and all tillers have emerged. This will avoid costly and timeconsuming roguing of unwanted cane regrowth.
- Plan to incorporate an appropriate green manure crop in the summer fallow period. Consult your SASRI Extension Specialist to select and source an appropriate crop.
- Fields with either RSD or high levels of other systemic diseases such as smut and mosaic which are eradicated, must be long fallowed to ensure all traces of the previous crop are gone. This could take up to a year during which time regular inspections are required. This also provides an opportunity for either a low-growing green manure or cash crops to be grown. As a result volunteers can be identified and removed.

Flowering

Some fields on the coastal belt have flowered profusely this year. Cane that has >20% flowered stalks should not be carried over. Plan to harvest this cane before October if possible to prevent yield losses.

BREAKING THE CYCLE **IMPROVING SOIL HEALTH WITH GREEN MANURES**

Page 6

Louis Titshall and Rian van Antwerpen (Senior Soil Scientists)

Research has proven that continuous monoculture in sugarcane can lead to long-term declines in soil quality and ultimately reduce crop yield. One option to improve soil health and break the monoculture is the use of green manures. Green manuring is the planting of cover crop species during the fallow period after a plough-out and before replanting of the next sugarcane crop. The intention is to retain the green manure biomass for its benefits on soil health and subsequent crop growth. Green manures can even assist in alleviating saline and sodic soils. Several local and international studies - 84% in the plant crop. Furthermore, these benefits have been found to carry to the first and second ratoons, though in diminishing amounts (5 – 25%).

However, to avoid disappointment when green manuring one must apply some careful thought to why you want to do it, what you hope to achieve, and how you are likely to benefit from it. While it may be desirable to want all the potential benefits from every available species, it is unlikely that this will be possible across all areas in the sugar industry. Certain species or combinations are better suited for different conditions and management inputs.

So...before you rush out to green manure, ask yourself the following questions:

- What season will I fallow (winter/summer) and for how long (3 months, 6 months, longer)?
- Which soil health and management objectives are my priority (e.g. soil erosion, organic matter, compaction, nitrogen supply, pest control)?

- What management capability (e.g. equipment, labour) do I have to establish and manage a green manure?
- How much management do I want to dedicate to the green manure crop (cost, time)?
- Do I have specific problems in my fields that may affect establishing a green manure (excess acidity, salts, poor fertility and steep slopes)?
- have shown that green manuring increases yield from 14 📕 Do I want to use the green manure for grazing or fodder production (or any other purpose e.g. cash crop)?
 - Has there been a systemic disease in the previous crop (e.g. RSD, smut, mosaic)? This will influence the growing height of the crop you choose to facilitate removal of volunteers.

If these key questions are considered and discussed with your green manure/cover crop specialist, the correct blend of species for the given climate, soil properties, management capacity and objectives can be advised. It is also important to remember serious soil health issues should ideally be addressed before planting the cover crop. For instance, where severe soil acidity (or salt) is present, it is necessary to remedy this before establishing the green manure. This will improve both the performance of the green manure, and create better soil conditions for the subsequent sugarcane crop.

For more information on green manures see the SASRI Green Manure Manual. For a list of seed suppliers visit the South African National Seed Organisation website's membership page (http://sansor.org/retail-for-farmersgrowers/).

What's the difference?

inter-cropping, crop rotation, and crop diversification is. A brief description of each is given below:

used to describe crops or pasture cash-crop or green manuring.

Green manuring: The growth of a cover soil health. crop for the purpose of retaining on the is not normally undertaken in green manuring applications. It is usually only

possible prior to a replant cycle. The soil borne diseases and promote soil what cover cropping, green manuring, enhance the subsequent sugarcane season (higher income). сгор.

is grown simultaneously amongst Cover crops: This is a general term another crop, planted within a month or two of the latter. For instance species planted between plough-out cabbages or beans may be grown and replant of cane (fallow period) during early sugarcane establishment mitigation (balancing income) if one of primarily grown for the protection and harvested prior to sugarcane the crops underperforms. of the soil, but that can be used for outcompeting the intercrop. These several purposes such as grazing, hay, crops may be used for cash crops, but It is worth noting that often a

soil surface or incorporating it into the Rotational cropping: This is a system provide the best outcome for a grower. soil while green. Removal of biomass of planting successive but different Consulting specialists in these fields crops in a systematic order. This is will help ensure the best combinations usually done to prevent build-up of are selected for your needs.

The many benefits of green manuring

Keeps the soil covered:

Protecting the soil surface during fallow periods reduces erosion, runoff, crusting, soil temperatures and nutrient loss and improves infiltration.

The miracle molecule:

Green manures increase soil organic Enhanced soil physical attributes are matter levels, with benefits for nutrient noted as one of the most important cycling, soil physical properties and benefits of introducing green manures microbiological function.

Use it or you lose it:

Green manures scavenge and retain nutrients in the upper soil layers and mobilise non-available pools of

...And what about my salty soils?

agricultural areas.

under salt-affected conditions is the where planned additional irrigation is selection of salt tolerant varieties. applied to facilitate leaching of salts.

Oats is commonly available in the sugarcane industry and an effective Salinity and sodicity problems are accumulator of salts. The efficiency of of salt-affected soils is enhanced in A key step to establishing cover crops the presence of a drainage system and

main purpose is to provide benefits fertility and it may allow for multiple Sometimes there is confusion about to soil health, break monoculture and crop production cycles within a single

> Crop or production diversification: **Intercropping:** This is when a crop This is to grow different crops within a farm with the advantage of access to different or additional markets for products compared to a single product system. It provides some degree of risk

> sometimes are included to provide pest combination of systems are adopted control and impart some benefits to by growers to suit their specific needs and situation. There is no single perfect solution and often a blend will

provide a free nitrogen supply.

More important than you know:

Green manures enhance both microbial diversity and activity when used to break crop monocultures with benefit for all aspects of soil health.

Keeping the soil whole:

by improving aggregation, aeration, alleviating compaction.

Numerous studies highlight that predators.

nutrients in the soil while legumes densely growing cover crops can effectively outcompete weeds and reduce weed seedbank stock. Introducing different crops to a soil also disrupts the life cycles of obligatory pests. Several studies have shown that many brassica varieties will reduce fungal infestations, while several other cover crop varieties (i.e. cabbage, marigolds, mustard, sorghum, oats and sunn hemp) can reduce nematode infestations.

Beneficial buos:

infiltration and water retention and By providing diversity in food sources and habitats, cover crops encourage several beneficial species of insects Chemical-free pest and weed control: that are useful pollinators and pest

Selecting crop varieties that are deep rooted (i.e. alfalfa) can promote water permeability thus improving drainage generally encountered in irrigated salt tolerant species to aid remediation and leaching from affected soils. It is important to remove cover crop biomass to prevent reintroducing high salt loads from decomposing residue.

ACCESSING NEW CHEMISTRIES FOR PEST AND DISEASE CONTROL

🖉 Prabashnie Ramouthar (Nematologist)

South African Sugarcane Research Institute | *The Link - September 2018*

Availability of effective chemicals against a particular pest or disease is critical to managing the pest or disease within an integrated management programme. Repeated exposure to a chemical or particular chemical group can cause the pest or disease to develop resistance. Having a variety of chemicals that differ in their mode of action is thus critical to reduce the risk of resistance development by enabling rotation of chemicals.

An agrochemical research group was set up at SASRI to investigate new chemistries for use against current and new major pests and diseases in the South African sugar industry. chemistries if we continue to purchase and use unregistered SASRI as an institute cannot register chemicals for use in the chemicals. Companies investing in sugarcane and not receiving industry. Our role is primarily to alert chemical companies to a favourable return from this market, will not continue to the needs of the industry and, in collaboration with chemical register chemicals for use in sugarcane. As stated earlier, companies, address these needs. New active ingredients and thus new chemistries are brought into the market by the large some areas of pest/disease control, and thus not worth the multinational companies at a huge expense (see example investment. If we do not support the current investment made below). Due to the size of the South African sugar industry by companies into sugarcane, we will further limit our access and the limited distribution of some pests and diseases, to new products and more importantly new chemistries. sugarcane in South Africa is generally seen as a small market. As a result, there is limited access to new chemistries as it is So the next time you buy that unregistered agrochemical, not seen as a viable investment. ask yourself the question: How am I impacting on my future access to new chemistries and new products?

SASRI continues, however, to engage with chemical companies and the relevant government authorities to address grower's needs. This can occur in one of two ways.

- SASRI may obtain promising products from agrochemical companies and conduct preliminary testing. If results are positive, the chemical company concerned is then informed. The chemical company can then choose to pursue the product further and conduct the necessary trials towards registration. Alternatively, the company may make a business decision not to pursue the product further.
- In other instances, companies approach SASRI with products that they would like to test in sugarcane, demonstrating an interest in this market. If results are positive, the company will most likely pursue registration of the product.

In addition to chemical companies and SASRI, the growers in the industry also have a role to play in access to new products. This is by using only registered chemicals and using them only according to label recommendations.

What are the dangers of using unregistered chemicals?

Using an agrochemical on a crop for which it is not registered or in a manner that is not specified on the label, is not only illegal but also unsafe. For each crop that a company wants to add to a particular agrochemical label, it has to provide residue data for that particular crop to ensure that the chemical is safe to use. Unregistered chemicals do not provide this assurance. There is therefore a risk to both the applicators of the agrochemicals as well as the consumers of sugarcanederived products due to the lack of residue breakdown data. The company also has to provide efficacy data to prove that the product will work in that particular crop. Unregistered chemicals, again, do not provide this assurance. The grower thus also takes a risk in that due to lack of efficacy testing, the



Availability of effective chemicals against a particular pest or product may not work effectively in the crop causing a loss in disease is critical to managing the pest or disease within an revenue.

Furthermore, using registered chemicals but not adhering to the label poses the same risks described above and can also lead to development of resistance to the chemical by the pest/pathogen or weed. These risks are well known to the grower community and have been highlighted by SASRI in the past.



REMOVING THE ROGUELLA CHEMICAL ROGUING FOR SMUT

Sharon McFarlane (Sugarcane Pathologist) Karlien Trumpelmann (Biosecurity Officer) Marius Adendorff (Extension Specialist) and Dane Ralfe (Lowveld grower)

Environmental conditions in the northern irrigated region have always favoured the development of smut and the disease is common in this area. What is notable from the disease surveys conducted by the Biosecurity Inspectorate this past season however, is the increased incidence in regions further south. This would have been influenced by climatic conditions (warmer winters and extended dry periods allow the build-up of spores and increase the likelihood of infection as setts germinate and new shoots emerge), variety disposition and management.

When sugarcane is infected with smut, a black whip-like structure emerges from the top of the stalk over time. These whips produce billions of infectious spores that are well-adapted to wind dispersal, but can also be spread in rain and irrigation water. To reduce the risk of spread from infected to healthy plants, both within the field and to surrounding fields, smut-infected stools need to be identified and removed (rogued) every four to eight weeks. Ideally, roguing should start when the cane is approximately two months old depending on the region, and when stools are in the incipient whip stage, before whips begin to emerge *(see picture).*

Digging out infected stools is a common method of roguing (see Information Sheet 2.5), but this is often a difficult and time-consuming process, particularly when the soil is hard. In many cases, the stool is not removed completely and much of the infected plant is left in the ground to re-grow, providing a source of infection later on. Chemical roguing provides an effective alternative. Mpumalanga grower Dane Rafe explains how he manages the smut problem on his farm. Dane Rafe farms approximately 365 ha of sugarcane on his farm in Mpumalanga, where smut is a major problem. In this article he shares his experiences in controlling this disease.

Smut control in Mpumalanga

When the smut levels on your farm begin to exceed 2%, manual smut removal by digging out the entire root stock is no longer effective. In drip-irrigated fields, stools are very large and the ground is extremely hard. Labourers therefore tend to cut off the base of the infected whip and leave the roots behind, which in effect is 'whiproguing'. This results in the problem disappearing for a short while only.

The most effective time to rogue is just after the first spring rains, and before the cane reaches full canopy. This is a very short period, and manual roguing is not quick enough. On my farm, roguing is a continuous practice, from the time that the first cut field is ankle-high until the last field has reached canopy.

Chemical roguing is a very quick, cheap and effective means of smut control. All you need is a pair of secateurs, hand held 2L sprayer (not a knapsack), chemical-proof, elbow-high gloves and a 10% Glyphosate mix. Use a surfactant with the glyphosate mix to increase its effectiveness. Only rogue in correct weather conditions; not in the rain, or if there is a strong likelihood of rain.

Always use the same person to rogue as this not a job for temporary labourers. If they do it constantly, they gain invaluable experience in identifying smut early. They also learn which varieties are more prone to smut on your farm and which fields have higher levels than others. I use one specialist roguer who has been doing my roguing for four years. He therefore has a much better idea of the smut levels on the farm than I do.

Notes on preparing the glyphosate mix:

- Add high quality ammonium sulphate (2%) to treat salts in the water. A buffer is not necessary if ammonium sulphate is added to the tank mixture.
- Add a suitable surfactant to improve uptake and efficacy of glyphosate. Follow label recommendations.

Notes on varieties

It is particularly important to check fields of varieties that are rated intermediate or susceptible to smut and to rogue when necessary.

In the irrigated north, N32 is currently most commonly and severely infected. This variety has been degazetted it may no longer be planted and must be eradicated by the

Above

Incipient whips: infected shoots with small, erect spindle leaves, thin stalks and elongated internodes He starts at the beginning of the season when the ratoon is ankle-high and will finish when the last cut field has canopied. He does not have to do the whole farm at one go. He will cover about 6 ha a day, and will cover the entire farm (365 ha) during the course of a season. He covers every field twice, and in the case of problem fields, thrice. After the first spring rains when the smut tends to show itself a lot, I usually allocate two additional people to this task (only for two months) to reduce the possible spread of the disease.

Correct roguing procedure

Start by identifying the whip. If you are early and there is just an elongation of one of the stems and no signs of spores, do not cut it as you can obtain a more effective kill if uncut with lots of leaf surface area to apply the chemical.

If the whip has elongated and there are signs of spores, cut the shoot as far down as possible making certain that you leave some leaves on that particular stalk. Hold those leaves in your gloved hand and give them a full cover spray. Just as smut is systemic, so is the glyphosate, and it will act on whatever part of the root system the smut has infected. From our experience, when we cut the infected whips very low without leaving any leaf surface, we found that there sometimes was regrowth from smut whips that did not share the same roots as the rest of the stool.

If roguing is done effectively, as an area wide approach, there is no reason to degazette varieties because of smut. Under climatic conditions similar to ours, Swaziland farmers are able to farm NCo376 to this day, while it has been degazetted in our area for over a decade.

At high levels of smut, chemical roguing is the only effective option. One cannot hope for a super variety even resistant varieties eventually succumb. Roguing must therefore become an annual farm practice.

end of February 2020. Smut is also common in N25 and N41 in this region, and to a lesser extent N14, N19, N23 and N36.

Further south, smut is most common in NCo376 on the coast and, while a number of varieties in the midlands are susceptible to smut, N54 is particularly prone to infection. This is an extremely popular variety but smut could be its downfall if not managed properly.

GRAWE STOEL UIT... **RAAK ONTSLAE VAN (SMUT) SONDER SELEKTIEWE VERWYDERING** (ROGUING)

Sharon McFarlane (Suikerriet Patoloog) Karlien Trumpelmann (Biosekuriteit offisier) Marius Adendorff (Spesialis voorligter) en Dane Ralfe (Laeveldse suiker boer)

> Omgewingstoestande in die noordelike

besproeiings gebiede is ideaal vir die ontwikkeling van smut, 'n algemene swamsiekte in hierdie omgewing. Inligting wat versamel is in opnames wat deur SASRI Biosekuriteit gedoen is die afgelope seisoen toon dat daar verhoogde vlakke van smut in die meer suidelike produksiegebiede voorkom. Verhoogde smut vlakke word heel waarskynlik deur klimaatsveranderinge (warmer winters en langer droë periodes, veroorsaak dat fungus spoor vlakke toeneem en dit veroorsaak hoër infeksie vlakke wanneer suikerriet ontkiem en nuwe stokke begin groei), variëteit verspreiding en bestuur veroorsaak.

Wanneer suikerriet met smut besmet is, vorm daar metter tyd swart sweep ag tige strukture aan die bokant van rietstokke. Hierdie swart swepe (whips), produseer biljoene fungus spore wat maklik deur die wind versprei word. Spore word ook deur reën en besproeiingswater versprei. Om die risiko van verspreiding van smut vanaf besmette plante na gesonde plante, asook verspreiding na ander lande te verlaag, moet smut geinfekteerde suikerrietstoele in die land spoedig geidentifiseer en verwyder word. Hierdie proses moet elke vier tot agt weke herhaal word afhangende van die spesifike area/ streek. Ideaal moet uitkapping geskied vandat die riet twee maande oud en in die begin fase van sweepvorming (incipient whips) is (Sien foto links bo op die bladsy).

Die selektiewe verwydering van smut-geinfekteerde suikerrietstoele (roguing) (sien SASRI Informasie Blad 2.5) is 'n algemene metode wat in die toepassing van smut beheer gebruik word, maar dit is ook 'n moeilike en tydrowende proses, veral as grond baie hard en droog is. In baie gevalle word die stoel nie ten volle verwyder nie en baie van die besmette stoel bly in die land agter, wat later weer kan begin groei en herbesmetting van die land veroorsaak. Chemiese beheer bied 'n goeie alternatief vir die selektiewe verwydering van stoele in die land. Dane Ralfe besit 'n suikerriet plaas van ongeveer 365 ha in die Laeveld waar smut 'n groot probleem is, hy deel sy ondervinding in die bestuur van smut met chemiese stowwe hieronder.

Dane Rafe boer met ongeveer 365 hektaar suikerriet op sy plaas in Mpumalanga, waar smut 'n baie groot probleem is. In hierdie artikel deel hy sy ondervinding van hoe hy smut op sy plaas beheer.

Beheer van smut in Mpumala<u>nga</u>

Wanneer smut vlakke op jou plaas hoër as 2% styg, is die selektiewe, fisiese verwydering van ge-infekteerde stoele (rogueing) nie meer effektief nie. In lande waar drupbesproeiing toegepas word is suikerrietstoele baie groot en die grond baie hard wat dit moeilik maak om stoele met hulle wortels te verwyder. Personeel kap dan net die stokke met smut swepe by die basis af in plaas daarvan om die hele stoel uit te haal, smut sweep selektiewe verwydering. Die wortels bly agter in die land en kan weer groei, so die probleem is net vir 'n kort rukkie opgelos.

Die beste tyd om stoele te verwyder is na die eerste lente reën, voordat die suikerriet volle blaardak stadium bereik. Hierdie is gewoonlik 'n baie kort periode en die fisiese selektiewe verwydering van ge-infekteerde stoele is nie vining genoeg nie. Op my plaas is verwydering van geinfekteerde stoele 'n konstante praktyk, vandat die riet enkel hoogte is totdat dit volle blaardakstadium bereik. Chemiese selektiewe verwydering van stoele is 'n goedkoop en effektiewe manier om smut te beheer. Al wat jy nodig het is 'n snoeiskêr, 'n 2 liter spreibottel (nie 'n rugsak nie), chemie-bestande elmboog lengte handskoene en 'n 10% glifosaat oplossing. Gebruik 'n benatter saam met die glifosaat mengsel om die effektiwiteit van die proses te verhoog. Sprei plante vir selektiewe verwydering wanneer die weertoestande reg is; nie wanneer dit reën nie en ook nie wanneer die kanse vir reën groot is nie.

Gebruik altyd dieselfde persoon om die selektiewe verwydering te doen aangesien dit nie 'n taak vir tydelike werkers is nie. Indien die persoon dit gereeld doen, doen hy onskatbare ondervinding op om smut op 'n vroeë stadium te identifiseer. Personeel leer ook watter variëteite op jou plaas vatbaar is vir smut, en watter lande hoër vlakke van besmetting het as ander. Ek gebruik een personeellid wat al vier jaar by my in diens is en gespesialiseerd is in die identifikasie en selektiewe verwydering van smut besmette stoele of stokke. Om hierdie rede het hy 'n baie beter idee van smut vlakke op die plaas as ekself.

Notas ter voorbereiding van die glifosaat mengsel:

- Voeg hoë kwaliteit ammoniumsulfaat (2%) by die mengsel om die soute in die water te behandel. 'n Buffer is nie nodig indien ammoniumsulfaat in die tenk mengsel gevoeg word nie.
- Voeg 'n gepaste benattingsmiddel (benatter) by die mengsel om die opname en effektiwiteit van die glifosaat te verhoog. Volg die aanbevelings op die etiket.

Smut is ook baie algemeen in variëteit NCo376 op die Suidkus. 'n Hele paar variëteite in die Middellande is vatbaar vir smut, Notas oor variëteite Dit is baie belangrik om lande waarin daar varïeteite wat veral N54, wat tans 'n baie gewilde variëteit is. As gevolg van intermediêr weerstandig of vatbaar vir smut is, te inspekteur smut vatbaarheid moet N54 baie goed bestuur word anders en ge-infekteerde opslag riet uit die land te verwyder. kan dit tot die ineenstorting van hierdie variëteit lei.

Во Onvolwasse smul swepe met klein, reguit blare, dun stokke en verlengde internodes.

Hy begin aan die begin van die seisoen wanneer die riet enkelhoogte is, en eindig wanneer die laaste ge-oeste land volle blaardak stadium bereik het. Dit is nie nodig om die hele plaas op een slag te doen nie. Dit neem gewoonlik 'n dag om 6 hektaar te doen en dus sal hy die hele plaas (365 ha) deur een seisoen kan doen. Hy doen elke land twee keer, en wanneer daar 'n probleem land is, drie keer deur die seisoen. Na die eerste lentereën wanneer die smut gewoonlik meer sigbaar is gebruik ek twee addisionele personeellede om hierdie taak te verrig (net vir twee maande) om die verspreiding van die siekte te verminder.

Korrekte selektiewe verwyderings prosedure

Begin deur eers die smutsweep te identifiseer. Indien jy vroeg begin en daar is net genoeg verlenging van een van die stokke en geen teken van spore nie, moet nie die stok af sny nie, 'n groter deel van die stok se blaaroppervlak is nou beskikbaar om die die chemikalieë op toe te dien.

Indien die smut sweep verleng het en daar is tekens van spore, sny die boonste deel van die stok met die sweep aan, so ver af as moontlik na onder, maar maak seker dat jy genoeg blare aan die stok los. Hou hierdie blare in jou hand met jou handskoene aan en maak seker dat jy die hele blaaroppervlak spuit. Smut is 'n sistemiese siekte en die glifosaat is ook sistemies, so die glifosaat sal werk op alle dele van die wortelstelsel waar daar smut infeksie is. Uit ondervinding het ons agter gekom dat wanneer die sweep baie laag afgesny is en daar geen blare gelos is nie, sal daar hergroei van die smut swepe voorkom van ander besmette lote wat nie aan dieselfde wortelstelsel verbind is nie.

Indien chemiese of fisiese selektiewe verwydering van smut besmette plante goed gedoen is en 'n streekswye benadering gevolg word, sal daar geen rede wees om variëteite te deregistreer as gevolg van smut nie. In klimaatsomstandighede in Swaziland wat baie deselfde is as hier, boer Swaziland boere vandag nog met NCo376, terwyl dit in die Mpumalanga area al meer as 'n dekade gederegistreer is.

Waar daar hoë vlakke van smut voorkom, is chemiese selektiewe verwydering die enigste effektiwe opsie om smut te beheer. 'n Mens kan nie jou hoop vestig op 'n super variëteit nie want selfs die weerstandbiedigste variëte kan swig of ondergaan. Selektiewe verwydering van smut moet daarom 'n jaarlikse praktyk op die plaas wees.

In die besproeide noordelike gebiede is N32 die mees algemeenste en ook die variëteit met die hoogste smut infeksie vlakke. Hierdie variëteit is ge-deregistreer (degazetted) en mag nie meer geplant word nie. N32 moet uitgeroei wees teen die einde van Februarie 2020. Smut kom ook algemeen voor in N25 en N14 in hierdie gebied, en in 'n mindere mate in N14, N19, N23 en N36.

WHAT'S THE STINK About Sulphur?

Z Dimpho Elephant, Sandile Mthimkhulu (Assistant Research Officers), Louis Titshall and Neil Miles (Senior Soil Scientists)

Sulphur (S) is a macronutrient found in soil that is essential for the synthesis of amino acids, proteins and vitamins in the sugarcane plant.

Insufficient sulphur can lead to reductions in yield and crop quality. In addition, there is a very strong interaction between S and nitrogen (N) in the growth of the crop. Adequate supplies of S are therefore of great importance in ensuring efficient response to applied N fertiliser.

Sulphur in soils of the SA sugar industry

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Sulphur deficiencies can be found in all soil types, most commonly in sandy soils with low organic matter. Of the sandy soils with low organic matter almost 80% exhibit sulphur deficiencies while around 33% of high organic organic matter soils are also deficient.

Unfortunately, since not many growers have been analysing the sulphur in their soils, these deficiencies have gone unnoticed.







Soil samples analysed by FAS from April – July 2018 revealed significant sulphur deficiencies in both low and high organic matter soils.

There are three main reasons for sulphur deficiencies in soil:

- 1. There is now an extensive use of high-grade sulphurfree fertiliser whereas, previously, sulphur was supplied through the wide use of sulphur-containing fertilisers such as superphosphate.
- 2. Less sulphur is being supplied via air pollution due to the advent of low-sulphur fuel and energy sources, and the increased use of emission-scrubbers in fossil-fuel burning power plants.
- 3. Frequent cropping due to shorter cycles, to suppress the stalk borer eldana, results in greater removal of S by the harvested crop.

Symptoms of sulphur deficiency in the plant

Sulphur deficiencies in the soil result in deficiencies in the potassium. Thus, adequate sulphur is necessary for ensuring sugarcane plant. These symptoms are evident in the leaves efficient response to these nutrients. and can often be confused with nitrogen (N) deficiency. As with N deficiency, sugarcane leaves will develop a pale-green Sulphur deficiencies can be addressed by the application of to yellow colour. However, the pale-green to yellow colour sulphur-containing fertilisers listed in the following table. develops on younger leaves in the case of sulphur deficiencies In addition, a range of additional S-containing products is whereas symptoms for N deficiency are noted on older leaves. available from the various fertiliser suppliers. Sulphur deficiencies can be readily confirmed with soil and leaf testing as they often occur where soil sulphur and leaf sulphur levels are below 15 mg/L and 0.14%, respectively.



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Routine sulphur testing now available!

SASRI's Fertiliser Advisory Service (FAS) has recently introduced a soil sulphur test which now enables the laboratory to routinely test for this nutrient in all soil samples submitted by growers. This test uses the same reliable extraction for phosphorus to detect levels of sulphur. The method uses technology which closely simulate the uptake of sulphur by the crop roots (similar to the FAS resin-P soil test). The advantages of this test are that it is accurate and precise; and because it is included in the routine package, there is NO EXTRA CHARGE to the grower!!!

Correcting sulphur deficiencies

Correcting sulphur deficiencies is vital for the crop. Sugarcane requirements are in the range of 20-50 kg S/ha for optimum yields. Importantly, sulphur application increases sugarcane uptake and utilisation of nitrogen, phosphorus, and potassium. Thus, adequate sulphur is necessary for ensuring efficient response to these nutrients.



Common sulphur (S) fertilisers and their corresponding S contents:

Fertilisers	S content (%)	Advantages	Disadvantages
Gypsum	13 - 23	 Supplies both Ca and S to the crop Cost effective source of both Ca and S Ameliorates subsoil acidity Ameliorates sodic soils 	• May leach cations such as K and Mg
Ammonium sulphate	24	 Supplies both N and S to the crop Suitable for alkaline soils 	• Acidifies the soil
Potassium sulphate	18	• Supplies both K and S to the crop	• More costly source for both K and S
Magnesium sulphate	13	• Supplies both Mg and S to the crop	• More costly source for both Mg and S
ʻsingle' superphosphate	10-14	• Supplies Ca, P, and S to the crop	• More costly source for both Ca and S
Elemental sulphur	99	Concentrated source of SSuitable for alkaline soils	 Acidifies the soil Finer particles (<0.1mm) are required (difficult to spread)

It is worth noting that gypsum is the cheapest form of S and rates of gypsum required to address subsoil acidity will generally supply enough S for the plant crop and several ratoons. When subsoil acidity is not a limitation, gypsum can still be applied at 500 kg/ ha (about 65 kg S/ha, assuming 13% S in gypsum) in the plant furrow. Lastly, gypsum is also a suitable amendment for alkaline soils with sodicity problems.

Other considerations:

- 1. On the coast, some sulphur will be supplied through sea-spray.
- 2. If you are using mill by-products and organic manures, all or part of the sulphur requirements may be supplied from these.
- 3. Sulphur leaches readily and transports cations (Ca, Mg, and K) to the subsoil.
- 4. Sulphur is also important for other crops such as macadamias, avocados, litchis, mealies and vegetables.
- 5. More frequent (annual) application of sulphur in sandy soils is advised because it leaches readily.

PEOPLE PASSION SCIENCE

Leadership lessons from a grower

🖉 Kerisha Raghunandan (Publications Officer)



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o Farm Profile

Name: Roseleigh Estates Owner: Rob & Tracy Gurney Area under cane: **1 405 ha** General variety distribution: N12 (30%) N54 (20%) N50 (10%) N48 (20%) Remainder - N37, N16, N31, N52. Current farm production: **75 000 tons cane**/ season Current average yield: **128 tons stalk/ha** Current average RV: 12.2% Average age at harvest: **19 – 20 months** Long-term average annual rainfall: **960 mm** Long-term average maximum temp: **23.7°C** Long-term average minimum temp: **13.4°C** Frost occurrence: Mild to severe frosting in valley bottoms (infrequent)





Farming in the 21st century is a combination of keeping up with farming technologies like GIS-based applications, equipment and vehicles, as well as adhering rigorously to known best management practices (BMP's). Maintaining this delicate balance can be tricky, as an 'over-focus' on either aspect may prove detrimental to the business.

Rob Gurney, the owner of Roseleigh Estates in Eston, is all too familiar with this modern-day juggling act. Roseleigh Estates is over 1 400 hectares in size. The farm was purchased by Rob's family back in 1916 and cane has been planted since 1926. Since the 90s Rob has expanded his operations by either buying or leasing neighbouring farms. While the original farm has high-potential humic soils that have been well-managed, the recent expansions into neighbouring farms came with several management challenges, one of the most common being high soil acidity.

"You can't build a big house on a poor foundation"

Over the years, Rob noticed a general decline on Roseleigh Estates in terms of the average yields and crop health, and an increase in eldana infestations. With the farm expansions, these averages worsened due to previous poor management on the newly acquired farms. Being of a curious mind, Rob decided to investigate further. From research reports, Rob realised that to ensure a strong, healthy, pest-resistant crop, one must first get the "foundation" right – that being the soil. Therefore, he

decided to go back to basics and together with his local Extension Specialist, Paul Botha, and SASRI Soil Scientist, Neil Miles, started managing his soils with a more "holistic approach".

Through soil sampling and evaluating soil profiles, Rob, identified high soil acidity on the farms. Rob is meticulous about record keeping, so the team also looked at the soil's history on the farm. Historically, acid saturation was in excess of 50%, immediately revealing a problem. Upon digging soil pits, it was evident that much of the acidity detected was in the sub-soil layer. The sugarcane plant cannot penetrate into the sub-soil layer if the acidity is in the region of 60% which will consequently reduce yields. In order to remediate this, Rob applies lime and gypsum according to the recommendations from FAS. His soils are now around 20% on average for the whole farming operation.

Holistic farm management

Rob's holistic approach to successful management of issues like sub-soil acidity involves a reliance on SASRI and FAS advice, motivating his farm managers and workers, and maintaining a passion for every aspect of agriculture. He firmly believes that these aspects are the basics to ensuring the success of the whole operation.



SASRI Soil Scientist, Dr Neil Miles (left) & Eston grower, Rob Gurney (right), discussing a soil profile.

Here are 10 "back-to-basic" principles from Rob:

- 1. Having the right attitude. This motivates management and workers. It is also important to ensure the team's goals are aligned to the goals of the business. Employ people with the right attitude and give them the correct training.
- 2. Adhering to SASRI's Best Management Practices. Rob recognises SASRI's responsibility to provide reliable and authoritative information based on sound research. He has full confidence in the recommendations provided by SASRI based on successes following their implementation on his farms.
- N48, N50, N52, N54 and a small bulking plot of N61.
- limits in mind.
- even the worst scenario.
- do.
- farming".
- to be innovative. Keep your passion for farming alive.

10. Have a relationship with every aspect of your business. Be connected to every facet of your farm, from your soils to your crop and importantly, your people.





3. Efficient nutrient management. FAS recommendations have revealed the nutrient shortages on the farms. Over 700 samples have been taken in the last 6 years. Rob's motto is that you cannot manage what you have not measured. Nitrogen and potassium applications have now increased along with lime and gypsum applications.

4. Planting new varieties. This has led to cutting cycles of 17 – 19 months and tonnages of between 116 – 128 t/ha. RV's are around 12%. RV's could be higher, but are affected by factors such as lodging, which cannot be avoided on the farm. New varieties include

5. Empowering farm management. Allowing the farm managers to take charge of most decisions on the farm and trusting that they will make the right choices. Also an acceptance that they will learn from their mistakes. These decisions are of course taken with financial

6. Planning for every scenario. Ensure that there is always a contingency plan in place for

7. Be passionate about farming. Get up in the morning knowing this is what you love to

8. Treat all management staff and workers with respect. Your management team are the ones setting the example to other staff members. Labour is your most important resource. "Growing the grass is the easy part. Managing people is one of the most difficult aspects of

9. Be inquisitive. Get more involved in the farm's activities. Play around with ideas and try

REDUCING THE CRAM ON THE CRUMB

LONG-TERM EFFECTS OF MECHANISED CROPPING SYSTEMS

Peter Tweddle (Agricultural Engineer) Sanesh Ramburan (Senior Crop Scientist , Variety Evaluation) and Sharon McFarlane (Sugarcane Pathologist)

South African Sugarcane Research Institute | *The Link - September 2018*

Over the last few years, an increasing number of growers in the Lowveld have been moving to mechanised cropping systems. With this in mind, some growers raised concerns at a SASRI RD&E workshop held in Komatipoort, about the long-term impact of mechanisation on soil compaction, ratoonability and disease development. In response, SASRI is conducting ongoing research to ensure that the effects of these systems are minimised.

Compaction

Research has shown that the impact of mechanisation on soil compaction and stool damage is exacerbated during wet field conditions. Yield losses can be as high as 50% over the point of impact. Fortunately, only a fraction of the field typically has such traffic. In addition, seasonal soil moisture changes can reduce this occurrence on an annual basis. Yield losses on an average field basis, taking variable moisture conditions into account across the season and the proportion of the field trafficked, has been estimated for a variety of typical systems. A range of 1-9% yield loss has been estimated between the least and most damaging systems. A chopper harvesting system, which was deemed to be one of the lowest impact harvesting systems available, was estimated to be one of the most damaging due to the magnitude and extent of heavy traffic passing throughout the field. The yield loss was estimated at approximately 8-9%.

Further reading: SASTA paper, "Estimating Crop Production Losses for Various Infield Sugarcane Extraction Systems" by Tweddle et al. (2015).

Ratoonability

From a rationability perspective, the damage caused to the stool has been established primarily as a function of poor field conditions, crop conditions, harvester selection and setup combined with chopper harvester operation management. The greatest loss is caused through a mismatch of various sub factors linked to these categories.

Further reading: A comprehensive overview is provided in the 2016 RD&E communiques (Issue 20).

Reducing negative impacts

The least impact is generally when the soils are the driest, however, less structured soils of lower clay percentage tend to be vulnerable under most field conditions. Despite such variability in soils and field conditions, some principles tend to be consistent to minimise compaction and stool damage, namely:

Avoid trafficking wet soils.

- Practise controlled traffic over the inter-rows and away from the crop rows.
- Use equipment that has the lowest impact with respect to soil contact pressure. This is achievable through low axle mass and low tyre inflation pressure.

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- Ameliorate compacted soils. See *SASRI Information sheet* 6.2.
- Improve soil health through practices such as break cropping, leaving mulch layers and increasing organic matter return. This will assist in the recovery of structure and some degree mitigate against compaction. Soil management strategies are also provided in SASRI Information sheet 14.1.

Disease spread

Research in Australia has shown that RSD is spread rapidly by mechanical harvesters. In one trial, up to 70% of the stools in the harvested rows tested positive in the following crop. They were able to prevent the spread of RSD by cleaning all parts of the harvester that came into contact with cut cane using a high pressure washer before spraying with a disinfectant. However, while harvester decontamination is recommended in Australia, it is seldom practised because the operators are reluctant to lose time when moving between fields and farms. Harvester decontamination is also not practised in Brazil but in both Australia and Brazil, fields are replanted more regularly than in SA. With fewer harvests, substantial RSD spread in these countries is less likely and the risk of significant yield reductions associated with high RSD incidence is minimised.

Currently, SASRI, RCL and a contractor in the Lowveld are involved in discussions on the research and procedures required to reduce the risk of spread. There is also a project on decontamination procedures in trials in Komati and Bruyns Hill. Outcomes of this research will be presented soon.

Optimal field size

Providing optimal solutions are site-specific and require a good understanding of current and future needs. The solution would need to take into account factors such as farm boundaries, irrigation systems, slopes, extraction routes and harvesting systems. Integrating all the demands of these factors with varying goals requires a number of compromises that have different management priority ratings. These are typically built into a carefully considered and well-crafted land use plan in conjunction with the grower where synergy between agronomic, hydrological and operational constraints are formulated.

Varietal characteristics

Crop characteristics suited to mechanised harvesting are wellknown (e.g. stalk straightness, fibre, population, length of top etc.). SASRI's current irrigated varieties will be "rated" for each of these traits and an index of suitability to mechanised harvesting will be developed. These ratings will be included in the variety information sheets. It is important to note that these will be "theoretical" ratings. Actual, observed responses of varieties to mechanical harvesting need to be quantified from commercial observations.

LANGTERMYN EFFEK VAN GEMEGANISEERDE OESSISTEME

Peter Tweddle (Landbou ingeneur), Sanesh Ramburan (Senior gewaswetenskaplike, kultivar evaluering) en Sharon McFarlane (Suikerriet Patoloog)

South African Sugarcane Research Institute | The Link - September 2018

Oor die laaste paar jaar het 'n toenemende aantal boere in die Laeveld oorbeweeg na gemeganiseerde oessisteme. Met dit in aggenome het 'n groep boere by 'n onlangse RD&E werkswinkel in Komatipoort hul kommer uitgespreek oor die langtermyn effek van meganisasie op grondkompaksie, ratoenbaarheid en siekte ontwikkeling. In reaksie hieroor is SASRI besig met deurlopende navorsing om die effek hiervan te minimaliseer.

Kompaksie

Navorsing het getoon dat die impak van meganisasie op grondkompaksie en stronkskade vererger word onder nat veld toestande. Seisoenale grondvog veranderinge kan oor 'n jaarperiode hierdie effek verlaag. Oesverliese kan tot so hoog as 50% wees by die punt van impak. Gelukkig word slegs 'n gedeelde van die land aan hierdie verkeer bloodgestel. Oesverlies op 'n gemiddelde veld basis met in agneming van veranderlike grondvogtoestande oor die verloop van 'n seisoen en die gedeelte van die land waar verkeer plaasvind is vir verskeie sisteme vasgestel. 'n Oesverlies van 1-9% word geskat tussen die sisteem wat die minste skade en die meeste skade berokken. Gemeganiseerde oessisteme is aanvanklik beskou as sisteme met die laagste impak maar die teendeel is bewys as gevolg van die herhaalde verkeer van swaar voertuie op dieselfde land. Oesverliese word beraam op ongeveer 8-9%.

Verdere leesstof: SASTA document, "Estimating Crop Production Losses for Various Infield Sugarcane Extraction Systems" by Tweddle et al. (2015).

Ratoenbaarheid

Vanuit 'n ratoenbaarheid perspektief is die stoelskade oorsaak primêr vasgestel as 'n funksie van swak land- en gewaskondisies, die keuse van meganiese oessisteem wat gepaard gaan met die bestuur van die oessisteem. Die grootste verlies is gekoppel aan 'n wanaanpassing van verskeie sub-faktore gekoppel aan hierdie kategorieë.

Verdere leesstof: 'n Volledige oorsig word voorsien in die 2016 RD&E skrywes (Uitgawe 20).

Vermindering van negatiewe impak

Gewoonlik is die laagste impak onder droeë grondtoestande. Minder gestruktuurde grondtipes met 'n lae klei-inhoud persentasie is egter kwesbaar onder meeste landkondisies. Ten spyte van die wisselende grond en land toestande is daar standaarde wat konstant bly om kompaksie en stronkskade te beperk:

- Vermy verkeer op nat grond.
- Beoefen beheerde verkeer buite/weg van die plantlyn
- Gebruik toerusting wat die laagste impak het ten opsigte van grondkontak druk. Dit kan behaal word deur gebruik te maak van lae asmassas en lae banddruk.
- Beperk die verkeer deur die land en gebruik dieselfde verkeer posisie deur die land elke seisoen.

- Belug gekompakteerde grond. *Sien SASRI Informasieblad* 6.2.
- Bevorder grondgesondheid deur gebruik te maak van 'n alternatiewe gewas, los van dekmateriaal en die verhoging van organise material. Dit sal die herstel van die grondstruktuur aanhelp asook die effek van kompaktering teenwerk. Grondbestuurspraktyke word gedek in die SASRI Informasieblad 14.1.

Siekteverspreiding

Navorsing in Australië toon dat RSD verspreiding bespoedig word deur meganiese oessisteme. In een proef is gevind dat tot 70% van die stronke besmet is in die daaropvolgende seisoen. Hulle het gevind dat die skade peperk kon word deur alle gedeeltes van die oesmasjinerie wat in kontak was met gekapte riet met 'n hoëdrukspuit te was voordat 'n ontsmettingsmiddel aangespuit is. Alhoewel oesmasjien dekontaminasie aanbeveel word in Australië, word dit selde toegepas aangesien operateurs nie die tyd tussen lande en plase wil verloor deur eers die masjinerie te was nie. Oesmasiien dekontaminasie word ook nie in Brasilië toegepas nie, maar in beide lande word herplant van lande meer dikwels toegepas as in Suid Afrika. Met minder oeste per plantsiklus word die verspreiding van RSD aansienlik verlaag in hierdie lande en die risiko van verlaagde oesopbrengste as gevolg van RSD word aansienlik verminder.

Tans is SASRI, RCL en 'n kontrakteur in die Laeveld betrokke met gesprekke om navorsing en prosedures daar te stel om die risiko van verspreiding te beperk. Daar is ook 'n dekontaminasie projek by Komati en Bruins Hill om prosedures vas te stel, die uitkoms van hierdie projek sal binnekort bekend gemaak word.

Optimale landgrootte

Om optimale oplossings te bied verg 'n deeglike begrip van die area, huidige en toekomstige benodighede. Die oplossing sal in ag neem faktore soos plaasgrense, besproeiingssiteme, helling, ekstraksieroetes en oessisteme. Integrasie van al hierdie faktore met verskeie doelwitte sal 'n aantal kompromieë met verskillende bestuursprioriteite en praktyke teweeg bring. Hierdie word tipies in 'n wel deurdagte land gebruikersplan (LUP) in samewerking met die boer saamgestel om 'n sinergie te behaal tussen argenomiese-, hidrologiese- en bestuurspraktyke saamgestel.

Kultivarkarakteristieke

Gewaskarakteristieke om aan te pas by meganiese oessisteme is wel bekend (bv. reguit riet, veselinhoud, rietpopulasie, lengte van kroon ens.). SASRI se besproeiingskultivars sal vir elkeen van hierdie parameters ge-ewalueer en gegradeer word en 'n indeks sal saamgestel word om die geskiktheid vir meganiese oes aan te dui. Hierdie graderings sal ook op die kultivarinligtingsblad aangedui word. Hierdie sal egter teoretiese graderings wees. Behaalde aangetekende reaksies van verskillende kultivars ten opsigte van meganiese oessisteme sal van komersiele waarnemings bepaal moet word.

Phillemon Sithole (Agrometeorologist) Abraham Singels (Principal Agronomist)

Outlook

Industry rainfall was mostly well below average for the first two months of 2018, followed by good rainfall in March. Autumn had near-normal rainfall for most parts, while 2018 winter season was very dry across the industry. The situation has been most dire in the South Coast region where rainfall, with the exception of March, was well below normal (Fig. 1). Winter temperatures were generally lower than the past two seasons, particularly in July when a few frost events were recorded in the Midlands region.

Review

Irrigation water supplies in most of the irrigated areas remain stable and much better than the same period in 2017. However, levels in the Pongolapoort and Goedertrouw dams in Zululand remain low at below 50% of full capacity. The El Niño-Southern Oscillation (ENSO) is currently in a neutral phase, but is expected to develop into the El Niño phase by spring persisting through the coming summer season. The impact of the El Niño on the 2018/19 summer rainfall is not clear at this stage, but an El Niño is typically associated with drier and warmer conditions in mid to late summer, especially for the northern parts of the industry.

The South African Weather Service (SAWS) predicts normal to above normal spring and early summer (October to December) rainfall. The International Research Institute for Climate and Society and European Centre for Medium-Range Weather Forecasts both predict normal rainfall over the same period in Kwazulu-Natal, and normal to below normal in Mpumalanga.



Figure 1: Regional average monthly total rainfall from January to July 2018 compared to the monthly long term mean (LTM).



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