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PULA
IMVULA

GROWING FOOD • PEOPLE • PROSPERITY

GRAIN SA MAGAZINE FOR DEVELOPING FARMERS

PULA IMVULA

Editorial team

PHAHAMA GRAIN PHAKAMA: PRETORIA
PO Box 74087
Lynnwood Ridge
0040
■ 086 004 7246
■ www.grainsa.co.za

EDITOR AND DISTRIBUTION
Liana Stroebel
■ 084 264 1422 ■ Office: 012 943 8285
■ liana@grainsa.co.za

PUBLISHING PARTNER
INFOWORKS MEDIA PUBLISHING
Assistant editor – Louise Kunz
■ louise@infoworks.biz
Team leader – Johan Smit
■ 082 553 7806 ■ Office: 018 468 2716
■ johan@infoworks.biz
Publishing – Elizma Myburgh, Jesseme Ross

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PGP Farmer Development Programme

REGIONAL DEVELOPMENT MANAGERS
Jacques Roux
Eastern Free State (Bethlehem)
■ 082 377 9529 ■ jacques.rouxjr11@gmail.com
Johan Kriel
Western Free State (Bloemfontein)
■ 079 497 4294 ■ johank@grainsa.co.za
Jerry Mthombothi
Mpumalanga (Mbombela)
■ 084 604 0549 ■ jerry@grainsa.co.za
■ Office: 012 943 8289 ■ Smangaliso Zimbili
Mpumalanga/KwaZulu-Natal (Louwsburg)
Lanalie Swanepoel (Office assistant)
■ Office: 012 943 8289 ■ vryheid@grainsa.co.za
Graeme Engelbrecht
KwaZulu-Natal (Dundee)
■ 082 650 9315 ■ graeme@grainsa.co.za
■ Office: 012 943 8287 ■ Nkosinathi Mazibuko
Phumzile Ngcobo (Assistant: Dundee)
■ 060 477 7940 ■ phumzile@grainsa.co.za
■ Office: 012 943 8287 ■ Nkosinathi Mazibuko
MJ Swart
Western Cape (Paarl)
■ 072 090 7997 ■ mj@grainsa.co.za
■ Office: 012 943 8285 ■ Hailey Ehrenreic
Du Toit van der Westhuizen
North West (Lichtenburg)
■ 082 877 6749 ■ dutoit@grainsa.co.za
■ Office: 012 943 8290 ■ Lebo Mogatlanyane
Eastern Cape (Kokstad & Mthatha)
Cwayita Mpotyi (Office assistant: Mthatha)
■ 078 187 2752 ■ umthata@grainsa.co.za
■ Office: 012 943 8277

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CONTENTS

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A WORD FROM... *The research team*

SOUTH AFRICAN GRAIN AND OILSEED PRODUCERS GRAPPLE WITH CHALLENGES AFFECTING THEIR PRACTICES, INCLUDING MARKET PRICE FLUCTUATIONS, ESCALATING PRODUCTION COSTS, CLIMATE VARIABILITY, AND THE IMPERATIVE FOR SUSTAINABLE FARMING.

Organisations like Grain SA play a crucial role in supporting farmers to achieve profitable and sustainable production. Grain SA's diverse departments, including applied economics and Phahama Grain Phakama (PGP) for farmer development, as well as the research department, contribute to these efforts.

The Research Department is exploring cutting-edge developments in grain research. The team collaborates across sectors to conduct innovative and applied research in disciplines or consortia such as plant health, climate resilience, crop improvement, cultivar trial evaluations and human capital development, addressing crucial needs for national food security.

Here is an update on the Plant Health Consortium research activities:

- Grain SA, in collaboration with the Department of Science and Innovation, the Technology and Innovation Agency, and the Maize Trust, has established a Diagnostic Clinic at the Forestry and Agricultural Biotechnology Institute (FABI). This clinic serves three purposes: The accurate identification of pests and diseases, providing the industry with insights into pest and disease distribution, and guiding research priorities to ensure proactive and relevant research. The research team at Grain SA can facilitate connections with the Diagnostic Clinic.
- The team is engaging with weed researchers on the escalating challenge of herbicide-resistant weeds. A detailed article on weed issues will be featured in the *SA Graan/Grain* magazine.
- A collaborative project is underway to evaluate the efficacy of potential chemicals to control Sclerotinia diseases affecting the oilseeds industry.
- Farming communities from various regions of the country are reporting more cases of cutworms affecting maize production. The research team is currently having engagements with experts from North-West University to address these challenges.

– Grain SA's research team consists of Dr Godfrey Kgatle (research coordinator) and Dr Miekie Human (research and policy officer).

GIBBERELLA STALK ROT
is a serious threat

STALK ROT RESULTS IN YIELD LOSSES DUE TO IMPAIRED GRAIN FILLING, PREMATURE SENESCENCE AND LODGING (LIMITS PRODUCTION AND HARVESTING OF EARS). IN ADDITION, MYCOTOXINS PRODUCED BY THESE FUNGI CAN RENDER INFECTED STALK TISSUES UNFIT FOR ANIMAL CONSUMPTION. IT IS A COMMON PROBLEM IN MAIZE PRODUCTION AREAS WORLDWIDE.

Gibberella stalk rot is caused by fungus pathogens within the *Fusarium graminearum* species complex (FGSC). The primary crop hosts of FGSC include maize, oat, barley, rye, sorghum and wheat.

ECONOMIC IMPORTANCE

Although it is difficult to estimate precise yield loss, FGSC stalk rot can cause extensive economic losses. This is due to premature plant death, interference with translocation of water and nutrients because of fungal growth on xylem and phloem tissues in the stalk during grain fill (poor grain fill) as well as lodging of plants due to weakened stems during favourable environmental conditions.

Kernels on affected ears are smaller than healthy plant grain and are often loose on the ear (can be quantified by using thousand kernel weight as a parameter). Lodging of infected plants complicates mechanical operations. Plants then need to be picked up and harvested by hand, which in turn increases harvest time, labour and input costs.

SYMPTOMS

- Symptoms of Gibberella stalk rot are like that of other stalk rots, but can be distinguished by its pink/red discolouration of the infected plant tissue (**Photo 1**).
- Affected plants wilt and healthy, light green leaves turn dull green and may eventually turn brown.
- The lower stalks become straw-coloured, while the internal pith disintegrates, leaving only the vascular bundles partially intact.
- The disintegration of stem tissue causes stem lodging (**Photo 2**) and rotting of the crown (**Photo 3**) and root system leads to root lodging (**Photo 4**).
- Small, round, black fruiting bodies (perithecia) may be produced superficially on the stalks, often at the internode of the stalk.

Stalk infections may occur during the vegetative growth stage, but the symptoms thereof generally manifest shortly after pollination and at onset of grain fill and develop at the origin of the leaf sheaths or around the brace roots. The fungus may also infect the plant through its roots and then grow up into the lower stem.

CONTROL

Crop rotation

A maize-based crop rotation system with legumes or sunflower will allow maize stubble to break down and not provide a suitable host for the fungus to survive on, thereby reducing the inoculum. However, recently published work indicates that the possible host range on which the FGSC may infect or survive is far wider than originally thought.

Resistance

Hybrids with resistance to other stalk rots (such as Diplodia) may also show resistance to Gibberella stalk rot. However, this resistance may rather be due to breeders that focused on plant stalk strength and standability and not directly to the disease. In fact, the stronger stalks may increase the survival of stalk rot pathogens because these stalks break down slower and the natural decay process is delayed.

1

Typical red discolouration of the stem by FGSC which results in Gibberella stalk rot.

2

Plants showing stalk lodging due to Gibberella stalk rot in the Winterton area.

Although a lot of effort has been made to select hybrids with stalk rot resistance, the main consideration is still high yield production. Genotypes that produce higher yields tend to have bigger ears, which act as larger sinks and a greater demand for carbohydrates in the plants. The higher demand because of the larger ears results in reduced carbohydrate levels in the lower stem, which predispose the plant to stalk rot. The balance between breeding for resistance to stalk rot and breeding for high yield is, therefore, delicate.

Nutrients and stress reduction

Common stress conditions include high nitrogen and low potassium fertility and a high soil moisture or water logging in the mid to late season following a dry, early season experienced during grain fill. A high incidence of leaf diseases causes a reduction of the photosynthetic area of the plant, adding further stress and predisposition to stalk rot. Physical damage creating wounds (insects or hail) that allow the pathogen to enter the maize plant may also predispose the plant to stalk rot.

Cultural practices that reduce plant stress also reduce incidence of stalk rot. Regenerative agriculture (conservation tillage) practices that reserve soil moisture and improve soil nutrient levels may reduce plant stress but may, on the other hand, increase inoculum levels. This play-off between soil and moisture conservation and increased disease levels needs to be breached with innovative research efforts.

Chemical control

There are no fungicides that are directly registered for the control of Gibberella stalk rot. However, fungicide applications for the control of leaf diseases may reduce stress on the plant, thus lessening stalk rot severity and ultimately lodging.

Biological control

There are several biological products presently marketed in South Africa that are alleged to reduce Gibberella stalk rots, generating interest by agronomists and producers. However, the efficacy of these products needs to be confirmed in independent studies by impartial institutions to confirm or refute the claims of efficacy.

Biological agents should therefore be tested under field conditions with accurate disease quantification techniques such as qPCR to quantify the amount of the target fungus within the stalk.

Even though many biological products show antagonistic properties against certain fungal pathogens in the laboratory, it needs to be confirmed in an environment where soil factors vary and may contain a wide range of soil microbes that may influence this efficacy. It is recommended that producers request field data that confirm efficacy before using these products.

Scan the QR code to read the complete article.

CONCLUSION

In conclusion, stalk rots still require a lot of research aimed at developing integrated disease management systems. Research is also required on *Fusarium* spp. of the FGSC involved in Gibberella stalk rots as well as the epidemiology of these species before integrated systems that are based on accurate scientific data can be developed. ■

DR BRADLEY FLETT AND DR BELINDA JANSE VAN RENSBURG, BOTH FROM THE ARC-GRAIN CROPS, POTCHEFSTROOM. FIRST PUBLISHED IN SA GRAAN/GRAIN, SEPTEMBER 2023.

3

Typical red crown symptoms of Gibberella crown rot.

4

Typical symptoms of Gibberella root rots showing red discolouration of maize roots is visible.

NAVIGATING OPTIONS:

THE ARTICLE IN THE JANUARY/FEBRUARY ISSUE FOCUSSED ON THE BACKGROUND OF HEDGING. THIS ARTICLE WILL DELVE DEEPER INTO PUT AND CALL OPTIONS. IT NOT ONLY CLARIFIES THE DISTINCTIONS BETWEEN THEM, BUT ALSO OFFERS A PRACTICAL EXAMPLE FOR BETTER UNDERSTANDING.

Before delving into options, it's essential to grasp several key terms:

- **Underlying assets**: These are commodities such as maize, soybeans and wheat.
- **Premium**: The cost paid by a farmer to purchase a contract.
- **Strike price**: The predetermined price at which the contract can be exercised.
- **Break-even point**: This is the threshold at which the price movement results in the profit being equivalent to the premium paid, thus breaking even.

PUT OPTIONS

A put option is a contract granting the buyer the right, without an obligation, to sell a designated underlying asset (such as maize) at a predetermined price within a specified time frame.

This instrument shields farmers from potential price declines, even if they anticipate price rises. If prices indeed fall, the put option not only safeguards the farmer from losses but also sees an increase in value. Conversely, if prices rise as anticipated, the farmer retains the ability to engage in the market at the elevated price level.

CALL OPTIONS

A call option is a contract that grants the buyer the right, without an obligation, to purchase a designated underlying asset (such as maize) at a predetermined price within a specified time frame.

This instrument aids millers in safeguarding against potential price hikes, even if they anticipate price declines. If prices indeed increase, the call option not only shields the miller from the higher prices but also experiences an appreciation in value. Conversely, if prices decrease as anticipated, the miller still retains the opportunity to engage in the market at a lower price point.

A PRACTICAL EXAMPLE

Consider the following scenario for the 2023/2024 production season: A farmer in Mpumalanga intends to cultivate 50 hectares of yellow maize and is set to buy inputs for the planting season in September 2023. He estimates that his input expenses will amount to R21 000/ha. With the ten-year average yield for yellow maize standing at 6 t/ha, the current price for the July 2024 contract is R4 500/t. The cost of purchasing a put option is R300/t.

Given:

- Crop: Maize
- Hectares: 50
- Input cost: R21 000/ha
- Average yield: 6 t/ha
- Current July 2024 contract price: R4 500/t
- Price of put option: R300/t

Given input expenses of R21 000/ha and a price of R4 500/t, a farmer must sell approximately 5 t/ha to offset input costs. Consequently, a farmer will opt to purchase a put option with a strike price of R4 500/t, incurring a cost of R300/t.

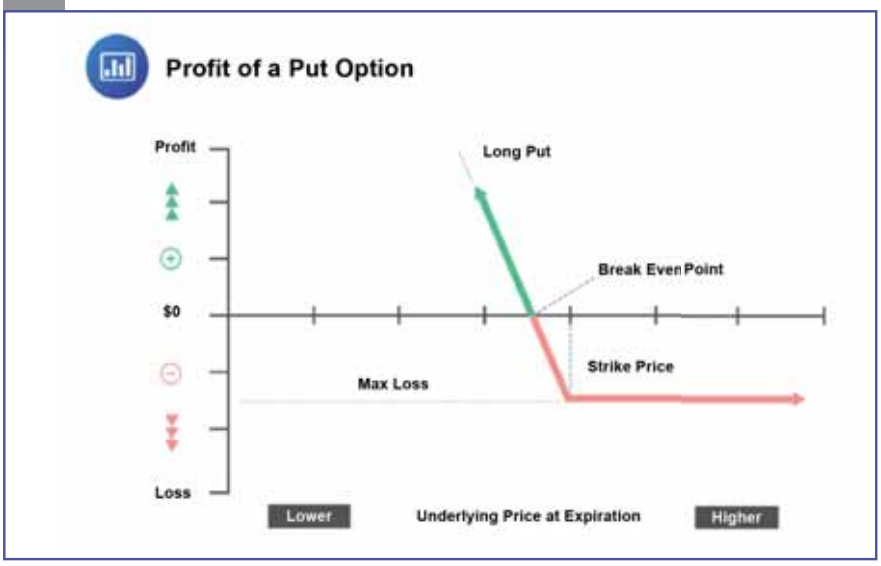
Scenarios

1. If prices remain the same at R4 500:

Price received = R4 200 (R4 500 - R300)

The farmer will close out his position and receive R4 200, calculated as follows: Subtracting the premium (R300) from the strike price of

1 ***Put option.***



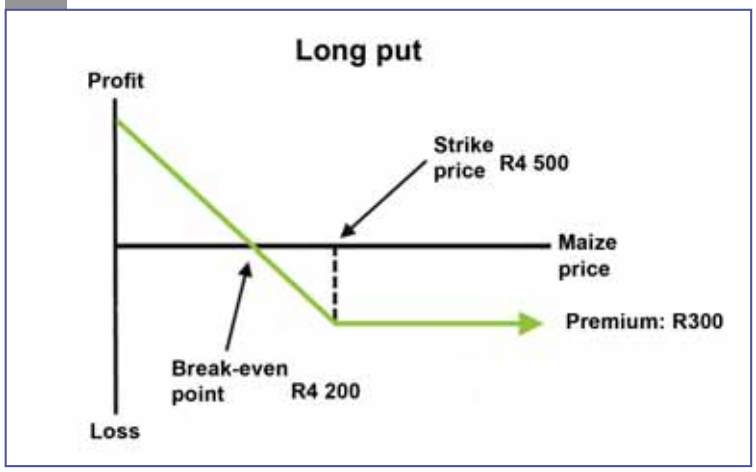
Source: Analyst Prep

Choosing a put or call

2 ***Call option.***

Source: Analyst Prep

3 ***An example of a practical scenario for the 2023/2024 production season.***



Source: Analyst Prep

the option (R4 500), then selling his maize in the market at R4 500/t.

2. **If the price falls to R4 000: Price received = R4 200 (R4 500 - R300)**
   The farmer will opt to exercise his option to sell at R4 500/t. Consequently, he will receive R4 200/t, calculated by subtracting the premium (R300) from the strike price (R4 500) upon exercising his option and selling the maize.
3. **If the price increases to R5 000: Price received = R4 700 (R5 000 - R300)**
   The farmer will choose not to exercise his option. Instead, he will sell his maize on the open market at the prevailing market price (R5 000). However, he must still fulfil the premium obligation (R300).

CONCLUSION

Understanding options can be somewhat challenging, but they offer significant benefits to farmers during uncertain periods, aiding in risk mitigation when employed effectively. While options present both advantages and disadvantages, employing them within a sound strategy minimises the likelihood of substantial losses. ■

JOHAN TEESSEN, ECONOMIST INTERN, GRAIN SA AND CHRISTIAAN VERCUEIL, AGRICULTURAL ECONOMIST, GRAIN SA

WORDS OF WISDOM

A country without a farmer is like a tree without a fruit.

~ MBALI NWOKO
CEO of Green Terrace, a BBBEE Level 1 agribusiness

Do **MAINTENANCE** before harvesting

A PRE-HARVEST COMBINE MAINTENANCE CHECKLIST CAN HELP A LOT WITH THE PREPARATION FOR THE COMING HARVEST SEASON. A CHECKLIST SHOULD COVER ANYTHING THAT HAS BEEN OVERLOOKED OR GONE UNINSPECTED SINCE THE LAST HARVEST – TECHNOLOGY, FLUIDS, FILTERS AND MORE.

For any combine owner, productivity is important. Focus on the following productivity-enhancing tips and make sure your combine is ready to hit the fields this harvest season.

DO AN EFFICIENCY CHECK

When the harvest is going smoothly, everything seems wonderful, but are you really achieving your highest yields if your equipment is not properly set up and calibrated for a peak performance? Grain lost on the ground is lost forever.

The following three steps will ensure that you get the most grain possible in the tank:

1. Invest in paddle tines, especially when harvesting soybeans and wheat: With their unique 'five-finger' design, anti-debris build-up and easy-to-install snap-on features, paddle tines can help to gather short or sparse crops more accurately. This means greater returns and improved feeding of crops such as soybeans and wheat.
2. Check your feeder latch: Before you harvest, check your feeder latch and make sure it has some preload in one of the notches when the head is attached. This helps to strengthen the clamp between the head and feeder, so there are no crop loss gaps.
3. Clean your feeder house connections: Cleaning and inspecting your feeder house and feeder house connections and adjusting the feeder chain to its optimal tension will help you to improve efficiency out in the field. Keep the feeder running in a high position for maize or soybeans and low for wheat.

INSPECT AND PROTECT TO MAXIMISE UPTIME

The only thing worse than sub-optimal equipment performance is an equipment breakdown. You may have done everything in your power to harvest at the right time and in the right field conditions, but if your equipment breaks, all your preparation and planning can quickly go to waste.

Protect your equipment

Take these equipment-protecting tips into consideration before you head out this harvest season:

- **Inspect machine concaves:** Inspecting machine concaves can safeguard against poor threshing. Not sure where to start? Consult your dealer for a thorough equipment examination.
- **Know when to replace rasp bars:** Replacing rasp bars at the right time is one of the most effective ways to prevent grain damage. Signs such as twists, breaks, chips, cracks or other damage can mean a replacement is due. Here is the best way to tell: If you can't read the number on the bolt head anymore, it's time to change your rasp bar with a new one.
- **Stalk stompers:** Stalk stompers are designed to protect tyres from costly stubble damage, helping you to avoid downtime and improving your overall harvest performance and residue management.
- **Replace fluids and filters:** They might not be flashy, but fluids and filters are some of the most important factors when it comes to maintenance prevention and equipment protection. Make sure to invest in genuine fluids and filters.
- **Make use of the grease gun and grease all the grease nipples.** If the nipple is damaged, replace it immediately.
- **Replace difficult-to-reach fanbelts** if you are expecting them to break during the harvesting season.
- **Clean and inspect** the combine harvester properly.

Don't forget the technology

- Technology is critical to achieving peak productivity during the harvesting season. It is important to make sure your systems are ready to go with the latest software updates. Consider investing in the latest harvesting technology for greater efficiency.
- Fine-tuning automated settings can help maximise the amount of high-quality grain you harvest. For instance, AFS Harvest Command™ makes harvesting simple by reducing the number of functions producers need to monitor from twelve to just three.

1

A cutter bar.

2

Clear instructions appear on the header.

The slip clutch on an older header.

A sunflower header.

Check with your dealer

You know your equipment best, but your dealer can help you check blind spots to avoid otherwise unseen problems. If you want to make sure you are completely ready for harvest season this year, get your list double-checked by your local dealer.

LET'S GET DOWN TO MAINTENANCE

The maize, sunflower or soyabean headers all are some of the most important components to harvest a crop effectively. If there is wear and tear, it will influence the combine harvester's performance and some kernels will end on the ground.

The cutter bar

Make sure that the knives, guards, skid plates and hold-down clips are in good working order on the cutter bar. Remember, if you replace the knives, the guards should usually also be replaced. Make sure that the cutter bar (**Photo 1**) stays in position and that it can move freely. It is also important to inspect the moving parts of the header.

Instructions

- It is important to read the header manual (**Photo 2**) and to do the maintenance as required.
- Check the oils in the gearboxes, as well as the tension on the fan-belts and driving chains.
- Oil and grease the power shafts.
- Replace the oil in the gearboxes as required. Grease may be a cheap lubrication fluid, but it can save you a lot of money.

Clutches

If you have an older type of header (**Photo 3**), checking the different clutches and ensuring that they are set according to the manuals can save you a lot of money.

Maintenance on headers

- **Sunflower header** (**Photo 4**)

- Make sure that the catch boards are in place and set according to the row widths.
- Ensure that the boards are tightened and set to catch the sun-flower heads.
- The cutter bar should be working efficiently.

The feed auger fingers, bushings, plastic guides, pins and sleeves must not be worn out, as this may influence the work of the header. If these components are worn out, the material cannot move effectively from the header to the combine machine.

- **Maize header** (**Photo 5**)

On the maize header the important points to check are:

1. The **deck plates** must be set to catch the cobs and kernels from falling on the ground. If the deck plates can be adjusted, make sure that they can move freely. Look for wear and tear on the links to adjust the deck plates.
2. The **gathering chain** is the chain that moves the material to the header feed auger. Check the tension on the chain and the wear and tear on the chain and sprockets. Make sure that the springs that keep the tension are free to move and are not rusted. Make sure that the drive gearbox is filled with oil or grease.

The deck plates, gathering chain and snapper rollers of the maize header.

Snapper rollers on a maize header.

A new-generation replacement gathering chain.

If you must replace the gathering chain, consider the one from 360 Yield Centre (**Photo 6**). It is a gathering chain equipped with brushes to firstly absorb the shock of the heads on the cover plates, and secondly to catch the loose kernels and feed them to the auger. This will help a lot with kernel loss.

3. **The snapper rollers** (**Photo 7**) are responsible for pulling the plant through the header. Make sure that the snapper rollers are set according to the manufacturer's norms. Ensure that the speed of these rollers is according to the harvesting speed. In the case of high-density maize, 360 Yield Centre markets a product called a chainroll. This snapper roller tears the plant material so that the material can decompose quicker. ■

PIETMAN BOTHA, INDEPENDENT AGRICULTURAL CONSULTANT

STORE SEED correctly for future use

ACCORDING TO THE SOUTH AFRICAN NATIONAL SEED ORGANISATION (SANSOR), THE CONDITIONS UNDER WHICH SEED IS STORED ARE A DECISIVE FACTOR IN THE YIELD POTENTIAL OF THE SEED.

Factors that have an influence on the yield potential of seed include the following:

- **Handling of seed**: Do not throw down sacks with seed, as rough handling cause the seed to burst or be damaged. internal damage is often only visible after germination, and leads to reduced vigour and yield.
- **Longevity**: As seeds age, they gradually lose viability. Maize and sunflower seed can be stored for two to three seasons, while the seeds of crops like soybeans and groundnuts have a shorter life.
- **Moisture content**: An increase in moisture content increases the deterioration of seed. Farmers growing seed crops should dry the seed as soon as possible after the harvest and store it in sealed containers.
- **Storage conditions**: Seed vigour deteriorates more quickly when storage conditions are not optimal. seed degradation is caused by high temperatures and high seed moisture levels in particular – which can be caused by high relative humidity in the store.
- **Temperature**: The storage life of seed increases as the temperature decreases. Seed should be stored at about 15°C, but if possible rather in cold storage at approximately 4°C.

STORAGE OF SEED ON FARMS

Here are a few useful tips on the storage of seed on farms:

1. The storage facility should have a solid floor.
2. Seed should be packed on pallets because of a high potential for floor contamination due to water or other materials that may leak.
3. Seed should preferably not be stacked higher than 2 metres, as the seed at the bottom can be damaged by pressure from above.
4. The store should be dry and cold.
5. Place a storage container inside the store in which to keep the seed.
6. Ensure that there is air flow to eliminate high temperatures and humidity.
7. Make sure that the roof does not leak to prevent possible germination and mould.
8. Inspect the seed regularly for the presence of insects, moths and weevils.
9. Protect the seed against rodents like rats. Liquid bait works the best in stores. Conduct regular inspections and supplement the bait when necessary.
10. Leave a space of at least 1 metre between the seed and other substances like chemicals or fertiliser. Also leave a space open between the seed and the sides of the storage facility to promote ventilation.
11. Keep the seed store free of dust and rubbish.
12. Do not remove labels from containers and keep seed from the same seed lots and varieties together.
13. Keep the seed labels until after the seed has been harvested so that it is easier to identify the problem if there is one.
14. If seed has been stored for a long period, have it tested by a registered seed-testing laboratory before it is planted.

This is an adapted version of an article which appeared in SA Graan/Grain's Grain Guide. ■

KARINA MULLER; SA GRAAN/GRAIN EDITORIAL TEAM

GUIDELINES FOR healthy beef cattle

LICKS MUST BE ADAPTED TO THE NEEDS OF THE ANIMALS AND THE NUTRITIONAL VALUE OF THE AVAILABLE PASTURES. IT SHOULD NOT BE REGARDED AS A SOURCE OF FOOD, BUT AS SUPPLEMENTARY FEED.

The natural protein in licks are particularly beneficial for young, growing animals and cows during pregnancy and lactation. Therefore make sure that the licks provided are absorbable and meet the nutritional needs of the livestock.

Providing lick to the animals should also make economic sense and improve the system, otherwise it is not sensible to use them.

Ensure that the animals' health is always at an acceptable level. Both internal and external parasites must be controlled in a timely and preferably preventive manner. The taking of regular dung samples can contribute towards determining the dosing and its effectiveness.

Guidelines for...

1 ***Lick and health programme for spring calf system.***

Month	Sep	Oct	Nov	Dec	Jan	Feb
COWS (Weaner system: 1 medium frame cow = 1,7 LSU /						
Production	Calves			Serve		
Lick	Production lick 1 - 1,5 kg/day		Summer lick 200 g/day			
Vaccinate	Vibriosis Rift Valley Fever	RB51 non-pregnant cows				
Age (months)	**1**	**2**	**3**	**4**	**5**	**6**
HEIFERS/BULL CALVES						
Production						
Lick programme						
Vaccination programme				BM heifers	Black quarter, botulism and anthrax, Pasteurella BVD IBR P13 (heifers)	Black quarter, botulism and anthrax, Pasteurella BVD, IBR P13 (heifers)
Age (months)	**13**	**14**	**15**	**16**	**17**	**18**
HEIFERS 1 - 2 years						
Production						
Lick programme	Production lick 1,5 kg/day		Summer lick 200 g/day			
Vaccination programme						RB51
Month	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**
Age (months)	**25**	**26**	**27**	**28**	**29**	**30**
HEIFERS 2 - 3 years						
Production		Serve				
Lick programme	Production lick 1,5 kg/day			Summer lick 200 g/day		
Vaccination programme	Vibriosis					RB51
Age (months)	**37**	**38**	**39**	**40**	**41**	**42**
1st-CALF COWS						
Production				Serve		
Lick programme	Production lick 1,5 kg/day			Summer lick 200 g/day		
Vaccination programme	Vibriosis					RB51
Month	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**
Internal parasites that occur regularly in cattle						
ROUNDWORMS	All animals; note the young animals in particular					
Liver fluke	Strategic treatment: All animals			Tactical treatment: All animals		
Conical fluke						
Tapeworm and coccidia	Tapeworm: Whole year suckling calves					

	Mar	Apr	May	Jun	Jul	Aug
Steer system [18 months]: 1 medium-frame cow = 2,2 LSU)						
	Pregnancy	Weaning	Selling old and non-pregnant cows			
		Winter lick 700 g/day				
	Multimun with Se	Pasteurella BVD	Black quarter Botulism Anthrax	Vit ADE	Rift Valley fever	Lumpy skin Ecoli
	7	**8**	**9**	**10**	**11**	**12**
		Sell weaners and bull calves				
		Production lick 0,5 - 1 kg/day				
	Multimun with Se		RB51 2nd vaccination heifers	Vit ADE	Rift Valley fever	Vibriosis, BM heifers, lumpy skin disease
	19	**20**	**21**	**22**	**23**	**24**
		Production lick 1 kg/day				
	Multimun with Se		Blackleg, botulism and anthrax	Vit ADE	Rift Valley fever	Lumpy skin Pasteurella BVD IBR P13
	Mar	**Apr**	**May**	**Jun**	**Jul**	**Aug**
	31	**32**	**33**	**34**	**35**	**36**
	Pregnancy				Calves	
		Winter lick 700 g/day		Production lick 1,5 kg/day		
	Multimun with Se		Blackleg, botulism and anthrax	Vit ADE	Rift Valley fever	Lumpy skin Pasteurella BVD IBR P13
	43	**44**	**45**	**46**	**47**	**48**
	Pregnancy	Weaning				
		Winter lick 700 g/day		Production lick 1,5 kg/day		
	Multimun with Se		Blackleg, botulism and anthrax	Vit ADE	Rift Valley fever	Lumpy skin Pasteurella BVD IBR P13
	Mar	**Apr**	**May**	**Jun**	**Jul**	**Aug**
		Strategic treatment: All animals				Strategic treatment: All animals
		Look out for conical fluke in these months in particular				

Coccidia: Whole year young calves (3 weeks+)

PIETMAN BOTHA, INDEPENDENT AGRICULTURAL CONSULTANT

Marketing of maize: Planning ahead is crucial

THE SELLING OF MAIZE WAS A LOT EASIER IN THE 'GOOD OLD DAYS' WHEN THE FARMER WOULD GROW THE MAIZE, DELIVER IT TO THE LOCAL CO-OP AND GET MONEY FOR HIS CROP AT A REGULATED MARKET PRICE. NOWADAYS MARKETING NEEDS TO BE CAREFULLY PLANNED AHEAD OF TIME TO MAXIMISE OPPORTUNITIES IN YOUR ENVIRONMENT.

A proper grain marketing plan requires the farmer to calculate his price target – the price that makes the effort and risk worthwhile. This means covering costs and also earning profits otherwise the exercise is not worth the effort. Different marketing strategies must be identified to achieve the target prices. This could take several different forms or be aimed at one buyer, but it should be flexible regularly reviewed.

> *You may receive less rand per ton but by eliminating transport costs you could still make a good profit.*

When considering where to market maize farmers need to think about the uses of maize, like who uses it, how and where it is used. Apart from household use, maize can be marketed in a number of ways. All possible markets need to be investigated.

In South Africa the leading grain buyers are agri-businesses like NWK, Senwes, TWK, Afgri and GWK. There are also many private buyers who you could market your maize to like maize milling companies, feed companies, feedlots, piggeries, chicken farms and small scale hawkers. You may also have successfully marketed your maize yourself by selling green mealies or by building relationships with reliable traders.

FACTORS TO CONSIDER

There are a number of options to consider when deciding where to sell your maize:

Locality

Because of high transport costs farmers need to find where the closest market would be. You may receive less rand per ton but by eliminating transport costs you could still make a good profit. Marketing opportunities for maize produced by farmers living close to big centres or major roads are less complicated than for those living in remote regions like the foothills of the Drakensberg.

Many small scale farmers are growing stronger because of improved knowledge and using modern technologies in farming. Unfortunately they are still facing challenges at harvest because there are no silos to store their crop so they have to load the grain directly onto trailers and cope with poor roads to the markets. Their marketing channel holds many challenges and may compromise their ability to compete for top prices in the market.

Time of the year

Maize is almost always readily available in South Africa, even if the harvest is not good. This means traders seldom have to go far to find the maize they need. Farmers have to compete for the best prices and those who live in remote areas may have problems selling their crops. Anticipate the challenges and make plans ahead of time.

Price

The market place for our grain is dominated by a central role-player known as the South African Futures Exchange (Safex) which serves as a buying and selling platform. A certain expertise is necessary to use this futures exchange effectively; as a result many farmers rely on agents' advice or to do the trading on their behalf. Commercial maize farmers should make an effort to understand how Safex operates.

Location differential

It is important for farmers to know what the location differential is. The location differential is essentially the transport cost in moving your grain from your farm to the central point for grain trading at Randfontein in Gauteng, so Safex subtracts that cost off your payment. If a local business buys grain from Randfontein he would pay location differential too. Sellers must understand this is a point for negotiation and the location differential fee could be a shared cost. Being informed empowers the negotiation process.

Product

Remember even before a maize crop is planted, you need to identify which products are in demand in your area. Perhaps there is a feed company in your area which would be a buyer of yellow maize. Or maybe there is a maize milling operation in your area which would buy white maize. These are crucial factors to consider.

Size of the harvest

When a bumper harvest is realised, traders can pick and choose so prices are likely to be depressed. This influences on-farm profitability levels. Overproduction depresses prices and can make the process of growing maize unprofitable. This is why it is no good planting more maize than you can use if a market has not been identified.

> *Being informed empowers the negotiation process.*

EXPORT MARKET OPPORTUNITIES

Many stakeholders question why farmers want to sell into the export market. South Africa annually produces more maize than our internal consumption, even in drought years, so farmers need a steady flow of maize out the country.

This export market serves to balance out those years of overproduction which cause our maize prices to decline. Stable grain prices empower farmers to plan better and to make more secure decisions about how much maize they will plant each new season.

YOUR OWN ROAD MAP

Don't wait until the grain is in your hands before you plan how you will sell your maize. Having a marketing plan means you will have a road map developed. It outlines your objectives. It empowers you to make better marketing decisions and you have clearly identified how much risk you are able to tolerate.

The grain you produce is your livelihood. It is crucial for you to make the effort to market it as well as you can. Use all the available resources to find the best buyer which will translate into the best profit margins. Don't instinctively sell your maize to the easiest and most convenient outlet. With a bit of marketing strategy you will increase your potential income and possibly forge new business relationships which will be beneficial into the future. ■

JENNY MATHEWS,
MANAGEMENT AND DEVELOPMENT SPECIALIST AND EDUCATOR
FIRST PUBLISHED IN PULA IMVULA, MAY 2022.

HAVE YOU HEARD?

GET YOUR DIARY OUT!

Don't forget that Grain SA's NAMPO Harvest Day takes place from 14 to 17 May at NAMPO Park near Bothaville in the Free State.

MAKING RURAL SOUTH AFRICA BETTER

South Africa's stumbling blocks in the country's rural towns were tackled head-on with a flood of solutions by ordinary South Africans who want conditions in rural towns to improve.

More than 300 delegates attended the Solutions for Rural South Africa Conference, which was held at Nampo Park near Bothaville in the Free State and organised by *Landbouweekblad* and Senwes. More than 70 speakers shared what they had done to improve their towns. Here is some of the advice shared by these planmakers.

NEW MINIMUM WAGE ANNOUNCED

The minister of employment and labour, Thulas Nxesi, recently announced the new minimum wage in the *Government Gazette*. Starting from 1 March 2024, farmworkers will also benefit from the increase of the national minimum wage to R27,58 per hour.

This is an increase of 8,5% compared to the previous minimum wage of R25,42 per hour, which was applicable until the end of February. The increase is 2,5 percentage points higher than the average inflation rate for 2023, which was 6%.

Source: *Press release*, Agri SA

TOP POTATO FARMER CROWNED

Potatoes SA announced its third Enterprise Development Farmer of the Year at a gala evening, which followed the Potatoes SA transformation symposium. **Meshack Ndongeni** from KwaZulu-Natal was announced as the winner.

Celebrating with Meshack (in the middle) are Rendani Murovhi, Potatoes SA's transformation manager, and Thandi Moyo, the deputy director-general of rural development at the National Department of Agriculture, Land Reform and Rural Development.

PANNAR SELLS DRY BEANS BUSINESS

AGT Foods Africa became the full owner of Pannar Seeds' dry beans seed business on 1 February this year. Brian Lever, the managing director of AGT Foods Africa, promised South African farmers that they will have access to all the top-quality dry beans seed they need for their plantings during the 2024/2025 summer production season.

AGT has contracted the expertise of Pannar's veteran dry bean and soybean breeder, Dr Antony Jarvie, who will use his knowledge and skills to improve the dry bean genetics AGT has acquired.

RESEARCH IN THE SPOTLIGHT

Various stakeholders, including government executives and officials, policymakers and researchers gathered at ARC Roodeplaat on 22 February. This first-of-its-kind research conference was hosted by the Agricultural Research Council (ARC) and the Department of Agriculture, Land Reform and Rural Development (DALRRD), with the aim to put agricultural research in the spotlight.

Corner Post

BY LOUISE KUNZ, ASSISTANT EDITOR

PAUL MOTLOKOA (50) WHO FARMS IN THE SASOLBURG DISTRICT IN THE FREE STATE BELIEVES IN KEEPING BUSY AND NOT WAITING AROUND FOR OTHERS TO MAKE THE DIFFERENCE HE WANTS TO SEE. 'IF YOU WANT TO SEE PROGRESS, MAKE SURE YOU ARE INVOLVED IN THE PROCESS.'

PAUL'S STORY

Paul grew up on a farm where his father was a farm worker and later worked for the same commercial producer before 'finding a way' to become a farmer. In 2007 he started farming on Welverdent, a 98 ha piece of land, in the Heilbron region.

In 2015 he moved to a bigger farm, Sachen Weimar, a 514 ha farm in the Sasolburg area with a 30 year leasehold, which he obtained from the Department of Agriculture, Land Reform and Rural Development. Although he always dreamed about being a cattle farmer, he is now proving to be a good all-round farmer.

Paul became part of the Farmer Development Programme in 2019 and has showed great strides since being mentored by Jacques Roux. He currently plants maize and soybeans on 234 ha of arable land on Sachen Weimar. He rents a further 200 ha from neighbouring farmers where he also produces soybeans.

Jacques Roux, regional development manager in the eastern Free State, says Paul is determined to increase his yield every year. 'In the first year he planted 234 ha, then rented 200 ha more to increase production and has now added another 150 ha of land to grow his total soybean hectares even more.'

Paul says that the input from the Farmer Development team has made a huge difference to his farming success. 'Since Jacques has been involved I have really developed into a successful farmer.

WHAT IS THE BEST AND WORST THING ABOUT BEING A FARMER?

I think farming is the only job where you can really see the progress you are making. Where there was soil, there will be crops. You can always see growth on a farm. Unfortunately the weather makes farming challenging. A huge problem we have to face is the theft, especially livestock theft.

WHAT LESSONS HAVE YOU LEARNED OVER THE YEARS?

Farm management is very important and I have learned to make notes every season so that I know where I can improve in future. I also learned that waiting for contractors that arrive late can have a huge impact on my harvest. I therefore invested in my farming operation by buying equipment. It is important to plough the profit from the harvest back into the farm.

WHAT IS YOUR AVERAGE YIELD?

My average yield on soybeans is 1,8 t/ha to 2,4 t/ha but on one of the new pieces of land (60 ha) I managed to realise 2,5 t/ha. Last season I managed 5,2 t/ha with white maize and 5,8 t/ha with yellow maize. Unfortunately the high rainfall this year caused water damage so the maize yield is slightly lower than average, but the soybeans are looking good. 'Soil analysis and soil preparation are key to a good yield.'

PAUL'S 3 TOP TIPS

1. Try to grow your farming enterprise bit by bit – even if you just plant a little bit more each year.
2. Don't wait for other people to do things for you – make a plan.
3. Make notes and learn from your mistakes.

FARM FACTS

Farm: Sachen Weimar
Nearest town: Sasolburg
Region: Free State
Size: 514 ha – plants on 234 ha and 200 ha which he rents from neighbouring farmer
Type of farming operation: Mixed – crops (maize and soybeans) and livestock (Bonsmara cattle)

PGP'S CONTRIBUTION

- Joined Grain SA many years ago
- Deneysville Study Group
- Member of 1 500 Ton Club: 2022

Training courses completed:
Has completed several courses including:
- Introduction to maize
- Introduction to soybeans
- Introduction to sorghum
- Business ethics and farm management
- Workshop skills development: Welding

A mentor's view:
Jacques Roux, regional development manager in the eastern Free State, has been mentoring Paul since 2019. 'Paul follows instructions and the advice we give him meticulously. He is keen to learn and attends courses regularly. He invests the profit back into the farm and is expanding his farming enterprise annually. Paul ensures that he is part of his own success story.'

Jacques Roux

A programme that is changing lives

Regional meetings: Encouraging collaboration and dialogue

THE REGIONAL MEETING FOR REGION 29 OF GRAIN SA WAS HELD IN ERMELO ON 6 FEBRUARY THIS YEAR. THIS GATHERING SERVES AS AN IMPORTANT PLATFORM FOR GRAIN SA, THE LEADING VOICE FOR GRAIN FARMERS, TO PROVIDE UPDATES ON ITS ACTIVITIES, INITIATIVES AND ADVOCACY EFFORTS.

At the meeting, discussions focussed on several key topics, including the new Grain SA structure, the Farmer Development Programme (FDP) and its opportunities, the importance of understanding economics for farmer profitability and Grain SA membership. Dr Tobias Doyer, Grain SA's new chief executive officer (CEO) was introduced and he addressed the farmers via a video message.

One of the highlights on the programme was a comprehensive presentation on one of the strategic focusses of Grain SA, which is to be intentional in its efforts to support small-scale grain farmers, aiming to facilitate their transition into commercial farmers. In addition, the new Grain SA logo featuring the slogan 'We are' was highlighted. The significance of the slogan was explained, emphasising that everyone within the collective 'we' contributes to the organisation's collective strength.

FDP AND OPPORTUNITIES

Grain SA's vice-chairperson, Jeremia Mathebula, explained in detail what the Farmer Development Programme entails, including its objectives, primary areas of focus and partners. The programme now falls under a non-profit company called *Phahama Grain Phakama* (PGP). Through the FDP, PGP aims to empower farmers, improve their livelihoods, and contribute to the growth and sustainability of the agricultural sector in South Africa.

He emphasised that, while the programme supports farmers in preparing business plans and obtaining funding, it is essential for them to register their businesses with relevant stakeholders. This ensures that they have the necessary documentation to get assistance.

However, collaboration is required for the programme to thrive and achieve success. Both Grain SA and its farmers must join forces and work closely together, hand in hand, to ensure its effectiveness and success. 'It is important to maintain ongoing collaboration and communication between Grain SA and the farming community,' Jeremia added.

APPLIED ECONOMICS AND LEVIES

Applied economics intern at Grain SA, Lerato Ramafoko, discussed the role of her department within Grain SA. She highlighted its function in monitoring and analysing developments in international markets. This department equips grain farmers with important information to facilitate informed decision-making regarding their crops, pricing strategies and market positioning.

Patricia Zimu, Grain SA's levy officer and marketer, provided an in-depth overview of the organisation's membership structure. She elaborated on how Grain SA levies are collected and explained the communication channels used to engage with farmers. In addition, she highlighted the need of establishing committees to ensure that Grain SA reaches all farmers across the region.

The regional meeting held in Ermelo played an important role in facilitating a dialogue between Grain SA and grain farmers. Attendees were encouraged to voice their concerns, raise questions and share their experiences. From challenges related to input costs and access to markets, to issues with infrastructure and regulatory compliance, farmers used the opportunity to raise their concerns and seek solutions. The meeting highlighted the importance of collaboration and communication between Grain SA and grain farmers in advancing the interests of the agricultural sector.

– Nolo Bakwa, communications intern at Grain SA, attended the meeting on behalf of the Pula Imvula editorial team.

Grain SA's team in Ermelo: Patricia Zimu, Jerry Mthombothi, Mussa Thomas Sibiya (executive member for Region 29), Jeremia Mathebula and Lerato Ramafoko.

Alfred Gondo, Nobuhle Duma and Hazel and Timot Mathelela attended the regional meeting in Ermelo.

PGP PHAHAMA GRAIN PHAKAMA
Farmer Development Programme
Feedback

Good job, farmers!

TO facilitate successful transformation and sustainable development in the grain farming sector, there are different groups of farmers in PGP's Farmer Development Programme.

For the 2023/2024 season, the Standard Bank (in partnership with the Kgodiso Development Fund and Pepsico) and South African Cultivar and Technology Agency (SACTA) projects are helping more advanced farmers to improve their agricultural practices and skills. Other donors include the Maize Trust and the Oil and Protein Seeds Development Trust (OPDT). It is important to encourage the farmers to keep going and to follow up on processes during farm visits.

Mentor Martin Botha visited Badge Skosana from Mpumalanga. Badge forms part of the Standard Bank/KDF project. Martin and Badge examined the maize crops for stalk borer and made sure no bollworms were present on the soybean crop.

Johannes Setshego from the Virginia district is a Standard Bank/KDF project participant. When he was visited by Johan Kriel, regional development manager, the sunflower was emerging well, and the fields were clean and free of weeds. The maize crop showed promise of a good yield, but follow-up rains were really needed.

Mentor Timon Filter visited Mathews Mlotshwa (who is part of the SACTA project) early in February. During the visit, he explained calibration and the mixing and spraying of chemicals. Timon also discussed the importance of having your administration in place.

Chris de Jager visited farmer Reginald Masondo, who falls under the Dundee office, in January. Reginald is part of the SACTA project. He was busy discing and planting maize after starting late because of all the rain. During Chris's visit, there were still some parts of the land that were too wet to be worked.

Training and trials IMPROVE KNOWLEDGE

A total of 17 farmers successfully completed the 'Introduction to groundnut production' course sponsored by OPDT, which was presented in Osizweni in KwaZulu-Natal by mentor and trainer, Paul Wiggill. Farmers found the course informative and are grateful for the new knowledge they can put into practice.

During a practical demonstration on the calibration of a boom-sprayer, eager farmers had the opportunity to bring the theory they had learned into practice.

Currently there are five demonstration trials growing – four in the Mbombela regional office's area of responsibility and one in the Dundee region.

The trial plot at Luphisi (sponsored by OPDT) was planted using the conventional tillage method of planting. After planting the pre-emergence herbicide Baseline mixed with Lamda was sprayed to control cutworms.

When Jerry Mthombothi, regional development manager at the Mbombela office, visited the trial plot at ka-Dlamini, he noticed some weeds in the field – so the group received 4 litres of Roundup herbicide to control these. The maize was almost knee height, and they were advised to top-dress with nitrogen (N) fertiliser.

This group of farmers are very proud of the maize trial plot they planted at ka-Dlamini.

"Cecelia Qokela looked after me as a child and basically raised me. Mzayfani Nonjingo taught me how to drive a tractor. For me, our good relationship is very important."

PROUD TO BE A PART OF YOUR STORY

FARMERS: Jed van Niekerk working alongside the Brookside Farm beneficeries Mzayfani Nonjingo; Zuko Qokela *(Cecelia's son)*; Cecelia Qokela and George Majola *(the combine harvester driver)*

FARM: Brookside Farming, Harry Gwala Agri

AREA: Kokstad, KwaZulu-Natal

PANNAR HYBRID USED:
PAN 4R-838BR *(Yellow Maize)*

PANNAR REP:
Andrew du Plessis
082 332 4870
Southern KwaZulu-Natal

I'm Jed van Niekerk and I'm pleased to report that this is the third year that we've partnered with members of Brookside Farming. Rory Brydon provides financial support and advice and I provide the mechanical support, while Pannar kindly donated the seed. Over the course of the past three years, Brookside has become financially independent. So this year, they have been able to pay for the full crop up front on their own, and it's going very well. The beneficiaries are really hungry to learn and their knowledge has grown... and when someone is so eager to develop themselves, we are always willing to go the extra mile and help or support them wherever we can. We also received great advice from our Pannar rep, Andrew du Plessis. He selected the right variety for the farm and the soils, the yields we were aiming for and for our limited budget.

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