

GRAIN GUIDE

SA Graan
Grain

GSA
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Your
AGRI SOLUTIONS



SMALL SEEDS, BIG REWARDS

Achieving canola success with Southern Oil



There are plenty of benefits to farming with canola – and by partnering with Southern Oil (SOILL), farmers will be able to tap into these advantages with ease. SOILL first introduced canola to the Western Cape in 1993, and today collaborates with over 500 local farmers. The company operates Africa's biggest canola seed crushing and oil manufacturing facility, meeting the increasing local demand for healthier cooking oil through their B-well brand.

As the largest buyer of canola seed in South Africa, SOILL supports all the canola farmers it partners with, making sure that they have the necessary support for maximum success.

Let's take a closer look at the benefits that a partnership with SOILL delivers to local farmers:

Expert Guidance: SOILL's agricultural experts are passionate about working with canola farmers and providing them with all the insights they need to grow the highest yields possible. Through personal farm visits, they assess soil conditions and crop health, tailoring their advice to each farm's unique

environment. Their invaluable advice covers effective crop management, pest control, disease prevention, soil health, and harvesting strategies.

High Yields: With SOILL's guidance, canola yields in South Africa have reached record highs. Their collaboration with local farmers has enabled them to achieve higher yields, resulting in substantial returns on their crop investments. This year's exceptional crop performance can be attributed to three key factors: favourable weather conditions, improved canola cultivars, and enhanced farming practices.

Crop Rotation Benefits: As a broadleaf crop, integrating canola into crop rotations offers various advantages, including improved weed control, increased yields in subsequent crops, enhanced soil quality, and better water infiltration. For example, wheat farmers have seen 20-30% higher yields the following year by adding canola to their crop rotation.

Sustainable Farming: SOILL promotes sustainable farming practices that reduce environmental impact and protect soil health. They advocate for the use of authorised pesticides that don't harm essential pollinators like bees, ultimately enhancing yields and promoting uniform flowering, pod and seed production.

Community Involvement: SOILL is committed to supporting the local community, not only through job creation but also through the Canola Development Trust. This trust, which owns 15% of SOILL, focuses on providing literacy and numeracy interventions to the children of the staff working on the farms supplying canola to SOILL.

Are you interested in finding out more about canola farming?
Get in touch with SOILL on 028 514 3441, info@soill.co.za or visit our website on www.soill.co.za.



Southern Oil

PREFACE

IF YOU'VE GOT IT, USE IT, KWAGGA!

Little Kwagga's dance version of the 'Lyfie' hit by Bernice West that has been circulating on social media over the past few weeks truly stirs up a fresh breeze.

The video has already been watched and shared millions of times. No wonder – the exuberant energy and focus with which little Kwagga wriggles the dance steps from his little body so convincingly are electric enough to make short shrift of South Africa's national power shortages.

The name of this 7-year-old farm boy from Balfour in Mpumalanga is Dirkco Jansen van Nieuwenhuizen (photo). According to Maroela Media, he jumped on the stage during his older sister's school concert when a packet of crisps and a chocolate were announced to be the prize to the most eager dancer to this number. In an interview with Pretoria FM, Dirkco explained that he had learnt most of his moves at his school and the others he just worked out for himself.

It goes to show – true inspiration comes in small packages! Like *Grain Guide '24* in its bold format, ring-bound to turn the pages easily and use regularly.

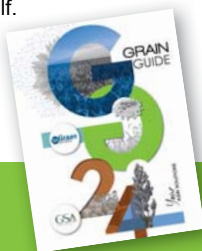
SA *Graan/Grain* says thank you to every advertiser and editorial contributor who helped the latest *Grain Guide* to see the light. The volume again contains relevant agricultural contacts and practical guidelines and tips to support producers in their demand for solution driven products and services.

Like little Kwagga, the editorial team expresses the hope that *Grain Guide '24* will enable readers to acquire obvious moves in this way – and add the rest through their own inventiveness.



Photo: Facebook

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GRAIN GUIDE PUTS THE WHOLE VALUE CHAIN IN YOUR HANDS

In today's world of electronic connectivity why do we even need a publication like the *Grain Guide*?

I'm often fascinated by how connected we are electronically but every now and then I find myself reaching for the good old, printed book that has all the contact details of all the people I need to get in touch with in one place.

Yes, we have very powerful search engines that can find you just about anything and anyone, but still, you need to know quite specifically what or who you are looking for to make them effective.

In the *Grain Guide* we strive to put together a collection of all the contacts that a grain producer could possibly need to run his business effectively coupled with useful information, sourced from the SA *Graan/Grain* magazine and sagrainmag.co.za website – your knowledge partner in the grain and oilseed industry. When you are busy planting or harvesting and you suddenly need to find someone who you don't have on your phone you just pick up the *Grain Guide* and you can find it in there.

Grain SA is the centre of information aimed at ensuring sustainable grain production by our members. This is not only to the benefit of our members, but is imperative to the people of South Africa – and also those in all the countries to which we export our agricultural goods.



In the *Grain Guide* we strive to put together a collection of all the contacts that a grain producer could possibly need to run his business effectively.

A country that looks after its producers is a country that looks after its people. I don't remember who said that, but never have truer words been spoken.

As producers we are often overlooked and then sometimes also heralded as most important, however we are just one link in the grain value chain. It is more and more obvious that no one link in the value chain will exist without the other.



The *Grain Guide* is there to put the whole chain in the palm of your hand and ensure that as a value chain we remain strong. It is also true that a chain is only as strong as its weakest link and therefore we need to understand and support each other in keeping the chain strong and effective.

To all the links in the chain, my wish is that we do even better business than before and we all can grow our businesses. May the rains fall on our fields and may your new production year be one of bounty and good business to the benefit of all South Africa.

Derek Mathews

Chairperson: Grain SA

Grain SA meetings and events

(as at 8 November 2023)

JANUARY

- 10 Commercial Producers Trust
- 11 Audit Committee
- 12 PGP NPC
- 12 NAMPO (Pty) Ltd
- 15 Marketing Working Group
- 16 Grain SA Management Committee
- 17 Winter Cereals Working Group
- 18 Canola Working Group
- 18 Lupine/Alternative Crops Working Group
- 26 SA *Graan/Grain* Editorial Committee
- 30 Maize Working Group
- 31 Grain SA Executive – NAMPO Park

JULY

- 9 NAMPO Livestock & Exhibitors Meeting
- 9 NAMPO Harvest Day Committee
- 10 - 11 Grain SA Executive – NAMPO Park
- 17 Southern Barley Working Group
- 18 Northern Barley Working Group
- 26 SA *Graan/Grain* Editorial Committee
- 30 Farmer Development Working Group
- 31 PGP NPC

FEBRUARY

- 1 Grain SA Executive Training – NAMPO Park
- 7 Sorghum Working Group
- 13 Sunflower and Soybean Working Group
- 20 Farmer Development Working Group
- 21 NAMPO Exhibitors Meeting
- 22 NAMPO Harvest Day Committee
- 22 Groundnuts Working Group
- 23 SA *Graan/Grain* Editorial Committee
- 27 Production/Input Working Group

AUGUST

- 6 Groundnuts Working Group
- 7 Winter Cereals Working Group
- 8 Canola Working Group
- 8 Lupine/Alternative Crops Working Group
- 12 Commercial Producers Trust
- 13 Maize Working Group
- 14 NAMPO (Pty) Ltd
- 15 Sorghum Working Group
- 20 Grain SA Management team
- 21 Sunflower and Soybean Working Group
- 23 SA *Graan/Grain* Editorial Committee
- 27 Audit Committee
- 29 Grain SA Management team

MARCH

- 13 - 14 Grain SA Congress – NAMPO Park
- 14 Grain SA Executive – NAMPO Park
- 14 Grain SA Executive Induction
(newly elected members)
- 22 SA *Graan/Grain* Editorial Committee
- 27 Northern Barley Working Group
- 28 Southern Barley Working Group

SEPTEMBER

- 2 Commercial Producers Trust
- 3 NAMPO (Pty) Ltd
- 3 PGP NPC
- 4 Grain SA Management Committee
- 4 - 7 Swartland Show
- 11 - 14 NAMPO Cape
- 17 Farmer Development Working Group
- 17 Production/Input Working Group
- 18 Day of Celebration
- 18 - 19 Grain SA Executive – NAMPO Park
- 20 SA *Graan/Grain* Editorial Committee
- 26 Grow for Gold

APRIL

- 15 - 17 Grain SA Management Committee
Planning session
- 26 SA *Graan/Grain* Editorial Committee

OCTOBER

- 10 - 11 Agri SA Congress
- 17 - 19 NAMPO Alfa – NAMPO Park
- 22 Grain SA Management team
- 25 SA *Graan/Grain* Editorial Committee
- 29 Remuneration Committee
- 30 Grain SA Management Committee
- 31 Marketing Working Group

MAY

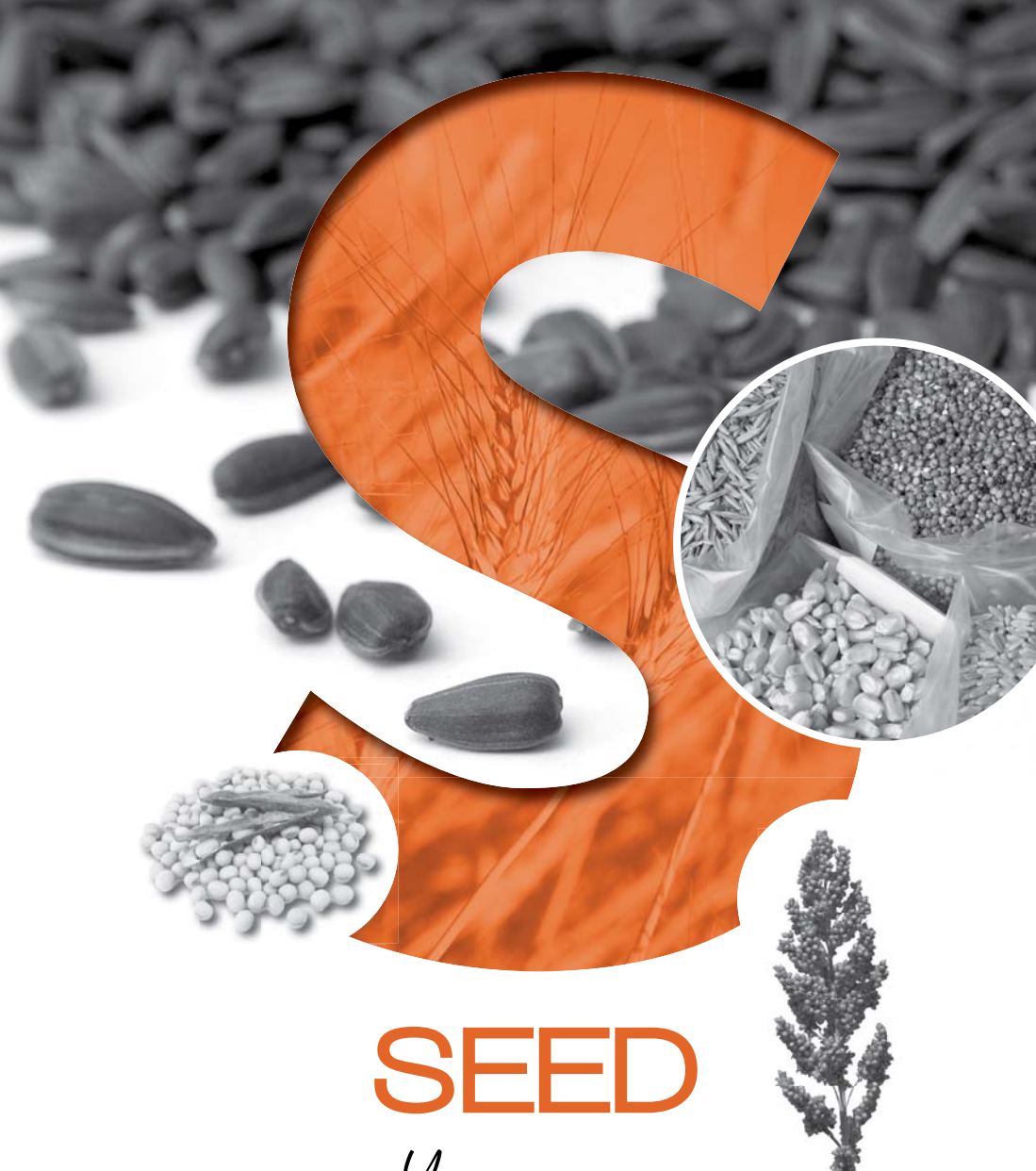
- 14 - 17 NAMPO Harvest Day – NAMPO Park
- 24 SA *Graan/Grain* Editorial Committee
- 28 Winter Cereals Working Group
- 29 Production/Input Working Group

JUNE

- 4 Grain SA Management Committee
- 5 Marketing Working Group
- 13 Commercial Producers Trust
special meeting
- 21 SA *Graan/Grain* Editorial Committee

NOVEMBER

- 1 Grain Producer Awards Function
- 15 SA *Graan/Grain* Editorial Committee
- 28 - 30 OFM NAMPO Park Christmas Market



SEED

Your CONTACTS

INSTITUTION

SA Cultivar and Technology Agency
(SACTA)

andrew@sactalevy.co.za
012 807 3958

South African National Seed Organisation
(SANSOR)

reception@sansor.co.za
012 472 9500

Think twice before TREATING SEED YOURSELF

The treatment of seeds must be approached with caution, especially if it is decided to do it yourself.

OWN TREATMENT MAY AFFECT GERMINATION

Seed companies do not guarantee the quality of seed if the seed treatment is not done by the seed company itself, or by a registered chemical supplier. Treatment with Rhizobia is excluded.

If a chemical supplier performs the treatment, they must be able to ensure that it will not affect the germination. The chemicals used must also be registered in terms of Act 36 of 1947 and preferably be recommended by the seed company.



For an example of a rodent management plan, scan the QR code.

RODENT CONTROL REMAINS A CHALLENGE

Producers must ensure that appropriate and responsible rodent management plans are implemented. Proven management plans – that include rodenticides – are available, therefore producers are advised to follow these management plans.

Contact Dr Gerhard Verdoorn at 082 446 8946 or gerhard@croplife.co.za in connection with these plans.

Corné Louw, head: Applied Economy and Member Services: Grain SA



MIELIES

Oopbestuifde variëteite, konvensionele en GM-bastermielies

KONTANTGEWASSE

Droëbone, grondbone, ertjies, baster- en oopbestuifde graansorghum, sonneblom, groenbone en sojabone

WEIDINGSGEWASSE

Gematigde en subtropiese weivelde

GROENBEMESTINGSGEWASSE EN DEKGEWASSE

GRASPERK- EN GERIEFSGRASSE

www.capstoneseeds.com

TEEL VIR KLIMAATS-
VERANDERING,
DIE OMGEWING
EN DIE BOER

KONTAK ONS

Cecil van Rooyen - 066 305 8751

Nasionale Verkoopsbestuurder SA

Oos-, Suid- en Wes-Kaap

Roelf van Niekerk - 083 949 5749

Verkoopsbestuurder: Agronomiese Gewasse

Mpumalanga, Gauteng, Wes-Vrystaat, Noord-Kaap

Neville Young - 082 654 2162

Nasionale Kleinhandelverkoopsbestuurder

Oos-Vrystaat, Noord-KwaZulu-Natal Koöperasies, Swaziland en Lesotho

Mark Wattam - 082 603 8471 - Verkoopsbestuurder -

Oos-Kaap; Swaziland en Namibië

Steve Thomson - 082 327 8083 - Tegniese

Verkoopsvertegenwoordiger - KZN



RETAINED SEED

– what does it really cost?

According to the South African National Seed Organisation (SANSOR), 70% to 80% of soybean plantings are done with retained seed. There are a number of reasons to support this practice but producers should guard against getting a bad bargain.

Except if other contractual clauses are involved, producers may hold back their seed to plant again. Selling this retained grain as seed is, however, against the law.

By holding back seed, producers can save on seed costs of between 10% and 15%, which is sensible, after all. Just remember that no paradise is without its snake – there are always hidden costs or risks that can come back to bite them.

Research conducted by seed companies and universities confirms that retained seed does not always provide better yields than newly purchased seed. Although the seed is genetically the same, the quality differs, and diseases can be borne by the seed. Yield differences of up to 600 kg/ha have been measured in trials – and on the face of it, it was good, retained seed. The processing, cleaning and storage of the seed affect the seed quality and must be managed properly.

OPPORTUNITY COSTS

Even if a producer holds back seed and production remains the same, one must not make the mistake of thinking the seed is free. There are always opportunity costs to take into account and there is a risk that the grain price at which



Soybean seeds that still need to be sifted and cleaned.

TABLE 1: EXAMPLE OF THE CALCULATION OF SEED COSTS FOR THE 2023/2024 SEASON.

	RAND
One ton of grain is sifted (price in May 2023 – R/ton)	9 000,00
Cleaning costs (R/ton)	800,00
Transport and other costs (R/ton)	250,00
Interest @ 10% per annum for one year (R/ton)	1 005,00
Cost for 900 kg of seed (10% is regarded as waste)	11 055,00
Cost per kilogram of seed	12,28
Cost per kilogram if planted 10% denser	13,51
Total seed costs per ton	13 511,67

the producer can break even has been set too low. The opportunity costs exist because producers could have sold this grain and use the money for other things. Opportunity costs also involve interest, so that the second cost component is the interest that could have been obtained on the money.

INTEREST CALCULATION

However, to calculate the opportunity costs for seed correctly, the interest for a full year must be included. Each producer's interest rate will differ. If the farm is a cash business, the interest on capital invested must be used, but if borrowed money is used, the interest rate of the over- ➤

◀ Retained seed...

draft facility must be applied. This difference can be significant.

The retained grain must be cleaned, and again more than one cost is involved here. In addition to the cleaning, the grain must also be sifted. Cleaning costs vary considerably – from basically nothing to more than R1 800/ton. The more it costs, the better the seed quality should be for planting. Some processors can clean, grade, store and bag the seed and provide the germination of the grain. The seed quality of this grain is then equal to that of purchased seed, but the risk of an error creeping in with the seed remains that of the producer. A realistic cost of R800/ton is a good price for cleaning the seed. The transporting of the grain is also at the expense of the producer.



When seed is cleaned by a third party, the producer must make sure that he receives his own seed back and that it is not accidentally mixed with the seed from another source.

In the seed cleaning process, approximately 10% of the grain is sifted out. Although the producer gets this grain back, the marketing of the grain is difficult because it includes all the split, stained, and damaged seed, which is usually subgrade grain. It may be possible to use this grain on the farm again, but more often it ends up in a landfill.

When seed is cleaned by a third party, the producer must make sure that he receives his own seed back and that it is not accidentally mixed with the seed from another source. It does not help to think you are planting one cultivar and then it is mixed with other seed.

PLANT POPULATION

Mature plants per hectare is one of the main determinants of yield. Too many and too few plants are equally bad. A good plant population starts with quality seed that germinates, is vigorous and can grow free of diseases. The germination percentage is therefore extremely important to determine how much seed per hectare must be planted to ensure the desired plant population. If the germination percentage of the seed is not known, it is easy to plant more seed per hectare than is necessary. This means extra seed and therefore increased seed costs.

Producers easily plant 10% to 15% more seed than is necessary. When producers retain

seed, they have to determine the germination percentage themselves and adjust their planting accordingly.

HANDLING AND STORAGE

In order to keep the germination percentage of soybeans high, attention should be given to the handling and storage of seed. If mistakes are made here, the germination percentage will drop significantly. Make sure that the seed is stored correctly and that it is handled as gently as possible. If the covering of a kernel is cracked, it does not grow.

Storage of seed is crucial. Be on the lookout for rodents and insects that can cause damage. The moisture management of the seed is also extremely important. Ensure that moisture is as low as possible during harvesting and store it in a store that is not too hot and too damp. This also applies to the storage of purchased seed to prevent damage.

SEED COSTS

Producers should particularly note where the cost of seed treatment with inoculant and chemicals is included. Always make sure where that cost is included when costs are compared.

Can any producer afford a loss of 600 kg/ha because of retained seed? That is what a producer loses by planting poor quality retained seed. Unfortunately, retained seed comes with risks – if the seed does not grow, or if there is a seed-borne disease, it can cost the producer a lot of money.

Table 1 (on page 7) is an example of how much soybean seed that is held back is supposed to cost. According to the table, retained seed can cost R13,51/kg. This figure can now be compared to newly bought seed. Although this cost should be much lower than that of the new seed, producers should take the risk included into account. It is recommended that part of the planting be done with newly bought seed and that grain should not be bought from fellow producers to use as seed.

Contact Pietman Botha at 082 759 2991 for more information.

The complete article appeared in SA Graan/Grain of March 2023.

Pietman Botha, SA Graan/Grain editorial team

Alles in 'n dag se *w*erk

Ons weet jy neem gemiddeld sowat 40 belangrike besluite elke seisoen. Hierdie besluite vereis 'n aanbod wat al die fasette van jou boerdery dek – van kwaliteitsaad en -gewasbeskermingsprodukte tot slim digitale oplossings. Ontdek wat die **#BAYER**voordeel vir jou plaas kan doen.



Jou trots
ons passie

Kom ons gesels ...



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TROTS OM DEEL TE WEES VAN JOU STORIE



"My pa sê altyd jy moet die
grond in 'n beter toestand los
as wat jy dit gekry het."

FOTO:

Boer: Renier Malan (seun),
Thea Malan (dogter),
Stephan le Roux

(Pannar verteenwoordiger)
en Theo Malan (vader)
Plaas: Palmietfontein

Gebied: Potchefstroom, Noordwes
Pannar verteenwoordiger:
Stephan le Roux



Vind Pannar se spesialis naby aan jou vir pasgemaakte plaaslike oplossings

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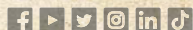
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SEED IS EXPENSIVE; HANDLE IT CORRECTLY

Ongoing input price monitoring is one of the most important tasks Grain SA handles on behalf of members, and seed price monitoring is part of this. Grain SA attempts to make seed prices as transparent as possible and to promote competition in the seed industry so that its members pay competitive prices and make informed decisions.

We are currently focusing intensively on fertiliser and energy prices (particularly fuel prices) because of the effect these factors have on input costs. The fuel price is responsible for about 13% of total variable costs.

Depending on the plant population, seed as production input can constitute between 10% and 17% of a maize producer's running production cost account. Little focus is usually placed on this, although it has a greater effect than fuel prices in some parts of the country.

Seed input costs are considered an investment. Seed with better genetics bred for specific conditions is more expensive, but can contribute to better yields. This seed should have a greater resistance against diseases and be better resistant against extreme weather conditions. With all these factors taken into account, specialist cultivars should improve profitability.

Cultivars differ with respect to various traits, and each one has unique adaptability and yield potential. According to the ARC-Grain Crops, this variety of cultivars offers alternatives that can be well utilised.

1

GUIDELINES FOR CULTIVAR PLANNING

- G** Never replace a reliable cultivar with a new or unknown cultivar within one season.
- G** Cultivar variety spreads risk. Plant a range of cultivars that differ with respect to length of growing season, length and properties.
- G** Cultivars should adapt to a specific yield potential, and also to higher and lower potential conditions.
- G** Review cultivars annually.

2

GUIDELINES FOR SEED PURCHASES

- G** Be aware that prices apply to different packaging, for example 18 kg, 20 kg or 25 kg bags, or kernel packages of 60 000 to 80 000 kernels per bag. For sunflower seed there are packages with 150 000 and 180 000 kernels per bag, and for soybeans 60 000 and 140 000 kernels per bag, and 25 kg bags.
- G** The new cultivars are generally more expensive. Make sure that the cultivars have been tested independently and that its performance is proven. Do not run unnecessary risks with a new cultivar.
- G** Take note of the agronomic properties (adaptability, yield performance and stability), quality characteristics and disease and pest resistance of a specific cultivar before you purchase it.
- G** Make sure at purchase that the quality of the seed meets all the requirements (also those on the packaging), particularly with respect to uniform kernel size and kernel shape.
- G** When GM cultivars are purchased, make sure that the technology fee is included in the price list and that conventional maize for the haven can be purchased additionally. Everybody handling the seed must be able to identify GM properties on seed bags and distinguish them from conventional cultivars.
- G** Certain seed lots are treated with substances that make a difference to the price.
- G** Negotiate a discount. Several companies have discount structures for bulk purchases, confirmation of order, early delivery and early payment.
- G** Contact seed companies and their representatives for more details in this regard.

3

SEED TREATMENT

Seed companies do not guarantee the quality of seed if the seed treatment is not done by the company itself, or by a registered chemical supplier that uses equipment and processes that are ISO accredited.

In the case of a chemical supplier handling the treatment, he must ensure that the treatment does not affect germination. The chemicals used must also be registered in terms of Act No. 36 of 1947 and preferably be recommended by the seed company for the cultivar concerned.

The treatment with Rhizobium is excluded. It is advisable for producers to obtain information from seed companies about the Rhizobium that work the best on their cultivars. Producers who do not buy seed that has already been treated and want to have it treated later, should preferably do this in collaboration with the seed company.

4

GUIDELINES FOR PLANTING BT MAIZE

With the purchase of Bt seed, a technology agreement is signed in which a producer undertakes to plant the seed according to prescribed guidelines.

One of the main guidelines includes the planting of a haven. There are two options: a 5% planting of non-Bt seed where stalk borers may not be controlled chemically, or a 20% planting of non-Bt seed where stalk borers can be controlled chemically.

If the 5% option is exercised, each 100 ha of maize must comprise 5 ha of non-Bt maize and 95 ha of Bt maize. If the 20% option is exercised, each 100 ha of maize must comprise 20 ha of non-Bt maize and 80 ha of Bt maize. In addition to the required percentage of non-Bt maize, there are also specific measures that apply to the planting of a haven.

Havens must be positioned so that Bt maize is not planted further than 400 m from a haven, and that at least two outside borders of the Bt planting are covered. It may not comprise fewer than six rows, and haven plants may not be positioned between Bt plants. Maize planted in the haven must have the same growth rate as the Bt maize and must also be planted within seven days of each other.

5

GUIDELINES FOR PLANTING INTACTA SEED

A haven is very important when Intacta soybean seed is being planted to protect the technology. A portion of the field is planted not with the Bt cultivars, but with RR cultivars, so that a certain part of the African bollworm population is never exposed to the Bt technology.

This is done so that there is always a population of Bt-susceptible moths to mate with Bt-resistant moths so that the next generation is Bt susceptible again.

6

BAYER PROVIDES THESE GUIDELINES:

- G The minimum recommendation for this haven (non-Bt cultivar) is 20%.
- G Havens must be planted within seven days from the Intacta planting.
- G They must be within 400 m of the Intacta planting.
- G The haven must be treated with insecticide (excluding Bt-containing products).
- G Varieties with the same growth class must be used.
- G A minimum of six rows is required.
- G The haven must be on the same farm, with the same growth conditions.



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SLOPPY SEED PLACEMENT

could cap your profit

Incorrect seed placement can be the cause of yield loss of as much as 10% for producers.

Here are a few tips to limit these losses:

1

Maintain planters. Many planters are equipped with the best technology, but because of poor maintenance and wear and tear, seeds are sometimes not picked up or spaced correctly, or two seeds are planted simultaneously.

2

Make sure that the correct planter speed is used. If the planter moves too quickly, the seeds can bounce and roll or stretch the interplant spacing. This will lead to fewer plants being planted per hectare, which will lead to a lower yield.

3

Have specialists like Cerealis Precision or other agribusinesses test and repair planter bins. Let a mechanic also check the electronics before the season starts.

4

Ensure that the planter units plant at the same depth. The planting depth can differ due to wear and tear on the units.

5

Consider buying another planter to reduce pressure on the other planter(s) and to ensure that the planting is done at the right speed.

6

Test the performance of the planters beforehand and during the planting process.

7

Make sure to have the latest equipment software updates installed. Contact the local manufacturers of the tractors and equipment to make sure it is updated.

8

Test all systems before the season starts and prepare to avoid pressure in the busy season.

Several articles on this topic appeared in SA Graan/Grain. Read amongst other the one on mistakes with seed placement that costs a lot without noticing on sagrainmag.co.za

Pietman Botha, SA Graan/Grain editorial team



INTACTA RR2 PRO[®]

BAANBREKERS IN SOJABOONTEGNOLOGIE.

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TEGNOLOGIE EN INNOVASIE

INTACTA RR2 PRO[®]

Die rewolusie in sojaboontegnologie is hier!

INTACTA RR2 PRO[®]-tegnologie bied drie hoofvoordele in 'n enkele produk. Hierdie nuwe eienskapkombinasie verteenwoordig 'n mylpaal vir Suid-Afrikaanse boere en dui op 'n nuwe golf van innovasie in sojaboontegnologie by **Bayer**. Die bekendstelling van **INTACTA RR2 PRO[®]** bied aan boere 'n nuwe keuse vir insekbeheer wat hul produktiwiteit, effektiwiteit en waarde verhoog en uiteindelik lei tot hoër opbrengste wat van beter kwaliteit getuig.

Bayer (Edms) Bpk. Reg. Nr. 1968/011192/07. Wrenchweg 27, Isando, 1601. Posbus 143, Isando, 1600. **INTACTA RR2 PRO[®]** is 'n gellisensieerde produk van **Bayer AG**, Duitsland.

What to do if seed quality is iffy

Experience is a good teacher. Ask producers who have learned the hard way to rather buy seed from a recognised company with a proven track record in South Africa. It is also advisable to have a control to refer to. Therefore, avoid planting only one cultivar.

If you suspect or have experienced any seed problems, follow the next steps:

- 1** Contact the seed representative and insist on an on-site investigation.
- 2** Keep a record of dates and conversations.
- 3** Gather and write down as much information as possible, take photos or videos to refer back to later.

If the problem is not resolved, do not wait too long before considering the next steps:

- 1** Contact an independent scientist to do an on-site investigation. Take it up with the DALRRD if the matter is still not resolved.
- 2** Members of Grain SA should inform the organisation if the seed company does not provide the required attention to the relevant problems.
- 3** A trade control investigation will be carried out in terms of the Plant Improvement Act.



Producers who may have retained seed from the previous year and want to have the germination tested can find certified laboratories for this via this QR code.

Department of Agriculture, Land Reform and Rural Development (DALRRD)'s tips:

- ➊ Only buy from registered seed suppliers.
- ➋ Producers are recommended to keep record of lot numbers and batch code numbers.
- ➌ Labels attached to seed bags should state the name of the firm, as well as the lot number, germination group and type of seed.
- ➍ When purchasing seed, request an analysis certificate of the quality of the seed lot concerned, issued by a registered seed laboratory. The laboratory report should not be older than three months.
- ➎ Producers are advised to retain the actual bag containing all the necessary traceable information, as well as the received invoice for reference purposes.

REGIONAL REPRESENTATIVES

Eastern Cape

GERALD JACK

Gqeberha, 041 484 2725/060 973 8003

FELICITY DANIELS

Gqeberha, 041 484 2725/060 973 8050

Free State

ZANELE BUHLUNGU

Bloemfontein, 051 406 0967/060 973 2001

Gauteng

LAZARUS RACHIDI

011 971 5136/074 542 0005

Western Cape

PHILLIP DU TOIT

Stellenbosch, 021 809 1656/
073 217 2665/060 973 1537

KwaZulu-Natal

RAKHEE SUBBAN

031 337 2755

RAVISH RANJITH

073 251 0157

Corné Louw, head: Applied Economics and Member Services: Grain SA

YIELDS TO BOAST ABOUT

Compared to the average yields for the various grain crops produced in the summer rainfall areas of the country, the yields realised by the producers participating in the Grow for Gold yield competition are quite phenomenal.

One often hears that high-yield competitions serve no purpose. However, listening to producers who took part in the 2023 Grow for Gold yield competition, many of whom entered for the first time, it is clear that a competition such as this pushes them to aim higher and dream bigger. These producers not only chase yields, but also focus on profitability and sustainable practices. They try innovative technologies, focus on interpreting data, and tweak their practices to determine what makes that additional difference. They do their own research to ensure that they compare apples with apples.

The average yield for dryland maize produced during the past season in the western production areas of the country was 5,22 t/ha. In this area the finalists in the North West, the Free State water table areas, as well as in the western parts of the central maize production areas, realised yields more than double the average with yields varying between 10,5 t/ha and 13,3 t/ha.

Even more astonishing were the yields realised by the finalists in the eastern dryland production areas of the country. The average yield for this area during the past season was 5,75 t/ha and the yields achieved in the competition varied from 13,6 t/ha to a top yield of 17,24 t/ha.

In the irrigation areas, the average maize yield during the past season was 11,39 t/ha. In this category,

the producers pushed the yield boundaries upwards to between 18,491 t/ha and 21,5 t/ha.

The average yield for soybeans produced under dryland conditions in the western parts of the country was 2,87 t/ha during the past season. This year the highest yield realised was 6,1 t/ha and the others varied from 4,4 t/ha upwards. The average yield during the past season for dryland soybeans in the eastern production areas was 2,88 t/ha. Here the record-breaking yields varied between 4 t/ha and 6,6 t/ha.

Under irrigation, the average soybean yield for the country is 3,53 t/ha and this year the finalists in this category almost doubled the yield average. The lowest yield in this category was 5,3 t/ha with the highest 6,67 t/ha.

The biggest success story, however, was found in the category for sunflower production. The average yield in the past season for sunflower production in South Africa was 1,31 t/ha. All three finalists realised yields of around 4 t/ha. In the third place the yield realised was 3,995 t/ha and the winning yield was 4,16 t/ha.



Some of the winners in the 2023 Grow for Gold national yield competition.

The complete article appeared in SA Graan/Grain of December 2023/January 2024.

sagrainmag.co.za

Magda du Toit, SA Graan/Grain contributor

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MPUMALANGA	Gerhard Marais	082 806 7931
EASTERN FREE STATE	Des Cuff	060 957 2992
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NORTHERN CAPE/EASTERN CAPE	Kallie Knox	067 424 7877
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AREA	AGRONOMIST	CONTACT
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MPUMALANGA	Roelof le Roux	083 627 0050
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NORTHERN CAPE/EASTERN CAPE	AJ Steyn	083 627 3788
WESTERN FREE STATE	Martin Brandt	082 303 0698
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PRODUCT AGRONOMIST - WEST	Johan Kock	071 681 4039

SMALL-SCALE FARMERS/TENDERS	AGENT	CONTACT
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Gevorderde saadoplossings vir uitnemende sukses



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Dawie du Plessis (<i>Sentraal-Vrystaat</i>)	071 852 1707
Christopher Coetzee (<i>Noordwes</i>)	071 895 6856
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SEED BREEDERS

aim for optimal sustainability

The development of new seed products is necessitated by climate change, new diseases, an increase in certain insects that act as vectors of plant diseases, new insects like the fall armyworm, as well as consumer preferences. Technology development in the seed industry also drives the development of new cultivars.

Seed companies follow different processes, and although some have local breeding programmes, others rely exclusively on products that show potential elsewhere in the world. They are then tested in local conditions with the aim of getting them registered and released here. Notwithstanding this process, the aim is to introduce new and improved products into the market.

MARKET ANALYSES

Hendrik van Staden, unit head at Syngenta's seed division in Africa, says the development of new and improved seed products is based on market analyses. 'Without feedback from our clients on product performance or shortcomings, we cannot improve. Information on the spreading of diseases is essential, because this mainly determines which products we place in regions. This provides direction to our research and development programmes,' he says.

Information gathered elsewhere can be tested and used in breeding programmes by local research and development teams. Similarly, information gathered on South African soil can be shared with other countries. In this way, breeders save a lot of time and money.

DATA COMPARISONS

'Data comparisons across countries' borders are beneficial,' says Leonard Oberholzer, maize strategy manager for Africa at Bayer. 'The data from a hybrid that is grown in comparable conditions in another country can already provide a good indication of whether the product should be tested here or not. The same applies to research and development that take place locally.'

SUITABLE GERMLASM

Germplasm at a very early level of development is tested annually for various properties. According to Dr André du Toit, Africa wheat manager at Corteva, it can take between eight and twelve years for a new variety or hybrid to have gone through the whole process of breeding and production and to be sold commercially.

'The time that elapses from when a problem or obstacle is identified until there is a new cultivar that can handle the problem can take several years. The nature of the problem, as well as the availability of suitable germplasm within breeding programmes, also plays a role. If suitable germplasm first has to be located elsewhere and then be bred into the existing germplasm, it can take up to twelve years before the solution can be commercially offered to producers.'

EVALUATION AND DESCRIPTION

According to Kobus van Huyssteen of the South African National Seed Organisation (SANSOR), all new varieties of declared crops must first be evaluated and described under local conditions by the Department of Agriculture, Land Reform and Rural Development (DALRRD). 'These descriptions are essential because they are used during certification and control purposes. If it differs from all known local varieties and are therefore "new", and it also comply with the uniformity and stability tests, it is placed on the varietal list. Only when a new product appears on the varietal list does it qualify to be commercially sold.'

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◀ 21 Seed breeders aim...

PROPERTIES

The following properties are important in breeding programmes:

- Ⓒ plantability;
- Ⓒ vitality of the seedling;
- Ⓒ yield potential;
- Ⓒ adaptability to local conditions;
- Ⓒ adaptability across various climatic regions;
- Ⓒ stability across seasons;
- Ⓒ stability across production areas;
- Ⓒ standability;
- Ⓒ disease tolerance;
- Ⓒ grain quality;
- Ⓒ grain colour;
- Ⓒ grain type;
- Ⓒ multi-headedness or single-headedness;
- Ⓒ plant morphology (plant type);
- Ⓒ plant height;
- Ⓒ growth length;
- Ⓒ harvestability;
- Ⓒ conventional, or products that contain gene properties;
- Ⓒ adapted for cultivation under irrigation or dryland; and
- Ⓒ producibility and production costs.

Some of the aspects will differ or move in the ranking depending on the crop. With sunflower the oil content is extremely important, while considerable emphasis is placed on bushel weight and baking properties with wheat. Legumes that burst open prematurely are naturally a disqualifying factor in soybeans.

WHEAT

According to Du Toit, it is important to ensure that yields are stable and that the baking and milling quality is acceptable to the industry.

Syngenta's two dryland breeding programmes focus on wheat development for the Western Cape and Free State, while the irrigation breeding programme develops wheat cultivars that are adapted for irrigation areas, says Stephan de Groot, wheat breeder for Syngenta. 'In the three programmes, we select a large variety of characteristics to develop cultivars that are well adapted for the specific areas.

'The most important traits are good yield that is stable, and good grain quality. The cultivars must furthermore have properties like good standability, good disease resistance, grain firmness, tolerance against sprouting, as well as good milling and baking properties.'

MAIZE

Development decisions about new maize hybrids are based on natural resistance to fungal diseases, environmental conditions like wind and drought stress, planting windows and production conditions. Faster versus slower growers and multi-headedness compared to single-headedness are also investigated, and yield potential is continuously measured.

Advanced breeding technology and bioinformatics ensure that high-yield varieties with better tolerance for diseases, drought and insects are developed. According to Roëan Wessels, maize breeding project leader at Syngenta, the main focus is to increase yield, while the plants resist changing environmental conditions, which include biotic and abiotic stress. Climate change not only causes heat and drought, but changing weather patterns that affect disease intensity and occurrence.

United Seeds uses inbred line development for hybrid development. According to Kruger van Wyk, the following are important in evaluating inbred lines:

- Ⓒ classification of inbred lines in heterotic groups;
- Ⓒ desired properties;
- Ⓒ heritability;
- Ⓒ combination ability; and
- Ⓒ population diversity.

He believes that the all-rounder hybrid that could be planted across the entire maize-growing region was popular thirty years ago, but producers' needs have changed. Producers now prefer a combination of hybrids with a view to sustainability and lower-risk plantings.

SUNFLOWER

According to Charles Basson, sunflower breeding project leader at Syngenta, the following is important in sunflower breeding:

- Ⓒ agronomy – the appearance of the hybrid across several environments and planting dates, plant height, standability, head size, angle of the head, days to flowering and days to physiological ripeness;
- Ⓒ disease resistance;
- Ⓒ herbicide resistance;
- Ⓒ oil content;
- Ⓒ grain yield; and
- Ⓒ seed production.

*The complete article appeared in
SA Graan/Grain of March 2023.*

Magda du Toit, SA Graan/Grain contributor



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Ons het belê in 'n nuwe geelmieliepakkiet sodat jy met gerustheid kan plant en sien hoe goeie planne in goeie opbrengs verander. **Ons help jou groei – vandag en môre.**



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IMPLEMENTS AND EQUIPMENT

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South African Agricultural Machinery Association (SAAMA) <i>agfacts@worldonline.co.za</i> 011 453 7249	Spill Response Team <i>info@marlowsa.com</i> 011 280 4160
South African Institute for Agricultural Engineers (SAIAE) <i>admin@saiae.co.za</i> 078 889 8925	Drizit SA <i>drizit@iafrica.com</i> 031 274 2300 Enviroserv <i>clientservices@enviroserv.co.za</i> 080 019 2783 Rapid Spill Response <i>spark@rapidspillresponse.com</i> 086 111 3467

Diesel rebate

– follow these steps

It is of critical importance for producers to keep strict record of their diesel consumption. The Customs and Excise Act (No. 91 of 1964) requires, among other things, that a logbook must be kept of how diesel was consumed.

PRACTICAL HINTS

- 1 Claim the diesel refund according to usage and not purchases.
- 2 Be as specific and prescriptive as possible about the activities. 'General' is not accepted.
- 3 In particular, keep proper records of the activities of trucks and vehicles using tarred roads. It is further experienced that it helps to keep separate logbook for vehicles and trucks.
- 4 Clearly indicate private use.
- 5 Transporting labour does not qualify.
- 6 It is more about the qualifying activity than it is about use on the farm. Use on the farm can also be a non-qualifying activity. For qualifying activities consult schedule 6, part 3.



Scan the QR code and scroll down to part 3. (It is in Schedule 6, part 3).

DETAILS ON RECORDING YOUR INFORMATION

- 1 Date on which the diesel was added.
- 2 Quantity of diesel added.
- 3 Description of the vehicle.
- 4 Timer or kilometre reading before and after use.
- 5 Reason for which diesel was consumed. (It is important to check which activities qualify for the diesel rebate – consult Schedule 6, Part 3. It also helps, to record what it is being used for).



Scan this QR code for an example of logbooks (store logbook and consumption logbook) supplied by SARS.



Corné Louw, head: Applied Economics and Member Services: Grain SA



T. van der Merwe

NEW HOLLAND DEALER NETWORK

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NORTH WEST	Dicla Farm & Seed JTR Machinery NWK	Megan Aspden Riaan Muller Johan Janse van Rensburg	011 662 1371 053 050 0831 072 123 5684
FREE STATE	BR Dienste JTR Machinery NWK	Reinhardt Grobler Riaan de Beer Johan Janse van Rensburg	083 631 4681 082 338 3348 072 123 5684
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KWAZULU-NATAL	BR Dienste Midlands Agri Ritchie Farm Equipment South Coast New Holland TWK Agri	Reinhardt Grobler Louis Fourie Paul Mannix Peter Holmes Bennie Parsons	083 631 4681 072 869 5903 082 571 6559 082 715 0971 033 346 1335
NORTHERN CAPE	JTR Machinery Upington Trekkers	Riaan Muller Yvon Heyns	053 050 0831 054 332 5691
EASTERN CAPE	RCL Trekkerdienste Kimjer Motors	Louwrens Bezuidenhout Trevor King	042 283 0012 082 823 0570
WESTERN CAPE	Kaap Agri SSK	Gielie Mocke Armand Horne	082 807 6547 083 281 1133
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NEW HOLLAND



Effectiveness trumps high cultivation costs

Over time the contribution of fuel and repairs is about 20% of the direct costs, especially for conventional grain cultivation. The fuel price is one of the main contributors to cultivation costs, but the field conditions, the operator and many other aspects also play a role.

Producers must learn about the aspects that 'gobble' up their money and try to manage these factors properly. Unnecessary tillage, the wrong tillage and other cultivation errors increase these costs.

Fixed costs for tractors and equipment are unavoidable. The tractor or harvester will lose its value over time. With the right maintenance and timely services the depreciation can be limited to a certain extent. Used tractors can often be sold for more than the purchase price, but because of inflation and other factors a new tractor is considerably more expensive. Therefore, calculate carefully when to replace. The purchase of a tractor always remains a difficult decision.

There are big differences in price per kilowatt between tractors, with the smaller tractors being the cheapest per kilowatt, and the cost per kilowatt increasing as the tractor's kilowatt increases. The average price per kilowatt for medium-sized four-wheel drive tractors with cabins of between 100 kW and 170 kW is in the region of R18 000/kW.



The average life expectancy of tractors is generally accepted to be 12 000 hours.

Due to fuel price decreases the tillage costs are expected to be lower than those for last year, but it remains an expensive aspect. Having engines run unnecessarily eats your profits. To increase efficiency and efficacy, it is important to know how much fuel a tractor should consume to perform a certain action, and how much should be budgeted to maintain the tractor and equipment. If producers check the fuel consumption of their tractors,

they can quickly identify and correct problems.

Tillage costs comprise two types of costs, namely fixed costs, and variable costs. Fixed costs indicate the ownership of a machine and occur regardless of whether the machine is working or not. Variable costs are the result of the use of the tractor. Variable costs are influenced by the skill of the driver, the working conditions, maintenance, and so on.

REPAIRS

The more work the tractor does, the higher the repair costs will be. A new tractor is not expected to require as much repair work as a used tractor, but then there are compulsory services to be carried out. Repairs to older tractors increase up to a point and then level off as worn components are replaced. Using an average repair cost per hour for tractors solves this problem to a certain extent. Currently, a norm is accepted where the repairs are determined over the life of the tractor at 120% of the purchase price of the tractor, divided by its use in hours. These norms are used in the costing tables.

Repairs to implements are influenced by the type of implement and the wear and tear. Like those of tractors, repairs to implements are also calculated as a percentage of the

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REACH FURTHER

WORK FASTER



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IN SA



IMPLEMENTS and EQUIPMENT



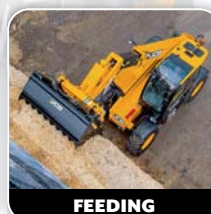
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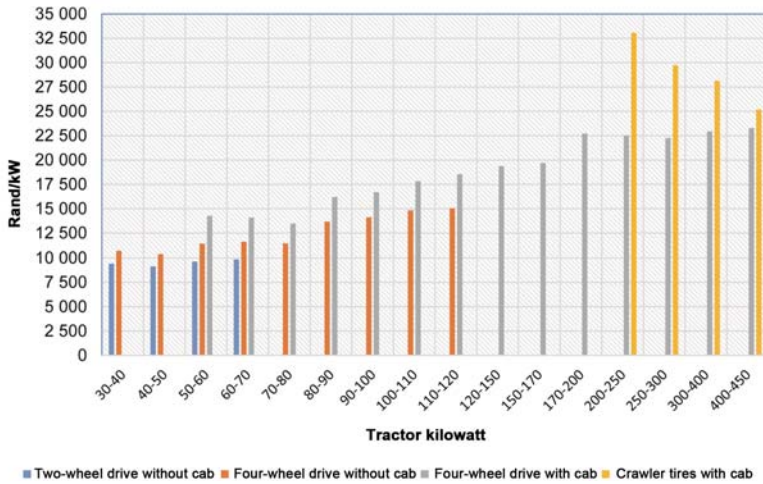
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Graph 1: Tractor costs per kilowatt divided between two- and four-wheel drive with open stations, four-wheel drive with cabin and tractors with tracks.

purchase price across the expected life of the implement. These norms are indicated in the cost calculation tables.

FUEL COSTS

It is much more difficult to calculate fuel costs than the cost of repairs. The fuel price, power requirements, litres used per kilowatt-hour, and the percentage of kilowatts used together determine the fuel costs. Other aspects like the tractor operator and the soil conditions also play an important role in the fuel consumption of a tractor.

NON-CASH AND CASH EXPENSES

Fixed costs are divided into non-cash and cash expenses. The non-cash expenses include aspects like depreciation and interest on the capital investment. The interest on capital is the opportunity cost of owning the machine. The cash expenses of the fixed costs usually comprise insurance and licence fees.

DEPRECIATION

Depreciation always occurs and the straight-line method is used to calculate depreciation across the tractor's expected life (12 000 hours). Dividing the purchase costs less the scrap value (10% of purchase price) of the machine by the expected life of the machine in hours, gives the depreciation per hour. The

expected lives of the different implements are indicated in the costing tables.

INTEREST EXPENSES

Interest expenses are calculated by multiplying the average capital investment (purchase price plus scrap value divided by two) by the interest rate of the medium-term investment. This amount is divided by the average annual use of the machine, assumed at 1 000 hours, to determine the cost per hour.

LICENCE AND INSURANCE

The licence and insurance costs of machinery are a cash cost in which the age of the machine plays a role. The licence and insurance costs are determined as 1,75% of the average capital investment.

COST PER ACTION

To calculate the cost per action, the fixed and variable costs of the tractor and the implement per hour are added together and then divided by the hours per hectare to obtain the cost per hectare.

Table 1 (on page 32) and **2** (on page 35) contain the cost for 77 kW and 250 kW four-wheel drive tractors with different implements.

*Address further enquiries to
Pietman Botha at 082 759 2991.*

Table 1: Tractor costs per hour for a 77 kilowatt 4x4 tractor costing R947 574.

ACTION	PLOUGH	RIP OVERALL	RIP ON ROW	CHISEL	DISC/ONE-WAY	WIDE-WORK-ING HOE	MAIZE PLANTER
Power requirement	High-powered	High-powered	High-powered	High-powered	High-powered	High-powered	High-powered
Total fixed costs	134,91	134,91	134,91	134,91	134,91	134,91	134,91
Total variable costs	385,82	385,82	385,82	385,82	385,82	385,82	385,82
Total tractor costs per hour	520,73	520,73	520,73	520,73	520,73	520,73	520,73
IMPLEMENT COSTS PER HOUR							
Implement used	4 shares 1,6 m	5 times 2 m	1 row 2 times tandem 1,5 m	9 times 2,7 m	28 discs 3,2 m	23 times 5,2 m	6 rows 0,9 m 5,4 m
Average new implement price	122 000	207 266	156 200	234 270	274 600	347 620	950 000
Average use (hours per year)	250	300	300	250	250	250	150
Life (hours)	2 500	3 000	3 000	2 500	2 500	2 500	1 500
Repairs and maintenance as % of purchase price	110	40	40	50	60	60	80
Total fixed costs	76,13	107,77	81,23	146,18	171,34	216,91	988,00
Repairs and maintenance	53,68	27,64	20,83	46,85	65,90	83,43	506,67
Total variable costs	53,68	27,64	20,83	46,85	65,90	83,43	506,67
Total implement costs per hour	129,81	135,40	102,06	193,03	237,25	300,34	1 494,67
TOTAL ACTION COSTS PER HOUR	650,54	656,13	622,79	713,76	757,98	821,07	2 015,40
WORK RATE							
Work speed km/h	7,00	6,50	6,50	6,00	8,00	7,00	7,00
Work width	1,60	2,00	1,50	2,70	3,20	5,20	5,40
Effectiveness	0,83	0,83	0,83	0,83	0,83	0,83	0,80
Hectares tilled per day (10 hours)	9 296	10,79	8,0925	13,446	21,248	30,212	22,68
TOTAL COSTS PER TILLAGE	699,80	608,09	769,58	530,83	356,72	271,76	888,62
Litres of diesel/ha	14,91	12,85	17,13	10,31	6,52	4,59	6,11
Rand repairs/ha	159,68	113,43	142,83	105,32	75,61	58,98	265,18
Total tractor costs/ha	560,17	482,60	643,47	387,28	245,07	172,36	229,60
Total implement costs/ha	139,64	125,49	126,11	143,56	111,66	99,41	659,02

AFTER SALES not making the cut

Members of Grain SA who receive unsatisfactory after-sales service from their mechanisation dealers or technology suppliers, can report it to Corné Louw, head: Applied Economics and Member Services at Grain SA at 086 004 7246 or send an email to corne@grainsa.co.za.

Corné Louw, head: Applied Economics
and Member Services: Grain SA

Diesel tests can expose contamination

Be cautious of fuel prices that seem too good to be true. Fuel distributors who are new to the scene often offer extremely competitive prices to producers. However, make sure that the quality of this diesel meets specifications.

Various sources can be used to test diesel quality. Producers who suspect that there are problems with their diesel quality – especially in cases of possible paraffin contamination – can contact the South African Revenue Service (SARS) for testing. Contact Sarika Munien at 082 557 4112 or by email at smunien@sars.gov.za.

Diesel mini
testing kit.

Another option is to have the diesel tested in a laboratory. The following laboratories have been used by members of Grain SA:

WEARCHECK

011 392 6322

www.wearcheck.co.za

support@wearcheck.co.za

TRIBOLOGY LABORATORY

012 420 2475

Philip.devaal@up.ac.za

Producers who wish to test the diesel themselves, can visit the www.dieseltesting.co.za website or contact 087 575 3568 for the purchase of test instruments.

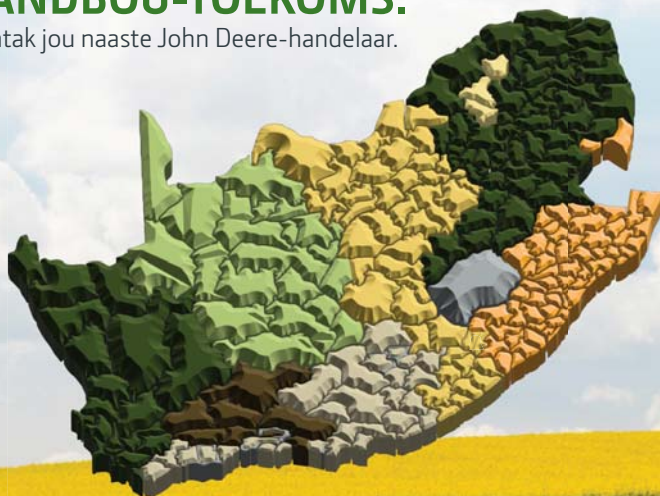
Corné Louw, head: Applied Economics
and Member Services: Grain SA










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AFGRI Equipment Suid	Wes-Kaap Tel. 087 820 1780 www.afgriequipment.co.za
Senwes	Noordwes, Wes-Vrystaat en Suid-Kaap Tel. 083 298 1553 www.senwes.co.za/products-and-services/equipment
JD Implemente	Suid- & Wes-Kaap Tel. 028 514 2700 www.jdimplemente.co.za
Mascor	KwaZulu-Natal & Mpumalanga Tel. 033 413 2164 www.mascor.co.za
GWK	Noord-Kaap Tel. 053 298 8200 www.gwk.co.za
Settlers Service Station	Limpopo Tel. 014 730 0112
Trekker & Diesel	Suid-Kaap Tel. 044 272 2268

Table 2: Tractor costs per hour for a 77 kilowatt 4x4 tractor costing R5 815 748.

ACTION	PLOUGH	RIP OVERALL	CHISEL	DISC/ONE-WAY	WIDE-WORKING HOE
Power requirement	High-powered	High-powered	High-powered	High-powered	High-powered
Total fixed costs	828,02	828,02	828,02	828,02	828,02
Total variable costs	1 526,57	1 526,57	1 526,57	1 526,57	1 526,57
Total tractor costs per hour	2 354,59	2 354,59	2 354,59	2 354,59	2 354,59
IMPLEMENT COSTS PER HOUR					
Implement used	8 shares 4 m	13 times 5,2 m	23 times 7n3m	64 discs 8,6 m	83 times 22 m
Average new implement price	452 000	531 430	984 500	1 470 250	650 320
Average use (hours per year)	250	300	250	250	250
Life (hours)	2 500	3 000	2 500	2 500	2 500
Repairs and maintenance as % of purchase price	110	40	50	60	60
Total fixed costs	376,97	369,33	821,07	1 226,19	542,36
Repairs and maintenance	198,88	70,86	196,90	352,86	156,08
Total variable costs	198,88	70,86	196,90	352,86	156,08
Total implement costs per hour	575,85	440,19	1 017,97	1 579,05	698,44
TOTAL ACTION COSTS PER HOUR	2 930,44	2 794,78	3 372,56	3 933,64	3 053,03
WORK RATE					
Work speed km/h	7,00	7,00	7,00	8,00	8,00
Work width	4,00	5,20	7,30	8,60	12,00
Effectiveness	0,83	0,83	0,83	0,83	0,83
Hectares tilled per day (10 hours)	23,24	30,212	42,413	57,104	79,68
TOTAL COSTS PER TILLAGE	1 260,94	925,05	795,17	688,85	383,16
Litres of diesel/ha	19,36	14,89	10,61	7,88	5,65
Rand repairs/ha	335,82	215,95	183,55	163,64	92,58
Total tractor costs/ha	1 013,16	779,36	555,16	412,33	295,51
Total implement costs/ha	247,78	145,70	240,01	276,52	87,66

Tractor life calculated at 12 000 and annual use at 1 000 hours

Scrap value of tractors and implements 10% of purchase price

Depreciation per hour is the (purchase price less the scrap value) divided by the expected life

Interest is calculated at 10,5% of the average investment divided by the hours used per year

Tractor insurance and licences are calculated at 1,75% of the average investment divided by the hours used per year

Repairs for tractors are use at 120% of purchase price divided by the expected life of the tractor

Implement insurance is calculated at 1,5% of the average investment divided by the hours used per year

Repairs for implements are calculated at the percentage of purchase price divided by the expected life of implement

The complete article appeared in
SA Graan/Grain of August 2023.

Pietman Botha,
SA Graan/Grain editorial team

PUT SAFETY FIRST

Accidents, injuries, and diseases can have negative consequences for agriculture. The Compensation for Occupational Injuries and Diseases Act (Act No. 130 of 1993) places the onus on the employer to create a safe working environment.

According to George Rautenbach of Winelands Consulting, it is important to identify risks. 'Regular meetings with workers can promote communication and cooperation. In the meetings it can be explained what can happen if risks are not eliminated. Keep a record and minutes of meetings. Employees must sign the attendance register and documents should be filed.'

1

CREATE A SAFE WORKING ENVIRONMENT

- Ⓒ Maintain buildings, places of work and machinery properly.
- Ⓒ Store, use and transport agrochemicals like fertiliser, herbicides and pesticides with safety as the priority.
- Ⓒ Avoid the use of unsafe products.
- Ⓒ Train workers and machine operators regularly and properly.
- Ⓒ Display the requirements visibly.
- Ⓒ Design the workplace with a view to the lifting, moving or shifting of heavy loads.
- Ⓒ Provide suitable safety clothing like hard-toed shoes, hats, gloves and masks.
- Ⓒ Fence play areas for children away from the immediate working environment.
- Ⓒ Remove loose objects, stones or low-hanging branches that can hamper the safe operation of machinery.
- Ⓒ Make sure that the work area is free of obstacles, debris, and other potential hazards.
- Ⓒ Mark ditches, holes, or uneven terrain surfaces.
- Ⓒ Transport workers safely.

2

AVOID ACCIDENTS

Arno du Plessis, head of Agricultural Product Support and Branding Services at CNH Industrial, emphasises the following:

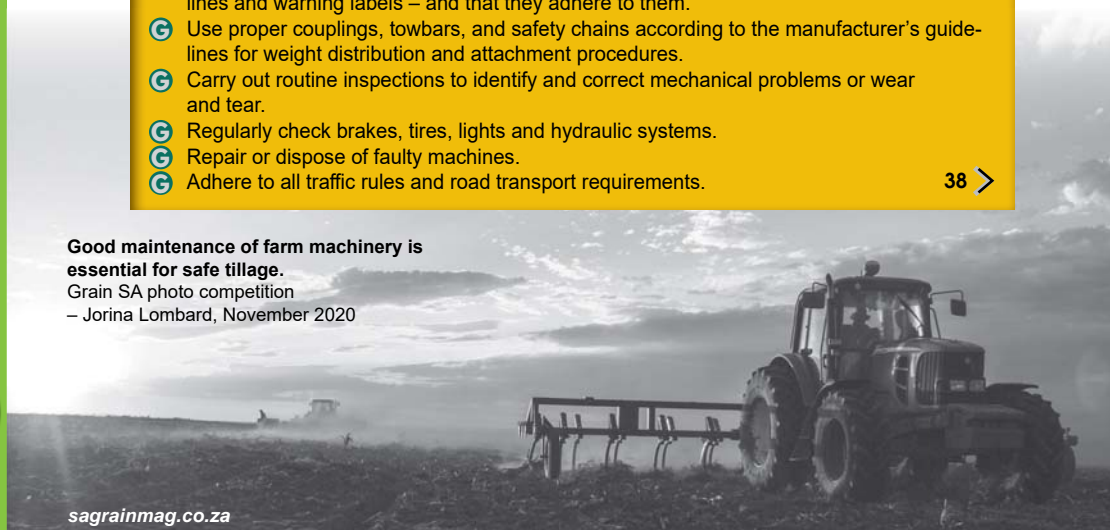
- Ⓒ Use tools, implements and machinery only for their designated purpose.
- Ⓒ Make sure that operators are familiar with the manufacturer's instructions, safety guidelines and warning labels – and that they adhere to them.
- Ⓒ Use proper couplings, towbars, and safety chains according to the manufacturer's guidelines for weight distribution and attachment procedures.
- Ⓒ Carry out routine inspections to identify and correct mechanical problems or wear and tear.
- Ⓒ Regularly check brakes, tires, lights and hydraulic systems.
- Ⓒ Repair or dispose of faulty machines.
- Ⓒ Adhere to all traffic rules and road transport requirements.

38 >

Good maintenance of farm machinery is essential for safe tillage.

Grain SA photo competition

– Jorina Lombard, November 2020



OOS WES TUIS BES

MET WILLARD

Min dinge roer 'n Suid-Afrikaanse boer soos die reuk van vrugbare grond en die wete dat sy implemente in betroubare toestand is. Betroubaarheid is een van Willard Battery se kenmerkende eienskappe wat al vir meer as 100 jaar gerustheid aan generasies boere verskaf. Met ons vervaardigingsaanleg hier in Suid-Afrika, verstaan ons die vereistes wat ons unieke omgewing stel.

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EMERGENCIES

-  Appoint first-aid officers and train them.
-  Develop an emergency response plan with contact information of medical services and emergency personnel.
-  Maintain a well-equipped first-aid kit.
-  Conduct regular safety drills.
-  Call an ambulance in the event of serious accidents.
-  When poisoning is suspected, immediately summon the first-aid officer, and arrange medical assistance. Establish which agrochemicals are involved and how the exposure occurred – ingestion, inhalation or through skin contact.
-  Investigate the accident and scene of the accident to establish what happened. Conduct interviews with eyewitnesses. Establish the sequence of events. Write down statements and have them signed. Take as many photos as possible.
-  Determine what can be done to prevent a reoccurrence.
-  Report the accident to the Compensation Commissioner within seven days.
-  Close off the scene of the accident. If a person has died, the entire scene must be left untouched until the SAPS has arrived.

CONTACT NUMBERS

-  Agricultural Employers' Organisation: 086 110 1828
-  Poison helpline: 086 155 5777
-  Winelands Consulting: 084 323 8416 or enquiries@winelandsconsulting.com

*The complete article appeared in
SA Graan/Grain of August 2023.*

Magda du Toit, SA Graan/Grain contributor



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DRONES

are not just about flying

Drones have become increasingly popular in agriculture as a valuable tool for precision farming. However, operators need to understand the licensing requirements and regulations surrounding the use of drones for agricultural purposes.

SACAA

The South African Civil Aviation Authority (SACAA) is responsible for the oversight and regulation of civil aviation activities within South Africa, including the operation of drones.

To legally operate a drone for agricultural purposes, specifically for pesticide spraying, operators are required to obtain a Commercial Remote Pilot License (RPL) and register as a Pest Control Operator (PCO) with the Department of Agriculture, Land Reform and Rural Development (DALRRD). Such drones must also obtain a Certificate of Airworthiness (CoA) from SACAA.

OPERATING CONDITIONS AND RESTRICTIONS

Specific operating conditions and restrictions must be adhered to when using drones for agricultural pesticide spraying in South Africa. Some key requirements include:

- ⓐ **Flight authorisation:** Operators must obtain flight authorisation from the SACAA for each flight conducted to prevent potential conflicts with other aircraft.
- ⓐ **Areas:** Operators must be aware of restricted airspace areas.
- ⓐ **Visual line of sight (VLOS):** Drone operations must always be conducted within the



dji AGRICULTURE

AGRIHAWK IS 'N DJI-GEMAGTIGDE HANDELAAR VIR ALLE LANDBOU-HOMMELTUIE MET VERSKEIE DIENSSENTRUMS LANDSWYD.

Agrihawk se voorloperprodukt op die mark is die nuwe Agras T40 spuit-en-strooi-hommeltuig. Hierdie hommeltuig sal 'n uitstekende aanwinst vir enige boerdery wees. Meer en meer boere belê in hierdie tegnologie, want hulle sien watter verskil dit maak, nie net in akkuraatheid nie, maar ook in besparings op operasionele koste.

Ons hooftak in Nylstroom het altyd voorraad beskikbaar, asook 'n stoor vol onderdele en 'n dienssentrum.



Ander produkte sluit die Mavic 3 Multi-spectral en die Mavic 3 Thermal in.

◀ Drones...

visual line of sight of the operator, ensuring effective control.

- Ⓞ **Weather conditions:** Operators should monitor weather conditions before and during flights to ensure safe operations.
- Ⓞ **Privacy and data protection:** Operators must respect privacy rights and data protection regulations. when using drones for agricultural purposes. Sensitive information should be handled responsibly and in compliance with relevant laws.

- Ⓞ Multiple flights in one day can be undertaken and it can be transported with a bakkie.
- Ⓞ Improved penetration is realized, when compared with traditional aircraft, as it flies at a slower speed and the nozzles are located below the propellers.
- Ⓞ When compared with tractor boom applications, drones are cheaper. It eliminates the crop loss associated with tractor compaction and it utilises only 10% to 15% of the water required for tractor boom applications.

CROP PESTICIDE SPRAYING BY DRONES OFFERS NUMEROUS ADVANTAGES

- Ⓞ More precise applications and it can get close enough to spray almost 100% of any field due to its sensors and GPS mapping.
- Ⓞ Greater fuel-efficiency, using up to 60% less fuel than manned aircraft when the batteries are charged by generators.
- Ⓞ It enables small farmers to use aerial pesticide applications as it is more cost-effective than standard aerial applications.

For more information, contact Jeandré de Beer at 071 044 6200 or send an email to jeandre@pacsys.co.za.

The complete article appeared in SA Graan/Grain of August 2023.

Mariëtta Cronjé, SA Graan/Grain contributor

ONTSLUIT ——— JOU TOEKOMS IN AMBAGTE EN IT

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- GEREEDSKAPMAKER
- PAS-EN-DRAAI
- OUTO-ELEKTRIES
(VERVOERELEKTRISIËN)
- ELEKTRIES
- MEULMAKER
- SWEIS

IT KWALIFIKASIES

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Persoonlike finansiële oplossings sodat jy 'n voorsprong kan kry.

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<https://www.deere.africa/en/finance/financing/current-offers/>

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IMPLEMENTS and EQUIPMENT

Repair cost calculations approach to consider

To accurately budget for diesel and repair costs is challenging, but important as it makes out a significant amount of crop cultivation costs. The question remains; How much must be budgeted for diesel and repairs? Must the same be budgeted for every crop?

Because crops require different types of tillage, the amount of fuel consumed per hectare differs. However, when it comes to the cost of repairs, there is a definite link between the amount of diesel consumed and the repairs required. The more diesel that is consumed, the more repairs are necessary.

Several methods can be used to determine and allocate the cost of repairs. By determining the relationship between fuel and repairs over time and analysing it meaningfully the repairs can be predicted to a reasonable extent. Fuel consumption is affected by the difference in each area and the soil, cultivation windows and topography on each farm. The brand and age of tractors will also affect the repairs. It is not necessarily true that old tractors require more repairs than new ones. Doing the maintenance and/or repairs yourself will also make a major difference to the total cost of repairs.

RULES OF THUMB

There are also rules of thumb against which you can measure these repairs.

- G** On the eastern Highveld repairs usually cost a little more than the diesel consumption due to the higher kilowatt per hectare (roughly 1 kW/ha) and the topography of the fields. An additional 10% more than the fuel can usually be budgeted for.
- G** On the plains of the Free State and North-West fewer kilowatts per hectare are used (approximately 0,75 kW/ha) purely because the cultivation window is bigger. Here the type of soil also plays a role and the diesel as percentage of repairs is usually equal.

Another rule of thumb is to allocate 1% of the price of the new tractor to repairs and then allocate this to the crops according to the amount of diesel consumed per hectare per crop.

A lot of research has been conducted on the repairs to tractors and equipment. Agricultural engineers and agricultural economists compiled the following benchmarks some time

ago to determine the repairs and maintenance of tractors and equipment.

The main cost drivers are:

- G** The average investment or the capital investment in the new tractors or equipment;
- G** expected lifetime of the tractors and equipment;
- G** expected annual use; as well as
- G** a repair percentage over the useful life of the tractors and equipment.

In general, the life expectancy of a tractor is twelve years, and that of most other implements ten years. A driver to a great extent determines the amount of diesel required by and the break-ages of equipment. By training these persons properly and checking on them constantly, the amount of diesel consumption and repairs can be kept to the benchmarks. With the electronic equipment installed in tractors these days good control is possible and equipment can therefore last considerably longer.

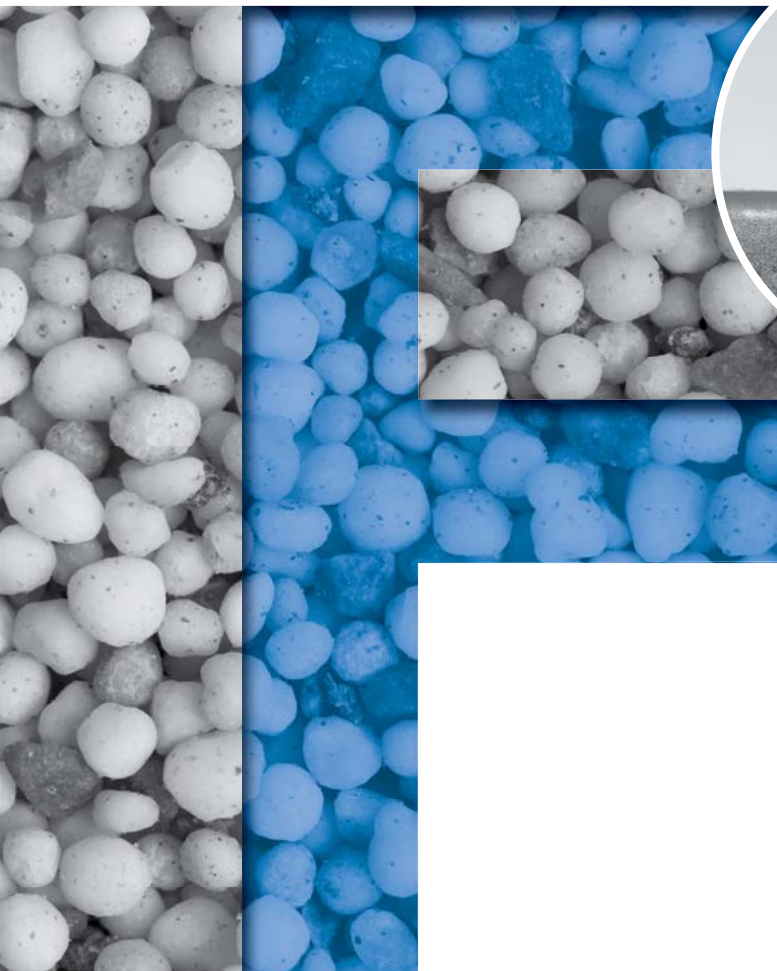
Record keeping of tractor repairs is also important. Write everything down by tractor and keep record of what breaks. This way you have control over repairs, and you can also check the drivers.

For more calculated processing costs, visit sagrainmag.co.za online.



For the full article by the author containing further information on the expected useful life of tractors and implements, the cost and working speed of four-wheel-drive tractors and a comparison between the costs of the different tractors, scan the QR code.

Pietman Botha, SA Graan/Grain editorial team



FERTILISER

Your CONTACTS

INSTITUTION

Agri Laboratory Association of South Africa
(AgriLASA)
info@agrilasa.co.za
076 833 1752

Fertilizer Association of Southern Africa
(Fertasa)
general@fertasa.co.za
012 349 1450



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WHAT IS BETTER: Band placing or spreading of fertiliser?

Which method is the best when it comes to applying fertiliser? To answer this question, production conditions must first be considered.

Soil types differ with respect to fertility status. The fertility levels of sandy soils can be lower than those of more clayey soils. Make sure that the plant nutrition applied can be absorbed as easily as possible by the plants, and usually, the closer to the roots the better the response.

The type of fertiliser and level of application will also be important in determining whether to spread it or not. Phosphate (P) and potassium (K) are less suitable for spreading because these two elements are mainly absorbed through diffusion. A high concentration in the band is important for the absorption of P and K. Certain soils can also embed P and K – in these soils, band placing will therefore also be the better application method.

In well built-up soils with a higher fertility, band placing will have a smaller impact than in sandy soils. Micro-elements like zinc (Zn), manganese (Mn), copper (Cu), iron (Fe), boron (B) and molybdenum (Mo) will also be better absorbed in a band.

Graph 1 indicates the yield response of maize in two row widths (1,5 m and 0,75 m). In a trial in which the same quantity of fertiliser was band placed and also spread, interesting observations were made. The differences in the trial are significant and confirm the importance of applying plant nutrition as close to the plant roots as possible for rapid and effective absorption. In this case the producer obtained better

value for his money by band placing than by spreading.

1

Make sure that the application action supports the effective absorption of fertiliser. If this is not the case, the application method must be adjusted for maximum effectiveness.

2

Fertiliser spread after emergence depends on rainfall to ensure the absorption of nutrients.

3

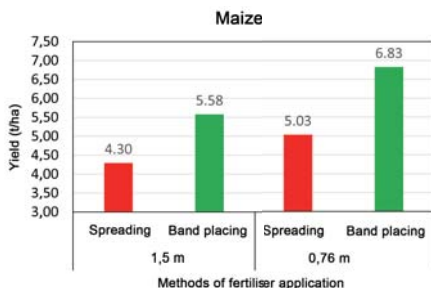
Fertiliser that is band placed is still in the soil, where more moisture is available for absorption.

4

In the last few wet seasons, band placing also worked better than spread fertiliser because of the higher concentration of nutrients in the band.

5

In some cases, spreading was the only feasible option.

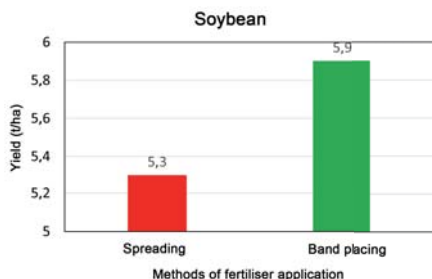


Graph 1: Yield response of maize to different methods of fertiliser application with the same product, applied at the same level per hectare.

Graph 2 (on page 48) indicates the yield response of fertiliser on soybeans that was band placed and spread, with the same product at the same level of application. Like with maize, the yield difference is big. The row width in the soybean trial was 0,86 m. In this trial the yield difference was approximately 600 kg/ha.

Not only the physical yield differences between band placing and spreading are big – the difference can also be seen clearly in satellite images. Satellite image data of a maize trial, with the planting date and quantity of fertiliser applied were the same for both application methods, indicated that the band placed fertiliser led to much stronger growth than the spread fertiliser. During harvesting there were major yield differences in favour of band placing.

◀ What is better...



Graph 2: Yield response of soybeans to different methods of fertiliser application with the same product, applied at the same level per hectare.

Plants do respond better to a higher concentration of plant nutrient elements. In the fertiliser band the concentration can be created artificially, while this cannot be done with broadcasting. To obtain maximum yield from a fertiliser investment, a good quality fertiliser (physically and chemically) must be used at the right application level and with the best possible application method.

It is undoubtedly cheaper and quicker to spread the top dressing rather than to apply it

with a tractor and hoe. If an eight-row hoe with fertiliser bins is compared to a 1 500 litre spreader that spreads 24 m wide, approximately 25 ha/day can be applied with one hoe. With the spreader, 115 ha/day can easily be spread. To hoe the same number of hectares per day, five tractors will have to work simultaneously.

Band placing top dressing should cost more or less R390/ha, while just spreading it will amount to approximately R62/ha. Add to this the hoeing action of R361/ha, and the price difference is no longer really a factor.

Taking the profitability into account, it definitely makes sense to band place top dressing, but if the season is too far advanced, the spreading of top dressing is an option to consider. Read the full article to get the complete picture.

The complete article appeared in SA Graan/Grain of July 2023.

Kobus van Zyl, senior agriculturist:
Omnia Fertiliser and Pietman Botha,
SA Graan/Grain editorial team



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AGRICULTURAL LIME AND GYPSUM

resources in South Africa

Calcite

CENTRAL				
LOCATION	NAME	COMPANY	NUMBER	OWNER (O) DISTRIBUTOR (D)
Barkly West	Ulco	LimeCrop	076 575 8476	D
Buhrmansdrif	Buhrmansdrif	Bastion Lime (Pty) Ltd	018 464 7820	O
Buhrmansdrif	Prolime Calcitop	SA Lime & Gypsum	086 010 3515	O
Buhrmansdrif	Prolime Calcite	SA Lime & Gypsum	086 010 3515	O
Buhrmansdrif	Buhrmansdrif	Kalkor	011 721 3141	D
Buhrmansdrif	Buhrmansdrif	LimeCrop	076 575 8476	D
Christiana	Britten	Bastion Lime (Pty) Ltd	018 464 7820	O
Christiana	Britten	Kalkor	011 721 3141	D
Christiana	Britten	LimeCrop	076 575 8476	D
Christiana	Britten – Grasstop 20 Calcite	Losmaat	011 721 3141	D
Daniëlskuil	Daniëlskuil	H Pistorius & Co	012 342 1075	D
Daniëlskuil	Daniëlskuil	Kalkor	011 721 3141	D
Daniëlskuil	Daniëlskuil	LimeCrop	076 575 8476	D
Hartbeespoort- dam	Sallies Calsite	SA Lime & Gypsum	086 010 3515	O
Hartbeespoort- dam	Sallies Calcitop	SA Lime & Gypsum	086 010 3515	O
Hiquallime	Microfine Calcite	H Pistorius & Co	012 342 1075	O
Immerpan	Leo	H Pistorius & Co	012 342 1075	O
Immerpan	Inca	LimeCrop	076 575 8476	D
Immerpan	Inca	SA Lime & Gypsum	086 010 3515	D
Immerpan	Inca Calcite Bulk	H Pistorius & Co	012 342 1075	D
Mafikeng	Buhrmansdrif – Grasstop 20:80	Losmaat	011 721 3141	D
Marble Hall	Marble Hall	Afrimat Lime Company	079 107 5463	O
Marble Hall	Marble Hall	Kalkor	011 721 3141	D
Marble Hall	Marble Hall	LimeCrop	076 575 8476	D
Marble Hall	Marble Hall Calsite	SA Lime & Gypsum	086 010 3515	D
Middelburg	Pro-Gyp Calcitop	SA Lime & Gypsum	086 010 3515	O
Ngodwana	Microfine calcite	H Pistorius & Co	012 342 1075	O
Ngodwana	Ngodwana	Kalkor	011 721 3141	D
Northam	Agri-Lime	H Pistorius & Co	012 342 1075	D
Northam	Agri-Lime	Kalkor	011 721 3141	D
Northam	Northam	LimeCrop	076 575 8476	D
Northam	Northam Calcite	SA Lime & Gypsum	086 010 3515	D
Olifantsfontein	Olifantsfontein Calcitop	SA Lime & Gypsum	086 010 3515	O
Olifantsfontein	Olifantsfontein Calcite	SA Lime & Gypsum	086 010 3515	O
Olifantsfontein	Olifantsfontein Precision Calcite	SA Lime & Gypsum	086 010 3515	O
Ottoshoop	Ottoshoop Calcitop	SA Lime & Gypsum	086 010 3515	O
Ottoshoop	Prolime Precision Lime – Ottoshoop	SA Lime & Gypsum	086 010 3515	O
Port Shepstone	Idwala Kulu CAG	Kalkor	011 721 3141	D
Port Shepstone	Idwala Kulu CAG	SA Lime & Gypsum	086 010 3515	D
Port Shepstone	Rossmine Calcite	SA Lime & Gypsum	086 010 3515	D

Calcite (continued)

CENTRAL				
LOCATION	NAME	COMPANY	NUMBER	OWNER (O) DISTRIBUTOR (D)
Roedtan	Inca	Inca Mining	015 667 0536	O
Roedtan	Inca	Kalkor	011 721 3141	D
Springs	Springs	Kalkor	011 721 3141	D
Vereeniging	Slaked calcite	Kalkor	011 721 3141	D
Witbank	Hiquallime	H Pistorius & Co	012 342 1075	O
Witbank	Hiquallime	Kalkor	011 721 3141	D
Witbank	Hiquallime	LimeCrop	076 575 8476	D
WESTERN CAPE				
Albertinia	Resiesbaan Calcite	SA Lime & Gypsum	086 010 3515	D
Bredasdorp	Aghydrate	LimeCrop	076 575 8476	D
Bredasdorp	Bredasdorp	LimeCrop	076 575 8476	D
Bredasdorp	Aghydrate	SA Lime & Gypsum	086 010 3515	D
Bredasdorp	Bredasdorp Calcite	SA Lime & Gypsum	086 010 3515	D
Moorreesburg	Titan Lime	LimeCrop	076 575 8476	D
Moorreesburg	Titan Calcite	SA Lime & Gypsum	086 010 3515	O
Moorreesburg	Titan Calcite 100	SA Lime & Gypsum	086 010 3515	O
Vredendal	Vredendal	Cape Lime	027 011 2000	O
Vredendal	Vredendal	LimeCrop	076 575 8476	D
Vredendal	Vredendal Calcite	SA Lime & Gypsum	086 010 3515	D

Dolomite

CENTRAL				
LOCATION	NAME	COMPANY	NUMBER	OWNER (O) DISTRIBUTOR (D)
Christiana	Britten	Bastion Lime (Pty) Ltd	018 464 7820	O
Christiana	Britten	Kalkor	011 721 3141	D
Christiana	Britten	LimeCrop	076 575 8476	D
Christiana	Britten – Grasstop 20	Losmaat	011 721 3141	D
Clayville	Burnt Dolomite Bulk	H Pistorius & Co	012 342 1075	O
Clayville	Clayville Soil Ameliorant	H Pistorius & Co	012 342 1075	O
Immerpan	Leo Dolomite	H Pistorius & Co	012 342 1075	O
Immerpan	Leo Dolomite	Kalkor	011 721 3141	D
Immerpan	Leo Dolomite	LimeCrop	076 575 8476	D
Meyerton	Henley on Klip	Afrimat Lime Company	079 107 5463	O
Meyerton	Meyerton	LimeCrop	076 575 8476	D
Meyerton	Meyerton Dolomite	SA Lime & Gypsum	086 010 3515	D
Middelburg	Calmasil	H Pistorius & Co	012 342 1075	D
Middelburg	Calmasil	Kalkor	011 721 3141	D
Middelburg	Calmasil	LimeCrop	076 575 8476	D
Middelburg	Calmasil	PBD Boeredienste	082 800 0055	O
Middelburg	Calmasil Dolomite	SA Lime & Gypsum	086 010 3515	D
Middelburg	Pro-Gyp Dolotop	SA Lime & Gypsum	086 010 3515	O
Newcastle	Ingogo Dolomite	H Pistorius & Co	012 342 1075	O
Olifantsfontein	Olifantsfontein Dolomite	LimeCrop	076 575 8476	D
Olifantsfontein	Olifantsfontein Dolomite	SA Lime & Gypsum	086 010 3515	O
Olifantsfontein	Olifantsfontein Dolotop	SA Lime & Gypsum	086 010 3515	O

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Dolomite (continued)

CENTRAL				
LOCATION	NAME	COMPANY	NUMBER	OWNER (O) DISTRIBUTOR (D)
Orkney	Vaalbrug	Kalkor	011 721 3141	D
Orkney	Vaalbrug	LimeCrop	076 575 8476	D
Orkney	Vaalbrug Greentop 20% (80/20)	Losmaat	011 721 3141	D
Orkney	Vaalbrug Greentop 20% (60/40)	Losmaat	011 721 3141	D
Orkney	Vaalbrug	PBD Boeredienste	018 011 0011	O
Ottoshoop	Ottoshoop Dolomite	LimeCrop	076 575 8476	D
Ottoshoop	Ottoshoop Dolomite PLUS	SA Lime & Gypsum	086 010 3515	O
Ottoshoop	Ottoshoop Dolomite PLUS	SA Lime & Gypsum	086 010 3515	O
Port Shepstone	Idwala Kulu DAG	Kalkor	011 721 3141	D
Port Shepstone	Idwala Kulu DAG	SA Lime & Gypsum	086 010 3515	D
Port Shepstone	Rosmin Dolomite	SA Lime & Gypsum	086 010 3515	D
Pretoria	MFD Mooiplaas Bulk	H Pistorius & Co	012 342 1075	D
Pretoria	Mooiplaas	Kalkor	011 721 3141	D
Pretoria	Mooiplaas Microfine dolomite	LimeCrop	076 575 8476	D
Pretoria	Mooiplaas Dolomite	SA Lime & Gypsum	086 010 3515	D
Springs	Atoll Dolomite Bulk	H Pistorius & Co	012 342 1075	D
Springs	Atoll	Kalkor	011 721 3141	D
Springs	Zimbiwa	Kalkor	011 721 3141	D
Springs	Atoll	LimeCrop	076 575 8476	D
Springs	Springs DOL/GYP 70/30	Losmaat	011 721 3141	D
Springs	Atoll Dolomite	SA Lime & Gypsum	086 010 3515	D
Zeerust	Marico	Bastion Lime (Pty) Ltd	018 464 7820	O
Zeerust	Marico	Kalkor	011 721 3141	D
Zeerust	Marico	LimeCrop	076 575 8476	D
Zeerust	Marico – Grasstop 80:20	Losmaat	011 721 3141	D
WESTERN CAPE				
Moorreesburg	Bridgetown	LimeCrop	076 575 8476	D
Moorreesburg	Bridgetown Dolomite	SA Lime & Gypsum	086 010 3515	D
Moorreesburg	Titan Dolomite 100	SA Lime & Gypsum	086 010 3515	O
Robertson	Langvlei	Cape Lime	023 626 3109	O
Robertson	Langvlei	LimeCrop	076 575 8476	D
Robertson	Langvlei Dolomite	SA Lime & Gypsum	086 010 3515	D
Vredendal	Vredendal	Cape Lime	082 771 7639	O
Vredendal	Vredendal	LimeCrop	076 575 8476	D
Vredendal	Vredendal Dolomite	SA Lime & Gypsum	086 010 3515	D

Magnesite

CENTRAL				
LOCATION	NAME	COMPANY	NUMBER	OWNER (O) DISTRIBUTOR (D)
Malelane	Gromag	Kalkor	011 721 3141	D

Gypsum and magnesium

CENTRAL				
LOCATION	NAME	COMPANY	NUMBER	OWNER (O) DISTRIBUTOR (D)
Buhrmansdrif	Buhrmansdrif (mixtures)	Bastion Lime (Pty) Ltd	018 464 7820	O
Christiana	Britten	Bastion Lime (Pty) Ltd	018 464 7820	O
Kanakies	Titan Gypsum	SA Lime & Gypsum	086 010 3515	O
Middelburg	Middelburg	H Pistorius & Co	012 342 1075	D
Middelburg	Middelburg	Kalkor	011 721 3141	D
Middelburg	Middelburg	LimeCrop	076 575 8476	D
Middelburg	Pro-Gyp gypsum	SA Lime & Gypsum	086 010 3515	O
Midrand	Chloorkop	LimeCrop	076 575 8476	D
Olifantsfontein	Bagged Gypsum	SA Lime & Gypsum	086 010 3515	O
Orkney	Vaalbrug	PBD Boeredienste	018 011 0011	D
Phalaborwa	Phalaborwa	H Pistorius & Co	012 342 1075	D
Phalaborwa	Phalaborwa	Kalkor	011 721 3141	D
Phalaborwa	Phalaborwa	LimeCrop	076 575 8476	D
Potchefstroom	Potchefstroom	Kalkor	011 721 3141	D
Richards Bay	Richards Bay Gypsum Bulk	H Pistorius & Co	014 342 1075	D
Richards Bay	Richards Bay Gypsum	Kalkor	011 721 3141	D
Richards Bay	Richards Bay Gypsum	LimeCrop	076 575 8476	D
Richards Bay	Richards Bay Gypsum	SA Lime & Gypsum	086 010 3515	D
Rustenburg	Phokeng	H Pistorius & Co	012 342 1075	D
Rustenburg	Phokeng	Kalkor	011 721 3141	D
Rustenburg	Phokeng	LimeCrop	076 575 8476	D
Rustenburg	Phokeng	OMV	018 464 7820	D
Rustenburg	Phokeng Gypsum	SA Lime & Gypsum	086 010 3515	D
Springs	Springs Gypsum	Kalkor	011 721 3141	D
Vereeniging	Barrage Gypsum Bulk	H Pistorius & Co	012 342 1075	O
Witbank	Alkaline Ameliorant Bulk	H Pistorius & Co	012 342 1075	O
Yzerfontein	Yzerfontein	Kalkor	011 721 3141	D
Zeerust	Marico (mixtures)	Bastion Lime (Pty) Ltd	018 464 7820	O
WESTERN CAPE				
Ceres	Kolkiesrivier	LimeCrop	076 575 8476	D
Kanakies	Titan Gypsum	SA Lime & Gypsum	086 010 3515	O
Moorreesburg	Titan Gypsum	LimeCrop	076 575 8476	D
Moorreesburg	Titan Gypsum	SA Lime & Gypsum	086 010 3515	O
Vanrhynsdorp	Vanrhynsdorp	LimeCrop	076 575 8476	D
Vanrhynsdorp	Vanrhynsdorp Gypsum	SA Lime & Gypsum	086 010 3515	D
Yzerfontein	Yzerfontein	LimeCrop	076 575 8476	D
Yzerfontein	Yzerfontein Gypsum	SA Lime & Gypsum	086 010 3515	D

Feed Lime

LOCATION	NAME	COMPANY	NUMBER	OWNER (O) DISTRIBUTOR (D)
Buhrmansdrif	Buhrmansdrif	Bastion Lime (Pty) Ltd	018 464 7820	O
Buhrmansdrif	Buhrmansdrif	LimeCrop	076 575 8476	D
Buhrmansdrif	Prolime Grit 2 - 4 mm	SA Lime & Gypsum	086 010 3515	O
Buhrmansdrif	Prolime Powder	SA Lime & Gypsum	086 010 3515	O
Vredendal	Vredendal	Cape Lime	082 771 9639	O

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FERTILISER QUALITY on the right track

In 2017 a memorandum of understanding for the funding and management of this fertiliser and lime quality monitoring project was entered into by and between the then Department of Agriculture, Forestry and Fisheries, the Fertilizer Association of Southern Africa (Fertasa), Grain SA and the Sasol Agricultural Trust.

The aim is to establish whether liming material and fertiliser quality are maintained according to the regulations of the Fertiliser Act (Act No. 36 of 1947) through random sampling of at least 140 fertilisers and ten lime sources.

Of the 89 fertilisers that were sampled in 2022, 7% were deficient in one aspect and 8% in two of the quality parameters. Of the 81 nitrogen-containing fertilisers, 99% were compliant in respect of nitrogen (N). Altogether 60 fertilisers contained phosphorus (P), of which 98% were compliant for P. Of the 50 potassium-containing fertilisers, 92% were compliant regarding

potassium (K). A total of 46 fertilisers contained sulphur (S) with 93% compliancy, eleven contained calcium (Ca) with 91% compliancy and five contained magnesium (Mg) with 80% compliancy. Nine fertilisers contained one or more of the following nutrients: boron, copper, manganese and iron, all in compliant quantities. A total of 35 fertilisers contained zinc (Zn), of which 86% were compliant for Zn. The act stipulates that the total nutrient content (N + P + K) of a fertiliser should not deviate by more than 14 g/kg from the registered content. This was found in 70 fertilisers with 94% compliancy.

RESULTS: FERTILISERS

37% of fertilisers were sampled in the winter rainfall area and 63% in the summer rainfall area (Table 1). Of the 89 fertilisers, 75 were analysed once, ten twice and four were analysed a third time.

One fertiliser mixture (3%) from the winter rainfall area was deficient in one nutrient. Twelve fertilisers (21%) were deficient in the summer rainfall area. Overall, six (7%) of these fertilisers were deficient in one nutrient or total nutrient content and seven (8%) in two nutrients or total nutrient content.

Table 1: Summary of fertiliser analysis, deficiencies and companies involved in 2022.

NUMBER OF	RAINFALL AREA		
	Winter	Summer	Total
Fertilisers sampled and analysed	36	56	89
Fertilisers with deficiencies	1	12	13
Companies	7	18	21

Table 2: Number of and compliance with regulatory parameters of lime products sampled in 2022.

NUMBER OF	RAINFALL AREA		
	Winter	Summer	Total
Products	10	14	24
Suppliers	7	9	16
Compliance (% compliant)			
1,7 mm-sieve	0	17	9
0,25 mm-sieve	40	43	42
0,106 mm-sieve*	-	0	0
Mg-content	100	93	96
CCE	80	93	88

RESULTS: LIMING AND GYPSUM PRODUCTS

Liming products

42% of lime samples were taken in the winter rainfall area and 58% in the summer rainfall area. Seven lime products were registered as dolomitic and the remainder as calcitic. One dolomitic and one calcitic lime were registered as microfine. The compliance of these lime products with the regulatory parameters are shown in Table 2.

Gypsum products

Table 3 shows that 36% of gypsum products were sourced in the winter rainfall area and 64% in the summer rainfall area. Regarding the physical quality of gypsum, the act stipulates that at least 90% of a product should pass through a 2 mm sieve and at least 50% through a 0,25 mm sieve. The chemical quality is determined by the Ca and S contents. The minimum Ca content is 180 g/kg and the minimum S content 120 g/kg.

The compliance of all gypsum products is also shown in Table 3. Less than 65% of these products met at least one of the two fineness requirements while 45% complied with the Ca content requirement. All gypsum products complied with the S content requirement. Only one gypsum product out of the eleven (9%), complied with all physical and chemical requirements.

Table 3: Number of and compliance with regulatory parameters of gypsum products sampled in 2022.

NUMBER OF	RAINFALL AREA		Total
	Winter	Summer	
Products	4	7	11
Suppliers	4	5	9
Compliance			
2,0 mm-sieve	25	57	45
0,25 mm-sieve	25	86	64
Ca-content	50	43	45
S-content	100	100	100

Interesting trends from 2017 to 2022

The following are relevant statistics for the various fertilisers sampled from 2017 to 2022. Assuming that the six investigations, each on its own, is a true reflection of the fertiliser quality of each year, the following can be stated:

- ③ A total of 592 fertilisers were sampled from 2017 to 2022. The percentage of non-compliant fertilisers declined from 2017 to 2018 and then levelled out between 14% and 16%.
- ③ Of the fertilisers sampled since 2017, 97% contained N. Of these fertilisers, 1% were non-compliant. Non-compliant fertilisers declined from a low 4% in 2017 to $\leq 1\%$ over time.
- ③ From 2017 to 2022, 77% of fertilisers contained P with 5% of them non-compliant. Excluding the 8% found in 2019, the portion non-compliant P fertilisers varied between 2% and 5% annually with no trend over time.
- ③ In total, since 2017, 60% of fertilisers contained K and 7% of these fertilisers were non-compliant. Annual non-compliance varied from 3% to 13% with an apparent increase over time.
- ③ The total nutrient requirement applied to 86% of all fertilisers sampled from 2017 to 2022. Less than 3% of them were non-compliant with sporadic occurrence over time.
- ③ S was a registered nutrient in 61% of fertilisers since 2017, with 5% of them non-compliant. The percentage non-compliance varied between 0% and 8% annually with no particular trend over time.

CONCLUSIONS

Fertilisers

Of the fertilisers sampled in 2022, 85% complied with all the quality requirements, in many cases with nutrient levels significantly above their registered contents. Zn, K and S are notable as respectively 14%, 8% and 7% of fertilisers containing them were non-compliant. Furthermore, N, P and total nutrients were deficient in 6% or less of fertilisers containing them. 16 fertilisers contained either calcium or magnesium of which one was non-compliant. Few fertilisers contained copper, iron or manganese, which all were compliant.

Lime and gypsum products

The physical quality of most lime products is substandard as less than 45% were compliant to either of the two sieve requirements, while none were compliant to both these requirements. The chemical quality of lime products was relatively better with 83% compliance with both the Mg content and CCE requirements.

Like with lime, the physical quality of gypsum products was also substandard, as only 36% were compliant to both sieve requirements. The chemical quality of gypsum products is also substandard as only 45% were chemically compliant with both the Ca content and S content requirements.

*The complete article appeared in
SA Graan/Grain of July 2023.*

Dr André Nel, independent agronomist,
William Deale, independent agronomist and
Christiaan Vercueil, agricultural economist, Grain SA

How to go about FERTILISER COMPLAINTS

Fertiliser is one of a grain producer's most expensive and important inputs. Follow these steps if you suspect a problem with the quality of your fertiliser:

1 Contact the fertiliser representative from whom you bought the fertiliser and insist on an investigation on site.

2 Keep a record of the dates and conversations.

3 Gather and write down as much information as possible, take photos or videos.

4 Try to keep as many sealed bags as possible in case samples have to be taken at a later stage.

Producers can contact Grain SA, the Fertilizer Association of Southern Africa (Fertasa) or William Deale directly in this regard to take and analyse samples for quality testing. William's contact details are 083 947 2389 or wideale@gmail.com.

Members can take up unresolved disputes with Grain SA or lodge a complaint directly with the Registrar of Act 36 of 1947.

If the problem is not resolved, follow these steps (do not wait too long):

1 Contact an independent scientist to do an on-site investigation.

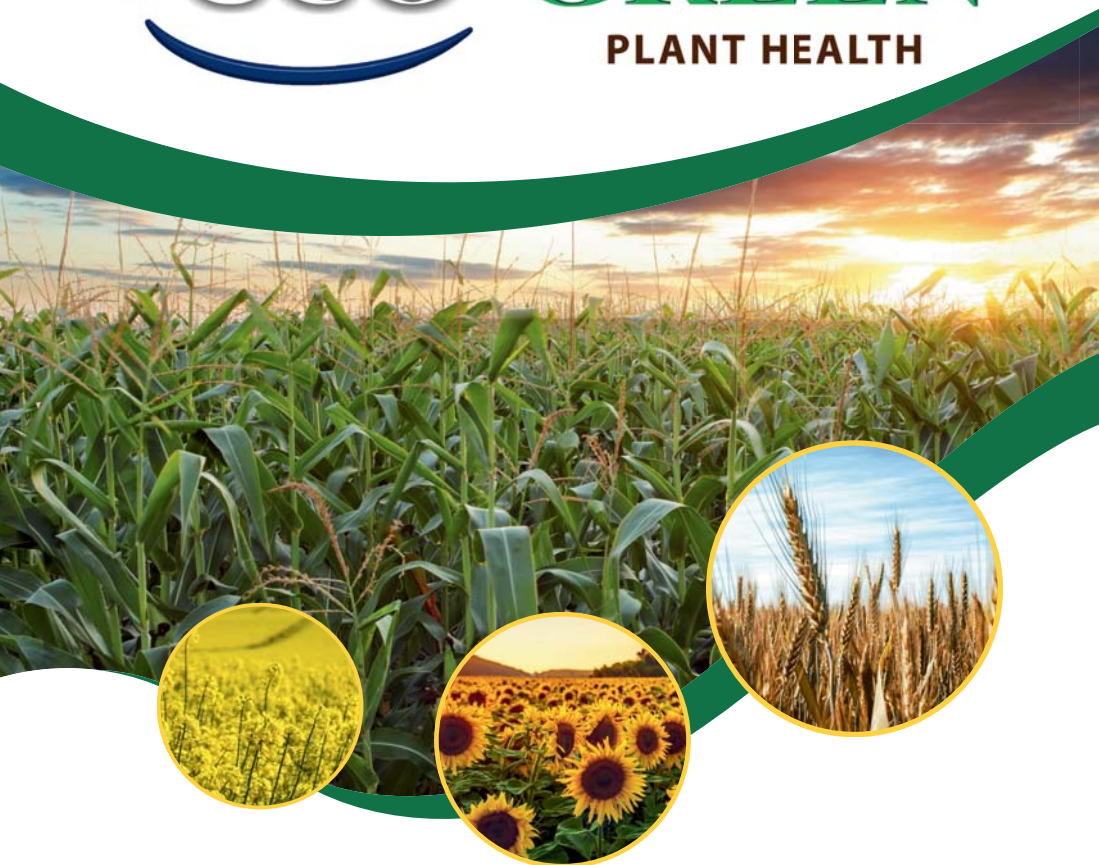
2 Inform Grain SA if the fertiliser company did not give the necessary attention to the problem.

3 Producers are recommended to test their fertiliser independently.

4 It is extremely important for fertiliser samples to be taken correctly.

5 Samples must be taken in collaboration with the fertiliser company.

Corné Louw, head: Applied Economics and Member Services: Grain SA



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Intydse **data** vir intydse **besluitneming**

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70
YEARS OF
INNOVATION

Gypsum obtained from **natural** and **industrial sources**

Gypsum is common across the world, both as a mineral (mined gypsum) and as an industrial by-product (phosphogypsum and industrial gypsum). Both forms of gypsum are used freely in South Africa as a soil and water ameliorant. This article focuses on the distinction between natural and industrial gypsum.

Natural gypsum that is mined is relatively coarser than industrial gypsum, unless it is ground very finely. A typical analysis of natural gypsum is Ca=18%, S=12% and CaSO_4 = 65%. Industrial gypsum is usually very fine and purer, with a typical analysis of Ca=22%, S=17% and CaSO_4 (95%).

1

NATURAL GYPSUM

Natural, mined gypsum is a mineral and is chemically defined as $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$, or calcium sulphate in combination with two water molecules, and occurs together with a mineral like anhydrite, written in chemical format as pure CaSO_4 , without any water molecules.

2

INDUSTRIAL GYPSUM

Industrial gypsum or phosphogypsum (PG) is a by-product in the manufacturing of phosphoric acid in the fertiliser industry, as well as gypsum from the treatment of acid mine water from coal and gold mines.

The main contributing PG-forming process is the treatment of phosphate rock with sulphuric acid during the production of phosphoric acid. The annual production of PG in South Africa amounts to approximately 3 million tons, and the accumulated stockpile is about 20 million tons (PG + MG), which is only a fraction of what is produced in the industry.

Storage of large quantities of PG is expensive, as large areas of land are required and surface and underground water sources can be polluted. Industries are therefore under pressure to market this by-product. Agricultural land occupies large areas and gypsum is an ameliorant for sodium-rich soil and improves water infiltration properties. This sector is therefore a logical choice for the marketing of gypsum.

Large quantities of industrial gypsum are manufactured annually in South Africa in areas where natural gypsum does not normally occur. Gypsum is spread on soil as an ameliorant to treat soil with a high

sodium (Na) content. Calcium (Ca) in the gypsum the adsorbed Na on the clay particles with Ca, which is much more favourable. The advantage is that the Na-rich soil, which allows soil to disperse and condense, is restored to improve the structure to enhance water infiltration in soil, making it a cheap source of Ca and sulphur (S).

PG is freely available and cheap in areas where large quantities are produced (the product price is mainly determined by transport costs). Producers and industries therefore commonly use PG as soil and water ameliorant.

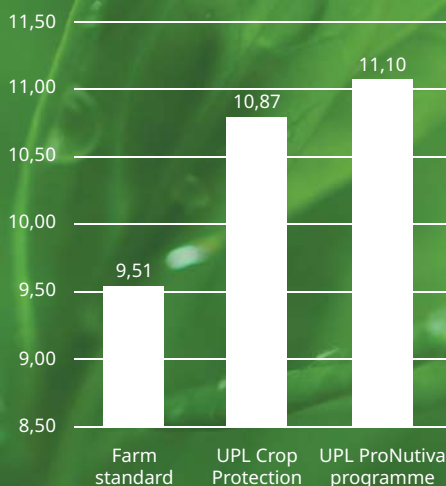
The PG derived from the production of phosphoric acid contains 0,4% phosphorus (P). The question is why this is not seen as an advantage? With the current fertiliser prices and P prices, this can be an asset that can be marketed in conjunction with the PG. Research has shown that it contributes to the controllable P in the soil.

Another feature of PG is that it contains flourine (F), and that is why environmental activists criticise the use of PG. However, the F is in the form of calcium fluoride, which is insoluble and is not harmful to the environment. In animal feed, however, it must be treated specially.

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PEST CONTROL

Your CONTACTS

INSTITUTION	EMERGENCY NUMBERS
CropLife South Africa <i>info@croplife.co.za</i> 087 980 5163	CHEMICAL SPILLAGE
Griffon Poison Information Centre <i>nesher@tiscali.co.za</i> 082 446 8946	Griffon Poison Information Centre <i>nesher@tiscali.co.za</i> 082 446 8946
Registrar: Act No. 36 of 1947 <i>MalutaM@nda.agric.za</i> 012 319 7303	South African Petroleum Industry Association (SAPIA) <i>info@sapia.co.za</i> 011 783 7664
Redbilled Quelea Control Centre <i>khulisog@daff.gov.za</i> 012 309 5823	

Cereals System Portfolio

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HERBICIDE

Aubaine® 518 SC

A suspension concentrate herbicide for the residual pre-plant, pre-emergence or early post-emergence control of Italian Ryegrass and other selected weeds in wheat in the winter rainfall region.

Kerb™ FLO 400 SC

HERBICIDE

Kerb™ FLO 400 SC

A suspension concentrate herbicide used for annual winter grasses on canola in the winter rainfall areas.

Pixxaro® 266 EC

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HERBICIDE

Pixxaro® 266 EC

An emulsion concentrate herbicide for pre-plant burndown of broadleaf weeds on fallow lands and selective early post-emergence control of broadleaf weeds in wheat and barley.

Quelex™ 200 WG

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HERBICIDE

Quelex™ 200 WG

A water dispersible granule herbicide for early post-emergence broadleaf weed control in wheat in the Western Cape and the summer rainfall region.

Tarzac® 320 WG

Arylex® active

HERBICIDE

Tarzac® 320 WG

A water dispersible granule herbicide for selective, early post-emergence control of broadleaf weeds and some annual grasses in wheat in the Western Cape and irrigated areas in the summer rainfall region.

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WARNING



HAZARD STATEMENT(S) FOR AUBAINE® 518 SC
Suspected of causing cancer. Suspected of damaging the unborn child. Very toxic to aquatic life with long lasting effects.

WARNING



HAZARD STATEMENT(S) FOR KERB™ FLO 400 SC
Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure if swallowed. Very toxic to aquatic life with long lasting effects.

DANGER



HAZARD STATEMENT(S) FOR PIXXARO® 266 EC
May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. Very toxic to aquatic life with long lasting effects.

DANGER



HAZARD STATEMENT(S) FOR QUELEX™ 200 WG
Causes serious eye irritation. May cause cancer. Very toxic to aquatic life with long lasting effects.

WARNING



HAZARD STATEMENT(S) FOR TARZAC® 320 WG
May be harmful if swallowed. Causes serious eye irritation. Very toxic to aquatic life with long lasting effects.

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Explore your fields regularly

Insect species have maximum and minimum temperature ranges within which they develop, and pests can cause problems when the climate changes, for example the fall armyworm. Regularly explore your fields by walking around and checking why plants appear lush and green (could be due to weeds) and what is wrong with plants in poor patches.

Tips to make the most of these monitoring walks

- 1 Decide on a diagonal and back-and-forth route across the entire field. Include 'good' and 'poor' patches.
- 2 Insect infestations mainly develop in patches and then spread outwards.
- 3 The outer edge of a field does not reflect what is happening inside the field.
- 4 The more observation points there are, the more accurate the infestation estimate will be.

Remember the following:

- Ⓒ The earlier an insect or disease is identified, the greater the chance of preventing large-scale damage.
- Ⓒ Some insect pests feed at night and the damage is discernible during the day, as in the case of the false armyworm (*Leucania loreyi*).
- Ⓒ If the symptoms or insect appears unfamiliar, send photos to experts. Include photos of the entire field, the affected plant from the soil surface up to the top, and if possible, also a photo of the suspected insect (including different stages of the insect if present).
- Ⓒ Small instars (baby insects) are easier to control than mature insects. Spray affected fields as soon as possible.
- Ⓒ Be cognisant of the pests and diseases occurring in the immediate vicinity.
- Ⓒ Every field has beneficial insects that can resolve an infestation free of charge as natural enemies.

For more information, contact Dr Vicki Tolmay at tolmayv@arc.agric.za or 073 469 0000 (MTN)/072 446 3538 (Vodacom).

The complete article appeared in SA Graan/Grain of July 2023.

How to carry out a monitoring route

- 1 Decide how many steps will be the standard, and which foot will be used as marker.
- 2 Walk a distance into the field. Then start counting the designated number of steps. On the last step, examine the crop plant closest to the front of the marker shoe for insect damage. The particular plant is then recorded as being with or without insects.
- 3 Then walk the predetermined route. Take readings at each inspection point as described in the previous point.
- 4 Use the collected data to calculate a percentage of infestation.
- 5 If chemical control guidelines for a pest is known, take the time of application and the percentage of infection into account to avoid unnecessary sprayings and costs.
- 6 If no guidelines for the insect concerned are known, the determination of infestation and the growth stage of the crop will enable the producer/expert to make an informed decision regarding its control.
- 7 More in-depth management of insect-infested patches is possible, thanks to drones that can apply sprayings at a significant cost saving.

TRICK SCLEROTINIA

S*clerotinia sclerotiorum* is a damaging fungal pathogen, causing disease on a range of crops, including beans, canola, lupin and soybean as well as a variety of vegetable crops. It also causes sclerotinia head and/or stem rot on sunflowers. Sclerotinia can result in devastating yield losses, which can be as high as 80% in both soybean and sunflower.

Integrated pest management (IPM) calls for producers to protect crops while disrupting the disease triangle through:

focussing on the strengths of the host;

weaknesses of the pathogen; and

creating environmental conditions that are unfavourable for disease development.

A good understanding of the Sclerotinia life cycle and chain of events that lead to disease development is important for producers to intervene and slow the spread of the disease. The typical Sclerotinia life cycle includes the stages as seen in **Figure 1**.

Sclerotinia diseases can be managed through IPM which includes a combination of strategies to increase the chance of successful and effective disease management, such as agronomic, biological and chemical control.

AGRONOMIC CONTROL

Cultural strategies for the control of Sclerotinia include the use of healthy seed, limiting high plant populations, and avoiding high fertility and narrow rows. Discussed below are the three key tactics within the various strategies:

1

AVOIDANCE AS FOCUS

- Avoid a dense canopy.
- Plants are most susceptible during the flowering period. Avoid coinciding flowering stage with conducive (wet and cool) periods for the pathogen.
- Avoid late planting dates.

2

SCLEROTINIA MANAGEMENT BY EXCLUSION

- Use healthy seed.
- Retained seed can be a risk if infected with mycelium or contaminated with sclerotia which are not removed through sieving.
- The purchase of certified seed ensures limiting pathogen presence in fields, as certified seed may not contain more than 0.2% sclerotia.
- Seed treatments should be applied to keep seed as healthy as possible, reducing the risk of disease spreading.

3

SCLEROTINIA MANAGEMENT BY ERADICATION

- Manage the inoculum level by selectively removing and burning heavily infected plants (if there are only a few). Additionally, crop rotations with non-hosts may reduce the sclerotia build-up and persistence across seasons.
- Scouting for the pathogen, i.e., apothecia, throughout the season provides an indicator of disease risk.
- Once symptoms are present in the field, a record of infected areas or 'patches' should be mapped out and maintained. This can assist with management in subsequent seasons.
- Weed control is important, as many weeds are hosts to *S. sclerotiorum* – scan the QR code for more information.



In summary: Implement rotation with non-host crops, plant clean or certified seed, increase row spacing or reduce plant populations, apply weed control, and clean implements and harvesters to remove sclerotia.

BIOLOGICAL AND CHEMICAL CONTROL

Registered fungicides for the control of Sclerotinia stem rot during the season is limited to canola and soybean, with only a seed treatment available for sunflower. Fungicides work to prevent flower petal infection by airborne spores of *S. sclerotiorum* – their effectiveness against direct infection by germinating sclerotia in the soil is unknown.

When considering fungicide application, the below methods can be used in improving its efficacy of control in canola, soybean and sunflower:

- ④ **Seed treatments:** There are several seed treatment options available for oilseeds. However, only Benomyl is registered on sunflower as a seed treatment.
- ④ **Timing:** Chemicals to control Sclerotinia diseases need to be applied preventatively (before disease symptoms are observed) as per label instructions. Applications at 15% - 30% bloom and good canopy penetration contributes to limiting disease development.
- ④ **Active ingredients:** Limit applications to two to four consecutive spray applications per crop per season, or as according to the label to avoid resistance build-up.
- ④ **Label usage instructions:** It is important to purposefully read and understand product labels when preparing and applying products. Products may require the addition of an adjuvant to enable greater spray droplet coverage on the plant to maximise the efficiency of the product. It is also important to use the right amount of water for canopy penetration.
- ④ **Biological control** with the fungus *Coniothyrium minitans* has been used successfully in smaller vegetable fields. It is, however, more expensive for crops such as canola, soybean and sunflower. *C. minitans* is commercially available

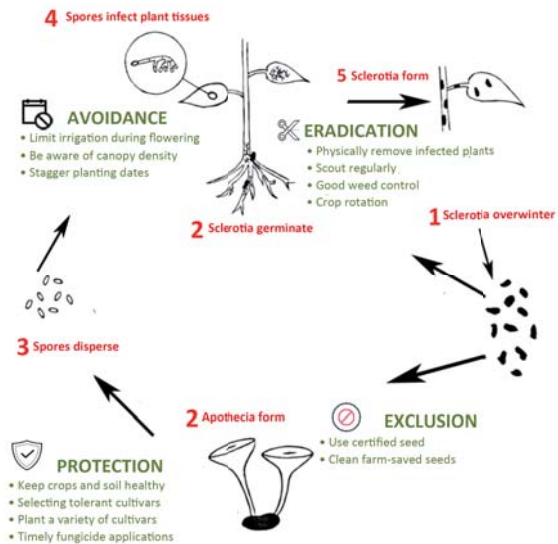


Figure 1: Key strategies in the integrated pest management (IPM) toolbox to manage Sclerotinia diseases of soybean and sunflower.

as Contans WG® fungicide, which is sprayed on the soil prior to planting or onto crop residues at the end of the season.

WHO TO CONTACT

- ④ Feel free to contact Dr Lisa Rothmann (CoetzeeLA@ufs.ac.za, 079 270 9691) or Dr Godfrey Kgatle (godfrey@grainsa.co.za, 079 489 5966) for further information.
- ④ Please contact us should you notice Sclerotinia in your field. This information will be important for surveillance and mapping the distribution of Sclerotinia diseases.
- ④ For updates, visit the South African Sclerotinia Research Network (SASRN) website (<http://sclerotinia.co.za/>) or Facebook page (<https://www.facebook.com/sclerotiniaZA>).

The content of this article originates from several articles written by the authors and which are all available on sagrainmag.co.za

Dr Godfrey Kgatle, Research and Policy Centre, Grain SA, Dr Lisa Rothmann, University of the Free State and Dr Miekie Human, Research and Policy Centre, Grain SA

PLANT PROTECTION ACTIONS

– some less obvious guidelines

When working with plant protection products, there are some perhaps less obvious guidelines that require a bit more thought as to why they need to be followed, because the reasoning for these may not be as apparent as the others.

PROTECTIVE CLOTHING AND EQUIPMENT

The safety datasheet (SDS) of a product will indicate what personal, protective equipment (PPE) is required. Except for fumigation, a higher-level PPE is required when preparing spray mixtures due to their concentrated form. Basic PPE consists of a cotton overall, a wide-brimmed hat, unlined rubber or chemical-resistant gloves and boots, goggles and a mask or a face shield. For highly hazardous products, a respirator with filters and an apron are required.

It is advisable to drape sleeves and legs of cotton overalls over gloves and boots. When

working with your hands suspended above your head, roll the glove tops into the cuffs of the overall, or secure it with duct tape. Clean the headband of eye or face protection and replaced often. Cover the strap with a hat or use a chemical-resistant strap.

FIRST AID GUIDELINES

The main ways in which a person can be exposed to a pesticide are through the mouth, skin or by breathing. Be sure to remember the following in case of contamination.

IN GENERAL

The best materials for absorbing chemical spills are sand, activated charcoal, vermiculite, or Arabic gum. Sawdust is not suitable due to the fire hazard.

Keep plant protection products separate from food products, animal feeds or general items such as clothing and out of reach of children, pets and unauthorised persons. Also group it according to its hazard classifications and per product category.

Herbicides should always be at the bottom. If unknowingly there is a leakage or spill of the herbicide into another product such as an insecticide, and if that product is applied to the crop, it may damage the crop. If an empty plastic pesticide container is not triple rinsed, it is categorised as hazardous waste and dangerous goods.

The type of protective clothing and equipment required depends on the task being performed.

1

Remove the contaminated clothing and rinse the skin with cold water. It also applies to rinsing or hand washing. Contact emergency services immediately and do not to use ointments or other drugs on chemical burns as these may cause more harm.

2

Do not give mouth-to-mouth resuscitation as you could inhale the fumes yourself. Instead use an artificial respirator pump. Wear a respirator in an enclosed area and remove the affected person to a space with ventilation.

3

Do not induce vomiting or give the person milk to drink and keep the product SDS and container with you so that medical personnel have the necessary information. Also ensure that the SDS of the product is available to consult and that the emergency telephone number is readily available.





Don't let grain income slip through your fingers

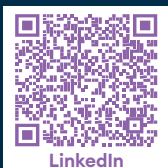


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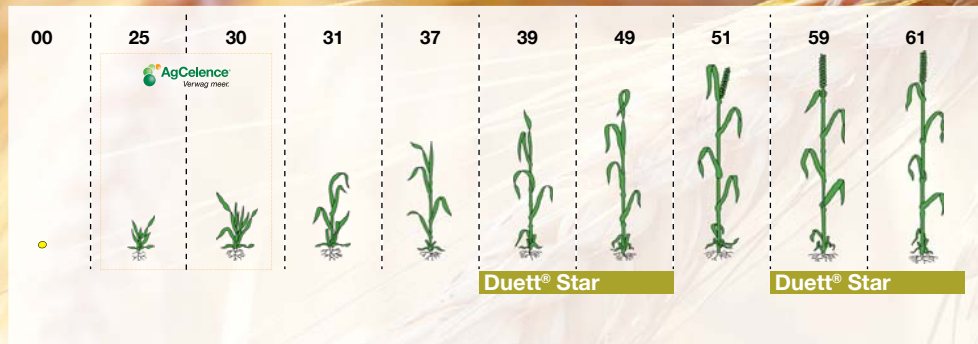
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PAY ATTENTION TO THE WARNINGS AND FOLLOW THE PRECAUTIONS ON THE LABEL.

Reg. No. L4586 Act No. 36 of 1947 Active Ingredients: Deltamethrin (pyrethroid) 25 g/l and Piperonyl butoxide 225 g/l DANGER Registration Holder: 2022 Environmental Science ZA (Pty) Ltd., 27 Wrench Road, Isando, 1600 SOUTH AFRICA TEL: +27 (11) 921 5911. K-Obiol® is a registered trademark of the Bayer Group.
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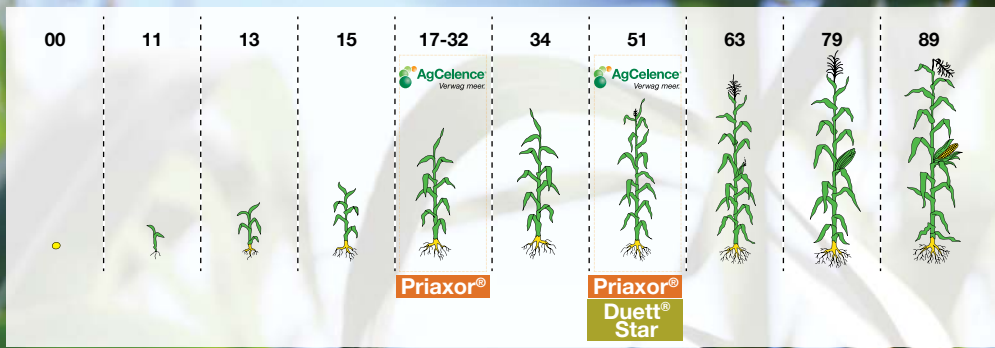
Produk	Groei stadiums	Dosis
Abacus® Advance <i>Swamdoder</i>	25-30	1 l/ha.
CeCeCe® <i>Plantgroeireguleerder</i>	25-30	2,1 l/ha.
Cerix® <i>Swamdoder</i>	25-30	0,8 l/ha.
Duett® Star <i>Swamdoder</i>	• 39-49 • 59-61	• 0,8 l/ha. • 0,8 l/ha.
Fastac® SC <i>Insekdoder</i>	25-59	Snywurm: 50 – 65 ml/ha. Amerikaanse bolwurm: 100 ml/ha.
Flite® <i>Swamdoder</i>	00	Saadgedraagte siektes: 25 ml/100 kg saad. Blaarsiektes: 120 ml/100 kg saad.

Abacus® Advance Reg. Nr. L9132. Aktiewe bestanddele: F500® 62,5 g/t en Epoksikonasool 62,5 g/t. Gevaarlik.
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 Cerix® Reg. Nr. L9801. Aktiewe bestanddele: Xemium® 41,6 g/t. F500® 66,6 g/t. Epoxiconazole 41,6 g/t. Gevaarlik.
 Basagran® Reg. Nr. L2916. Aktiewe bestanddele: Bendioksied 480 g/t. Waarskuwing.
 Dash® HC Reg. Nr. L7469. Aktiewe bestanddele: C-65 Methylesters 406 g/t en Klearfac AA-270 244 g/t. Versigtig.
 Duett® Star Reg. Nr. L10958. Aktiewe bestanddele: Epoxiconazole 84 g/t. Fenpropimorph 250 g/t. Waarskuwing.
 Eragon® Reg. Nr. L10407. Aktiewe bestanddele: Kixor® 700 g/kg
 Fastac® SC Reg. Nr. L4992. Aktiewe bestanddele: Alpha-cypermethrin 100 g/t. Skadelik.
 Flite® Reg. Nr. L4965. Aktiewe bestanddele: Trictonazole 200 g/t. Waarskuwing. F500® - Pyraclostrobin. Xemium® - Fluxapyroxad
 Frontier® Optima Reg. Nr. L7011. Aktiewe bestanddele: Dimethenamid-P 720 g/t. Waarskuwing.
 Intellex® Reg. Nr. L9895. Aktiewe bestanddele: Kixor® 68 g/t en Dimethenamid-P 600 g/t. Waarskuwing.
 Opera® Reg. Nr. L9013. Aktiewe bestanddele: F500® 133 g/t en Epoksikonasool 50 g/t. Waarskuwing.
 Priaxor® Reg. Nr. L11011. Aktiewe bestanddele: Xemium® 75 g/t en F500® 150 g/t. Waarskuwing. F500® - Pyraclostrobin. Kixor® - Saflufenacil.
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MIELIE PORTEFEULJE



Produk	Groeistadiums	Dosis
Abacus® Advance <i>Swamdoder</i>	• 17-32 • 51	• 1,6 l/ha. • 1,6 l/ha.
Basagran® <i>Onkruidodder</i>	11-32	Geeluintjies: 3 – 5 l/ha; Breëblaaronkruid: 2 – 3 l/ha.
Duett® Star <i>Swamdoder</i>	51	0,8 l/ha.
Eragon® 'n Kixor® -oplossing <i>Onkruidodder</i>	Voor plant	35 g/ha Eragon® + 750 ml/ha Dash® HC + glifosaat. Verwys na glifosaat-etiket vir toediening dossisse.
Fastac® SC <i>Insekdoder</i>	• 00 • 15-34 • 51-79	Snywurm: Grondtoediening: 0,2 ml/100 m ry of 65 ml/ha; <i>Lugtoediening:</i> 65 ml/ha. Stronkboorder: Grondtoediening: 1,25 ml/100 m ry of 125 ml/ha; <i>Lugtoediening:</i> 125 ml/ha. Stronkboorder: Grondtoediening: 1,25 ml/100 m ry; <i>Lugtoediening:</i> 125 ml/ha. Stronkboorder: Grondtoediening: 1,25 ml/100 m ry; <i>Lugtoediening:</i> 125 ml/ha. Afrika-bolwurm: Grondtoediening: 1 ml/100 m ry; <i>Lugtoediening:</i> 100 ml/ha.
Frontier® Optima <i>Onkruidodder</i>	00	Afhanklik van klei % 0,5 – 1,25 l/ha.
InteleX® 'n Kixor® -oplossing <i>Onkruidodder</i>	00	0 – 16% Klei: 0,6 – 0,9 l/ha 16 – 25% Klei: 0,9 – 1,2 l/ha 26 – 35% Klei: 1,2 – 1,5 l/ha >35% Klei: 1,5 l/ha.
Opera® <i>Swamdoder</i>	• 17-32 • 51	• 750 ml/ha. • 750 ml/ha.
Priaxor® <i>Swamdoder</i>	• 17-32 • 51	• 800 ml/ha. • 800 ml/ha.

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Tread lightly for these pitfalls during input purchases

The risk of using untested input resources and the buying of input resources from unknown distributors are traps into which producers fall every season. Here are a few good tips for purchasing inputs.

1

VERY IMPORTANT SUGGESTIONS FOR PURCHASING AND USING INPUTS

- Ⓔ Make sure that the supplier is a recognised company with a proven record.
- Ⓔ Ensure as far as possible that all recommendations are provided in writing and store it safely.
- Ⓔ Try to keep a record of all purchases as far as possible.
- Ⓔ Check the quality of the input resource.
- Ⓔ Seed treatment should be done by the seed company itself or with certified seed treatment equipment.

3

WHEN PURCHASING AGROCHEMICALS

- Ⓔ Make sure that the chemical is registered for the purpose for which it is being used under Act 36 of 1947. If the purpose for use is not specified on the label, it is illegal to use.
- Ⓔ Make sure that the owner of the chemical is a member of CropLife.
- Ⓔ Make sure that the distribution company is a member of CropLife and that the agent is qualified.

Top tip

As a rule, use small control sites to test new input resources before using them on a large scale.

It provides additional peace of mind if a company from which you make purchases is a member of an umbrella organisation, for example for seed – SANSOR; for fertiliser – Fertasa; for agrochemicals – CropLife, and for agricultural machinery, SAAMA.

2

NEGOTIATING PRICES

- Ⓔ Make sure that you pay the best market-oriented price.
- Ⓔ Obtain as many quotations as possible and do not simply accept the first and best price.
- Ⓔ Ask your neighbour what he paid for the input.
- Ⓔ Purchase inputs jointly.
- Ⓔ Members are free to contact Grain SA with regards to input price trends.

RHIZOBIA BACTERIA

- Ⓔ It is important to use only registered (L registration in terms of Act 36 of 1947) chemicals.
- Ⓔ The product concerned must also preferably be recommended by the company whose seed is being planted.
- Ⓔ Do not use new products on a large scale.

TIPS WHEN PURCHASING SOIL AMENDMENTS, FOLIAR NUTRITION AND ORGANIC SUBSTANCES

Producers should note that some of these input resources have not been properly tested or registered in terms of Act 36 of 1947.

When considering using such an input resource, you should therefore note the following:

- Ⓔ Make sure it has been registered in terms of Act 36 of 1947.
- Ⓔ Insist on long-term statistics and preferably independent local test results.
- Ⓔ Never use such an input resource on a large scale immediately.
- Ⓔ Rather use small-scale strip trials that can be evaluated statistically.
- Ⓔ Determine whether it is cost effective to use the input resource.

Corné Louw, head: Applied Economics and Member Services: Grain SA

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- Noordelike blaarskroei (*Exserohilum turcicum*),
- Grysblaarvlek (*Cercospora zeinamaydis*) en
- Gewone bruinroes (*Puccinia sorghi*).



L11022 Act./Wet No. 36 of van 1947 | FRAC FUNGICIDE GROUP CODE: 11+3 | ACTIVE INGREDIENTS: Fluoxastrobin (Dihydrodioxazine) 167 g/ℓ Flutriafol (Triazole) 218 g/ℓ | CAUTION | Registration holder: UPL South Africa (Pty) Ltd Co. Reg. No./Mpy. Reg. Nr.: 2009/019713/07 7 Sunbury Office Park, Off Douglas Saunders Drive, La Lucia Ridge, South Africa, 4019 Tel: 031 514 5600 Hazard statement: May be harmful if swallowed. Harmful if inhaled. Causes mild skin irritation. Very toxic to aquatic life.

HELP PUT PLASTIC IN ITS PLACE

Most pesticides supplied to producers are packaged in HDPE containers (high-density polyethylene containers), while seeds are supplied in woven PP bags (polypropylene bags). It is estimated that there are approximately 8 500 metric tons of HDPE and about 2 000 tons of PP seed bags in the agricultural sector.

These plastic containers and bags can be recycled and are highly sought after in the recycling industry. It is unnecessary for agriculture to pollute the earth, water, and marine environment with empty pesticide containers or seed bags. In light of global concerns about pollution and waste management, it is also unnecessary for producers to burn or bury this material on their farm.

RECYCLING BEGINS ON THE FARM

Empty HDPE pesticide containers must be rinsed three times, while a seed bag after a simple rinse under running water is clean enough to be recycled. CropLife SA provides guidelines on their website (www.croplife.co.za) under container use tips on how to rinse containers three times and clean seed bags. It takes less than three minutes to rinse an HDPE container three times, and less than two minutes to clean a seed bag.



It takes less than three minutes to rinse an HDPE container three times, and less than two minutes to clean a seed bag.

PLASTIC RECYCLERS CAN HELP

A network of CropLife SA-certified plastic recyclers can be found at <https://croplife.co.za/container-management/>. These recyclers take the rinsed empty HDPE containers and seed bags and recycle them into other commodities. Laws and regulations that manage waste in South Africa classify such cleaned containers and seed bags as non-hazardous. This means special permits are not required to transport them from the farm to the collection points or recycling facilities.

Service providers who remove containers and bags do not need to have a license, provided they only remove the rinsed empty containers and thoroughly cleaned seed bags. The transport

The following happens at the recyclers:

1

Plastic material is sorted into different types before processing.

2

HDPE containers are shredded with a very strong industrial-grade shredding machine before being rinsed at high temperatures.

3

These small chips or pieces are thrown into a container that is heated to more than 150 °C. The melted material is extruded, cooled, and chopped into small pellets.

4

It is standard practice to test the pellets, and levels of pesticide residues are rarely observed, meaning the plastic is clean.

5

The pellets are then used to manufacture a wide variety of goods.

of unrinsed containers falls under the regulations for the transport of hazardous goods and such transport companies must be licensed as such.

There is no problem with any of the service providers certified by CropLife SA, and producers can be assured that these individuals and companies operate according to the policies and laws of the country.

The HDPE and PP from the agricultural sector are treated with great respect because they are valuable materials and are usually much cleaner than the other plastic material collected for recycling. ➤

< Help put plastic...

WARNING

Not all collectors and recyclers of plastic waste follow the rules. Do not be misled by unreliable operators but rather use service providers certified by CropLife SA. They issue a certificate of approval to each certified plastic recycler. This must be presented to producers before they are allowed to remove empty containers or seed bags.

The service provider must also issue a CropLife SA certificate to the producer to indicate that the empty containers have been properly disposed of. This must be done every time the producer has containers or bags removed by a CropLife SA-certified plastic recycler.

Some of the unscrupulous operators remove containers from producers and sell them as water and food containers. This is against all principles of human safety. Producers are asked to contact CropLife SA and report all such incidents immediately.

THE WORLD IS WATCHING FARMS LIKE A HAWK

Although the public enjoys eating the producers' food, they easily attack producers when they see something to complain about. A mountain of unrinsed containers on a farm is not only unsightly, but illegal and a serious risk to human and environmental health. Do not give ammunition to anti-farming advocates to portray producers as villains or polluters who do not recycle empty containers and seed bags.

Let's decide together that all plastic on the farm should be recycled – it is the right thing to do.

For more information contact Dr Gerhard Verdoorn of CropLife SA at 082 446 8946 or gerhard@croplife.co.za.

The complete article appeared in SA Graan/Grain.

Dr Gerhard H Verdoorn, CropLife South Africa



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REPORT CHEMICALS

not making the grade

If you suspect or experience problems with the quality of agrochemicals, take the following steps:

- 1** Contact the representative as soon as possible and insist on an investigation on site.
- 2** Keep a record of dates and conversations.
- 3** Gather and write down as much information as possible, take photos or make videos.

If you are unable to resolve the problem with the company, do the following (do not wait too long before doing so):

- 1** Contact an independent scientist to do an investigation on site.
- 2** Members should inform Grain SA if the chemical company does not attend to the problem as required.

As far as Rhizobium bacteria are concerned, it is important that only registered (Act No. 36 of 1947) vaccines should be used. The specific product should also preferably be recommended by the relevant seed company whose seed is planted. Do not use new products on a large scale.

Producers who want to have their vaccine tested to make sure it is viable can contact the ARC-PPRI (Roodeplaat) for this:

POPPIE MTHIMUNYE
MthimunyeP@arc.agric.za
DR AHMED HASSEN
HassenA@arc.agric.za
FRANCINA BOPAPE
PhalaneF@arc.agric.za
012 808 8138

The quality of agrochemicals (active ingredients) can be tested at the Southern African Grain Laboratory (SAGL).

**FRANCÉ MULDER or
WIANA LOUW**
Crop Protection Division – SAGL
Info.cpd@sagl.co.za
+27 (0) 12 807 4019/2011
+27 (0) 82 415 9905



Corné Louw, head: Applied Economics and
Member Services: Grain SA

Avoid picloram; rather control fleabane in this way

Fleabane is a tough, semi-woody, mainly winter weed that germinates late in the season when crops are already physiologically ripe, but still before harvest (see photo).

The hairy leaves of fleabane make the absorption of herbicides difficult. Frustration among producers about poor fleabane control obtained with registered herbicides has led to some of them using picloram as a possible solution.

However, there are several problems with this – picloram is a systemic herbicide that is spread gradually through vascular bundles to the rest of the plant and acts as a synthetic growth hormone that promotes uncontrolled and disoriented growth. Normally, products containing picloram are used to control deeply rooted herbaceous and woody plants in the forestry industry, conservation areas and pastures.

This chemical is extremely soluble in water, resistant to biotic and abiotic breakdown processes and is one of the most mobile herbicides in the soil. It is broken down slowly in soil, with a half-life of between one month and several years.



Fleabane seedlings that germinated late in the season.

As picloram does not bind strongly to soil molecules, it leaches from the soil profile quickly and easily. No further breakdown takes place when it lands in groundwater and it can occur there for years. Picloram poses a significant risk for groundwater pollution and consequent damage to adjacent plants. It can also leak to the soil profile from the roots of treated plants and be absorbed by neighbouring plants. **Picloram is not registered for use on any local crops.**

Nevertheless, producers attempt to control fleabane by applying tank mixtures of glyphosate mixed with 10% picloram. This is not only **illegal**, but also **dangerous**, because it is applied in production areas which results in **crop damage**. Picloram can cause significant damage to producers of broad-leaved crops. **Producers are strongly advised not to use picloram on crops.**

Fleabane can be controlled through soil tillage, but it is not an option preferred by conservation producers. They prefer crop rotation, choice of cultivar and chemical weed control. Where fleabane is out of control, it can be useful to harrow the field. This will also contribute to destroying the late season transfer insect eggs and larvae.

Crop rotation offers the opportunity to use different herbicides and makes autumn spraying possible in cases where a high-clearance sprayer is not available.

Product labels must be followed carefully with tank mixtures, dosages, application volumes and application methods. The regrowth of fleabane can be controlled further after an initial spraying by applying paraquat at high water volumes (300 l/ha).

Atrazine and 2,4 D tank mixtures can also be used, provided the label instructions are followed and the residual effect of atrazine on follow-up crops is kept in mind.

One of the problems with late-season fleabane control is producers who produce glyphosate-resistant maize using aeroplanes to spray glyphosate and even illegal glyphosate/picloram aerially on the glyphosate-resistant maize. No glyphosate-containing herbicides are registered to apply glyphosate aerially to mature or almost-ripe maize.

*Enquiries: Dr Craven (083 366 3662)
or Dr Verdoorn (082 446 8946).*

*The complete article appeared in
SA Graan/Grain of September 2023.*

Dr Maryke Craven, ARC-Grain Crops, Potchefstroom
and Dr Gerhard Verdoorn, CropLife South Africa

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STOP AGRICULTURAL PESTS IN THEIR TRACKS

Queleas and locusts are major pests of agriculture that can cause substantial damage to pastures and crops. The Department of Agriculture, Land Reform and Rural Development (DALRRD) is responsible for the control of queleas and locusts. They are declared pests according to the Agricultural Pests Act (Act No. 36 of 1983).

Before an official of the DALRRD can do a physical inspection in the case where queleas have been reported, the following procedures/steps must be followed by the complainant:

1 The actual sleeping or breeding area of the specific flock of queleas causing the damage must be correctly identified. The area can only be identified early in the evening, as the queleas will not be at their respective nests during the day. Breeding flocks will have nests and they can be used to identify the breeding area during the day.

2 If the area identified is not the property of the complainant, the complainant must obtain permission for access and possible control actions from the landowner concerned.



The complainant contacts one of the resource conservation inspectors (see contacts below) with the above information and report the queleas. An appointment will be made to inspect the sleeping or breeding area with the complainant.

Contact details for queleas

QUELEAS	
JOHN TLADI Deputy Director: Migrating Pests 060 973 2366	KHULISO GANGASHE Assistant Director 067 410 6103
COLIN BURKE 082 859 5158	PRUDENCE MAJOZI 066 299 5348
LUKA GEERTSEMA 066 299 5365	VINCENT MAKHARI 066 279 9648
LOCUSTS	ARMY WORMS
VUYOKAZI JONGWANA Migrating Pests Officer: De Aar 084 760 8176	JOHN TLADI Deputy Director: Migrating Pests 060 973 2366

Corné Louw, head: Applied Economics and
Member Services: Grain SA



IRRIGATION

Your CONTACTS

INSTITUTION	
Department of Water and Sanitation <i>customer@dwes.gov.za</i> 080 020 0200	Green Scorpions Hotline <i>pi@toanone.co.za</i> 080 020 5005
Water Research Commission <i>info@wrc.org.za</i> 012 330 0340	South African Institute for Agricultural Engineers (SAIAE) <i>admin@saiae.co.za</i> 078 889 8925
Water Institute of Southern Africa <i>clientcare@wisa.org.za</i> 086 111 9472	South African Irrigation Institute (SABI) <i>info@sabi.co.za</i> 021 580 8220

The impact of LOAD SHEDDING ON IRRIGATION WHEAT

On average, South Africa produced 1,82 million tons of wheat annually over the past ten years. Of the total hectares, 75% is planted on dryland, with only 25% under irrigation. However, if we look at production as a whole, we see that only 53% of the total production is produced by dryland areas, and 47% under irrigation. Irrigation therefore constitutes a large part of the country's overall wheat production.

IRRIGATION COSTS

In normal conditions, ordinary irrigation costs for producers in Limpopo and in the Northern Cape are, respectively R5 775/ton and R6 126/ton (July 2023). Normal conditions refer to the ability of producers to schedule irrigation better because of the uninterrupted availability of electricity.

With the current power situation, this is no longer possible, and producers are forced to irrigate when electricity is available. This situation also causes irrigation systems to be active for shorter periods and to be switched on more regularly, which further raises labour costs.

In most cases, these brief periods are not sufficient to meet the irrigation needs of the crop and alternatives have to be found to provide power to systems. Generators are currently the most practical and effective way. This form of electricity generation can raise the producer's irrigation costs by up to 20%.

SENSITIVITY ANALYSIS

The sensitivity analysis indicates the change in profit with the change in yield because of the lack of irrigation, and the change that can occur if a producer decides on a generator, which can raise his irrigation costs.

Table 1 clearly indicates that if yield is not affected and irrigation costs increase by only 10%, the producer can move from a profit of R309/ton to a loss of R269/ton. If irrigation costs remain the same and the yield is reduced by 0,5 t/ha, a producer can move from a profit of R309/ton to a significant loss of R2 590/ton.



Producers are forced to irrigate when electricity is available.

It is important to mention that the profitability of irrigation wheat is affected more by a loss in yield than by an increase in irrigation costs, and if the crop has been planted, it would be better to increase the irrigation costs rather than sacrifice yield.

If it is no longer profitable to produce wheat under irrigation, there is a possibility that producers can decide against planting the crop. If producers do decide not to produce wheat, the demand for imports of wheat can increase. **Table 2** depicts the loss in production if the production of wheat is limited due to

Table 1: Sensitivity analysis of the profit that wheat under irrigation in Limpopo can yield with changes in yield and irrigation costs if the producer fertilises for 7 t/ha.

WHEAT: SENSITIVITY ANALYSIS – PROFIT (R/TON)							
CHANGE IN IRRIGATION COSTS (% CHANGE)							
Yield (t/ha)	-30%	-20%	-10%	0%	10%	20%	30%
6,0	-3 757	-4 334	-4 912	-5 489	-6 067	-6 644	-7 222
6,5	-858	-1 435	-2 013	-2 590	-3 168	-3 745	-4 323
7,0	2 041	1 464	886	309	-269	-846	-1 424
7,5	4 941	4 363	3 786	3 208	2 631	2 053	1 476
8,0	7 840	7 262	6 685	6 107	5 530	4 952	4 375



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Table 2: Losses in wheat production under irrigation.

TOTAL WHEAT PRODUCED UNDER IRRIGATION (HA)			1 052 120
Loss	Ton	Import parity	Rand value
10%	105 212	7 022	738 798 664
20%	210 424	7 022	1 477 597 328
30%	315 636	7 022	2 216 395 992

a lack of profitability. This imported wheat is accompanied directly by currency leaving the country that could have stayed in the country and have been received by producers.

job losses and increasing food inflation as direct consequences of the power situation are only a few of the problems our struggling economy faces.

CONCLUSION

If this power situation continues, there is a definite possibility that it can negatively affect the production of many different crops and thus pose a threat to food security. The loss in currency and accompanying risks like

The complete article appeared in SA Graan/Grain of July 2023.

Christiaan Vercueil,
agricultural economist: Grain SA

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IS IRRIGATION MAIZE

more profitable than before?

The country's agricultural sector has shown relatively constant growth over the past few years. Yet, increasing input costs remains one of the most concerning factors producers have to face.

Table 1 provides an illustration of the input costs for maize production in South Africa over the past few years. It indicates how the prices of local fuel, total fertiliser and seed have risen and show a clear upwards trend over time. The question is whether grain producers are more profitable than in the past. The Department of Agricultural Economics at the University of the Free State investigated the matter.

Historical industry budgets were used to compare grain producers' profitability over time. To compare prices over time, the effect of inflation must first be removed, therefore nominal prices must be converted to real prices.

The nominal value refers to any economic statistics measured according to the actual prices at that point. The real value refers to the same statistics after having been adjusted for inflation. The real price is obtained by removing the effect of price-level changes from the nominal price in order to get a true picture of economic trends.

Argue as follows: Ten years ago, R1 000 had more purchasing power compared to today. To obtain a valid comparison of two prices, we must use rand values of equivalent purchasing power.

Graph 1 (on page 86) shows the inputs used. This approach was followed to

1

The first step was to select a base year arbitrarily, after which prices are converted with the aid of a price index to reflect the level of the purchasing power in the base year.

2

The producer price index (PPI) was used to convert the various input costs in actual terms, as the PPI is known as a measure of inflation from the perspective of the producers. Instead of using the PPI supplied by Statistics SA (SSA), an adjusted PPI comprising a basket of important inputs used in grain production was calculated.

better set off the specific inflationary pressure grain producers experience, rather than relying on the general PPI provided by SSA. The basis year selected was 2023, which means that all the historical input prices in the various industry budgets were expressed in 2023-rand terms.

After the adjusted PPI had been calculated, the annual inflation growth rate for the input basket was deduced. This is depicted together with the prime interest rate in Graph 1. The comparison of the prime interest rate and the annual inflation rate can provide insight into the impact of monetary policy on price stability. Based on Graph 1 it appears that there can be an inverse relationship between the prime rate and the annual inflation rate, specifically, when the

Table 1: Historical nominal prices for fuel, total fertiliser and seed costs from 2013 to 2023.

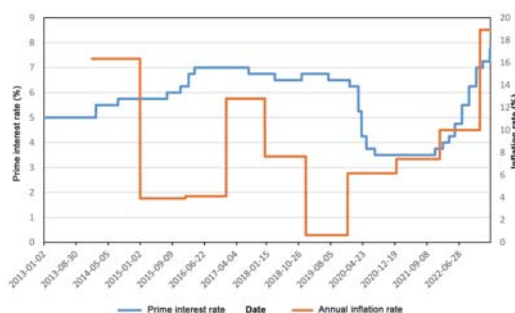
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Fuel (R/ha)	604	644	558	533	649	782	806	924	934	1 254	1 480
Total fertiliser costs	7 851	8 554	9 599	8 775	8 969	9 469	9 039	9 061	9 978	20 394	17 134
Total seed costs	3 173	3 198	3 198	3 180	3 319	5 175	5 175	5 175	5 400	5 400	5 400



◀ Is irrigation maize...

Table 2: Overview of maize production costs and profitability in South Africa: nominal and real prices.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total costs/ ha (nominal prices)	18 645	20 352	21 719	21 817	23 451	26 017	25 700	26 655	28 484	39 615	40 822
Total costs/ ha (real prices)	42 886	40 237	41 322	39 870	37 996	39 157	38 434	37 552	37 356	47 108	40 822
Nominal maize prices	2 288	1 712	3 075	4 311	1 802	2 087	2 899	2 545	3 254	4 262	3 517
Real maize prices	3 699	2 612	4 482	5 908	2 348	2 597	3 467	2 946	3 604	4 504	3 517
Marginal overheads in nominal terms (13 t/ha)	12 243	2 760	19 794	36 382	876	2 158	13 437	7 703	15 445	17 922	6 658
Marginal overheads in real terms (13 t/ha)	7 053	4 981	19 182	39 894	6 303	4 102	8 374	2 219	11 304	13 694	6 658



Graph 1: Year-on-year inflation growth rate for specific input basket, together with the prime interest rate.

prime interest rate is high, the annual inflation rate for the basket of inputs tends to drop. This could be the result of the fact that high interest rates make loans more expensive, which leads to less spending and therefore a reduction in the demand for inputs too.

In **Table 2** the nominal total cost per hectare has increased over time. However, if the total cost per hectare is considered in real terms, it can be seen that the cost per hectare has remained relatively stable, with some years even showing a decline. This indicates that while the nominal prices have risen, the actual costs of maize production have not, in real terms, increased at the same rate.

In nominal terms, the marginal overheads vary considerably from year to year, but in real

terms the picture differed. Interestingly enough, in some years where the marginal overheads were high, the real marginal overheads were actually lower. The marginal overheads were the highest in 2016, in both nominal and real terms. This indicates that, in that year, producers were more profitable compared to other years.

Based on the analysis of the data presented, it can be concluded that there is a significant difference between nominal and real prices, particularly when it comes to measuring total cost per hectare and marginal overheads.

Whereas nominal prices show a rising trend over time, the conversion to real prices indicates that these values are moving sideways, or even drop in some years. This means that producers have to take inflation and other factors affecting the purchasing power of their income and expenditure into account.

This complete article appeared in SA Graan/Grain of August 2023.

Markus Monteiro and Dr Hermias van Niekerk,
Department of Agricultural Economics,
University of the Free State

Limit load shedding's effect on sprayers

Load shedding is a reality that means available irrigation hours per day are reduced. How do producers adapt to reduce the effect before alternative energy sources?

Start by evaluating the **condition** of the irrigation system. If the system is old and inefficient, a lot can be achieved by bringing the system up to standard again. First focus on basic aspects such as leaks or inefficient pumps. Ensure that check valves are in good working condition and that foot valves of the pump function correctly.

A **redesign of the system** can be done to determine if the system application can be increased within the framework of the existing pivot's pipe size and the main line's size. If the pump and/or motor need to be replaced, it is still a relatively inexpensive solution to add another millimetre or two capacity per day.

Droplet size, even distribution of water under each nozzle, and the bandwidth (nozzle diameter) of each nozzle are **core characteristics** that surely determine the greatest contribution to the effectiveness of

water in the soil. "Too large" droplets compact the soil and quickly lead to runoff. Droplets that are "too fine" have an exponentially increasing evaporation factor as they get smaller.

Nowadays, producers have access to improved droplet size refinement as well as a movement mechanism that has lower operational resistance and lower wear resistance. This ensures that the nozzle maintains its effectiveness over the years.

Therefore, the basic condition of the pumps, pipes, and irrigation device must first be reviewed or upgraded, after which a high-quality nozzle package will make the next biggest single difference. Thereafter, the daily design application in millimetres can be upgraded if the existing equipment economically justifies it.

*The complete article appeared in
SA Graan/Grain of August 2023.*

Theuns Dreyer, managing director: Senter 360

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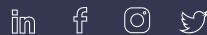
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Harnessing AI in farming and agricultural equipment

Advancements in artificial intelligence (AI) have brought about a new era in agriculture, transforming traditional farming methods and enabling producers to optimise production, improve sustainability, and enhance decision-making.

PRECISION FARMING AND PREDICTIVE ANALYTICS

AI technologies, such as machine learning algorithms and predictive analytics, play a crucial role in precision farming. By analysing vast amounts of data collected from various sources, including weather patterns, soil conditions, crop health, historical and live machine metrics, AI algorithms provide insights and recommendations to producers.

This enables them to make data-driven decisions related to planting, irrigation, fertilisation, pest control, leading to optimised resource allocation, reduced costs, and increased yields.

Raven's OMNiDRIVE™ technology brings advanced autonomous capabilities to grain collection and transport, which allows commanding operatorless tractors with grain carts to drive to the combine, match the speed of the combine while the combine is unloading grain into the cart; then returning the tractor and grain cart to a designated parking location.

SMART SENSORS AND INTERNET OF THINGS (IOT)

Smart sensors are deployed in fields and agricultural machines to collect data on moisture levels, temperature, humidity, and nutrient content, among other parameters. AI algorithms process data to provide producers with precise information about crop health, early detection of diseases, pests and nutrient deficiencies. By leveraging data, producers can take proactive measures to prevent crop losses and optimise resource usage before harvesting.

Computer vision techniques (like the CNH's Augmenta technology) analyse images captured by cameras installed on agricultural machines to detect anomalies, like weed growth, nutrient deficiencies or crop diseases. Machine learning algorithms can identify patterns and provide predictive analytics, and also do adjustments in real time on spraying applications of herbicides and foliar feeding to help producers optimising the use of agricultural chemicals and kerb pollution. Computer vision technology (VSN) is used in visual guidance of agricultural machinery to optimise driving paths to lower the crop damage caused by trampling (**Photo**).

Sensors and AI algorithms on combines provide producers with the ability to optimise harvesting in real time whereby the combine bases an optimised decision on 280 000 000 data entries every 20 seconds with Harvest Command. The AI algorithm calculates with the sensor data of the combine to optimise throughput to enable the grain quality and machine efficiency based on the parameters set by the operator. Class 8 combines from Case IH with Harvest Command use this technology to optimally adjust settings of the components in the combine while harvesting for effective material throughput, adjusting the combine ground speed depending on the volume and moisture content of plant material, and cleaning the grain for a high quality and clean product.



Computer vision technology (VSN) is also used in visual guidance of agricultural machinery.

AGRICULTURAL DRONES AND ROBOTICS

Drones equipped with AI and computer vision capabilities, are valuable in modern agriculture. Drones survey production areas quickly and efficiently, capturing high-resolution images and multispectral data. AI algorithms process these images to identify crop stress, plant diseases, or irregularities in growth patterns. This enables producers to target specific areas for intervention, reducing

the need for manual scouting and improving the effectiveness of interventions.

Robotic technologies powered by AI are making significant strides in agriculture. Autonomous robots equipped with sensors and computer vision systems perform tasks such as seeding, weeding, harvesting, and sorting crops. These robots minimise the need for human labour and increase operational efficiency, particularly in labour-intensive processes like harvesting. AI algorithms enable robots to recognise and handle different crops with precision, resulting in reduced waste and increased productivity.

AI AND CONTROL ROOM MANAGEMENT

Control rooms use AI, data mining and analytics based on the machine data to provide preventative maintenance guidance and usage methodologies for the optimal use of the equipment. These guidelines and alerts provide cost savings in fields like repairs and fuel usage and can prolong the useful life of equipment and wear parts. The equipment receives updated software or firmware over the air (OTA) with upgraded software and machine parameters which will provide the operator with new functionality and guidance. In high alert critical situations, the vehicle will advise the operator to stop the vehicle and request technical assistance.

*The complete article appeared in
SA Graan/Grain of August 2023.*

Esmond Coen, agriculture solutions manager, CNH Industrial

CONCLUSION

The adoption of AI in agriculture can address key challenges facing the sector, ensuring sustainable food production and improving global food security. The interconnected systems and equipment with readily available data enable and promote the analytics with the use of AI to provide information for today and tomorrow. CAP Computer vision technology (VSN) is also used in visual guidance of agricultural machinery. OMNiDRIVE™ technology brings advanced autonomous capabilities related to grain collection and potential in shaping the future of farming.



The image shows an Electrolee Planter Monitor (PM8+2) device mounted on a planter in a cornfield. The device has a digital display showing '10000' and several indicator lights. The Electrolee logo is in the top left, and a '3JAAR WAARBORG' (3-year warranty) badge is in the top right. The text 'Monitor KUNSMISVLOEI en Saad op jou planter' is overlaid on the bottom half of the image.

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COMMUNICATE LIKE THIS DURING OUTAGES ON FARMS

Cell phone reception in the rural areas in particular has deteriorated significantly due to South Africa's power crisis. In addition to vandalism, poor maintenance of the electricity infrastructure leads to further frustration and safety risks. This has a devastating effect on the stability of network connections in remote areas. Here are a few possible solutions to establish a better connection.

SIMPLEX RADIO FREQUENCY

The registration of a simplex radio frequency system by agricultural organisations appears to provide a good solution. Such a system works quite simply and does not depend on electricity or a cell-phone system. All that is required is a high-frequency radio, regardless of make or model. As soon as the radio has been tuned to the registered channel, the user can communicate with other producers on the same channel in the area (within a certain radius).

Agri Western Cape has registered a simplex radio frequency with the Independent Communication Authority of South Africa (ICASA). Currently the channel can be used only by members of Agri Western Cape and the organisation also bears the cost of the radio frequency. However, any producer in the Western Cape is welcome to join and use the channel.

The system has limitations, like the reach, which differs from area to area because of environmental factors and topography. Mountainous parts will offer a smaller reach than the Karoo, for example, where the area is flat. With load shedding schedules changing without warning, it is important to plan ahead and to ensure that the radio is always at hand. Make sure that alternative energy systems are available to recharge the radios, for instance solar panels, an inverter, or a generator. A mobile unit like a hand-crank generator or an extra backup battery kept in the bakkie is a good idea.

One of the greatest benefits of satellite connections is the ability to provide cover in remote and underserved areas.



SIGNAL AMPLIFICATION

1

A relay network placed in strategic locations can help the frequency to function continuously.

2

Signal amplifiers/signal repeaters can improve the signal reception so that cell phones can still be used during load shedding. This threefold system helps to amplify the signal that is received and distribute it through a broadcast antenna. If multiple antennas are deployed, cell phone towers that are on different load shedding schedules can be targeted to ensure an uninterrupted signal.

3

There are even signal amplifiers for vehicles available that can amplify the 2G, 3G and 4G voice and data signal in any vehicle.

SATELLITE INTERNET

A more expensive option that offers reliable high-speed connectivity is satellite internet. The network quality and access are not affected by load shedding because the satellite does not depend on a terrestrial infrastructure. However, a power source is required for the modem and router.

This article is scheduled to appear in SA Graan/Grain of February 2024.

Louise Kunz, SA Graan/Grain contributor



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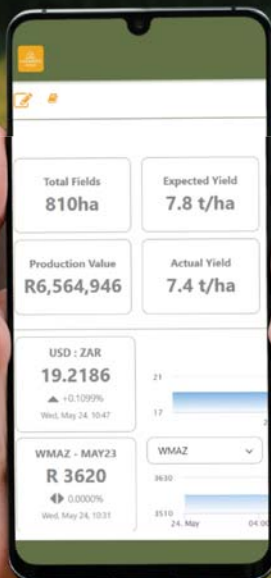
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The ideal business entity for farming operations

Agriculture is an important sector of the South African economy, contributing significantly to employment and gross domestic product (GDP). However, producers often face numerous challenges, including climate change, market volatility and regulatory requirements.

One of the crucial decisions that producers need to make when starting a business is selecting the right legal structure. Choosing the right business entity can have significant implications for liability, taxation and management.

According to Statistics South Africa, most farm businesses in South Africa are run as sole proprietorships. A sole proprietorship is owned by one person who runs the business intending to maximise profit. As a sole proprietor, the producer accepts full responsibility for making all decisions and is personally liable for any farming losses or claims that could be brought against the farm business.

To choose the most suitable structure for a specific situation, the following aspects should be considered:



Choosing the right business entity starts with proper estate planning. Poor estate planning can disrupt the continuation of the farming business – it can cause a shortage of available cash to continue farming, result in hefty income taxes as well as capital gains tax and be the cause of tension amongst heirs. It is necessary to consult lawyers, financial advisers, and tax experts to make sure that the best business structure is chosen.



It is necessary to consult lawyers, financial advisers, and tax experts.

For example, when a producer focuses only on tax savings, he may bequeath the entire estate to his spouse to save capital gains tax and estate tax. By this, he only focuses on the short-term benefits of tax savings. The producer may then fail to consider whether the spouse is indeed in a position to effectively manage the farm after his death and fail

to consider the estate tax implications upon her death.

THE IDEAL BUSINESS STRUCTURE

All farming units consist of these four production elements:

- Ⓒ Labour
- Ⓒ Capital
- Ⓒ Resources
- Ⓒ The owner

The ideal is to make use of a business entity (or combinations thereof) that keeps the production elements separate. The production functions can become so intertwined in a sole proprietorship that it could be nearly impossible to differentiate between the various elements. To overcome these challenges a farm business can consider the business structure shown in **Figure 1**.

The operational section of the farm business consists of the company, where the capital that is used to produce and market the

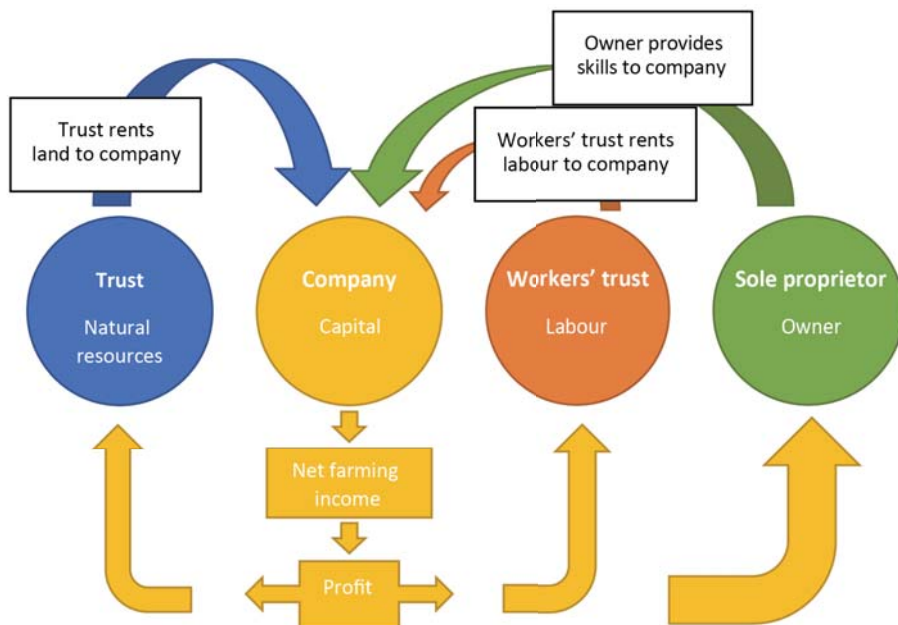


Figure 1: The ideal business structure.

Source: Theunissen (2005)

various farming products is invested. Capital consists of vehicles, equipment, and live-stock, but not land. The company rents the land from the trust that owns all the natural resources. This is necessary to protect the farm from future liability claims and the growth of land value is vested in the trust which does not dissolve at the death of the producer.

To have the operational part of the farming enterprise vested in a company, has the advantage that continuity is ensured at the death of the owner. It is difficult to ensure continuity if the farm business was run as a sole proprietorship.

Farm activities do not stop at the death of the owner – it might be in the middle of harvest or lambing season – and the day-to-day activities must continue. The executor does not always have the necessary skills to take over and run a complex farming business, which can harm the continuity and profitability of the operation. No bank transactions can take place without a letter of executorship, which can take months to obtain.

That is why the sole proprietor is seen as a separate entity with the producer only

providing knowledge and skills to the farming operation. Forming a separate trust to manage labour is beneficial, especially in light of future worker claims. This will allow the labourers to also share in the net farming income of the farm business. Profit that remains after that, is used to pay the owner and to maintain and/or expand the assets of the farm business.

This structure makes estate planning easier and keeps the production functions separate. The biggest disadvantage of this structure is the initial cost of creating the various business forms and the tax implications for each business form.

*The complete article appeared in
SA Graan/Grain of May 2023.*

Dr Mariëtte Geyser, School of
Economics, North-West University

FAMILY FARMING: know the challenges

Family undertakings make a major contribution to the economy. Between 70% and 90% of undertakings in developing economies can be classified as family undertakings. In South Africa too, the vast majority of successful agricultural undertakings are family businesses.

Yet, the average lifetime of a family undertaking is 24 years, according to Yolandi Kruger of Dunamus Agri. When such an undertaking is handed over from the first to the second generation, the chance of success is 30%, but when it is handed over by the second generation to the third, the success rate drops to about 10%.

This is concerning, as family farms are the biggest single job creator in the world. More emotion and loyalty are involved in family undertakings than in corporate organisations. That is why it is essential to apply certain principles correctly for the undertaking to remain successful in the hands of further generations.

SUCCESSION PLANNING

'Requirements must be introduced before the next generation is there,' says Prof Elmarie Venter of the Nelson Mandela Metropolitan University. In addition, Dr Johan Beukes of Authentic Living Learning believes proper boundaries must be in place to protect family relationships.



Succession planning is one of the biggest challenges in a family farming undertaking.

Kallie Schoeman, managing director of Schoeman Boerdery, feels that succession planning is one of the biggest challenges in a family farming undertaking. He says the unavoidable must be kept in mind, because change is the only unchangeable element – in the family, on the farm and macro market.

Management succession planning must be a proactive process, and families should not wait until adversity strikes before they start planning. Often this planning is pushed to the background with the hope that the next generation will take over the farm effortlessly and care for the retiring generation.

Prof Stephan van der Merwe of the NWU Business School says one of the main reasons for the high failure rate of family farms is the reluctance and/or inability of the family to plan for management succession timeously.

Management succession involves much more than the succession of leadership from one generation to the next. It can stretch over many years and includes actions and decisions regarding the transition from one generation to the next, the development process of successors, and preparations to maintain family harmony, which will at the same time ensure the survival of the family farm.

VALUES AND STEREOTYPING

Schoeman compares the values of their farm with a three-legged pot, with the three legs representing trust, care, and respect. 'When one of the legs breaks off, the pot collapses and nobody has any food.'

It is crucial not to transfer the stereotyping, like that the oldest child is the most responsible one, of the family to the undertaking. Beliefs and silent assumptions in a family, like that the father's word is law, should also not be transferred to a family undertaking, says Dr Beukes.

COMMUNICATION

Communication is important for the smooth flow of a family farm and members must communicate regu-





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< 100 Family farming...

lary. All matters, even 'family secrets', must be addressed. It is essential to know what the opinions, feelings and sentiments of each member of the family undertaking are.

Schoeman distinguishes between complex and sensitive challenges. 'Complex challenges are the difficult things for which solutions should be found quickly, but sensitive ones are those involving emotions and that can lead to severe conflict if they are not handled correctly.'

WARNING SIGNS

Factors that can affect management succession:

1

Family-related factors

- ⓐ **Owner-manager** – owner-managers cling to what they have built up over years. To them succession amounts to handing over power, as well as an awareness of their own mortality.
- ⓑ **Successors** – it is stressful to them when they are forced to adjust to the challenges of adult life and are confronted by the (possible) death of their parents. Sometimes successors feel that they have to take over responsibilities, but that the older generation does not want to scale down or hand over.
- ⓒ **Other family members** – spouses can discourage succession planning because they fear that it can disrupt the harmony between family members. The choice of a successor can cause jealousy between children.

2

Non-family-related factors

Ignorance about this is often a major reason for failure.

- ⓐ **Managers and employees** – management succession is often a shift of a personal relationship with the owner-manager to a more professional and 'impersonal' relationship with the successor. Managers and employees feel threatened by changes. Timeous communication and planning are critical.
- ⓑ **Organisational factors** – when roles and responsibilities of family members are not demarcated, succession planning can be hampered. The organisational culture on the farm can also affect planning. If succession planning is viewed as a threat to the status quo rather than a learning opportunity, management succession planning can also be impaired.
- ⓒ **Environmental factors** – unique factors that make management succession difficult exist in South Africa, like emigration of possible successors, black economic empowerment, land reform, farm attacks, globalisation and droughts. Family farms often cannot influence these, but an awareness can contribute to proactive management planning.



Scan the QR code to find the series
on sagrainmag.co.za.

*This article was compiled from the
Family Farming series that appeared
in SA Graan/Grain in 2023.*

Karina Muller, SA Graan/Grain contributor



AN OMBUD AT YOUR SERVICE

If you, as a producer or consumer, have received unfair treatment – or have lodged a complaint but received a cold shoulder from a service provider – an ombudsman is most likely the next place to turn to.

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- Ⓞ The **Fiduciary Institute of South Africa (FISA)** is a self-regulating body for matters such as wills, trusts and estate planning. See <http://fidsa.org.za>.
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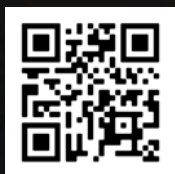
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Determining the RENTAL VALUE OF LAND

How does one determine the value of rental land? This is one of the most common questions asked in the agriculture sector today. There is not just one answer to this question either. Usually, the rental price is calculated as a percentage of the market value of the land. The problem here becomes how to determine this percentage value.

FACTORS THAT DETERMINE VALUE

1

Location is one of the most important factors when determining the value of rental land.

2

The size of the land and the soil quality are also important variables.

3

Distance influences the price the lessee/renter is willing to pay. As an example, a neighbour will be willing to pay a premium due to the lower transaction cost compared to someone further away.

4

Supply and demand factors also play an important role in the market value of the land.

5

The infrastructure outlay of the property – as already existing capital outlay is usually a positive attribute for the renter.

OTHER METHODS

In some areas, especially when it comes to grazing, the rand per livestock unit (LSU) is still the preferred method. It is important in these cases to determine the grazing capacity in order to manage the property efficiently. Another popular method when it comes to crop production is a percentage of the long-term yield. This method limits the risk of the lessee during bad seasons, while still allowing the lessor to invest in property.

Some of the questions that should be answered when looking to rent out property instead of utilising it yourself, include the following:

1

Should one look at the market value of the land, or should it be the productive value of the land?

2

Is the productive value of land measured as net farm income or gross farm income?

3

What enterprises are currently actively being pursued on the property?

A PERCENTAGE OF MARKET VALUE

A percentage of market value seems to be the best solution in most or simple cases. In more difficult cases, a hybrid or more flexible method can be applied and decided between the lessor and lessee with clear, transparent rules and regulations stipulated in a contract.

Where a percentage is used, it should be calculated using the opportunity cost as well as a premium for risk. In this case, the opportunity cost is based on market value, therefore it should be the market value of the property invested in a reasonable fund linked to inflation as well as an appreciation factor for land and a risk premium.

Inflation plus a risk premium, or 7% plus 3% to 4%, will be very close to the prime rate. This implies that a good starting point would be anything from 10% to 12% of market value. The appreciation of the property is therefore also included.

The complete article appeared in SA Graan/Grain of May 2023.

sagrainmag.co.za

Dr David Spies, School of Economics;
Agricultural Economics, North-West University



ANIMALS

Your CONTACTS

INSTITUTION	
Animal Feed Manufacturers Association (AFMA) <i>admin@afma.co.za</i> 012 663 9097	National Wool Growers Association (NWDA) <i>nwga@nwga.co.za</i> 041 365 5030
ARC-Irene Animal Production <i>ULecuona@arc.agric.za</i> 012 672 9111	Red Meat Producers Organisation (RPO) <i>rpo@lantic.net</i> 012 349 1102
ARC-Onderstepoort Veterinary Research <i>ovi-info@arc.agric.za</i> 012 529 9111	South African Animal Health Association (SAAHA) <i>info@saaha.co.za</i> 087 821 7547
South African Poultry Association (SAPA) <i>reception@sapoultry.co.za</i> 011 795 9920	Milk Producers Organisation (MPO) <i>info@mpo.co.za</i> 012 843 5600
South African Pork Producers' Organisation (SAPPO) <i>admin@sappo.org</i> 012 100 3035	SA Meat Industry Company (SAMIC) <i>samic.co.za</i> 012 361 4545

FEED CROPS for livestock

Feed crops must be carefully chosen to ensure they are suited to the climate and season in which they are planted – as well as to effectively address the purpose for which they are intended – since a wide variety of feed crops are available in the market.

LUCERNE

This 'king of feed crops' is a high-quality feed with 18% - 20% crude protein and also has a high digestibility. Lucerne can be cultivated successfully under intensive high-production conditions with irrigation, or less intensively under dryland conditions. It is a strong perennial plant and will produce well for approximately six years and longer. Grazing and hay types are available.

Plant lucerne in cool areas during February to April and in warmer areas from March to June. Try to sow approximately 20 kg to 25 kg of seed broadcast or 5 kg to 15 kg can be planted in rows.

INTENSIVE GRASSES AND MIXTURES

This crop category is distinguished from others by the type of stock unit involved. The input costs on these crops are high. They must be well fertilised and planted under irrigation to achieve their genetic potential. To recover the high input costs, the pastures must be utilised with producing animals like dairy cows, weaners or sheep.

CROP	PLANTING TIME	RAINFALL (MM)	SOW DENSITY (KG/HA) BROADCAST (BC) OR ROWS
Perennial ryegrass (Diploid and Tetraploid)	Feb - May Aug	Irrigation	BC 30 - 35 kg Rows 25 - 30 kg
Italian ryegrass types (Diploid and Tetraploid)	Feb - May Aug	Irrigation	BC 30 - 35 kg Rows 20 - 25 or 30 - 35 kg
Westerwolds ryegrass types (Diploid and Tetraploid)	Feb - May	Irrigation	BC 30 - 35 kg Rows 20 - 25 or 30 - 35 kg
Tall fescue	Feb - Jul	> 900 mm of Irrigation	BC 30 - 35 kg Rows 25 - 30 kg
Rough cocksfoot/Creeping bentgrass	Feb - Jul	> 900 mm of Irrigation	BC 20 - 25 kg Rows 15 - 20 kg
White clover and Red clover	Feb - May	> 900 mm of Irrigation	BC in mixtures 2 - 3 kg Clean stand 6 kg
Egyptian clover	Feb - March	Irrigation	BC 15 kg Rows 10 kg
Kikuyu grass	Oct - Jan	Irrigation	BC 2 - 4 kg Rows 2 kg

DRYLAND WINTER CROPS

High-potential oats, korog and stooling rye cultivars are available on the market. Pannar offers a cultivar package that supplies good-quality green feed during the critical late autumn, winter and spring months. The right choice of cultivar ensures green feed that produces sufficient grazing at the right time.

Green-feed cultivars are classified according to their growth habit into spring, intermediate, and winter types. Each of these types has its own application in a feed flow programme. It is therefore important to pay attention to the characteristics of each of these types in order to make the best use of its benefits.

CROP	PLANTING TIME	RAINFALL (MM)	SOW DENSITY (KG/HA) BROADCAST (BC) OR ROWS
Japanese radish	Dec - Jan/Feb	Assistance irrigation/Dryland > 350 mm rain in growth period	Rows 2 - 3,5 kg
Oats	Feb - March	Assistance irrigation/Dryland	BC 50 - 100 kg Rows 40 - 70 kg
Korog/Triticale	Feb - Apr	Assistance irrigation/Dryland	BC 60 - 100 kg Rows 40 - 60 kg
Stooling rye	March - Apr	Assistance irrigation/Dryland	BC 40 - 60 kg Rows 25 - 40 kg

ANNUAL SUBTROPICAL CROPS

These crops establish and produce feed rapidly. There are feed sorghum hybrids available that can be utilised respectively as grazing, silage, standing hay, and/or green chop. Choose the right hybrid for the right task.

Teff cultivars are not merely a commodity but have been developed to give the producer a head start. Teff is an excellent hay crop and typically yields two cuttings per season.

The cultivation of field beans together with teff can be considered for a low-input, high-quality feed.

CROP	PLANTING TIME	RAINFALL (MM)	SOW DENSITY (KG/HA) BROADCAST (BC) OR ROWS
Teff	Oct - Dec	> 600 mm	BC 15 - 20 kg
Feed/Fodder sorghum	End Oct - Jan	< 600 mm > 600 mm	BC 15 kg rows 4 - 6 kg BC 20 kg rows 7 - 15 kg
Hybrid babala	End Oct - Jan	< 600 mm > 600 mm	BC 10 kg rows 3 - 5 kg BC 15 kg rows 5 - 10 kg



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< Feed crops...

PERENNIAL SUBTROPICAL CROPS

These pastures are cultivated under semi-intensive conditions. They are summer crops and are dormant in winter. During the autumn months the grazings translocate nutrients from the leaves and stems to their roots. This enables the grass species to bud in spring and develop rapidly.

Apart from the fact that each of these species has preferences with respect to soil, management and rainfall, each has properties that allow it to fit in perfectly with a specific system. Both the preferences as well as the properties of the crops must be considered before making a choice.

CROP	PLANTING TIME	RAINFALL (MM)	SOW DENSITY (KG/HA) BROADCAST (BC) OR ROWS
Blue buffalo grass	Dec - middle Feb	> 350 mm	BC 5 - 8 kg Rows 3 - 5 kg
White buffalo grass	Dec - middle Feb	> 500 mm	BC 6 - 8 kg Rows 3 - 5 kg
Smuts finger grass	Oct - beginning Feb	> 500 mm	BC 5 - 8 kg Rows 3 - 4 kg
Rhodes grass	Oct - beginning Feb	> 600 mm	BC 8 - 10 kg Rows 5 - 7 kg
Weeping lovegrass	Oct - Nov or Jan - Feb	> 650 mm	BC 6 - 8 kg Rows 3 - 5 kg

For more information, contact
Pietman Botha at 082 759 2991.

Pietman Botha, SA Graan/Grain editorial team







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GRAIN SA

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GRAIN SA

relevant to all producers



Grain SA is a voluntary industry organisation that provides commodity-strategic support and services to the grain and oilseeds producers of South Africa.

The organisation's corporate identity and slogan "We Are" imply that the members of the organisation, together, are stronger than a single voice. This united voice resonates with the collective's authenticity and relevance and speaks to the dynamics of grain and oilseed production in South Africa.

Commodities that are represented include maize, wheat, soybeans, canola, sunflower, sorghum, barley and groundnuts. The organisation was established on 19 June 1999 with the merging of four former industry organisations, namely NAMPO (maize), NOPO (soybeans, sunflower, and groundnuts), the WPO (grain, barley and oats) and the SPO (grain sorghum).

WE are...

VISION

To influence the macro- and micro-economic environment enabling sustainable and profitable local grain production and development.

MISSION

Ensure and grow a credible and sustainable, voluntary and inclusive grain producers organisation that drives the mandated strategic actions including meaningful stakeholder partnerships and relationships.

CULTURE AND VALUES

Creating an enabling and caring environment for passionate, dedicated and knowledgeable teams to grow and enjoy serving the organisation and influence and deliver value for the broader food value chain. We strive to build trust and relationships through respectful interaction as well as open, honest and efficient communication. We value consistent, authentic and legitimate teamwork that deliver consistent and impactful results.

CORE STRATEGIC OBJECTIVES

- ③ Influence economic sustainability.
- ③ Grow and support developing grain producers to become commercially sustainable.
- ③ Increase the involvement of younger producer members.
- ③ Grow a broader membership base.
- ③ Grow and maintain key value chain relationships.
- ③ Effective and efficient communication.

LEADERSHIP

Grain SA represents its members in 33 geographical regions of South Africa where grain and oilseeds are cultivated commercially. Each region is represented on the Executive by an elected member (nominated and elected for a term of office during Congress) – see p. 116 - 121 for a breakdown of the Executive. The management of affairs and all executive competencies vest in the Executive. It is also the highest authority when Congress is not in session.

The Executive elects a Management Committee from its ranks, comprising a chairperson, two vice-chairpersons and additional members. The Management Committee exercises all the powers of the Executive when the Executive and Congress are not in session, subject to such limitations as the Executive and/or Congress may impose on it from time to time.

Working groups are appointed by the Executive to assist the leadership in carrying out their duties. The chairpersons of Grain SA's specialist working groups and committees, as well as the members of the Management Committee, appear on p. 115.

Members should also take note of the following platforms in the extended grain family where Grain SA's leadership and/or staff represents and promotes the case of the grain producer:

1

TRUSTS

Maize Trust, Oil and Protein Seed Development Trust (OPDT), Sorghum Trust, Winter Cereal Trust, Sasol Agricultural Trust, SA Winter Cereal Industry Trust (SAWCIT), Commercial Producer Trust, Western Cape Agricultural Research Trust

2

FORUMS

Oilseed Forum, Sorghum Forum, Wheat Forum, Maize Forum

3

ADVISORY COMMITTEES/TECHNICAL COMMITTEES (RESEARCH)

Oilseeds Advisory Committee (Oilseed Trust), Technical committees for winter cereals (Winter Cereal Trust)

4

ORGANISED AGRICULTURE

Agri SA (Board of Directors, Industry Chamber, Centers of Excellence, nine provincial unions)

5

OTHER COMMITTEES AND DIRECTORSHIPS

Southern African Grain Laboratory, Safex Technical Committee, Safex Advisory Committee, SA Cultivar and Technology Agency (SACTA), Soybean PNS Working Group, Canola PNS Working Group, Phahama Grain Phakama NPC, NAMPO Commercial (Pty) Ltd, Saamkoop NPC, National Grain Research Programme (NGRP), Agricultural Academic Council High School Reitz, Alenti Management Body

STAFF

Strategically the staff corps focuses on six main focus areas to ensure that objectives are achieved. The Chief Executive Officer is supported by a core leader for each focus area, namely:

1

NAMPO, MARKETING AND RESEARCH COORDINATION

The department focuses on the effective management of the NAMPO brand and NAMPO Park. While the NAMPO Harvest Day is a cornerstone of the sustainability of the organisation, the brand is further promoted through NAMPO Cape and the NAMPO Alfa expo.

Successful media and producer liaison is an essential function that is performed. Communication must be effective so that the media and the public realise the importance of grain producers. The publication of the *SA Graan/Grain* magazine is another key marketing activity.

Levies are the basis of Grain SA – without it, the organisation is not sustainable and also cannot support producers. To retain autonomy, it is necessary to collect levies on all grains and oilseeds produced.

The effective coordination of grain research links up with the establishment of research consortia that improve the productivity, profitability and sustainability of grain and oilseeds producers and is to the benefit of the industry. The research team is also involved in the coordination of national cultivar assessments for maize and sorghum.

2

APPLIED ECONOMY AND MEMBER SERVICES

This department plays a key role in influencing the macro and microeconomic environment in order to keep grain and oilseeds producers profitable and sustainable on their farms and promote a sound policy environment in the market and input environments. The administration of and service to the different specialist working groups of the organisation are another core focus point.



3

FINANCE AND CORPORATE SERVICES

The objectives of the team involve unqualified audit opinions and acceptable fact-finding reports on all Grain SA's external projects. Internal control measures and good corporate control enable the department to achieve these objectives.

We ensure that all accounting and processing are relevant, accurate and complete, supporting key individuals and teams with informed decision-making. The team also ensures that all service providers perform in line with contracts and budgets.

4

PHAHAMA GRAIN PHAKAMA NPC

Active grain farmers are assisted in cultivating grain profitably by using the best available technology and practices for sustainability. A well-established team consists of regional development managers, mentors and administrative staff to purposefully support producers on their path to commercialisation.

Producers are served in four groups: Subsistence Farmers, Small Farmers, Potential Commercial Farmers, and New Era Commercial Farmers. There are joint efforts to develop more potential new era and new era producers across all the development regions.

5

COMPANY SECRETARIAT

This department manages the institutional environment of the Grain SA group of entities to ensure compliance and good management. Guidance is provided to Executive members and other governance structures and it is a contact point for legal affairs of the group. The coordination of Congress, strategic support to the CEO and the implementation of strategic objectives are also part of the key focus areas.

6

HUMAN RESOURCES

The principal focus is to position Grain SA as a preferred employer – not only in agriculture, but in the labour market as a whole. A full spectrum of Human Resources functions is provided.

For more information, visit Grain SA online at grainsa.co.za or on social media.



MANAGEMENT COMMITTEE, WORKING GROUPS and CHAIRPERSONS



DEREK MATHEWS
Management Committee
(chairperson)
Maize Working Group
Disciplinary Committee
Nomination Committee



RICHARD KRIGE
Management Committee
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Winter Cereals Working Group
Winter Cereals Research Committee
Marketing Working Group
Remuneration Committee
Nomination Committee



JEREMIA MATHEBULA
Management Committee
(vice chairperson)
Farmer Development
Working Group
Nomination Committee



DANIE MINNAAR
Management Committee
NAMPO Harvest Day
Committee



JACO BREYTENBACH
Management Committee
Editorial Working Group



SAREL HAASBROEK
Management Committee



RAMOSO PHOLO
Management Committee



RALF KÜSEL
Sunflower and Soybean
Working Group



WILLEM GROOTHOF
Sorghum Working Group



ANDRÉ KIRSTEN
Production/Input
Working Group
Lupin Specialist Committee
Alternative Crops
Working Group



GERHARD BRUWER
Groundnuts Working
Group



KOOS BLANCKENBERG
Canola Working Group



JOSE DE KOCK
Barley (National Barley
Industry Committee);
(Southern Barley
Industry Committee)



WILLIE BOTHA
Barley (Northern Barley
Industry Committee)



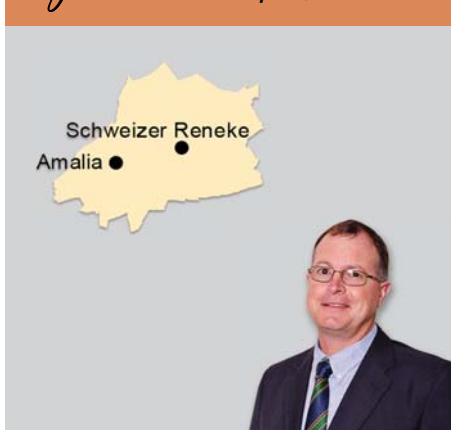
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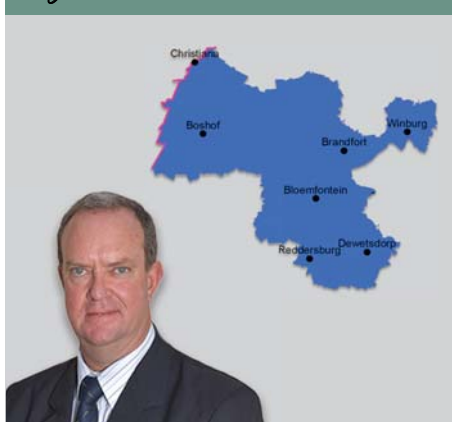
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Representative:
Farmer Development
PATRICK STUURMAN
stuurmanpatrick5@gmail.com



Are you a member of Grain SA?

Grain SA is an autonomous and voluntary industry organisation which acts collectively in the interest of the economic prosperity of the grain producers of South Africa. It is the combined voice of grain producers that addresses industry matters and issues with authorities and other role-players in the industry.

HOW IS MEMBERSHIP OBTAINED?

Complete the authorization form on the Grain SA website or scan the following QR code:

As soon as Grain SA has received the authorisation form, it is handed to the collection agent concerned to deduct the levy whereafter the producer is registered on the system as a member.

Linked members: If more than one person is involved in a farming operation, such persons can function as linked members.



WHO CAN BECOME A MEMBER OF GRAIN SA?

Natural persons, trusts, and any legal entities that:

produce grain for marketing; and

pay the prescribed membership fee and commodity levy to Grain SA; and

endorse the objectives of Grain SA.

COLLECTION AGENTS



Amandel
Graan

Atlanta Grain
Producers



Countrywide
Nuts (PTY) LTD



Qualita Seeds



SS Silo Co



GRAIN SA MEMBER MARKETERS

For enquiries or specific information contact our marketers:

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(Western Free State, North-
West and Northern Cape)
082 806 9401
lombard@grainsa.co.za



WERNER VOS

(Mpumalanga region)
063 851 8178
werner@grainsa.co.za



CHRISTIAAN VERCUEIL

(Eastern Free State)
060 550 6108
christiaan@grainsa.co.za



ARE YOU UNSURE IN WHICH REGION YOU ARE?

Refer to the information about the Executive on pp. 116 - 121 or contact Grain SA's head office at 086 004 7246. You can also send an email to christiaan@grainsa.co.za.

HOW IS THE LEVY COLLECTED?

The commodity levy is collected in two ways:

1

COLLECTION AGENTS

Grain SA has concluded agreements with agricultural businesses and other grain off-takers in terms of which these institutions, for an agency fee of 5%, collect the commodity levy for Grain SA as collection agents. This makes it easy for producers to ensure that their commodity levy is paid over.

The levy per ton is collected on all grains at the first point of delivery and the collection agent will only deduct the levy as long as the member agrees to this.

2

DIRECT PAYMENT

- G** A member can pay the commodity levy to Grain SA by means of a direct deposit at the bank or an electronic transfer.
- G** Members who make direct or electronic deposits must email the proof of payment plus the member's details to Patricia Zimu at patricia@grainsa.co.za.

GRAIN SA'S ACCOUNT DETAILS ARE AS FOLLOWS:

ACCOUNT HOLDER:
GRAIN SOUTH AFRICA NPO

BANK:
FNB

ACCOUNT NUMBER:
62864206430

BRANCH CODE:
230145



As a leading agricultural magazine, *SA Graan/Grain* is your online compass for the sustainable production of grains and oilseeds. This exceptional agricultural publication provides you with the latest agricultural information based on relevant research, technology, production techniques, and expertise.

Supported by Grain SA as a prominent grain producers' organisation, *SA Graan/Grain* articles are written by scientists, academics, researchers, agricultural economists, industry experts and professional journalists.

Not only is the magazine read monthly in print format, but readers increasingly find it convenient to visit the online platform, sagrainmag.co.za. Stay informed by befriending *SA Grain/Grain*'s social media platforms on Facebook, Instagram, X, and LinkedIn.



Grain SA and John Deere have established a series in 2023 that readers can participate in. Here you get the opportunity to spotlight your hero in agriculture and even stand a chance to win a cash prize. To enter, visit sagrainmag.co.za or scan the QR code and complete the form on the My Hero page.

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To make sure that we cover every aspect of grain and oilseeds farming, we focus on specific themes every month:

FEBRUARY	Mini focus on groundnuts Mini focus on canola
MARCH	Focus on seed Mini focus on weed control in winter cereals Cultivar insert (winter grains)
APRIL	Focus on NAMPO Harvest Day
MAY	Mini focus on financial services
JUNE	Review on NAMPO Harvest Day Focus on integrated farming Mini focus tertiary institutions
JULY	Focus on fertiliser Mini focus on lime
AUGUST	Focus on implements and equipment NAMPO Cape insert Focus on integrated pest control
SEPTEMBER	Mini focus on soybeans Spotlight on sorghum NAMPO Alfa insert
OCTOBER	Focus on irrigation Focus on social responsibility Cultivar insert (summer grains)
NOVEMBER	Spotlight on cover crops Grain Producer awards
DECEMBER/ JANUARY	Focus on Grow for Gold Spotlight on winter grains Grain Guide 2025



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Contacts: General

Organised agriculture

INSTITUTION	EMAIL	NUMBER
African Farmers Association of South Africa (AFASA)	info@afasa.org.za	012 943 7290
Agbiz Grain	annellen@agbizgrain.co.za	012 807 3002
Agri Eastern Cape	natasja.barkhuizen@agriec.co.za	041 363 1890
Agri Gauteng	ceo@agrigoauteng.com	012 643 3400
Agri Limpopo	info@limag.co.za	015 307 2725
Agri Northern Cape	marian@agrinc.co.za	053 832 9595
Agri NW	wanda@agrinw.co.za	018 632 3612
Agri SA	agrisa@agrisa.co.za	012 643 3400
Agri Western Cape	info@awc.co.za	021 860 3801
Free State Agriculture	info@vslanbou.co.za	051 444 4609
Grain SA	info@grainsa.co.za	086 004 7246
KwaZulu-Natal Agricultural Union (KWANALU)	info@kwanalu.co.za	033 342 9393
Mpumalanga Agriculture	nmbedu@mpg.gov.za	013 766 6020
Potatoes SA	info@potatoes.co.za	012 349 1906
Transvaal Agricultural Union (TAU SA)	navrae@tlu.co.za	012 804 8031

Government

INSTITUTION	EMAIL	NUMBER
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Department of Environmental Affairs	callcentre@environment.gov.za	086 111 2468
Department of Health	minister@health.gov.za	012 395 8086
Department of Labour	dol.customercare@labour.gov.za	012 309 4000
Department of Mineral Resources	samradonline@dmr.gov.za	012 444 3000
Department of Science and Innovation	webmaster@dst.gov.za	012 843 6300
Department of Tourism	callcentre@tourism.gov.za	012 444 6577
Department of Trade, Industry and Competition	contactus@thedtic.gov.za	086 184 3384
Department of Transport	info@dot.gov.za	012 309 3774
Department of Water and Sanitation	info@dws.gov.za	080 070 1701
Eastern Cape provincial government	ndlelantle@gcis.gov.za	043 722 2602
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Gauteng provincial government	deborah.tshivasa@gauteng.gov.za	011 355 6138
Independent Police Investigative Directorate (IPID)	complaints@ipid.gov.za	012 399 0000
Industrial Development Corporation (IDC)	callcentre@idc.co.za	086 069 3888
International Trade Administration Commission (ITAC)	sxulu@itac.org.za	012 394 3591
KwaZulu-Natal provincial government	neli.mkhize@kznpremier.gov.za	033 341 3310
Limpopo provincial government	MphakaJ@premier.limpopo.gov.za	015 287 6515
Mpumalanga provincial government	molelekoan@mpg.gov.za	013 766 2076
National Agricultural Marketing Council (NAMC)	info@namc.co.za	012 341 1115
National Crop Estimates Committee (NCEC)	ronab@dalrrd.gov.za	012 319 8032
North West provincial government (Bokone Bophirima)	gbowker@nwpg.gov.za	018 388 4968
Northern Cape provincial government	info@ncpg.gov.za	053 838 2600
Western Cape Department of Agriculture	info@elsenburg.com	021 808 5111
Western Cape provincial government	service@westerncape.gov.za	086 014 2142

Agricultural Research Council (ARC)

INSTITUTION	EMAIL	NUMBER
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ARC-Soil, Climate and Water	AdriL@arc.agric.za	012 310 2500
ARC-Small Grain, Bethlehem	malana@arc.agric.za	058 307 3400
ARC-Tropical and Subtropical Crops	infoitsc@arc.agric.za	013 753 7000

Trusts and foundations

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Maize Trust	beatrrix@agrimanage.co.za	012 807 3958
Oil and Protein Seeds Development Trust (OPDT)	info@opot.co.za	011 234 3400
Protein Research Foundation (PRF)	pns@proteienresearch.net	011 803 2579
Sasol Agriculture Trust	beatrrix@agrimanage.co.za	012 807 3958
Sorghum Cluster Initiative (SCI)	petru@agrimanage.co.za	012 807 3958
Sorghum Forum (SF)	petru@agrimanage.co.za	012 807 3958
Sorghum Trust	beatrrix@agrimanage.co.za	012 807 3958
South African Winter Cereal Industry Trust (SAWCIT)	beatrrix@agrimanage.co.za	012 807 3958
Wheat Forum (WF)	beatrrix@agrimanage.co.za	012 807 3958
Winter Cereal Trust	thato@wctrust.co.za	012 007 1200



SGS South Africa holds Superintendent and Grain and Feed Testing approval with GAFTA

Our services include:



Laboratory Testing



Seed and Crop
Testing



Certification



Customised Audits



Training

Contact Us

+27 21 506 3280 | +27 12 110 4667

south.africa@sgs.com

WWW.SGS.CO.ZA



Other

INSTITUTION	EMAIL	NUMBER
Agri Manage Solutions (AMS)	beatrice@agrimanage.co.za	012 807 3958
Arbitration Foundation of South Africa (AFSA)	info@arbitration.co.za	011 320 0600
Bureau for Food and Agricultural Policy (BFAP)	dalene@bfap.co.za	082 550 2808
JSE (Safex)	info@jse.co.za	011 520 7000
National Chamber of Milling (NCM)	info@grainmilling.org.za	012 663 1660
Perishable Products Export Control Board (PPECB)	info@ppecb.com	021 930 1134
SA Cultivar and Technology Agency (SACTA)	andrew@sactalevy.co.za	012 807 3958
SA Society for Crop Production (SASCP)	admin@sascp.org.za	018 299 6346
SA Soy Food Association (SSA)	info@ssa.org.za	012 807 7600
South African Cereals and Oilseeds Trade Association (SACOTA)	andre.vandervyver@sacota.co.za	083 412 0287
Southern African Grain Information Service (SAGIS)	info@sagis.org.za	012 941 2050
South African Grain Laboratory (SAGL)	info@sagl.co.za	012 807 4019

Emergency numbers

INSTITUTION	EMAIL	NUMBER
Fire		
Fire Protection Association of South Africa (FPASA)	reception@fpasa.co.za	011 397 1619

Education

INSTITUTION	EMAIL	NUMBER
Agri Sector Education and Training Authority (AgriSETA)	info@agriseta.co.za	012 301 5600
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Eisenburg College of Agriculture (Western Cape)	Mary.James@westerncape.gov.za	021 808 5008
Fort Cox College of Agriculture (Eastern Cape)	admin@fortcox.ac.za	040 653 8033
Glen College of Agriculture (Free State)	makungu@fs.agric.za	051 861 8637
Grootfontein College of Agriculture (Eastern Cape)	elanak@daff.gov.za	049 802 6723
Madzivhandila College of Agriculture (Limpopo)	madzivhandilacollege@gmail.com	015 962 7200
North-West University	studies@mynwu.info	018 299 1111
Owen Sithole College of Agriculture (KwaZulu-Natal)	njabulo.ngcobo@kzndae.gov.za	035 795 1345
Potchefstroom College of Agriculture	potchcollege@nwpg.gov.za	018 285 0700
Sol Plaatje University	information@spu.ac.za	053 491 0000
Taung College of Agriculture	mvsalman12@gmail.com	053 994 9800
Tompi Seleka College of Agriculture (Mpumalanga)	tompi@telkomsa.net	013 264 5308
Tsolo College of Agriculture (Eastern Cape)	johnmikelisa@yahoo.com	047 542 6285
University of Limpopo	enrolment@ul.ac.za	015 268 3332
University of the Free State	info@ufs.ac.za	051 401 9111
University of Fort Hare (Eastern Cape)	amikiva@ufh.ac.za	043 704 7190
University of Mpumalanga	UGenquiries@ump.ac.za	013 002 0047
University of Pretoria	ssc@up.ac.za	012 420 3111
University of Stellenbosch	info@sun.ac.za	021 808 9111
University of Venda	info@univen.ac.za	015 962 8000
University of KwaZulu-Natal	education@ukzn.ac.za	031 260 1111
University of Zululand	info@unizulu.ac.za	035 902 6000
University of South Africa	edu-enquiries@unisa.ac.za	080 000 1870

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OCTOBER

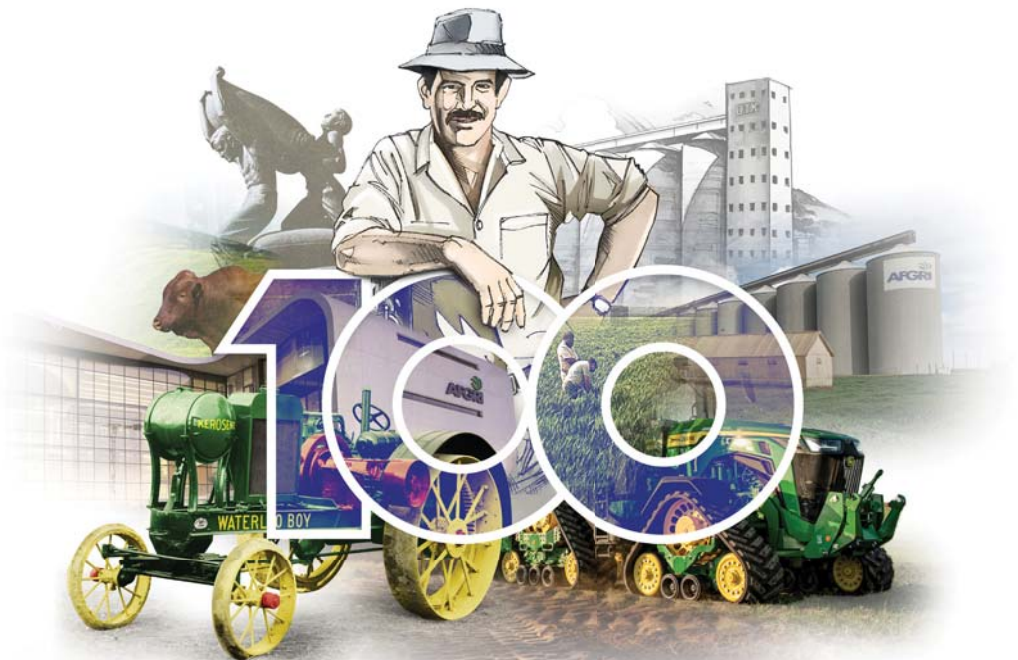
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Vanjaar vier ons 'n honderd jaar van landboubesigheid saam met jou, die produsent. Hier op die kruin neem ons 'n oomblik om terug te kyk na ons reis deur die afgelope eeu.

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HOU AAN GROEI.

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