

YOUR CONTACTS IN AGRICULTURE

GRAIN

GUIDE

2018



GRAAN
SAGRAIN



5 YEARS
Grasland



Ons wêreldklas kalk, wat die strengste kwaliteitsbeheerproses ondergaan, is daar om te verseker jou beskikbare landbougrond word ten volle benut.

Ons het die afgelope twee jaar groot beleggings in ons aanlegte gemaak om dit op wêreldklasstandaard te kry.

Pluk die vrugte (of graan) van ons intensiewe navorsing wat daarop gemik is om topgehalte kalk beskikbaar te stel wat jou opbrengste verbeter en jou winsgrense verhoog.



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Kry resultate, koop Grasland kalk.

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Face *realities* and be on the lookout for *opportunities*



I HAVE BEEN farming for almost 18 years, but every season it becomes clearer to me that no norm exists. Each season has its unique challenges and accompanying unique adjustments. This was even more the case in the past season. The consequences of the most severe drought in 100 years in South Africa that was suddenly broken in the north but still drags on in the southern parts of the country have had a major impact on the financial position – and now also the state of mind – of every producer.

Producers have to continuously try to improve and be more effective and a large number have followed the route of constant technological improvements. However, the cost of technology and the profit on capital layout must be assessed all the time. The result is that there are currently farms with a very strong balance sheet, but their debts are so high that the farm cannot repay them.

This situation creates the need for thorough introspection and assessment of performance. All non-essential expenditure and non-productive assets must be seriously reconsidered. All risks should be eliminated, mitigated or managed as far as possible. However, be careful not to endanger yields, because it is yield that will carry us through the period of low prices. In particular, look at overheads – the devil is in the detail.

In the past few years land and rental prices have gone through the roof in most areas. And it is in years like these that we should once more take stock of the reality that we live in South Africa with its volatile climate and the associated risks. With this reality in the back of our minds, opportunities for consolidation and/or expansion also occur. Use this time to make your farm more competitive. However, guard against too much debt. The low profitability of the grain producer may still continue for a few years.

In South Africa it is encouraging to see an increasing number of people standing up for what is right. Journalists, businessmen, the public, civil servants and now even politicians. There is a new wind blowing – even though we have not seen the worst of the corruption and state capture. It is important for us to keep our slate clean and not take part in all the wrong things going on in our country. It is so easy to pay R100 to avoid a fine, but even this simple deed is at the root of the evil.

3 Face realities and be on the lookout for opportunities

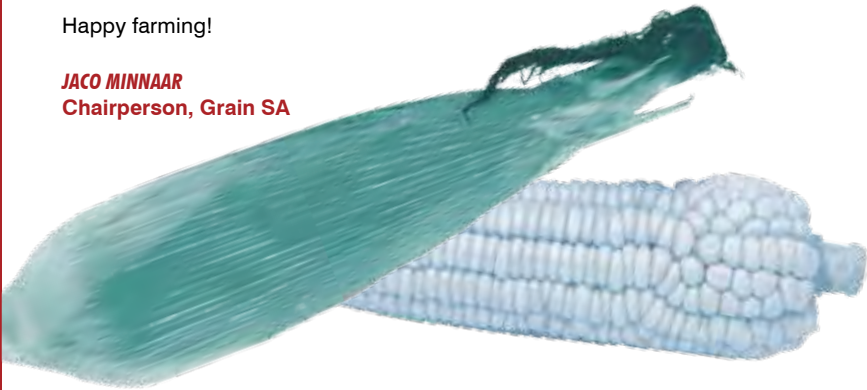
We must fight for our rights, but also make sure that the rights of others are protected. We have to look after our workers and their circumstances. We must also accept that the pressure on land tenure and a shift in ownership will become greater in the run-up to the 2019 election. Support and trust your organisations to fight this battle for you and do not allow political strife to have a negative effect on your farm.

Partners in agriculture are extremely important now. We as producers cannot look just to ourselves for solutions, outcomes or opportunities. In order to optimise our effectiveness, we must build partnerships with suppliers and off-takers. There are a large number of experts out there to assist you to add value to your farm or to make better decisions. The days of merely writing a cheque and never seeing the person again are long past. Every partnership must be built on mutual respect and trust, but both parties should also benefit from a relationship.

Use the *Grain Guide* to choose the right partners and then walk a long-term road with them. Also use it to measure whether your partners are still the best for your farm and whether they add the most value.

Happy farming!

JACO MINNAAR
Chairperson, Grain SA



MANAGING EDITOR

JOHAN SMIT
Infoworks

Tel: 018 468 2716
johan@infoworks.biz

PROJECT CO-ORDINATOR

ADRI THERON
Infoworks

Tel: 018 468 2716
adri@infoworks.biz

GRAPHIC DESIGNER

JORITHA HECHTER
Infoworks

ADVERTISEMENT CO-ORDINATOR

KOLBE MEDIA
Cape Town

JURGEN VAN ONSELEN

Tel/fax: 021 976 4482
Cell: 082 417 3874
jurgenv@kolbemediaco.za

ADVERTISEMENT CONSULTANT

INFOWORKS

RUTH SCHULTZ

Tel: 081 480 6413
Cell: 083 583 5243
ruth@infoworks.biz

OWNER/PUBLISHER

GRAIN SA
P O BOX 74087
LYNNWOOD RIDGE
0040

Shift focus to *price management*



THE WEATHER AND market prices remain the two biggest variables in the grain industry. Producers are completely at the mercy of both. If you want to continue in a sustainable manner, you must be able to manage these two risks. Grain SA and the partners in the *Grain Guide* form part of the team that can contribute to the management of these risks.

The contrasting term 'green drought' is interpreted in different ways by different people. Everybody says that a wet year with ample tonnage and low prices is better than a dry year with low tonnage and high prices. Yet there is no ideal situation. Sometimes you can plan to handle one drought like that in every five or more better years. However, the challenges for the wheat farmers in the Western Cape and the maize men in the north west are much greater than that. The frequency for catching up the backlogs is becoming increasingly shorter. This is definitely not sustainable.

Input providers and all the other support services in agriculture will definitely have to focus more on these realities. The drought of 2016 caused a total shift in research. However, we will have to look carefully at the delivery dates so that we can still deliver in time to get grain producers in the fields.

Renewed attention on the yield of each type of grain and oilseed and the drought and heat resistance of each, are vital building blocks for sustainability in these conditions. We still dream of a day when the fights about the past in our country will be buried and we can, in unity, take better care of our agriculture.

It seems as if the producers have focused more on the technical improvement of yield in the past few years. The technological developments and benefits of precision farming have definitely contributed to the sustainability of grain production. Yet it seems as if we have taken our eyes off the proverbial price-management ball. This risk demands considerably more attention from producers.

I have sometimes wondered what the percentage of the time split between production and marketing of the average grain producer is. A large number of producers delegate the task of price management relatively easily, but the past few years have proven that the producers who gave more attention to price management did not suffer as much. Perhaps 2018 is the year in which you should increase your expertise in price management and analyse your marketing partners and plans again before you rush in and start planting.

South Africa's producers are known to be among the best in the world. This accolade particularly refers to our ability to produce sustainably in challenging circumstances and with no government aid. Our challenge in the next few years is to retain this position of honour and will greatly depend on our ability to remain sustainable at the current low price levels. I feel that everybody around you, the producer, is aware of the challenges and ready to help you.

All the best with the decisions to be made in the new calendar year.

Grain Guide regards

JANNIE DE VILLIERS
Chief Executive Officer, Grain SA

CONVERSION TABLES and FORMULAE

WEIGHT

Wheat and soybeans

1 bushel of wheat or soybeans = 60 lb
 = 27,216 kg
 = 0,0272 metric tons
 = bu x 0,027216

Bushels to metric tons 36,74371 bu of wheat or soybeans

One metric ton is equal to:
 Wheat: bu/acre x 0,06275 = metric tons/hectare

Maize and sorghum

1 bushel of maize or sorghum = 56 lb
 = 25,4012 kg
 = 0,0254 metric tons
 = bu x 0,025400

Bushels to metric tons 39,3679 bu of maize and sorghum

One metric ton is equal to:
 Maize: bu/acre x 0,06277 = metric tons/hectare

Barley

1 bushel of barley = 48 lb
 = 21,772 kg
 = 0,0218 metric tons
 = bu x 0,021772

Bushels to metric tons 45,9296 bu of barley

One metric ton is equal to:
 Barley: bu/acre x 0,05380 = metric tons/hectare

Oats

1 bushel of oats = 32 lb
 = 14,515 kg
 = 0,0145 metric tons
 = bu x 0,014515

Bushels to metric tons 68,8944 bu of oats

One metric ton is equal to:
 Oats: bu/acre x 0,03587 = metric tons/hectare

AREA OF LAND EQUIVALENTS

1 hectare = 2,4710 acres
 1 square mile = 640 acres (259 hectares)
 1 acre = 0,404694 hectares
 = 43,560 square feet
 = 4,800 square yards

TEMPERATURE

| °F | °C |
|-----|------|
| 32 | 0 |
| 40 | 4,4 |
| 50 | 10 |
| 60 | 15,6 |
| 70 | 21,1 |
| 75 | 23,9 |
| 85 | 29,4 |
| 95 | 35 |
| 100 | 37,7 |
| 105 | 40 |

C = 5/9 (F - 32) F = 9/5 (C + 32)

FOR CONVERSION; MULTIPLY BY...

| | |
|-------------------|--------|
| Foot to metre | 0,3048 |
| Metre to foot | 3,281 |
| Metre to yard | 1,094 |
| Gallon to litre | 4,546 |
| Litre to gallon | 0,22 |
| Morgen to hectare | 0,8565 |
| Kilometre to mile | 0,6214 |
| Mile to kilometre | 1,609 |
| Pound to kilogram | 0,4536 |
| Pound to gram | 453,6 |

1 TON (METRIC TON) IS EQUAL TO

= 1 cubic metre of water
 = 1 000 litres
 = 10 hundredweights
 = 10 quintals

OTHER

1 kilogram = 2,204622 pounds
 1 quintal = 100 kg
 1 metric ton = 10 quintals
 = 1 000 kg

METRIC WEIGHT AND CONVERSION

100 kilograms = 1 quintal
 1 kilogram = 2,240 622 lb
 1 quintal = 220,462 lb

MOISTURE CONTENT ON DELIVERY

Grain is seldom sold at the standard moisture content. When the moisture content is greater than the standard, the weight of the grain is discounted to make provision for the additional moisture.

The following moisture content standards are used as condition for the delivery of commodities at silos:

| | Delivered | Agreed standard |
|------------|-----------|-----------------|
| Sorghum | ≤ 14% | 12,5% – dry |
| Wheat | ≤ 13% | |
| Maize | ≤ 14% | 12,5% – dry |
| Soybeans | ≤ 13% | 12% – dry |
| Sunflower | ≤ 10% | 9% – dry |
| Groundnuts | ≤ 7% | |
| Canola | ≤ 8% | |
| Barley | ≤ 13% | |
| Oats | ≤ 13% | |

For example: Maize is delivered at a moisture content of 14%.

$$\begin{aligned} \text{Formula: } & \frac{(100\% - \text{delivery } \%)}{(100\% - \text{standard } \%)} \\ & = \frac{(100\% - 14\%)}{(100\% - 12,5\%)} \\ & = \frac{86\%}{87,5\%} \\ & = 0,9828 \end{aligned}$$

By multiplying the weight of the grain delivered by 0,9828, the weight of the maize is calculated at a moisture content of 12,5%, for example the weight of a load of maize of 32 000 kg delivered at 14% moisture is (32 000 kg x 0,9828) 31 449,6 kg @ 12,5% moisture content.

HOW MUCH WATER IS IN MY DAM?

There are a few measurements that you need:

- Surface area
- Maximum depth

SURFACE AREA

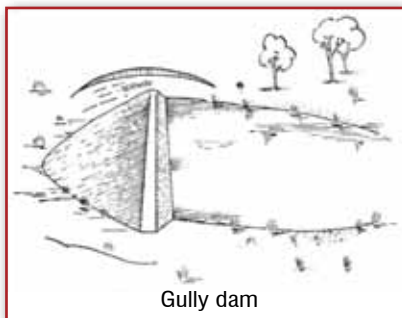
The surface area of a dam is calculated by multiplying the length by the width.

Example: 30 metres x 50 metres = 1 500 m²

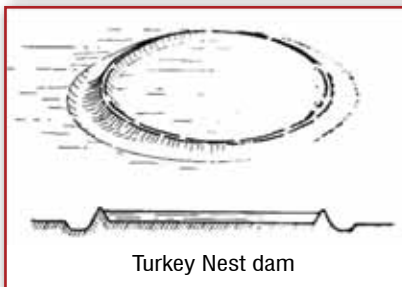
This will be the case for square or rectangular dams. Most dams start out as a square or rectangle, but over time appear to become rounded. If the dam is not exactly square, round the measurements off. Make sure to err on the conservative side.

Dams such as Turkey Nest dams (used to store water on a relatively flat terrain) can be any shape, and their dimensions may need to be approximated to calculate the surface area.

Gully dams (used to store water in a gully) can also be of varying shapes and the formula for calculating their storage capacity is discussed later.



Gully dam



Turkey Nest dam

VOLUME

With the surface area depth calculated, the volume can then be determined:

$$\text{Volume (m}^3\text{)} = \text{Surface Area (m}^2\text{)} \times \text{Max depth (m)} \times 0,4$$

(Where 0,4 accounts for the batter slope on the sides of the dam)



7 CONVERSION TABLES and FORMULAE

Example: $1\ 500\ (m^2) \times 5\ (m) \times 0,4 = 3\ 000\ m^3$

To calculate the capacity of your dam in mega litres (ML), divide the volume in m^3 by 1 000
 e.g. $3\ 000\ m^3 / 1\ 000 = 3\ ML$

Gully dams

You can estimate the capacity of small gully storages using this formula:

Volume = (width x maximum depth x length) / 5 (where 5 is the correction factor)

Example: Water level height up bank = 2 m

Length = 20 m, width = 10 m

Volume of excavation = 100 m^3

Volume = $(2 \times 20 \times 10 + 100)/5 = 100\ m^3$

Width and depth are measured at the embankment site and length is the distance water will back-up (you will need to add the volume of any excavations made below water level to give the total storage capacity). If the excavation volume is not known, substitute the depth of water at the deepest point as an approximation for the depth.

DEPTH

One way to determine dam depth is to row out into the dam and lower a weighted line over the side. When the line is vertical, measure the length of the line needed to reach the bottom. Alternatively, use a pole with distances marked on it. You will need to do this at a number of places across the dam to find the deepest point.

An alternative for smaller dams, or if no boat is available, use a fishing line with a sinker on the bottom with a float attached. The line is cast out repeatedly, with the float gradually adjusted until it's not quite floating on the surface. The distance between the float and the sinker will be the depth at that point in the dam. Again, you will need to do this at a number of places across the dam.

Reference:

Rob Dimsey. December 2006. *Vegetable-matters-of-fact*, Number 43

ESTIMATED CAPACITY OF RESERVOIRS (IN LITRES)

| DIAMETER IN METRES | DEPTH IN METRES | | | | |
|-----------------------|-----------------|---------|---------|---------|---------|
| | 1,2 m | 1,5 m | 1,8 m | 2,1 m | 2,4 m |
| 3 | 8 600 | 10 760 | 12 900 | 15 000 | 17 200 |
| 3,6 | 12 200 | 15 300 | 18 300 | 21 800 | 24 400 |
| 4,2 | 16 650 | 20 800 | 25 000 | 29 200 | 33 300 |
| 4,8 | 21 700 | 27 200 | 32 600 | 37 900 | 43 400 |
| 6 | 34 000 | 42 500 | 51 000 | 59 400 | 68 000 |
| 7,5 | 53 000 | 66 000 | 75 600 | 92 700 | 108 000 |
| 9 | 76 500 | 95 500 | 114 700 | 134 000 | 150 200 |
| 10,5 | 104 000 | 130 000 | 155 800 | 182 000 | 207 900 |
| 12 | 126 000 | 170 000 | 203 500 | 237 000 | 271 000 |
| 13,5 | 172 000 | 241 000 | 257 500 | 300 000 | 344 000 |
| 15 | 212 000 | 266 000 | 318 200 | 372 000 | 425 000 |
| 16,5 | 257 000 | 321 000 | 385 000 | 450 000 | 514 000 |
| 18 | 306 000 | 382 000 | 458 000 | 534 000 | 610 000 |

Databank of empowerment models

According to Mr Christo van der Rhee, deputy executive director of Agri SA, uncertainty about the government's policy and major 'political noise' are the reasons why land reform is experienced as negative.

IN order to look at land reform from a different angle, he and his team started tracking successes in land reform last year and capturing them in a databank. The web page was introduced to the public in November 2016 and contains previously published articles on land reform that is largely driven by the private sector and is extremely successful.

Producers will benefit from the databank by gaining knowledge on the variety of financing mechanisms that are already being used to make the projects successful and sustainable.

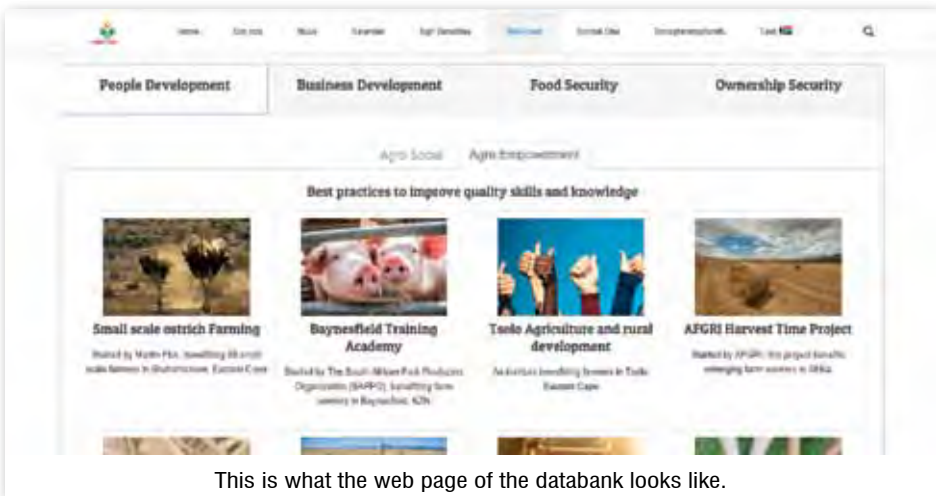
Many other projects that involve large businesses and even schools are contained in the databank.

The databank can save the producers who want to become actively involved in land reform the 'school fees'. The articles included in the data bank involve projects that work and that can be described as sustainable land reform.

The databank with articles is available at <http://www.agrisa.co.za/sustainable-growth/> and includes success stories like that of Cedar Citrus in Citrusdal in the Western Cape. This project was established by ALG Estates and a total of 36 farmworkers benefit from the project. ALG Estates made 40 ha of land available and donated 36 000 citrus trees.

This databank is quite extensive, with successes in various commodities – from mangoes to sheep. A variety of methods of shareholding and financing are also described and can provide producers with clear guidelines for their own projects.

Scan this QR code to view examples in the databank.

This is what the web page of the databank looks like.

Valerie Cilliers, SA Grain/Grain contributor

Misperceptions in the workplace

If there is no contract of employment, the employee is not a permanent employee

The employment relationship comes into effect the moment an employee starts working – regardless of whether the relationship is recorded in a verbal or written agreement.

Should the employee grant permission, the employer need not deduct UIF; UIF does not apply to foreign employees

All employers must register with the Unemployment Insurance Fund (UIF) and ensure that all employees who work more than 24 hours a month are also registered and that UIF contributions are deducted from their remuneration.

The employer can dismiss an employee immediately for serious misconduct

An employer cannot dismiss an employee for misconduct, even for a valid reason, without holding a disciplinary hearing to ensure that a fair procedure is followed and that there is a substantive reason to justify the dismissal.

When an employee visits the clinic, paid sick leave is involved

An employee is only entitled to paid sick leave when he is unable to work due to a medical condition. The employer is not required to remunerate the employee when he asks for time off to visit the clinic to obtain medication, or in the event of regular visits to the clinic or doctor.

The presiding officer at a disciplinary hearing helps the employer to prove the case

The presiding officer must be objective. Duties include holding the hearing in good order, recording a finding or 'guilty' or 'not guilty' on the grounds of all the evidence given during the hearing and making a recommendation on an appropriate sanction in line with the disciplinary code.

Suspension is always without pay

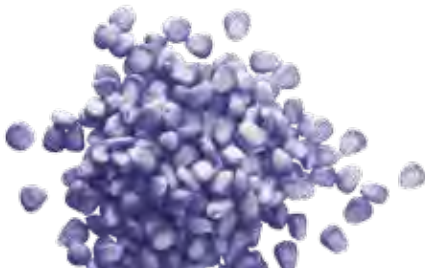
When an employee is willing and able to carry out their duties, but the employer has suspended the employee, it is always with pay, for example pending a disciplinary hearing. When the employee is unable to carry out his/her duties, the employer can suspend the employee without pay, for example when the employee is under the influence of alcohol or drugs.

The employee has dismissed himself by deserting

An employee cannot dismiss himself. When an employee deserts (is absent from work for more than five days without informing the employer or providing a reason), the employer must attempt to contact the employee. The employee can be dismissed after the right procedure has been followed, including a disciplinary hearing.

The employer can use a fixed-term service contract as probationary period

Using a fixed-term service contract as a probationary period is unfair labour practice. The termination of the contract after completion of the fixed term can be regarded as unfair dismissal. Employers must understand clearly that disguising permanent employment as a fixed-term service contract is illegal.



Increase *productivity* with labour audit

INTRODUCE RULES AND PROCEDURES

Clear rules and procedures in the workplace are essential so that the employee is aware that he will be held accountable for his actions. Make employees aware of the rules by discussing them and by displaying the disciplinary code in the workplace so that everyone can see it.

SET ACHIEVABLE OBJECTIVES

Employees should know what is expected of them and what the standard of their work should be. Should their work not be up to standard, the employer can continue with a poor job performance consultation. The employer must ensure that the correct legal procedures are followed at all times with respect to inputs, needs, training and assistance. Monitor the employee and arrange follow-up consultations.

CREATE A POSITIVE WORKING ENVIRONMENT

A positive working environment ensures that employees report for duty with a good attitude. Give the necessary recognition to employees as motivation to provide their best work at all times. To further motivate employees, the employer can even nominate an 'employee of the month'. This will encourage other employees to become the next month's 'employee of the month'.

ADJUST EMPLOYEES' HOURS

Make full use of all hours of the day. Employees' work hours can be adjusted as the seasons change. Consider allowing employees to work shifts on a rotation basis, keeping the number of hours the same for all employees. In this way the employer ensures optimum productivity from every employee.

LISTEN TO THE EMPLOYEES

Implement a grievance procedure to create a harmonious working environment by identifying any dissatisfaction or feelings of injustice among employees and resolving this internally. The grievance procedure also protects the employer in cases of constructive dismissal (when an employee resigns as a result of unbearable working conditions).

Anneline Scriven, Agricultural Employers' Organisation

◀◀ *Misperceptions in the workplace*

■ A dismissed employee is entitled to a separation payment

A separation payment is payable only when an employee is retrenched and this is calculated as at least one week's remuneration for every complete year of service. When an employee either accepts or refuses unreasonably to accept an alternative offer of employment, the employee's statutory right to separation pay is forfeited.

■ An employer can dismiss an employee because he is too old

No person may directly or indirectly discriminate against an employee in any employment policy or practice, including with respect to remuneration, employment benefit and conditions of employment. An employer may not dismiss an employee on the grounds of age.

Christo Bester, Agricultural Employers' Organisation

Protect **POLLINATORS** this way

1 CONSULT LABELS

Follow crop protection product instructions, including using the recommended dose, preventing drift of sprays and dusts (e.g. in cocoa plants), not applying in windy conditions or when there is a danger of drift to non-target areas.

2 'BEE' GENUINE

Only use genuine crop protection products. Counterfeit and illegal products have unknown impacts and could potentially harm humans, animals and the environment.

3 SPARE SPRAY

Apply crop protection products within an Integrated Pest Management programme, only using them when necessary. For sprays, consider spot-spraying (just applying to infested areas). In places where there are Spray Service Providers, consider using their services.

4 BUST THE DUST

Minimise distribution of dust from treated seed by carefully pouring it out of bags, avoiding seed spillage (cleaning it up otherwise), disposing of seed bags and unused seed properly, and regularly cleaning seed equipment.

5 USE CLEAN MACHINERY

In cases where planting machines are utilised, choose those that eliminate or minimise dust production and ensure they are regularly cleaned.

6 TIME CONSCIOUS

Avoid spraying when bees are foraging and plants are flowering.

7 PROTECT LIQUID ASSETS

Avoid contamination from spray liquids by being cautious when mixing and loading, properly disposing waste and other used materials, and cleaning up any spills appropriately.

8 EMPOWER WITH FLOWERS

Protect pollinator habitats by supplying a constant source of nectar and pollen and creating healthy, diverse gardens that beautify the environment and serve as a food source.

9 COMMUNICATE

Communicate at the farm gate and educate producers on when and how to use crop protection products. Farmers should inform local beekeepers when they are going to apply crop protection products so nearby hives can be moved or otherwise protected.

10 'BEE' RESPONSIBLE

Beekeepers also need to follow good management practices with good hygiene, disease control, proper feeding, access to water, genetic diversity and moving hives out of areas to be sprayed.

Reference:

CropLife Africa Middle East. *Pollinator Protection Vital to Crop Production* (pamphlet)

A brief look at *fire management*

Producers are faced with the challenge of veld fires every year. The best they can do is to manage this difficult reality. Frans Marx of Wolmaransstad, vice-chairperson of Suidwes Landbou and highly successful head of the local FPA, shares a few suggestions with *Grain Guide* readers.

ACTIONS DURING VELD FIRES

- Check the speed and direction of the wind, as these determine how far ahead your backfires must be to stop the fire.
- Determine the point at which you will stop the fire and send the persons tasked with this to that spot to do so.
- Move in sections that have already burnt as much as possible, particularly on hot days when whirlwinds occur. Such a whirlwind can cause you to be caught up in the fire.
- Make sure that you always know where you are and where the section is that has already burnt so that you can go there if necessary.
- Do not move forwards if the fire is not completely extinguished behind you.
- Always fight the outside edges of the fire first; inside fires can be extinguished later. Make sure that you know where the outer flanks of the fire are.
- Always try to work in teams of three hoses, then you are usually sure that the fire behind you is extinguished.
- Always check your vehicle's heat gauge.
- Always make sure that enough people are involved with the backfire to stop the fire so that a second fire does not start. Only the fire chief can decide where a backfire is to be made.
- Always wear protective clothing and masks.
- Take enough drinking water with and regularly consume water.
- Inform landowners threatened by the fire in time so that they can remove their stock – ± 10 km ahead for runaway fires.
- Always think clearly and do not take chances – your life is worth more!

PREVENT VELD FIRES IN THIS WAY

- Make and maintain your firebreaks in time every year. Every landowner and tenant is legally obliged to do so. Make sure they are free of flammable material – a bush slasher does not create a firebreak.
- Speak to workers regularly and teach them the risks of open fires.
- Make sure those areas where food is prepared on open fires are clear.
- You are advised to make wide firebreaks around your workers' homes.
- Do not do the following on days when there is a strong wind:

1. Use cutting wheels near dry grass.

2. Weld in the open (gates, windmills, straining posts, etc.).

3. Grade roads with a grader on stony ground.

4. Mow with bush slashers.

5. Grind feed.

6. Make headlands and burn fields.

- A tractor that has done light work for long periods and is suddenly used for heavy work, can emit sparks from its exhaust, which could cause a fire.
- If you have to do any burning, do it early in the morning.
- Clear the shoulders of secondary roads and keep the grass short so that backfires can be made easily.

Frans Marx, FPA Wolmaransstad

Transporting farmworkers:

A complex system of rules

The transporting of farmworkers comes under the spotlight regularly as an area of concern for producers and their workers. Something like this that sometimes appears to be quite innocent, can be an area of enormous risk if it is not approached and managed within the framework of the law.

- 1** The business rationale that underlies the decision to transport workers must always take the human dignity and personal safety of the workers being transported into account too. In terms of the Occupational Health and Safety Act an employer is obliged to take reasonable care that the workplace is healthy and safe.
- 2** The driver of the vehicle must have a valid driver's licence. If the vehicle is a bus (32 or more persons) or a vehicle fitted out for twelve people (driver included), or if the vehicle weighs more than 3 500 kg, or people are transported for a fee, the driver must also have a professional driving permit (PDP).
- 3** It is vital for employers to be aware of the fact that, since May 2017, no children may be transported for a fee on a bakkie or a truck.
- 4** In the event of an accident while the workers (including seasonal workers) are on duty, or were being transported to or from their place of work without payment, a claim may be submitted to the Compensation Commissioner in terms of the Compensation for Occupational Injuries and Diseases Act (COIDA). The employer is therefore not held civilly liable for injuries, but this does not exclude the possibility of criminal prosecution where the employer does not comply with legal requirements (roadworthiness and transport permits), or where the driver was negligent or was driving under the influence of alcohol.
- 5** According to the Road Traffic Act of 1996 the vehicle (including trucks) must be roadworthy. The requirement is that the truck must be covered up to 350 mm above the seating level of the vehicle – or a minimum of 900 mm if people are standing upright while being transported. People and goods or tools may not be transported without railings and no person may be transported in a crate.
- 6** Where workers are transported for a fee, a relatively greater responsibility rests on the driver of the vehicle himself. Where employers provide such a service, it is extremely important for the correct type of insurance product to be used – not just personal insurance – to ensure sufficient protection in the event of an accident.
- 7** In terms of the National Land Transport Act an additional permit is required if people are transported for a fee. A producer transporting his workers in his own vehicle or who outsources the service is exempted from this provision. This arrangement can be changed at any stage. Employers are advised to obtain permits. Non-compliance can have consequences like the vehicle being impounded and possible criminal prosecution.

Given this complex legal situation, employers are advised to ensure that legal requirements are complied with. It is also important to remember that the legal requirements are designed to limit risk and promote safety and that is why it is essential to comply with them.

Jahni de Villiers, head: Labour and Development, Agri SA

Contacts: General



ORGANISED AGRICULTURE

| INSTITUTION | EMAIL | NUMBER |
|---|--|--------------|
| Grain SA | info@grainsa.co.za | 086 004 7246 |
| Potatoes South Africa | ontvangs@potatoes.co.za | 012 349 1906 |
| African Farmers Association of South Africa (AFASA) | info@afasa.org.za | 012 492 1383 |
| Agbiz | admin@agbiz.co.za | 012 807 6686 |
| Agri Gauteng | evanniekerk@agrigauteng.com | 012 643 3400 |
| Mpumalanga Agriculture | mplandbou@mweb.co.za | 017 819 1295 |
| Agri Limpopo | info@agrilimpopo.co.za | 015 065 0669 |
| Agri Northern Cape | ontvangs@agrinc.co.za | 053 832 9595 |
| Agri NW | wanda@agrinw.co.za | 018 632 3612 |
| Agri Eastern Cape | natasja.barkhuizen@agriec.co.za | 041 363 1890 |
| Agri SA | agrisa@agrisa.co.za | 012 643 3400 |
| Agri Western Cape | ilana@awk.co.za | 021 860 3800 |
| KwaZulu-Natal Agricultural Union (KWANALU) | info@kwanalu.co.za | 033 342 9393 |
| Milk Producers' Organisation (MPO) | info@mpo.co.za | 012 843 5600 |
| Transvaal Agricultural Union (TAU SA) | dienste@tlu.co.za | 012 804 8031 |
| Free State Agriculture | info@vslandbou.co.za | 051 444 4609 |

GOVERNMENT

| | | |
|--|--|--------------|
| Department of Labour | dol.customercare@labour.gov.za | 012 309 4000 |
| Department of Health | DG@health.gov.za | 012 395 8086 |
| Department of Trade and Industry | contactus@thedti.gov.za | 086 184 3384 |
| Department of Agriculture, Forestry and Fisheries | SteveGAL@daff.gov.za | 012 319 6000 |
| Department of Rural Development and Land Reform | queries@drdlr.gov.za | 080 000 7095 |
| Department of Mineral Resources | enquiries@dmr.gov.za | 012 444 3000 |
| Department of Environmental Affairs | callcentre@environment.gov.za | 086 111 2468 |
| Department of Tourism | callcentre@tourism.gov.za | 012 444 6000 |
| Department of Water and Sanitation | info@dws.gov.za | 012 336 7500 |
| Department of Transport | info@dot.gov.za | 012 309 3774 |
| Gauteng provincial government | deborah.tshivasa@gauteng.gov.za | 011 355 6138 |
| Industrial Development Corporation | callcentre@idc.co.za | 011 269 3000 |
| International Trade Administration Commission (ITAC) | pmatsepane@itac.org.za | 012 394 3590 |
| KwaZulu-Natal provincial government | sifiso.zondo@kznpremier.gov.za | 080 059 6596 |
| Limpopo provincial government | mathivak@premier.limpopo.gov.za | 080 086 4729 |
| Mpumalanga provincial government | premierregistry@prem.mpg.gov.za | 013 766 2473 |
| National Agricultural Marketing Council (NAMC) | info@namc.co.za | 012 341 1115 |
| National Crop Estimates Committee (NCEC) | DAS@daff.gov.za | 012 319 8454 |
| Northern Cape provincial government | publicinfoNCPL@ncpg.gov.za | 053 839 8000 |
| North West provincial government (Bokone Bophirima) | | 018 392 7000 |

GOVERNMENT (CONTINUED)

| INSTITUTION | EMAIL | NUMBER |
|--|-----------------------------------|--------------|
| Independent Police Investigative Directorate (IPIID) | <i>complaints@ipid.gov.za</i> | 012 399 0000 |
| Eastern Cape provincial government | <i>communication@ecleg.gov.za</i> | 040 608 0041 |
| Free State provincial government | <i>legislature@fsl.gov.za</i> | 051 407 1100 |
| Western Cape Department of Agriculture | <i>service@westerncape.gov.za</i> | 086 014 2142 |
| Western Cape provincial government | <i>info@wcpp.gov.za</i> | 021 487 1600 |

AGRICULTURAL RESEARCH COUNCIL

| | | |
|---|------------------------------|--------------|
| Agricultural Research Council (ARC) Head Office | <i>enquiry@arc.agric.za</i> | 012 427 9700 |
| ARC-Grain Crops | <i>jamesm@arc.agric.za</i> | 018 299 6100 |
| ARC-Soil, Climate and Water | <i>iscwinfo@arc.agric.za</i> | 012 310 2500 |
| ARC-Small Grain | <i>malana@arc.agric.za</i> | 058 307 3400 |
| ARC-Tropical and Subtropical Crops | <i>infoitsc@arc.agric.za</i> | 013 753 7000 |

TRUSTS AND FOUNDATIONS

| | | |
|---|-------------------------------------|----------------|
| Maize Trust | <i>l-lopation@mweb.co.za</i> | 012 807 3958 |
| Oil and Protein Seed Development Trust (OPDT) | <i>info@opot.co.za</i> | 011 234 3400/1 |
| Protein Research Foundation (PRF) | <i>pns@proteienresearch.net</i> | 011 803 2579 |
| Sorghum Trust | <i>audra@llagric.co.za</i> | 012 807 3958 |
| Winter Cereal Trust | <i>simon.letsoalo@wctrust.co.za</i> | 012 007 1200 |

OTHER

| | | |
|---|------------------------------------|--------------|
| Arbitration Foundation of South Africa (AFSA) | <i>info@arbitration.co.za</i> | 011 320 0600 |
| South African Grain Information Service (SAGIS) | <i>info@sagis.org.za</i> | 012 941 2050 |
| SA Soy Food Association (SSA) | <i>info@ssa.org.za</i> | 012 807 7600 |
| SA Society for Crop Production (SASCP) | <i>sascp.secretariat@gmail.com</i> | 018 299 6346 |
| South African Grain Laboratory (SAGL) | <i>info@sagl.co.za</i> | 012 807 4019 |

EMERGENCY NUMBERS

| Fire | | |
|---|---------------------------|----------------|
| Fire Protection Association of South Africa (FPASA) | <i>johanv@fpasa.co.za</i> | 011 397 1618/9 |



EDUCATION

| INSTITUTION | EMAIL | NUMBER |
|---|---------------------------------|------------------|
| Agri Sector Education and Training Authority (AgriSETA) | <i>info@agriseta.co.za</i> | 012 301 5600 |
| Cedara College of Agriculture (KwaZulu-Natal) | <i>college@kzndard.gov.za</i> | 033 355 9304 |
| Eisenburg College of Agriculture (Western Cape) | <i>zenovia@eisenburg.com</i> | 021 808 7798 |
| Fort Cox College of Agriculture (Eastern Cape) | <i>info@fortcox.ac.za</i> | 040 653 8033/4/5 |
| Glen College of Agriculture (Free State) | <i>paul@glen.agric.za</i> | 051 861 8637 |
| Grootfontein College of Agriculture (Eastern Cape) | <i>elanak@daff.gov.za</i> | 049 802 6600 |
| Madzivhandila College of Agriculture (Limpopo) | <i>madzivha@mweb.co.za</i> | 015 962 7200 |
| North-West University | <i>13251724@nwu.ac.za</i> | 018 299 1111 |
| Owen Sithole College of Agriculture (KwaZulu-Natal) | <i>ngcobon@kzndae.gov.za</i> | 035 795 1345 |
| Potchefstroom College of Agriculture | <i>oplpwn@potch1.agric.za</i> | 018 299 6721 |
| Sol Plaatje University | <i>information@spu.ac.za</i> | 053 491 0000 |
| Taung College of Agriculture | <i>mvsalman12@gmail.com</i> | 053 994 9800 |
| Tompi Seleka College of Agriculture (Mpumalanga) | <i>tompi@telkomsa.net</i> | 013 268 9300 |
| Tsolo College of Agriculture (Eastern Cape) | <i>johnmikelisa@yahoo.com</i> | 047 542 0107 |
| University of Limpopo | <i>enrolment@ul.ac.za</i> | 015 268 9111 |
| University of the Free State | <i>info@ufs.ac.za</i> | 051 401 9111 |
| University of Fort Hare (Eastern Cape) | <i>avdyk@ufh.ac.za</i> | 043 704 7371 |
| University of Mpumalanga | <i>info@ump.ac.za</i> | 013 002 0001 |
| University of Pretoria | <i>ssc@up.ac.za</i> | 012 420 3111 |
| University of Stellenbosch | <i>info@sun.ac.za</i> | 021 808 9111 |
| University of Venda | <i>info@univen.ac.za</i> | 015 962 8000 |
| University of KwaZulu-Natal | <i>education@ukzn.ac.za</i> | 031 260 1111 |
| University of Zululand | <i>info@unizulu.ac.za</i> | 035 902 6000 |
| University of South Africa | <i>infoservices@unisa.ac.za</i> | 012 429 3111 |



Rainfall calendar 2018

| | JAN | FEB | MAR | APR | MAY | JUN |
|----|-------------|-------------|------------|-----------|-----------|-------------|
| 1 | Monday | Thursday | Thursday | Sunday | Tuesday | Friday |
| 2 | Tuesday ○ | Friday | Friday ○ | Monday | Wednesday | Saturday |
| 3 | Wednesday | Saturday | Saturday | Tuesday | Thursday | Sunday |
| 4 | Thursday | Sunday | Sunday | Wednesday | Friday | Monday |
| 5 | Friday | Monday | Monday | Thursday | Saturday | Tuesday |
| 6 | Saturday | Tuesday | Tuesday | Friday | Sunday | Wednesday ● |
| 7 | Sunday | Wednesday ● | Wednesday | Saturday | Monday | Thursday |
| 8 | Monday | Thursday | Thursday | Sunday ● | Tuesday ● | Friday |
| 9 | Tuesday ● | Friday | Friday ● | Monday | Wednesday | Saturday |
| 10 | Wednesday | Saturday | Saturday | Tuesday | Thursday | Sunday |
| 11 | Thursday | Sunday | Sunday | Wednesday | Friday | Monday |
| 12 | Friday | Monday | Monday | Thursday | Saturday | Tuesday |
| 13 | Saturday | Tuesday | Tuesday | Friday | Sunday | Wednesday ● |
| 14 | Sunday | Wednesday | Wednesday | Saturday | Monday | Thursday |
| 15 | Monday | Thursday ● | Thursday | Sunday | Tuesday ● | Friday |
| 16 | Tuesday | Friday | Friday | Monday ● | Wednesday | Saturday |
| 17 | Wednesday ● | Saturday | Saturday ● | Tuesday | Thursday | Sunday |
| 18 | Thursday | Sunday | Sunday | Wednesday | Friday | Monday |
| 19 | Friday | Monday | Monday | Thursday | Saturday | Tuesday |
| 20 | Saturday | Tuesday | Tuesday | Friday | Sunday | Wednesday ● |
| 21 | Sunday | Wednesday | Wednesday | Saturday | Monday | Thursday |
| 22 | Monday | Thursday | Thursday | Sunday ● | Tuesday ● | Friday |
| 23 | Tuesday | Friday ● | Friday | Monday | Wednesday | Saturday |
| 24 | Wednesday | Saturday | Saturday ● | Tuesday | Thursday | Sunday |
| 25 | Thursday ● | Sunday | Sunday | Wednesday | Friday | Monday |
| 26 | Friday | Monday | Monday | Thursday | Saturday | Tuesday |
| 27 | Saturday | Tuesday | Tuesday | Friday | Sunday | Wednesday |
| 28 | Sunday | Wednesday | Wednesday | Saturday | Monday | Thursday ○ |
| 29 | Monday | | Thursday | Sunday | Tuesday ○ | Friday |
| 30 | Tuesday | | Friday | Monday ○ | Wednesday | Saturday |
| 31 | Wednesday ○ | | Saturday ○ | | Thursday | |

● New moon

○ First quarter

○ Full moon

● Last quarter

| JUL | AUG | SEPT | OCT | NOV | DEC | |
|------------|------------|-----------|-------------|-------------|------------|----|
| Sunday | Wednesday | Saturday | Monday | Thursday | Saturday | 1 |
| Monday | Thursday | Sunday | Tuesday 🌓 | Friday | Sunday | 2 |
| Tuesday | Friday | Monday 🌓 | Wednesday | Saturday | Monday | 3 |
| Wednesday | Saturday 🌓 | Tuesday | Thursday | Sunday | Tuesday | 4 |
| Thursday | Sunday | Wednesday | Friday | Monday | Wednesday | 5 |
| Friday 🌓 | Monday | Thursday | Saturday | Tuesday | Thursday | 6 |
| Saturday | Tuesday | Friday | Sunday | Wednesday 🌑 | Friday 🌑 | 7 |
| Sunday | Wednesday | Saturday | Monday | Thursday | Saturday | 8 |
| Monday | Thursday | Sunday 🌑 | Tuesday 🌑 | Friday | Sunday | 9 |
| Tuesday | Friday | Monday | Wednesday | Saturday | Monday | 10 |
| Wednesday | Saturday 🌑 | Tuesday | Thursday | Sunday | Tuesday | 11 |
| Thursday | Sunday | Wednesday | Friday | Monday | Wednesday | 12 |
| Friday 🌑 | Monday | Thursday | Saturday | Tuesday | Thursday | 13 |
| Saturday | Tuesday | Friday | Sunday | Wednesday | Friday | 14 |
| Sunday | Wednesday | Saturday | Monday | Thursday 🌓 | Saturday 🌓 | 15 |
| Monday | Thursday | Sunday | Tuesday 🌓 | Friday | Sunday | 16 |
| Tuesday | Friday | Monday 🌓 | Wednesday | Saturday | Monday | 17 |
| Wednesday | Saturday 🌓 | Tuesday | Thursday | Sunday | Tuesday | 18 |
| Thursday 🌓 | Sunday | Wednesday | Friday | Monday | Wednesday | 19 |
| Friday | Monday | Thursday | Saturday | Tuesday | Thursday | 20 |
| Saturday | Tuesday | Friday | Sunday | Wednesday | Friday | 21 |
| Sunday | Wednesday | Saturday | Monday | Thursday | Saturday 🌑 | 22 |
| Monday | Thursday | Sunday | Tuesday | Friday 🌑 | Sunday | 23 |
| Tuesday | Friday | Monday | Wednesday 🌑 | Saturday | Monday | 24 |
| Wednesday | Saturday | Tuesday 🌑 | Thursday | Sunday | Tuesday | 25 |
| Thursday | Sunday 🌑 | Wednesday | Friday | Monday | Wednesday | 26 |
| Friday 🌑 | Monday | Thursday | Saturday | Tuesday | Thursday | 27 |
| Saturday | Tuesday | Friday | Sunday | Wednesday | Friday | 28 |
| Sunday | Wednesday | Saturday | Monday | Thursday | Saturday 🌓 | 29 |
| Monday | Thursday | Sunday | Tuesday | Friday 🌓 | Sunday | 30 |
| Tuesday | Friday | | Wednesday 🌓 | | Monday | 31 |

🌑 New moon
🌓 First quarter
🌑 Full moon
🌓 Last quarter

Measuring your SAFETY STATUS

Farm security is a very relevant theme that should be visited regularly. Measure yourself against these questions and do something about the weaknesses. Being alert, observant and prepared will definitely help at the point when you need it the most.

YOUR IMMEDIATE ENVIRONMENT

- Is the security fence still effective in combating undesirable access?
- Are the security doors and gates and burglar bars of your houses still effective and adequate?
- Is there a security gate in your home that can effectively separate the bedrooms from the rest of the house and do you lock this gate at night?
- Do you have a dog that sleeps in the house at night?
- Are the security lights and alarm system still effective and in working order?
- Are the guard dogs and alternative warning mechanisms still effective?
- Are the areas around your gates and at T junctions open so that a surprise attack is difficult to launch?
- Is your garden laid out in such a way that there are no easy hiding places?

EMPLOYEES

- Is the attitude of your employees such that they will protect your family if you are not there?
- Do you handle as little cash as possible and do your workers know that there is no real cash in the house or office?

GENERAL

- Are you still alert and prepared? Do you attend to the small things that do not appear right, and do you know what to do?
- Do you have unique plans to ensure your safety and to outsmart criminals?

These are only a few questions to get you thinking. Each producer's circumstances in farming are unique, so draw up your own list and be alert and prepared!

COMMUNICATION

- Do you have alternative communication systems in addition to the landline or personal cellphones? (For example, contact with the neighbours and the police or a hidden cellphone in a room?)
- Do your and your family's cellphones, as well as the hidden cellphone, contain a list of whom to contact in the case of an incident?
- Do you inform the community of possible suspect persons or vehicles in the area?

EMERGENCY PLAN

- Is there an emergency plan for different incidents and does everybody know what to do when?
- Do you, your family and workers still apply the safety measures and do you practise the emergency plan regularly?
- Is there an early warning system for your farm and is it still effective?
- Do you tend to follow a specific routine, for example, do you always stop in the same place when you come from town?

VISITORS/STRANGERS

- Do you have a protocol in place to deal with, for example, uninvited visitors who come looking for work?
- Do you have a protocol in place to check and verify the identification of uninvited and invited visitors?
- Are you always on the lookout for strangers on your farm?
- Will your employees report strangers and strange vehicles on your farm?
- Do you approach all strangers with the necessary caution? (You never know whether they are armed or not.)

Pietman Botha, agricultural consultant

SEED

| | |
|----------------------------|----|
| Agricol | 23 |
| Pannar | 24 |
| Advance Seed | 27 |
| Senseed | 28 |
| Pannar | 30 |
| Monsanto | 32 |
| Klein Karoo Seed Marketing | 35 |
| Monsanto | 36 |
| Pioneer | 38 |
| Link Seed | 41 |



Contacts: Seed

| INSTITUTION | EMAIL | NUMBER |
|---|--|--------------|
| South African National Seed Organisation (SANSOR) | seedcert@sansor.co.za | 012 472 9518 |



Approach seed treatment with *caution*

DR GERHARD VERDOORN SAYS:

“ Agrochemicals are sometimes wrongly used for seed treatment to combat the effect of gerbils.

This creates the risk of negatively affecting seed germination, and it can also cause environmental damage when seed is spilt during planting and eaten by birds and animals. ”



PROVEN management plans that include rodenticides are available, therefore producers are advised to follow these management plans. Contact Dr Gerhard Verdoorn, director: Griffon Poison Information Centre at **082 446 8946** or neshert@tiscali.co.za in connection with these plans.

DON'T MERELY TREAT SEED YOURSELF

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. The treatment for rhizobia is excluded.

If a chemical supplier handles the treatment, he must be able to ensure that the treatment will not affect the germination.

The chemicals used must also be registered in terms of Act No. 36 of 1947 and preferably be recommended by the seed company.

Corné Louw, senior economist: Inputs, Grain SA

Op die voorvoet van SAADTEGNOLOGIE

BEMARKINGSBESTUURDER

Daneel Fourie
083 461 6671

AANKOPE BESTUURDER/ STREEKSBESTUURDER

Marcell van der Westhuizen
083 626 3235

GEWASBESTUURDERS

Daneel Fourie (*Mielies*)
083 461 6671

Roelf van Niekerk (*Sojabone*)
083 625 4906

Joubert Swanepoel (*Sonneblom*)
081 011 0009

LANDBOUKUNDIGES

Christopher Coetzee
063 253 2000

Carlo Pelster
083 977 0536

Henko van Barneveld (*Sojabone*)
063 407 3500

www.agricol.co.za

VERKOOPBESTUURDERS

Willem Labuschagne (*Gauteng/ Limpopo*)

083 501 0109

Carinus Fourie (*Noord-Vrystaat*)

060 587 5626

Pieter Taljaard (*Oos-Vrystaat*)

078 019 6950

Henk Crafford (*Wes-Vrystaat*)

078 459 4833

Dawie du Plessis (*Noord-Kaap/Sentraal Vrystaat*)

071 852 1707

Willem Nel (*Noordwes*)

081 018 3296

Daneel Fourie (*Noord-Mpumalanga*)

083 461 6671

Anina Snyman (*Suid-Mpumalanga*)

082 772 5769

Charles Saayman (*Natal-Suid*)

083 306 5246

Andries van Niekerk (*Natal-Noord*)

063 299 9929

Nico Bouwer (*Piketberg - Swartland*)

083 844 3369

Jan Botes (*Overberg*)

083 277 5893

Cornel Cronje (*Oos-Kaap*)

078 019 3408

André Pretorius (*Suid-kaap*)

082 807 8240

Ruan Stander (*Visriviervallei*)

083 798 9222

Herman Walters (*Wes-Kaap - Brackenfell*)

081 015 9834



agricol
aan die groei



Multi-gewasspesialis, verbind tot sukses met graanproduksie



KWAZULU-NATAL EN KAAP

Tel: (033) 413 9500

Verkoopbestuurder:

Petrus van Rooyen - Sel nr: 082 822 6438

Landboukundige:

Grant Pringle - Sel nr: 071 678 1511

GAUTENG, SUID-MPUMALANGA EN OOS-VRYSTAAT

Tel: (013) 665 8500

Verkoopbestuurder:

Carl Otto - Sel nr: 079 523 9980

Landboukundige:

Joe Payne - Sel nr: 083 417 4795

NOORDWES

Tel: (018) 406 1700

Verkoopbestuurder:

Jannie Bignaut - Sel nr: 083 659 5400

Landboukundige:

Corné van der Westhuizen - Sel nr: 082 570 8240

WES-VRYSTAAT

Tel: (056) 216 3013

Verkoopbestuurder:

Jaco Naude - Sel nr: 083 287 0949

Landboukundige:

Hendrik Linde - Sel nr: 079 527 7695

NOORD-KAAP

Tel: (018) 406 1717

Verkoopbestuurder:

Martin Bullock - Sel nr: 082 921 0887

Landboukundige:

Klaas van Wyk - Sel nr: 072 665 6488

OOSTELIKE HOËVELD EN LIMPOPO

Tel: (013) 665 8500

Verkoopbestuurder:

André du Randt - Sel nr: 082 454 5543

Landboukundige:

Nico Barnard - Sel nr: 082 850 1503



Saam boer ons
vir die toekoms™

infoserve@pannar.co.za
www.pannar.com



If you suspect or experience any problems with seed quality, you should take the following steps:

1

Contact the seed representative and insist 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 to refer back to later.

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

1

Contact an independent scientist to do an investigation on site.

2

Inform Grain SA if the seed company cannot provide the required attention and solutions for the relevant problems.

Steps to address seed quality problems

- Contact DAFF if the matter is still not solved.
- A trade control investigation in terms of the Plant Improvement Act will be carried out.

DAFF ALSO HAVE THE FOLLOWING TIPS:

- Producers are recommended to keep record of batch code numbers.
- When purchasing seed, request an analysis certificate of the quality of the seed lot concerned, issued by a registered laboratory.
- Producers are advised to retain the actual bag containing all the necessary traceable information for reference purposes.



CONTACT PERSONS

Eastern Cape regional representatives:

Gerald Jack: Port Elizabeth, 041 484 2725

Felicity Daniels: Port Elizabeth, 041 484 2725

Free State regional representative:

Zanele Buhlungu: Bloemfontein, 051 406 0967

Gauteng regional representative:

Christo Botha: Pretoria, 012 319 6139

Western Cape regional representative:

Christo Gouws: Stellenbosch, 021 809 1709

Corné Louw, senior economist: Inputs, Grain SA

AIM AND GUIDELINES for the use of cover crops

In order to counteract and even reverse the process of soil degradation and climate change, producers should consider more sustainable and profitable practices like conservation agriculture (CA). One of the principles of CA is diversification and integration of crop and animal species, which includes the use of cover crops.

REASONS FOR USING COVER CROPS

- Restoration and improvement of soil health and biological diversity.
- Improvement of resilience, risk and sustainability of crop rotation systems.
- The economically and ecologically sustainable integration of livestock.
- The sequestration of atmospheric carbon in the soil and therefore the combating of global warming.
- The control and management of weeds, diseases and pests.
- More effective use of water (from rain or irrigation).

GUIDELINES FOR USING COVER CROPS

- The suitability of cover crop species should be assessed on the farm in small demonstration or screening trials.
- Assess the need for fertilisation, liming and irrigation.
- Implement the correct plant, fertilisation, irrigation and weed control practices.
- Use a suitable grazing practice – ultra-high density grazing is strongly recommended.
- Manage grazing to provide good livestock production per hectare rather than production per animal.

GUIDELINES FOR CHOOSING COVER CROPS

Functional plant groups

- It is important to understand the properties and functions of the different plant groups.
- Legumes are used the most for nitrogen contributions.
- Grass crops are used more commonly to control soil erosion and weeds, for nutrient cycling and carbon sequestration, as well as to improve soil structure.
- Brassicas are used to reduce soil compaction and improve soil structure, as well as to cycle nutrients and suppress diseases and weeds.

Cover crop rotations and associations with cash crops

The next section provides information on different cover crops that are grown together with, between or after cash crops. The emphasis falls on the summer rainfall area of South Africa. These crops should preferably be planted as a multi-species mixture and utilised by way of ultra-high-density grazing. The ideal situation is to have a variety of living roots in the soil throughout the year to improve the health of the soil.

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PHOTO 1



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After maize or soybeans, or late in the growing season (as a winter cover crop or relay intercrop)

- Relay intercropping is the technique of sowing winter cover crops in a mature grain crop. The cover crops germinate and grow slowly under the crop canopy (see **PHOTO 2**).
- When the maize/soybeans are harvested in autumn or winter, the cover crops are already established and the growth resumes, which saves valuable time.
- The intercrop will usually grow much more throughout the winter and spring than any cover crop sowed after the grain harvest.



PHOTO 2

The following cover crops can be used in this way (preferably in a mixture):

- **Grasses:** Cereal rye, annual ryegrass, wheat, oats or triticale (see **PHOTO 1**).
- **Brassicas:** Oilseed or Tillage radish or turnips.
- **Legume:** Vetch.



PHOTO 3

Besides the benefit to livestock integration there are numerous other economic and environmental benefits.



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During the growing season of cash crops (as green fallow system)

- Crops like babala, fodder sorghum, sunflower, cowpeas, soybeans, mung beans, dolichos lablab, velvet bean, sun hemp and jack bean can be used (see **PHOTO 3**).
- The time of termination depends on the need to store or preserve groundwater for the next crop.

**PHOTO 4****In the growing season, at the same time as maize (as intercrop)**

- Non-creepers (like cowpea, bush-*Mucuna* or velvet bean) or creepers (dolichos lablab and velvet bean) can be sown two to eight weeks after maize was planted.
- Later plantings have a smaller impact on maize yield.
- The earlier the cover crop is sown, the greater is the soil protection and weed suppression obtained.
- In small-scale systems, intercrops are also planted as source of food, for example dry beans or cowpeas and their residues can also be used for animal feed (see **PHOTO 4**).

For more information, contact Dr Wayne Truter at wayne.truter@up.ac.za, Prof Chris Dannhauser at admin@GrassSA.co.za, Dr Hendrik Smith at hendrik.smith@grainsa.co.za, or Mr Gerrie Trytsman at gtrytsman@arc.agric.za.

Dr Hendrik Smith, conservation agriculture facilitator, Grain SA

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Steps to *calibrate* planters

Successful cropping has developed into a highly specialised process. Planters play an extremely important role in the process – particularly with respect to the accurate spacing of plants and the plant depth of seed. The accurate dispensing of fertiliser is also important.

1 THE FUNCTION OF A PLANTER

A planter has the following basic functions:

- It opens the fertiliser furrow up to the correct depth for fertiliser placement.
- Correct measuring of calibrated fertiliser and placement.
- It opens the seed furrow up to the correct depth for seed placement.
- Correct measuring and placement of seed.
- Closing of seed and fertiliser furrows.
- Compaction of the soil for effective soil to seed contact.

The above functions must all take place simultaneously and their effectiveness should not be speed sensitive.

2 SEED DISPENSING

The primary function of planters is to dispense seed correctly. Seed can be dispensed in the following ways:

- Conventional horizontal tray dispenser
- Tray dispenser dispensing at an angle
- The finger-wheel dispenser
- The vacuum tray dispenser

Tray dispensers are still used, but because seed grading is no longer that accurate, vacuum dispensers and finger-wheel dispensers are used increasingly.

3 DISPENSING AND PLACEMENT OF FERTILISER

Fertiliser is dispensed as granules or in liquid form. Granular fertiliser is dispensed positively with a star-wheel or worm dispenser.

Liquid fertiliser is dispensed with a squeeze pump, or – these days – with a special liquid fertiliser pump.

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4

CALIBRATION OF THE PLANTER

When a planter is calibrated, wheel slippage of the planter drive wheels is an important component to take into account.

It is important to calibrate the planter in the field to be planted to compensate for wheel slippage. Different soils will cause different wheel slip percentages.

4.1. Calibration of fertiliser

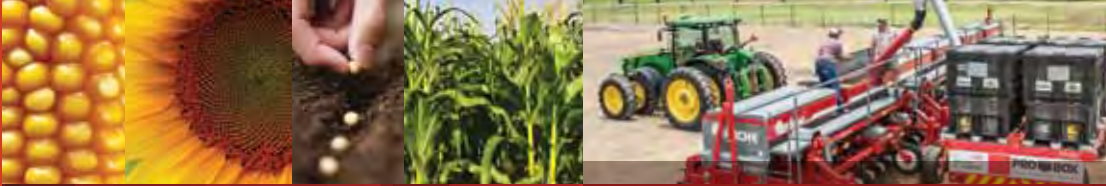
Fertiliser dispensing can be calibrated as follows:

- Mark out a distance of 10 m in the field.
- Catch the fertiliser from one of the fertiliser delivery tubes in a suitable container across the 10 m distance, while the planter moves at a normal working speed.
- Weigh the fertiliser caught in the container.
- The fertiliser delivery in kg/ha can be calculated as follows:

$$\frac{\text{Mass of fertiliser delivered over 10 m in grams}}{\text{Planter's row spacing in metres}}$$

- Repeat the process with the other planter rows to ensure that the delivery is the same.
- If the delivery has to be changed, the gear combinations between the drive wheels of the fertiliser mechanism should preferably be changed rather than increasing or decreasing the delivery.





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| ERMELO | Peet von Wielligh | 082 948 2610 | LIMPOPO | Cornel Smit | 079 699 4503 |
| ERMELO | Colin Odendaal | 082 061 8284 | LOUIS TRICHARDT / HOEDSPRUIT | André Grobbelaar | 083 321 6622 |
| PIET RETIEF | Sarel Nieuwenhuizen | 082 680 9198 | MIDDELBURG | Jan Wijma | 082 555 0014 |
| PIET RETIEF | Piet Nieuwenhuizen | 082 374 8395 | MIDDELBURG | Pieter Erasmus | 082 450 6705 |
| VRYHEID | AP Keeve | 083 679 1763 | POLOKWANE | André Terreblanche | 083 263 2112 |
| VRYHEID | Fritz le Roux | 082 878- | | | |

| AREA | AGENT | KONTAK-NOMMER |
|---|-----------------------------|---------------|
| OOS- EN SENTRAAL VRYSTAAT / OOS-KAAP | | |
| AREABESTUURDER | Oosie Oosthuizen (Snr) | 082 788 1744 |
| LANDBOUKUNDIGE | Martin Brandt | 082 303 0698 |
| BETHEHEM / CLARENS / PAUL ROUX | Gideon Knobel | 083 628 6477 |
| BETHEHEM / REITZ / TWEELING / LINDLEY | Herman Coetzee | 083 261 9756 |
| CLOCOLAN / LADYBRAND / MARQUARD / ROSENDAL | Ryk Neethling | 072 527 1334 |
| FOURIESBURG / FICKSBURG / CLARENS | Josef van Eeden | 082 316 3079 |
| HARRISMITH / WARDEN | Marchand Janse van Rensburg | 082 781 5221 |
| HUMANSDORP / OOS-KAAP | OB Olivier | 082 553 6146 |
| LADYBRAND / EXCELSIOR / TWEESPRUIT | Meyer Kotze | 082 908 9994 |
| LADYBRAND / EXCELSIOR / TWEESPRUIT | Erik Faure | 082 895 1897 |
| LESOTHO | Neil de Villiers | 082 568 7055 |
| PETRUS STEYN / HEILBRON / REITZ | John Stadler | 082 371 4396 |
| PETRUS STEYN / HEILBRON / REITZ | Louw Stadler | 082 614 8629 |
| REITZ / PETRUS STEYN / BETHEHEM / LINDLEY | Oosie Oosthuizen (Jnr) | 082 789 4309 |
| SENEKAL / WINBURG / MARQUARD | Jurgens Kotze | 083 414 3034 |
| SENEKAL / WINBURG / MARQUARD | Hennie van Wyk | 083 870 0000 |
| STEYNSRUS / ARLINGTON / LINDLEY | Louis Koch | 073 661 0452 |
| WARDEN / VREDE / MEMEL | Maré Potgieter | 083 604 2608 |

NOORDWES

| | | |
|---|------------------|--------------|
| AREABESTUURDER | Tom van den Berg | 083 630 0253 |
| LANDBOUKUNDIGE | Philip Fourie | 082 909 3262 |
| COLIGNY / LICHTENBURG / HARTBEEFSFONTEIN / KLERKSDORP | Charl de Wet | 071 681 1254 |
| KOSTER / DERBY / GROOTPAN / RUSTENBURG / MAGALIESBURG | Albie Roux | 078 801 0331 |
| LICHTENBURG / SANNIESHOF / BIESIESVLEI | Dirk van Niekerk | 082 781 6377 |
| OTTOSDAL | Hannes van Wyk | 082 829 5496 |
| SCHWEIZER-RENEKE / BLOEMHOF | Rudi de Bruin | 083 655 2912 |
| VRYBURG / LOUWNA / TOSKA | Ami de Wet | 082 343 6467 |
| WOLMARANSSTAD / LEEUDORINGSTAD / MAKWASSIE | Willie Smit | 083 307 9144 |

| AREA | AGENT | KONTAK-NOMMER |
|--|-------------------|---------------|
| NOORD-KAAP | | |
| AREABESTUURDER | Dawie Human | 083 286 4943 |
| LANDBOUKUNDIGE | AJ Steyn | 083 627 3788 |
| BLOEMFONTEIN / ALIWWAL-NOORD | André van Aswegen | 083 298 1875 |
| DOUGLAS / ORANJERIVIER | Henry du Toit | 082 783 5593 |
| DOUGLAS / VAALRIVIER / ORANJERIVIER | Willie Botha | 083 632 1900 |
| JACOBSDAL / KIMBERLEY / MODDER-RIVIER / HOPETOWN | Stephen Bann | 082 783 5593 |
| PETRUSBURG / PAARDEBERG | Jano Hugo | 082 774 7300 |
| PRIESKA / MARYDALE | Jannie Smit | 082 496 5835 |
| UPINGTON / KAKAMAS / GROBLERSHOOP | Jannes Gagiano | 084 745 2992 |
| VANDERKLOOF / HOPETOWN / COLESBERG | Henry Griesel | 082 921 5245 |

OOS-VRYSTAAT / MPUMALANGA

| | | |
|------------------------------|---------------------|--------------|
| AREABESTUURDER | Gert Naudé | 076 431 2257 |
| LANDBOUKUNDIGE | Martin Brandt | 082 303 0698 |
| PRODUK LANDBOUKUNDIGE | Mauritz van Heerden | 082 885 3962 |
| GROOTVLEI / VREDE | Johan Stadler | 082 782 8840 |
| HEIDELBERG | Hendrik de Wet | 082 555 0442 |
| HEIDELBERG | Henri Marais | 083 764 2404 |
| KOPPIES | LK Jonker | 082 784 1666 |
| MORGENZON / STANDERTON | Francois du Plessis | 082 331 6572 |
| VILLIERS / MEMEL / FRANKFORT | Schabort de Jager | 082 441 9739 |
| VREDE | Hennie Jansen | 082 322 8037 |

NOORDWES / VRYSTAAT

| | | |
|---|------------------------|--------------|
| AREABESTUURDER | Fanie le Roux | 082 463 0457 |
| LANDBOUKUNDIGE | Philip Fourie | 082 909 3262 |
| PRODUK LANDBOUKUNDIGE | Johan Kock | 071 681 4039 |
| BOTHAVILLE | Chris Joubert (Snr) | 082 572 5632 |
| BOTHAVILLE | Ian Joubert (Jnr) | 082 920 2640 |
| BULTFONTEIN / WESSELSBRON | Riaan Potgieter | 082 775 1688 |
| HEILBRON / ORANJEVILLE / SASOLBURG | Brendan Naudé | 076 884 0514 |
| HOOPSTAD / HERTZOGVILLE | Tertius Theron | 083 381 9971 |
| KROONSTAD | Fires Janse van Vuuren | 082 809 5431 |
| PARYS / VREDEFORT | Etienne Aucamp | 083 600 5779 |
| POTCHEFSTROOM / FOCHVILLE / VEREENIGING | Abrie Coetzee | 083 448 0940 |
| POTCHEFSTROOM / FOCHVILLE / VEREENIGING | PE Coetzee | 073 123 9456 |
| VENTERSDORP / CARLETONVILLE | Sias Fourie | 082 551 4536 |
| VILJOENSKROON | Hanco Steyn | 072 783 4845 |

Consult *SA Grain's* cultivar supplement

SA GRAIN ANNUALLY PUBLISHES information on the evaluation and recommendation of cultivars that is done by the ARC.

To obtain the most recent information on maize, soybean and sunflower cultivars (published in November 2017), scan the QR code below and change the language option at the top according to your preference.



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Steps to *calibrate* planters

4.2. Calibration of seed

Seed dispensing can be calibrated as follows:

- Mark out a distance of 10 m in the field.
- Set the plant depth so that the seed is placed on the soil.
- Plant at the normal plant speed over the measured distance of 10 m.
- Count the number of seeds delivered in a row over the distance of 10 m.
- Calculate the plant population in number of seeds/ha as follows:

$$\frac{1\ 000 \times \text{number of seeds counted over 10 m}}{\text{Planter's row spacing in metres}}$$

- If the plant population must be changed, change the gear combinations as indicated on the calibration table of the planter.
- If there are many double seed deliveries or seed is not delivered at all, make sure that the right tray has been selected for the seed size for tray planters. The correct vacuum delivery for vacuum planters should be checked. Finger-wheel planter dispensing mechanisms should be serviced.



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 LS 6164 R* LS 6466 R*
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Lambert Blom: +27 (0)82 786 6875

Albert Kriek: +27 (0)82 824 5442

KwaZulu-Natal/Eastern Freestate/Eastern Cape

linkseed@linkseed.co.za

North West / Western Province

Mpumalanga / Limpopo

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IMPLEMENTS

| | |
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| New Holland | 45 |
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| Lemken | 55 |
| JHB Tractor Spares | 56 |



Contacts: Implements

| INSTITUTION | EMAIL | NUMBER |
|--|--|--------------|
| ARC-Agricultural Engineering | iaeinfo@arc.agric.za | 012 842 4017 |
| South African Agricultural Machinery Association (SAAMA) | agfacts@worldonline.co.za | 011 453 7249 |
| South African Institute for Agricultural Engineers (SAIAI) | boeboe@saili.co.za | 012 842 4043 |

EMERGENCY NUMBERS

| <i>Petrol and diesel spillage</i> | | |
|-----------------------------------|--|--------------|
| Spill Response Team | info@spiltech.co.za | 086 100 0366 |
| Drizit SA | drizitgt@iafrica.com | 031 274 2300 |
| Enviroserv | clientservices@enviroserv.co.za | 080 019 2783 |
| Rapid Spill Response | info@rapidspillresponse.com | 080 017 2743 |



DIESEL QUALITY suspicious?

If producers suspect that there are problems with the quality of diesel, particularly in cases of possible paraffin contamination, they can contact the South African Revenue Services (SARS) to monitor this:

CONTACT

Gregory Marks
National Group Manager
021 413 8938
gmarks@sars.gov.za

TEST DIESEL QUALITY YOURSELF

If producers want to test their diesel themselves, they can visit the website www.dieseltesting.co.za, scan the QR code alongside or call **087 575 3568** to purchase the testing instruments.

Corné Louw, senior economist: Inputs, Grain SA



Diesel mini testing kit.

NEW HOLLAND. ALTYD AAN JOU SY.

| | | | |
|----------------------|---|---|---|
| HOOFKANTOOR | Bemarking - Trekkers Bemarking - Stroppers, hooi- en baaltoerusting CNHI Capital - Finansiering | Ockert Scheepers Nico Dreyer Antonie Schutte | 082 524 8725 082 902 1255 082 819 8078 |
| GAUTENG | Agriquip Waterberg NWK | Dewald Janse van Vuuren Leon Venter Mike Lombaard | 016 341 3135 014 736 4836 076 483 7212 |
| KWAZULU-NATAL | Midlands Agri Ritchie Motors Zululand Barloworld Megazone Humulani Marketing TWK Agri | Louis Fourie Paul Mannix Clinton Diedericks Jan Vermaak Manoj Hariram Johan Bender | 033 816 9324' 035 772 1164 033 392 4444 036 448 2482 039 682 2550 017 824 1000 |
| MPUMALANGA | Laeveld Trekkers Ritchie Motors Zululand TWK Agri Ritchie Motors NWK | Wimpie Bezuidenhout Paul Mannix Johan Bender Francois Mellet Mike Lombaard | 013 758 1233 035 772 1164 017 824 1000 017 712 1211 076 483 7212 |
| LIMPOPO | Janpret Trekkers Waterberg Laeveld Trekkers | Giel Jansen Leon Venter Henk Bezuidenhout | 015 293 0333 014 736 4836 013 792 4773 |
| VRYSTAAT | BR Dienste Ritchie Motors Zululand Agriquip Kroon NH Mega Agri | Reinhard Grobler Paul Mannix Dewald Janse van Vuuren Nico Lategan Chris Botha | 058 303 6782 035 772 1164 016 341 3135 056 212 1225 051 853 1009 |
| WESKAAP | Kaap Agri SSK | Braam Strauss Henri van Niekerk | 022 482 8000 028 514 8600 |
| OOSKAAP | Humulani Marketing RCL Trekkerdienste Mikes Mechanical Universal Equipment | Manoj Hariram Louwrens Bezuidenhout Riaan Venter Ivan van Aswegen | 039 682 2550 042 283 0012 042 233 0724 041 453 1810 |
| NOORDKAAP | Kaap Agri Mega Agri Upington Tractors | Braam Strauss Chris Botha Ivan Heyns | 022 482 8000 051 853 1009 054 332 5691 |
| NOORDWES | NWK Mega Agri | Louis Lange Chris Botha | 018 633 1189 051 853 1009 |
| NAMIBIË | Windhoeker Maschinen Fabrik Kaap Agri | Apie Oberholzer Boet Burger | 026 461 445 520 026 463 297 426 |
| MOSAMBIEK | MTM | Alwyn Malan | 00258 84 735 7315 |
| SWAZILAND | Laeveld Trekkers | Henk Bezuidenhout | 013 792 4773 |
| LESOTHO | BR Dienste | Reinhard Grobler | 058 303 6782 |



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175
CASE II
 AGRICULTURE



175 JAAR VAN INNOVASIE. STERKER AS OOI.

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Case left 17/184



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*Bepalings en voorwaardes geld (beskikbaar by www.deere.com/sub-saharan/en). Aanbod geldig solank voorraad hou.

John Deere Financial word ondersteun deur Absa, 'n gemagtigde finansiële diensteverskaffer en geregistreerde kredietverskaffer. Reg Nr NCRCP7.

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How to qualify for *diesel rebate*

It is critical for producers to keep a 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.

Agri SA and Grain SA commented on what a logbook should look like, but have received no further information in this regard from SARS yet.

In the meantime, producers are recommended to keep the minimum information required by law.

Keep a logbook at main distribution points, containing at least the following information:

- Date on which the diesel was added.
- Quantity of diesel added.
- Description of the vehicle.
- Timer or km reading before and after use.
- Reason for which diesel was consumed. (It is important to check which activities qualify for the diesel rebate.) Click on the link alongside and scroll down to part 3. (It is in Schedule 6, part 3.)



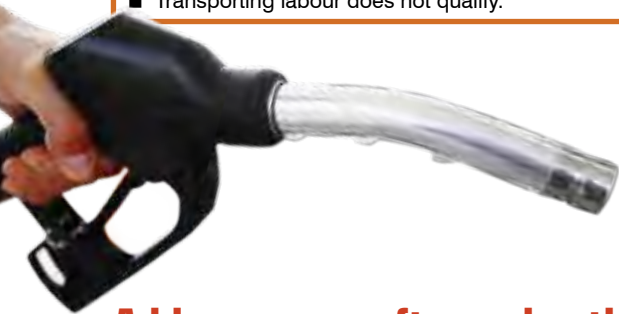
Other practical hints:

- Be specific about the activities. 'General' is not accepted.
- In particular, keep proper records of the activities of trucks and vehicles using tarred roads.
- Clearly indicate private use.
- Transporting labour does not qualify.

Click here for examples of logbooks supplied by SARS:



Corné Louw, senior economist: Inputs, Grain SA



Address poor after-sales this way

IF MEMBERS OF Grain SA receive poor after-sales service from mechanisation dealers, they can contact Corné Louw, senior economist: Inputs, Grain SA, or Grain SA at **086 004 7246**.

Corné Louw, senior economist: Inputs, Grain SA

Quickly calculate HARVESTER LOSSES

After the planting process, the harvesting process for any crop is very important, because its activities have an effect on the yield. Losses occur during any harvesting process, and it is important to limit these losses in order to increase the yield.

When determining losses, a small scale is used to determine the mass of the seeds in the frame and pan reasonably accurately. The losses can then be determined with the aid of a simple formula. The losses are divided into four categories, namely:

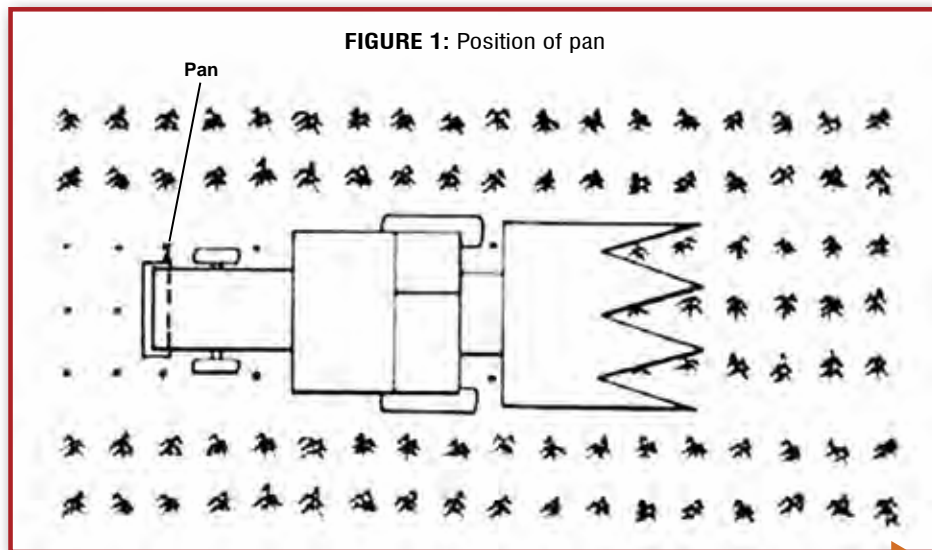
- Pre-harvest losses
- Header or table losses
- Drum losses
- Separation losses

PRE-HARVEST LOSSES

- These losses can be determined by weighing all the seeds in a square frame of 1 m x 1 m beforehand – before you start harvesting.
- Position the frame at different places in the field and obtain an average mass in grams of the seeds in the frame. By multiplying the average mass (in grams) of the seeds in the frame by ten, you obtain the pre-harvest losses in kg/ha.

HEADER OR TABLE LOSSES

Here you use a pan measuring 25 cm wide and a little longer than the width of the straw outlet of the harvester so that no straw and seeds fall on the ground behind the harvester. While you are harvesting, the pan is placed below the straw outlet of the harvester so that the long sides of the pan are positioned transversely to the direction in which the harvester is moving (see **FIGURE 1**).



MCCORMICK

X7.650 – X7.660 – X7.670 – X7.680

GEREED VIR DIE MODERNE LANDBOU-UITDAGINGS

Gerugsteun deur moderne ontwerp tegnieke en ingestel op gedurige tegniese ontwikkeling, bied McCormick nou 'n nuwe generasie trekkers. Trekkers om te voldoen aan die landboumark se hoogste vlak van verwagting in soverre dit gaan oor kwaliteit, werkverrigting, intelligensie aan boord en moderne ontwerp.

HOOFKENMERKE:

- Beta-power 6.7 liter, 24 klep, 6 silinder turbo-enjins met drukbuisinspuiting en lug tot lug tussenverkoeling
- "Pro Drive" ratkas met spoelkas (shuttle) en kruiprat verskaf 40 vorentoe- + 40 truratte deur 'n 6 gang 4 spoed per gang ratkas
- Kragaftakker met elektro-hidrouliese inskakeling verskaf 4 spoedkeuses teen 540/540E/1000/1000E rpm
- Soliede vierwiel-aangedrewe vooras met elektro-hidrouliese inskakeling
- Kat III, 3-punt hyser, 4 afstandbeheerklappe, hidrouliese pompvloeiempo van 90 l/min en 'n hyskapasiteit van 9300 kg
- Premierkajuit - auto-styl, skep 'n ware tegnologiese kajuitbinneruim wat die operateur in volle beheer van al die trekkerfunksies plaas.
- **X7.650:** Die kajuituitleg van die McCormick X7.650 verskil van die groter X7 modelle. Die multi-funksie elektroniese beheer op die armlening aan die sitplek is verskuif na die sypaneel. Die transmissiekontrolle is ook nou op die sypaneel en verskaf nog dieselfde beheerfunksies omdat die transmissie op die reeks nie verander het nie.

VIR MEER INLIGTING SIEN JOU NAASTE HANDELAAR OF KONTAK.
HOOFKANTOOR: 911 914 1700, KAAPROVINSHIE: 040 937 3552, LIMPOPO /
NPUMALANGA: 079 211 2366, VRYSTAAT / NOORDWES: 082 879 3558,
KWAZULU-NATAL / OOS-KAAP: 083 907 4358

Webblad: www.argosa.co.za. Epos: mccormick@argosa.co.za

MCCORMICK X7.6 REEKS - BETAPOWER ENJINS

| MCCormick X7 Reeks | X7-650 | X7-660 | X7-670 | X7-680 |
|----------------------|--------|--------|--------|--------|
| Maks. enjinkrag (kW) | 116 | 121 | 130 | 138 |

MCCORMICK

BETAPOWER ENJIN

X7.650 Kontrolle-uitleg

Kruip tot 40 vorentoe

Hidrouliese sisteem met 4 afstandbeheerklappe

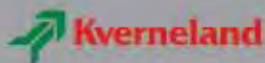


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CONTACT DETAILS

Head Office
30 Halsted Road
Mkondeni
Pietermaritzburg

Tel: 033 386 3574
Fax: 033 386 0742
info@jupidex.co.za
parts@jupidex.co.za

M-Hale

Bede

HP ALPLER

Agri-Spread

Quickly calculate HARVESTER LOSSES

Remove the pan with all its contents and place it to one side. Now pick up all the seeds lying directly below the pan, as well as on either side, so that all the seeds over an area of 25 cm x the width of the harvester header or table have been picked up. Determine the mass of these kernels with the aid of the scale. Substitute this mass (in grams), minus the mass of the pre-harvest losses, into the following formula to determine the header or table losses.

$$\text{Header or table losses kg/ha} = \frac{40 \times \text{mass of the seeds picked up (in grams)}}{\text{Width of header or table in metres}}$$

EXAMPLE: Assume the mass of the seeds picked up as prescribed, minus the mass of the pre-harvest losses, is 15 g, and the width of the header or table is 3,5 m, then the header or table losses are:

$$\frac{40 \times 15}{3,5} = 171 \text{ kg/ha}$$

THRESHING DRUM LOSSES

Weigh the unthreshed seeds in the pan (in grams) – only the seeds and not the plant material – and use the following formula to determine the drum losses.

$$\text{Threshing drum losses in kg/ha} = \frac{40 \times \text{mass of the unthreshed seeds (in grams)}}{\text{Width of header or table in metres}}$$

SEPARATION LOSSES

Weigh all the seeds remaining in the pan and use this mass (in grams) in the same way as for the threshing drum losses to determine the separation losses in kg/ha.

Losses can also be converted to a percentage if the yield per hectare is known:

$$\frac{\text{Loss in kg/ha} \times 100}{\text{Yield in kg/ha}}$$

Johan van Biljon, ARC-Agricultural Engineering



BLOU BETEKEN GAAN GROOT – TREK LIG

SOLITAIR 12 – PRESISIE LUGDRUKPLANTER



Veelsydige metereenheid kan maklik ook kanola, sojabone, tef en ander fynsade hanteer

Met werkwydtes van tot 12 m is die Solitair 12 die LEMKEN-werktuig wat baie hektare per dag plant, maar lag-lag deur die land draf agter 'n trekker van net 112 kW. Elektriese metereenhede en druklugverdeling verseker akkurate saadplasing teen hoë spoed. Dit is die ideale planter om produktiwiteit te verhoog wanneer daar baie geplant moet word in 'n kort tyd!

- Saadkapasiteit van 5 800 liter
- Werkwydtes van 8 tot 12 meter
- Ry-afstande van 12,5 of 15 cm
- Hoë presisie teen hoë spoed

HELIODOR 9 KOMPAK-SKOTTELEG



Skottels van 510 mm verseker intensiewe grondbewerking tot 12 cm diep

Die Heliodor-reeks is ideaal vir die boer wat vinnig en goedkoop organiese materiaal wil opkap en inmeng. Te danke aan die hoë spoed waarteen hy kan werk, is die Heliodor ook besonder goed geskik vir saadbedvoorbereiding. Nalooprollers beheer die werkdiepte en laat 'n ferm saadbed agter. Die kompakte en slim ontwerp laat die Heliodor lekker lig trek, terwyl die hoë werkspoed intensiewe bewerking verseker.

- Afsonderlik geveerde skottels
- Werkwydtes van 2,5 tot 16 m beskikbaar
- Verseëelde laers is ten volle onderhoudbaar
- Hoë werkspoed vir groot, volledige en intensiewe bewerking

Kontak jou naaste Area Verkoopsbestuurder om meer oor LEMKEN uit te vind

Karel Munnik, Direkteur + Area Verkoopsbestuurder,
082-412-2577, k.munnik@lemken.com

Blackie Swart, Area Verkoopsbestuurder,
082-404-9651, b.swart@lemken.com

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Contacts: Fertiliser

| INSTITUTION | EMAIL | NUMBER |
|--|--|--------------|
| Agri Laboratory Association of South Africa (AgriLASA) | info@agrilasa.co.za | 016 951 2318 |
| Fertiliser Association of Southern Africa (Fertasa) | general@fertasa.co.za | 012 349 1450 |



Step by step reporting of FERTILISER COMPLAINTS

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 Also keep a record of the dates and conversations.

3 Gather and write down as much information as possible, take photos or make videos to refer back to later.

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

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

- Contact an independent scientist to do an investigation on site.
- Inform Grain SA if the fertiliser company cannot provide the required attention and solutions for the relevant problems.

- Producers are recommended to test their fertiliser independently.
- It is extremely important for fertiliser samples to be taken correctly.
- Fertiliser samples for testing fertiliser quality have to be taken in collaboration with the fertiliser company.

Producers can contact Grain SA, 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.

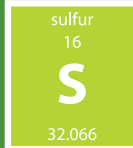
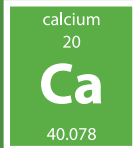
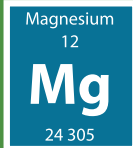
Members can take up undissolved disputes with Grain SA or lodge a complaint directly with the Registrar of Act No. 36 of 1947.

Corné Louw, senior economist: Inputs, Grain SA

Landboukalk & Gips

Voordele van Bekalking

- Verhoog die pH van die grond.
- Verbeter voedingstofopname.
- Goedkoop bron van kalsium en magnesium.



Fertiliser






Inligtingstegnologie

- Hou kliënte op hoogte van bestellings per e-pos en SMS.
- Bestellings kan aanlyn geplaas word.

Vervoer

- Ons reël en koördineer die vervoer van die bestelling.



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AGRICULTURAL LIME AND GYPSUM SOURCES

in *South Africa*

CALCITE SOURCES

| Central | | | | OWNER (O) DISTRIBUTOR (D) |
|-----------------|---------------------------------------|-----------------------|----------------|------------------------------|
| LOCATION | NAME | COMPANY | CONTACT NUMBER | |
| Barkley West | Ulco | Kalkor | 011 721 3141 | D |
| Barkley West | Ulco | H Pistorius & Co | 012 342 1075 | D |
| Barkley West | Ulco | SA Lime & Gypsum | 086 010 3515 | D |
| Barkley West | Ulco | PBD Boeredienste | 087 700 2328 | D |
| Barkley West | Ulco | LimeCrop | 076 575 8476 | D |
| Buhrmansdrif | Buhrmansdrif | Grasland Ondernemings | 018 464 7820 | O |
| Buhrmansdrif | Prolime | SA Lime & Gypsum | 086 010 3515 | O |
| Buhrmansdrif | Prolime Precision Lime | SA Lime & Gypsum | 086 010 3515 | O |
| Buhrmansdrif | Buhrmansdrif | LimeCrop | 076 575 8476 | D |
| Christiana | Britten | Grasland Ondernemings | 018 464 7820 | O |
| Christiana | Britten | LimeCrop | 076 575 8476 | D |
| Daniëlskuil | Daniëlskuil | Kalkor | 011 721 3141 | D |
| Daniëlskuil | Daniëlskuil | H Pistorius & Co | 012 342 1075 | D |
| Daniëlskuil | Daniëlskuil | PBD Boeredienste | 087 700 2328 | D |
| Daniëlskuil | Daniëlskuil | LimeCrop | 076 575 8476 | D |
| Immerpan | Inca & Leo | H Pistorius & Co | 012 342 1075 | O |
| Immerpan | Inca | SA Lime & Gypsum | 086 010 3515 | D |
| Immerpan | Inca | LimeCrop | 076 575 8476 | D |
| Lichtenburg | Lovedale | Grasland Ondernemings | 018 464 7820 | O |
| Lichtenburg | Lovedale | LimeCrop | 076 575 8476 | D |
| Marble Hall | Marble Hall | Limecor | 079 107 5463 | O |
| Marble Hall | Calcite | SA Lime & Gypsum | 086 010 3515 | D |
| Marble Hall | Marble Hall | PBD Boeredienste | 087 700 2328 | D |
| Ngodwana | Ngodwana | Kalkor | 011 721 3141 | D |
| Ngodwana | Micro fine calcitic agricultural lime | H Pistorius & Co | 012 342 1075 | O |
| Northam | Agri-Lime | Kalkor | 011 721 3141 | D |
| Northam | Agri-Lime | SA Lime & Gypsum | 086 010 3515 | D |
| Northam | Northam | PBD Boeredienste | 087 700 2328 | D |
| Northam | Northam | LimeCrop | 076 575 8476 | D |
| Olifantsfontein | Olifantsfontein Calcite | SA Lime & Gypsum | 086 010 3515 | O |
| Port Shepstone | Idwala Kulu CAG | SA Lime & Gypsum | 086 010 3515 | D |
| Port Shepstone | Rossmin Calcite | SA Lime & Gypsum | 086 010 3515 | D |
| Roedtan | Inca | Kalkor | 011 721 3141 | D |
| Roedtan | Inca | PBD Boeredienste | 087 700 2328 | O |
| Sasolburg | Panfontein | SA Lime & Gypsum | 086 010 3515 | O |
| Sasolburg | Wolwehoek Precision Lime | SA Lime & Gypsum | 086 010 3515 | O |
| Witbank | Hiqua | Kalkor | 011 721 3141 | D |
| Witbank | Hiqua | H Pistorius & Co | 012 342 1075 | O |
| Witbank | Hiqua | PBD Boeredienste | 087 700 2328 | D |
| Witbank | Hiqua | LimeCrop | 076 575 8476 | D |

| Cape | | | | OWNER (O) DISTRIBUTOR (D) |
|------------|------------|------------------|----------------|------------------------------|
| LOCATION | NAME | COMPANY | CONTACT NUMBER | |
| Albertinia | Resiesbaan | Nitrophoska | 028 713 1508 | O |
| Albertinia | Resiesbaan | SA Lime & Gypsum | 086 010 3515 | D |
| Bredasdorp | Karsrivier | Nitrophoska | 028 713 1508 | O |

| | | | | |
|----------------|-------------|------------------|--------------|---|
| Bredasdorp | Bredasdorp | P&B Lime Works | 028 424 1157 | 0 |
| Bredasdorp | Aghydrate | SA Lime & Gypsum | 086 010 3515 | D |
| Bredasdorp | Bredasdorp | SA Lime & Gypsum | 086 010 3515 | D |
| Bredasdorp | Aghydrate | LimeCrop | 076 575 8476 | D |
| Bredasdorp | Bredasdorp | LimeCrop | 076 575 8476 | D |
| Jeffreys Bay | Loerie | Kalkor | 011 721 3141 | D |
| Jeffreys Bay | Loerie | Njati Holdings | 011 721 3141 | 0 |
| Moorreesburg | Titan Lime | SA Lime & Gypsum | 086 010 3515 | 0 |
| Moorreesburg | Titan Lime | LimeCrop | 076 575 8476 | D |
| Port Shepstone | Idwala Kulu | Kalkor | 011 721 3141 | D |
| Saldanha | Saldanha | VDM | 022 714 4212 | 0 |
| Vredendal | Vredendal | Cape Lime | 023 626 3190 | 0 |
| Vredendal | Vredendal | Limecor | 079 107 5463 | D |
| Vredendal | Vredendal | SA Lime & Gypsum | 086 010 3515 | D |
| Vredendal | Vredendal | LimeCrop | 076 575 8476 | D |

DOLOMITE

| Central | | | | OWNER (O) DISTRIBUTOR (D) |
|-----------------|-------------------------------|-----------------------|----------------|------------------------------|
| LOCATION | NAME | COMPANY | CONTACT NUMBER | |
| Christiana | Britten | Grasland Ondernemings | 018 464 7820 | 0 |
| Christiana | Britten | LimeCrop | 076 575 8476 | D |
| Clayville | Clayville Soil Ameliorant | H Pistorius & Co | 012 342 1075 | 0 |
| Henley-on-Klip | Meyerton | PBD Boeredienste | 087 700 2328 | D |
| Immerpan | Leo | Kalkor | 011 721 3141 | D |
| Immerpan | Leo Dolomite | H Pistorius & Co | 012 342 1075 | 0 |
| Immerpan | Leo | PBD Boeredienste | 087 700 2328 | D |
| Immerpan | Leo Dolomite | LimeCrop | 076 575 8476 | D |
| Johannesburg | Chloorkop Dolomite | Kalkor | 011 721 3141 | D |
| Lichtenburg | Lovedale | Grasland Ondernemings | 018 464 7820 | 0 |
| Lichtenburg | Lovedale | LimeCrop | 076 575 8476 | D |
| Lyttelton | Lyttelton | Limecor | 079 107 5463 | 0 |
| Marble Hall | Limecor | Kalkor | 011 721 3141 | D |
| Marble Hall | Marble Hall | Limecor | 079 107 5463 | 0 |
| Marble Hall | Dolomite | SA Lime & Gypsum | 086 010 3515 | D |
| Meyerton | Limecor | Kalkor | 011 721 3141 | D |
| Meyerton | Meyerton | Limecor | 079 107 5463 | 0 |
| Meyerton | Meyerton | SA Lime & Gypsum | 086 010 3515 | D |
| Meyerton | Meyerton | LimeCrop | 076 575 8476 | D |
| Middelburg | Calmasil | Kalkor | 011 721 3141 | D |
| Middelburg | Calmasil | H Pistorius & Co | 012 342 1075 | D |
| Middelburg | Calmasil | SA Lime & Gypsum | 086 010 3515 | D |
| Middelburg | Calmasil | PBD Boeredienste | 087 700 2328 | 0 |
| Middelburg | Calmasil | LimeCrop | 076 575 8476 | D |
| Midrand | Chloorkop | Kalkor | 011 721 3141 | D |
| Midrand | Chloorkop | LimeCrop | 076 575 8476 | D |
| Olifantsfontein | Olifantsfontein Dolomite | SA Lime & Gypsum | 086 010 3515 | 0 |
| Olifantsfontein | Olifantsfontein Dolotop | SA Lime & Gypsum | 086 010 3515 | 0 |
| Olifantsfontein | Olifantsfontein Dolomite | LimeCrop | 076 575 8476 | D |
| Orkney | Vaalbrug | PBD Boeredienste | 087 700 2328 | 0 |
| Orkney | Vaalbrug | LimeCrop | 076 575 8476 | D |
| Port Shepstone | Idwala Kulu | Njati Holdings | 011 721 3141 | 0 |
| Port Shepstone | Idwala Kulu DAG | SA Lime & Gypsum | 086 010 3515 | D |
| Pretoria | Mooiplaas | Kalkor | 011 721 3141 | D |
| Pretoria | Mooiplaas Micro Fine Dolomite | H Pistorius & Co | 012 342 1075 | D |

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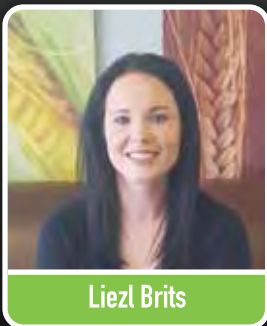
GRAIN GUIDE

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DOLOMITE (CONTINUED)

| Central | | | | OWNER (O) DISTRIBUTOR (D) |
|----------|-------------------------------|-----------------------|----------------|------------------------------|
| LOCATION | NAME | COMPANY | CONTACT NUMBER | |
| Pretoria | Mooiplaas | Limecor | 079 107 5463 | D |
| Pretoria | Mooiplaas | SA Lime & Gypsum | 086 010 3515 | D |
| Pretoria | Mooiplaas | PBD Boeredienste | 087 700 2328 | D |
| Pretoria | Mooiplaas Micro Fine Dolomite | LimeCrop | 076 575 8476 | D |
| Springs | Atoll | Kalkor | 011 721 3141 | D |
| Springs | Atoll | SA Lime & Gypsum | 086 010 3515 | D |
| Springs | Atoll | PBD Boeredienste | 087 700 2328 | D |
| Springs | Atoll | LimeCrop | 076 575 8476 | D |
| Zeerust | Marico | Grasland Ondernemings | 018 464 7820 | O |
| Zeerust | Ottoshoop Dolomite | SA Lime & Gypsum | 086 010 3515 | O |
| Zeerust | Ottoshoop Dolotop | SA Lime & Gypsum | 086 010 3515 | O |
| Zeerust | Marico | LimeCrop | 076 575 8476 | D |

| Cape | | | | OWNER (O) DISTRIBUTOR (D) |
|--------------|------------|------------------|----------------|------------------------------|
| LOCATION | NAME | COMPANY | CONTACT NUMBER | |
| Moorreesburg | Bridgetown | SPH | 021 527 5200 | O |
| Moorreesburg | Bridgetown | SA Lime & Gypsum | 086 010 3515 | D |
| Moorreesburg | Bridgetown | LimeCrop | 076 575 8476 | D |
| Robertson | Langvlei | Cape Lime | 023 626 3190 | O |
| Robertson | Langvlei | Limecor | 079 107 5463 | D |
| Robertson | Langvlei | SA Lime & Gypsum | 086 010 3515 | D |
| Robertson | Langvlei | LimeCrop | 076 575 8476 | D |
| Vredenburg | Calmag | SA Lime & Gypsum | 086 010 3515 | O |
| Vredendal | Vredendal | Cape Lime | 023 626 3190 | O |
| Vredendal | Vredendal | Limecor | 079 107 5463 | D |
| Vredendal | Vredendal | SA Lime & Gypsum | 086 010 3515 | D |
| Vredendal | Vredendal | LimeCrop | 076 575 8476 | D |

GYPSUM AND MAGNESIUM

| Central | | | | OWNER (O) DISTRIBUTOR (D) |
|-----------------|---------------------------------|-----------------------|----------------|------------------------------|
| LOCATION | NAME | COMPANY | CONTACT NUMBER | |
| Christiana | Britten | Grasland Ondernemings | 018 464 7820 | O |
| Danielskuil | Danielskuil | Kalkor | 011 721 3141 | D |
| Lichtenburg | Lovedale | Grasland Ondernemings | 018 464 7820 | O |
| Middelburg | Middelburg | Kalkor | 011 721 3141 | D |
| Middelburg | Middelburg | SA Lime & Gypsum | 086 010 3515 | O |
| Middelburg | Middelburg | LimeCrop | 076 575 8476 | D |
| Midrand | Chloorkop | Kalkor | 011 721 3141 | D |
| Midrand | Chloorkop | H Pistorius & Co | 012 342 1075 | D |
| Midrand | Chloorkop | SA Lime & Gypsum | 086 010 3515 | D |
| Midrand | Chloorkop | PBD Boeredienste | 087 700 2328 | D |
| Midrand | Midrand | LimeCrop | 076 575 8476 | D |
| Olifantsfontein | Chloorkop | SA Lime & Gypsum | 086 010 3515 | O |
| Potchefstroom | Potchefstroom | Kalkor | 011 721 3141 | D |
| Potchefstroom | Potchefstroom Sifted & Unsifted | SA Lime & Gypsum | 086 010 3515 | D |
| Potchefstroom | Potchefstroom | LimeCrop | 076 575 8476 | D |



Diens aan die Landbou

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Dolomiet Kalsiet Foskorgips

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& KIE

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GYPSUM AND MAGNESIUM (CONTINUED)

| <i>Central</i> | | | | OWNER (O) DISTRIBUTOR (D) |
|----------------|---------------------|------------------|----------------|------------------------------|
| LOCATION | NAME | COMPANY | CONTACT NUMBER | |
| Prieska | Prieska | Kalkor | 011 721 3141 | D |
| Richards Bay | Richards Bay Gypsum | Kalkor | 011 721 3141 | D |
| Rustenburg | Phokeng | Kalkor | 011 721 3141 | D |
| Rustenburg | Phokeng | H Pistorius & Co | 012 342 1075 | D |
| Rustenburg | Phokeng | SA Lime & Gypsum | 086 010 3515 | D |
| Rustenburg | Phokeng | PBD Boeredienste | 087 700 2328 | D |
| Rustenburg | Rustenburg | LimeCrop | 076 575 8476 | D |
| Steytlerville | Mount Stewart | Njati Holdings | 011 721 3141 | O |
| Witbank | Witbank | H Pistorius & Co | 012 342 1075 | O |

| <i>Cape</i> | | | | OWNER (O) DISTRIBUTOR (D) |
|--------------|---------------|------------------|----------------|------------------------------|
| LOCATION | NAME | COMPANY | CONTACT NUMBER | |
| Ceres | Kolkiesrivier | SA Lime & Gypsum | 086 010 3515 | D |
| Ceres | Kolkiesrivier | LimeCrop | 076 575 8476 | D |
| Eastern Cape | Mount Stewart | Kalkor | 011 721 3141 | O |
| Moorreesburg | Titan Gypsum | SA Lime & Gypsum | 086 010 3515 | O |
| Moorreesburg | Titan Gypsum | LimeCrop | 076 575 8476 | D |
| Vanrhynsdorp | Vanrhynsdorp | SA Lime & Gypsum | 086 010 3515 | D |
| Vanrhynsdorp | Vanrhynsdorp | LimeCrop | 076 575 8476 | D |
| Yzerfontein | Yzerfontein | SA Lime & Gypsum | 086 010 3515 | D |
| Yzerfontein | Yzerfontein | LimeCrop | 076 575 8476 | D |

FEED LIME SOURCES

| LOCATION | NAME | COMPANY | CONTACT NUMBER | OWNER (O) DISTRIBUTOR (D) |
|--------------|---------------------|-----------------------|----------------|------------------------------|
| Bredasdorp | Feed lime | P&B Lime works | 028 424 1157 | O |
| Buhrmansdrif | Prolime Feedlime | SA Lime & Gypsum | 086 010 3515 | O |
| Buhrmansdrif | Prolime Grit 2-4 mm | SA Lime & Gypsum | 086 010 3515 | O |
| Buhrmansdrif | Buhrmansdrif | Grasland Ondernemings | 018 464 7820 | O |
| Buhrmansdrif | Buhrmansdrif | LimeCrop | 076 575 8476 | D |
| Northam | Feed lime fine | Agrilime | 014 536 9900 | O |
| Northam | Agrilime fine | Agrilime | 014 536 9900 | O |

Independent laboratories in *South Africa*

BELOW IS A list of the laboratories that are members of AgriLASA. These laboratories participate in an inter-laboratory control scheme for each discipline to which they belong. The latter schemes are co-ordinated by AgriLASA. The schemes are the best way for laboratories to verify their results. Each laboratory's achievements can be requested from the laboratory by producers or institutions who want to do business with the laboratory.

| INHOUSE LABORATORIES | CONTACT NUMBER | DISCIPLINE |
|--------------------------------------|----------------|------------------------------------|
| Omnia Fertilizer/Kunsmis, Sasolburg | 016 970 7411 | Soil, plants, water and fertiliser |
| Foskor, Richards Bay | 035 761 5140 | Fertiliser and water |
| Foskor, Phalaborwa | 015 789 2434 | Fertiliser and water |
| Kimleigh Technologies, Potchefstroom | 018 293 1028 | Fertiliser and feeds |

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Jou wetenskaplike groeivenoot



Jonathan Etherington
Tegniese, Verkope en
Bemarkingsdirekteur
Tel: +27 (0) 82 921 8428
Epos: jonathan@mbfi.co.za

Dawie Pretorius
Streeksbestuurder: Oos-
en Wes-Vrystaat, Noord-
Kaap en KZN
Tel: +27 (0) 82 612 6098
Epos: dawie@mbfi.co.za

Christo Kritzinger
Tegniese Bestuurder
Tel: +27 (0) 79 501 4822
Epos christo@mbfi.co.za

Stefan Jacobs
Streeksbestuurder:
Mpumalanga, Limpopo en Zambië
Tel: +27 (0) 72 874 2231
Epos: stefanj@mbfi.co.za

Adriaan Smit
Landboukundige:
Noordelike KZN
Tel: +27 (0) 64 904 0422
Epos: adriaan@mbfi.co.za

Wean Benadie
Landboukundige:
Oos-Vrystaat
Tel: +27 (0) 82 888 9275
Epos: wean@mbfi.co.za

Duard Bruwer
Landboukundige:
Wes-Vrystaat
Tel: +27 (0) 72 606 0015
Epos: duard@mbfi.co.za

Jaco Fourie
Landboukundige:
Noordwes en Noord-Kaap
Tel: +27 (0) 76 400 9680
Epos: jaco@mbfi.co.za

Nico Olivier
Landboukundige
Oos- en Wes-Kaap
Tel: +27 (0) 82 655 5802
Epos: nico@mbfi.co.za

| LABORATORY | CONTACT NUMBER | DISCIPLINE |
|--|----------------|------------------------------------|
| Absolute Science (Pty) Ltd, Watloo, Pretoria | 012 803 0331 | Fertiliser and water |
| Acacia Operations Services (Laboratory), Umbogintwini | 031 949 2082/9 | Fertiliser |
| Agri Enviro Lab, Bethal | 017 647 1150/1 | Fertiliser |
| Agrilab, Tzaneen | 015 307 6790 | Soil and plants |
| ALS Analysis and Inspection-Durban (Pty) Ltd | 031 301 1257 | Fertiliser |
| ALS Inspection South Africa (Pty) Ltd, Richards Bay | 035 797 9415 | Fertiliser |
| ARC-Industrial Crops (ARC-IIC), Rustenburg | 012 427 9999 | Soil and plants |
| ARC-Soil, Climate and Water (ISCW), Pretoria | 012 310 2500 | Soil, plants, fertiliser and water |
| ARC-Tropical and Subtropical Crops, Nelspruit | 013 753 7000 | Soil, water and plants |
| ARC-Small Grain, Bethlehem | 058 307 3501 | Soil |
| Bemlab (Pty) Ltd, Strand | 021 853 1490 | Soil, plants, water and fertiliser |
| Bosveld Phosphate Laboratory, Phalaborwa | 015 780 6170 | Fertiliser and water |
| Chem Nutri Analytical, Kempton Park | 011 316 8800 | Plants |
| DARD Soil Analytical Services, Pietermaritzburg | 033 355 9456 | Plants, soil and water |
| Department of Agronomy Soil Science Lab, Alice | 040 602 2139 | Soil, plants, fertiliser and water |
| Department of Plant Production and Soil Sciences, Pretoria | 012 420 3213 | Plants, water and soil |
| Directorate Research Support Services: Soil, plants and water Laboratory, Elsenburg | 021 808 5111 | Soil, plants and water |
| Döhne Analytical Services, Stutterheim | 043 683 1240 | Soil and plants |
| DCELS, Dolphin Coast, Kwadukuza | 087 353 9754 | Soil |
| Eco Analytica, Potchefstroom | 018 293 3900 | Soil and water |
| Fortcox College of Agriculture and Forestry, King William's Town | 040 653 8035 | Soil |
| Glen Soil Analysis Lab, Glen | 051 861 8647 | Soil |
| Grond- en omgewingslaboratorium, Potchefstroom (GEOLAB) | 083 379 6540 | Soil |
| Institute for Commercial Forestry, Scottsville | 033 386 2314 | Soil |
| Intertek Agricultural Laboratory, Bapsfontein | 011 964 1004 | Soil, plants, fertiliser and water |
| Intertek Environmental, Durban | 031 552 8149 | Water |
| KL Analytical Services T/A Labserve, Nelspruit | 013 752 4745 | Plants |
| M and L Laboratory Services, Johannesburg | 011 661 7926 | Fertiliser |
| Madzivhandila College of Agriculture, Thohoyandou | 015 962 7200 | Soil |
| Modderfontein Laboratory Services (Pty) Ltd, Modderfontein | 011 457 1801 | Water and fertiliser |
| NECSA, Pelindaba Analytical Lab, Pelindaba | 012 305 4237 | Fertiliser |
| NviroTek Laboratories, Hartbeespoortdam | 012 252 7588 | Soil, plants, fertiliser and water |
| SA Sugar Research Institute (SASRI), Mount Edgecombe | 031 508 7436 | Plants, soil and fertiliser |
| SA National Parks, Skukuza | 013 735 4458 | Soil, plants and water |
| Sci-Ba Lab, Cape Town | 021 418 0325 | Water |
| SGS Agricultural Services, Somerset West | 021 852 7899 | Soil, plants, fertiliser and water |
| Tompi Seleka College Soil and Water Analytical Laboratory, Marble Hall | 013 264 5300 | Soil |
| UP Nutrilab, University of Pretoria | 012 420 3269 | Plants |
| University of Venda | 015 962 8431 | Soil |
| Wynland Laboratories, Wellington | 021 873 3514 | Soil, plants and water |

Vossie Wilsnach, president: AgriLASA

Conservation Agriculture and soil fertility management

ONE OF THE good agricultural practices (GAPs) associated with CA is **integrated soil fertility management (ISFM)**, which essentially depends on locally adapted CA principles and practices to build-up soil health, allowing producers to reduce the use of fertilisers, while sustaining good and stable yields and increasing profitability.

This concept of ISFM emphasises the following:

- Maximisation of nutrient use efficiency.
- The enhanced access of soil nutrients to plant roots.
- The response of soil as a living ecosystem.
- The role of sound locally adapted soil management practices enhancing ecosystem functions and services leading to improved soil fertility.
- Well-adapted, disease- and pest-resistant germplasm.
- Other good agricultural practices.

WAYS TO INCREASE NUTRIENT USE EFFICIENCY (NUE)

Nutrient use efficiency, which may be defined as the yield obtained per unit of available nutrients in the soil (supplied by the soil + fertilisers), could be improved as follows:

- Adjustment of fertiliser application rates based on (natural) soil fertility levels taking account of SOC level, organically bonded nutrients, nutrient cycling and/or previous cropping practices, especially legumes, and their residue biomass.
- Apply fertiliser at the right time and place and using the right source.
- Plant crops at the right planting density having enough plants to ensure optimal and efficient nutrient access and yield. In CA higher planting densities (around 30% higher than the norm) or at least above 22 000 p/ha ensures effective use of soil nutrients and water in the whole soil profile and surface area, while reducing temperature at soil surface level.

The critical soil ecosystem processes involved are transformation of carbon (mineralisation), cycling of nutrients, maintenance of the structure and fabric of the soil, and biological regulation of soil populations.

CA PRINCIPLES AND PRACTICES ENHANCING INTEGRATED SOIL FERTILITY MANAGEMENT

Many producers world-wide have achieved large improvements in soil health and -fertility in a relatively short time. What are these farmers doing differently?

Minimum soil disturbance

- Physical soil disturbance, such as tillage, is destructive and disruptive to soil microbes and creates a hostile, instead of hospitable, place for them to live and work (See **PHOTO 1** on page 75).
- The soil may also be disturbed chemically or biologically through the misuse of inputs, such as fertilisers and pesticides. This disrupts the symbiotic relationship between micro-organisms and crop roots. By strategically reducing chemical inputs, we can take advantage of these soil ecosystem services to allow plants to freely access essential nutrients.

Diversify with crops and animals

- Sugars made by plants, through the miracle of photosynthesis, are released from their roots into the soil as liquid carbon and traded to soil microbes for nutrients to support plant growth.

» Voeding volgens plantontwikkeling »

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Foli-Plus® Reg. No. K9397 en Foli-Grande® Reg. No. K8045
(Alle produkte is geregistreer onder Wet 36 van 1947)

Fertiliser



ZINCHEM

Sinksulfaat-monohidraatkorrels

Zinchem is trots om aan te kondig dat die sinksulfaat-monohidraat van 2016 in korrelvorm beskikbaar sal wees.

Die sinksulfaat-monohidraatkorrels – B621 – met 34% Zn en B3987 met 28% Zn sal ook ronde korrels (2-5 mm) beskikbaar wees



Zinchem, Suid-Afrika se vooraanstaande vervaardiger en verskaffer van mikro-elemente, gaan Sinksulfaatkorrels in 2016 loods. Alhoewel die sinksulfaat van Zinchem al vir jare kommersieel beskikbaar is, word dit nou vir die komende seisoen die eerste keer as korrels verkoop.

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- This soil ecosystem service can be enhanced through the inclusion of as many different plants and animals as practical (see **PHOTO 2**).
- Biodiversity directly leads towards a diverse array of soil microbes from a range of functional groups.
- A diverse and fully functioning soil food web provides for nutrient, energy, and water cycling that allows a soil to express its full potential.



PHOTO 1



PHOTO 2



PHOTO 3

Grow living roots throughout the year

- There is no better food for the soil food web than the liquid carbon exuded by living roots (See **PHOTO 3**).
- Soil organisms feed on liquid carbon from living plant roots first. Next, they feed on dead plant roots, followed by above-ground crop residues, such as straw, chaff, husks, stalks, flowers, and leaves. Lastly, they feed on other organisms lower in the soil food web.
- Healthy soil is dependent upon how well the soil food web is fed. The provision of plenty of easily accessible food (liquid carbon) helps soil microbial communities to colonise and recycle nutrients for plants to grow.
- The functioning of the soil ecosystem is therefore determined by the presence, diversity and photosynthetic rate of actively growing green plants and roots.
- Cover crop mixtures produce root exudates with varying composition and effects, and have different zones of nutrient uptake, because they differ in amount, depth, and patterns of root branching.



PHOTO 4

Permanent organic soil cover

Soil should always be covered by growing plants and/or their residues, and soil should rarely be visible from above. A mulch keeps the soil cool and moist which provides a favourable habitat for many organisms that begin residue decomposition by shredding residues into smaller pieces (See **PHOTO 4**).

Dr Hendrik Smith, conservation agriculture facilitator, Grain SA



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2018

GRAIN GUIDE

PEST CONTROL

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Contacts: Pest control



| INSTITUTION | EMAIL | NUMBER |
|--|--|--------------|
| Croplife South Africa | info@croplife.co.za | 087 980 5163 |
| Association of Veterinary and Crop Associations of South Africa (AVCASA) | info@avcasa.co.za | 087 980 5163 |
| Griffon Poison Information Centre | neshher@tiscali.co.za | 082 446 8946 |
| Registrar: Act No. 36 of 1947 | gilbertn@nda.agric.za | 012 319 7252 |
| Redbilled Quelea Control Centre | khulisog@daff.gov.za | 012 309 5823 |

EMERGENCY NUMBERS

| | | |
|--|--|--------------|
| Griffon Poison Information Centre | neshher@tiscali.co.za | 082 446 8946 |
| South African Petroleum Industry Association (SAPIA) | info@sapia.co.za | 011 783 7664 |

What does CARA say about *invader plants* and *weeds*?

The Conservation of Agricultural Resources Act (CARA) provides specific regulations that provide for the control of weeds and invader plants. In terms of the existing act's regulation 15, there are three categories of regulated plants:

Category 1: Declared weeds

The plants in this category must be controlled on land or water surfaces by all land users. These plants may no longer be propagated anymore and all trade in seeds, cuttings or other propagation material is prohibited. They may not be translocated or be allowed to disperse. These species carry a fine and include the most aggressive of the aggressive species. Category 1 plants include various Australian Acacia species, lantana, pom pom weed, water hyacinth and yellow oleander. Category 2 species without a permit are treated as category 1 species and are handled as such.

Category 2: Declared invaders with commercial value

These are invader plants that pose a threat to the environment, but nevertheless can be exploited for timber, fruits, fuel wood, medicinal plants, animal fodder, building material or shelter or to stabilise soil. These species are only allowed to occur in demarcated areas that carry a permit. If the plants are used for commercial purposes, land users have to obtain a water use licence as these plants con-

sume large volumes of water. Where plants occur outside demarcated areas they have to be controlled. Category 2 plants include *Rooikrans*, black wattle, sisal, grey poplar and weeping willow (not to be confused with indigenous *salix mucronata*). The landowner needs to approach the Department of Agriculture, Forestry and Fisheries (DAFF) to obtain a permit for the category 2 species.

Category 3: Declared invaders with ornamental value and shade benefit

These are plants that have the potential of becoming invasive but are considered to have ornamental value. In terms of regulation 15 of CARA, these plants will not be allowed to occur anywhere except in biologically controlled reserves unless they were already in existence when these regulations came into effect (30 March 2001). This means that the existing plants do not have to be removed by the land user; however, they must be kept under control and no new plant may be initiated, propagated or dispersed and the plants may not be sold. Category 3 plants include the tipu tree (so-called racehorse tree), jacaranda, syringa, pepper tree (*Acacia elata*), Australian silky oak, St Joseph's lily etc.



Pest control

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The *right procedure* for empty plastic pesticide containers

CropLife South Africa (CLSA), in co-operation with plastic processors, implemented a system to gather and process empty plastic pesticide containers in a legal and responsible way.

All the details are available at www.croplife.co.za under the banner **AVCASA Waste Management Programme**:

- List of CropLife SA-approved plastic gatherers and processors.
- Guidelines for the cleaning and disposal of plastic containers.
- Warnings about plastic containers.
- Guidelines for plastic processors.

If the pesticide container is empty, clean it as follows at the spray tank:

- Fill the container with water up to a quarter of the container volume .
- Shake the container for thirty seconds.
- Pour the rinse water over into the spray tank.
- Repeat the rinse process twice.
- Cut the container into quarters and allow it to dry.

Dispose of the material in the following way:

- Contact the CLSA-approved plastic processor closest to you.
- Arrange for the plastic to be dropped off with them, or for it to be collected from the farm.
- Ensure that the plastic processor's valid CLSA certificate of approval is shown to you.
- Insist on a certificate of destruction.

Do not consider or do the following:

- Burn or bury containers.
- Donate containers to anyone for reuse.
- Reuse containers for lick or drink containers for animals.

Do your part and do the right thing!

Dr Gerhard H Verdoorn, CropLife South Africa



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Bemarking

Linda van der Merwe

Hoof: Kliënte Bemarking

s 082 304 7524

e linda.van_der_merwe@syngenta.com

Kerien van Dyk

Produkbestuurder:

Aartappels en Subtropiese vrugte

s 082 905 0052

e kerien.van_dyk@syngenta.com

Cecile Bester

Produkbestuurder:

Rygewasse (Westelike streek)

s 082 608 5921

e cecile_marie.bester@syngenta.com

Christian Giesel

Produkbestuurder:

Graan en Sagtevrugte

s 071 872 0457

e christian.giesel@syngenta.com



Tegnies

Andreas Boon

Tegniese Bestuurder

s 072 952 9201

e andreas.boon@syngenta.com

Francois Viljoen

Tegniese gewaskundige:

Onkruidodders

s 083 441 7022

e Francois.viljoen@syngenta.com

Adri Anthonissen

Tegniese gewaskundige:

Swamdoders

s 083 445 0481

e Adriana.anthonissen@syngenta.com



groei slim





Verkope

Ernest Myburgh

Hoof: Verkope
s 082 809 5434
e Ernest.myburgh@syngenta.com

Stephan Venter

Area Bestuurder: Sentrale streek
s 083 325 8935
e stephan.venter@syngenta.com

Francois van Greunen

Area Bestuurder: Oostelike streek
s 082 932 5398
e francois.van_greunen@syngenta.com

Dr Erik Eksteen

Area Bestuurder: Suidelike streek
s 082 809 5172
e Erik.eksteen@syngenta.com

Theunis Meiring

Verkoopsbestuurder: Oostelike hoëveld
s 083 842 2500
e theunis.meiring@syngenta.com

Cassie Leonard

Verkoopsbestuurder: Noordwes
s 082 427 4056
e cassie.leonard@syngenta.com

Jaco Botha

Verkoopsbestuurder: Oos-Vrystaat
s 082 772 4337
e jaco.botha@syngenta.com

Frans Roos

Verkoopsbestuurder: Wes-Vrystaat
s 082 809 5440
e frans.roos@syngenta.com

Gerhard de Villiers

Verkoopsbestuurder: Limpopo / Botswana
s 082 332 9804
e gerhard.de_villiers@syngenta.com

Dr Christo Viljoen

Verkoopsbestuurder: Noord-Kaap
s 082 783 3262
e christo.viljoen@syngenta.com

Zoë Bredell

Verkoopsbestuurder: Suid-Kaap
s 084 645 7815
e Zoe.bredell@syngenta.com

Jacques Minnaar

Verkoopsbestuurder: KZN
s 082 563 8250
e jacques.minnaar@syngenta.com

Lukas Meyer

Sleutelverhoudingsbestuurder:
Saadbehandeling
s 082 448 3839
e lukas.meyer@syngenta.com

Syngenta Suid-Afrika (Edms) Beperk

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TANK MIXTURES can sink pest control

Most of the time producers underestimate the impact a tank mixture of agrochemicals has on crop production.

The seed of most seed companies is treated with fungicide and/or insecticide or both and is sold like that to producers. There are also various products on the market that can be used as plant growth regulators to promote emergence and arrangement. Furthermore it is a common practice among maize producers to plant with pre-emergence herbicides.

Therefore, several instances can arise where different agrochemicals are mixed with one another. However, these products must be mixed strictly according to registration prescriptions. Product labels of herbicides contain a section where the 'mixability' is addressed to prevent agrochemicals from being mixed together randomly.

Disadvantages of unregistered tank mixtures:

- Products are inconsistent and precipitate, foam and/or thicken.
- This causes clogging of spray equipment.
- Herbicide is not a homogeneous solution.
- Herbicide dosage is affected (too high or too low).
- Too little herbicide reaches the target plant (weed).
- Ineffective weed control.
- Crop damage right after administration.
- Delayed effect on crop – perhaps only visible later in season (yield losses/quality of yield affected).
- Extended aftereffect in soil.
- Risk of any damage borne by the producer himself.

Important to remember:

Tank water must be corrected if pH is too low or too high.

Hard water (e.g. high sodium and/or calcium levels in water) can prevent herbicide from dissolving effectively in water.

Sequence in which agrochemicals must be mixed in tank mixtures:

- 1 Ammonium sulphate/buffers
- 2 Water soluble bags
- 3 Water soluble granules
- 4 Wettable powders
- 5 Suspension concentrate
- 6 Capsule suspensions
- 7 Suspo emulsions
- 8 Oil in water emulsions
- 9 Emulsifiable concentrates
- 10 Liquid foliar nutrition
- 11 Soluble liquid formulations
- 12 Wetting agent

The formulation of a herbicide is an indication of the solubility of a product in water.

Where products are mixed, first dissolve small amounts of the products in water and mix well before mixing with the rest of the tank water (already prepared) (particularly granular formulas).

Certain herbicides can be successfully (and in accordance with registration) mixed with an insecticide, but as a rule fungicides cannot be mixed with herbicides.

The addition of any other products like growth regulators and additives (penetrators, wetting agents) must be done very carefully.

Only registered products with indications on their labels may be added and mixing instructions must be followed at all times.

For further enquiries, contact Elbé Hugo at **082 885 0716** or send an email to Elbe.Hugo@Syngenta.com.

Dr Elbé Hugo, Syngenta SA

Wrong gerbil poison has *far-reaching* effects

Gerbils are one of the grain producer's biggest enemies, but they can be managed effectively with the right methods without harming the environment. However, there are many ways in which legal rodenticides are abused and illegal pesticides harm the environment and its numerous gerbil predators.

Producers should take note of the following:

- The scattering of zinc phosphide bait on the soil surface is ineffective and creates the risk of birds and other mammals picking up the bait and being poisoned.
- The scattering of wax-block bait or paste bait on the soil surface is also ineffective, as the sun can destroy it.
- It is illegal to mix bait yourself with carbofuran and grain, and it is also extremely dangerous.
- It is illegal to use rodenticides that are not registered for gerbils.
- It is illegal to treat seed with carbofuran and it is also ineffective for controlling gerbils.
- It is illegal to treat seed with zinc phosphide and creates the risk that the seed will not germinate.

Rather do the following:

- Use only rodenticides registered for gerbils.
- Always place bait directly in the burrows and then seal the burrows, or place bait in plastic pipes close to the nests.
- Use natural rodent control by encouraging owls and raptors with suitable poles and hatching boxes.

Contact the Griffon Poison Information Centre for the complete gerbil management plan at **082 446 8946** or neshertiscali.co.za.

Dr Gerhard H Verdoorn, CropLife South Africa

Report *queleas* this way

The Agricultural Pests Act (Act No. 36 of 1983) declare queleas and locusts to be pests. The DAFF is responsible for controlling them.

PROCEDURES TO BE FOLLOWED BY THE COMPLAINANT TO REPORT QUELEAS

Before an official of the department can do a physical inspection, the following procedures/steps must be followed by the complainant:

1 The correct sleeping or breeding area of the 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 during the day to identify the breeding area.

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 may then contact one of the resource conservation inspectors (see contact numbers below) with the information and report the queleas. An appointment will be made to inspect the sleeping or breeding area in the company of the complainant.

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Fredie Ndindana : 082 612 6599

Gauteng, Mpumalanga, Limpopo and Eastern Free State

Johan Bothma : 082 321 6551

Free State and North West

Stephan Marais : 082 653 8803

Western and Northern Cape (Vines & Cereals)

Willie Auret : 082 870 5145

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Kobus Meintjes : 082 323 6348

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For more information please contact the registration holder: Dow AgroSciences Southern Africa (Pty) Ltd. Reg. No. 1967/007147/07 • Emergency No. 082 887 8079 • Private Bag X 160, Bryanston, 2021 www.dowagro.co.za

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Solutions for the Growing World

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Expose **poor-quality** *agrochemicals*

IF YOU SUSPECT or experience problems with the quality of agrochemicals, take the following steps:

- 1** Contact the representative from whom the agrochemicals were bought as soon as possible and insist on an investigation on site.
- 2** Also 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):

- Contact an independent scientist to do an investigation on site.
- Members should inform Grain SA if the chemical company cannot provide the required attention.

DISPOSING OF EMPTY CONTAINERS FOR AGROCHEMICALS

- The accumulation of empty containers for agrochemicals remains a problem.
- AVCASA has developed practices for disposing of such containers.
 - ▶ Instructions for disposing of pesticide containers.
- AVCASA has also compiled a list of companies that can recycle these containers.
 - ▶ Plastics processors who can dispose of empty pesticide containers.



Corné Louw, senior economist: Inputs, Grain SA

85 Report *queleas* this way

CONTACT DETAILS FOR PEST REPORTING

Contact details for *queleas*

| PERSON | CONTACT NUMBER |
|---|---|
| JOHN TLADI Deputy Director: Migrating Pests | Tel: 012 309 5743 Cell: 082 457 3741 |
| KHULISO GANGASHE Assistant Director | Tel: 012 309 5823 Cell: 072 231 2192 |
| COLIN BURKE | Tel: 012 309 5826 Cell: 082 451 4861 |
| LUKA GEERTSEMA | Tel: 012 309 5824 Cell: 082 457 3742 |
| PRUDENCE MAJOZI | Tel: 012 309 5866 Cell: 076 655 1466 |
| VINCENT MAKHARI | Tel: 012 309 5877 Cell: 073 175 3843 |

Contact details for locusts

| PERSON | CONTACT NUMBER |
|--|--------------------|
| GERT GREYVENSTEIN Migrating Pests Officer: De Aar | Cell: 082 451 4860 |

Contact details for army worms

| PERSON | CONTACT NUMBER |
|---|---|
| JOHN TLADI Deputy Director: Migrating Pests | Tel: 012 309 5743 Cell: 082 457 3741 |

Corné Louw, senior economist: Inputs, Grain SA

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Roundup PowerMAX[®] bevat glifosaat 540 g/l. Versigtig. Reg. No. L7769 (Met No. 36 van 1947). Gebruik onkruidloosers op 'n veilige manier. Lees altyd die etiket en produkinligting voor gebruik. Monsanto, Roundup[®], Roundup Ready[®] en Roundup PowerMAX[®] is geregistreerde handelsmerke van Monsanto Technology LLC. Monsanto Suid-Afrika (Edms) Bpk, Posbus 69933, Bryanston, 2021.

Suggestions for PURCHASING AND USING

input resources

The use of untested input resources and the purchasing of input resources from unknown distributors expose producers to great risks every year.

Very important suggestions for purchasing and using inputs:

- Make sure that the input provider is a recognised company with a proven record.
- Ensure as far as possible that all recommendations are provided in writing and store them 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.
- When purchasing agrochemicals:
 - ▶ Make sure that the chemical is registered for the purpose for which it is being used.
 - ▶ 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.

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

RHIZOBIA BACTERIA

- It is important to use only registered (L registration in terms of Act No. 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.

NEGOTIATING PRICES

- Make sure that you pay the best market-oriented price.
- Where possible, obtain at least three quotations and do not simply accept the first and best price.
- Members are free to contact Grain SA with respect to input price trends.

IMPORTANT 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 No. 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 No. 36 of 1947.
- Insist on long-term statistical 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, senior economist: Inputs, Grain SA



Steps to calibrate for spraying

IF YOU WANT to calibrate for spraying quickly, follow the steps below (for overall spraying):

1 Decide in which gear and at what engine revolutions you intend spraying with your tractor. Fill the tank with water and then determine the time it will take for the tractor to travel 100 m in the field.

3 With the spray pressure set at the desired level, measure the amount of water delivered by each spray head in the time period as determined in Step 1.

2 Make sure that the sprayer is fitted with the right spray heads. With the tractor stationary, switch on the pump and adjust the spray pressure to the desired level and at the same engine revolutions as in Step 1.

4 Measure the total spray width of the sprayer.



5 With the aid of the above information, calculate the spray volume per hectare:

$$\text{Spray volume} = \frac{10\,000 \times \text{total volume of water (litres) (as determined in Step 3)}}{\text{distance (100 m)} \times \text{sprayer width (metres)}}$$

6 If the desired spray volume is not obtained, repeat Steps 1 to 5 with different gear combinations until the desired volume per hectare is applied.

7 Now calculate the correct volume of herbicide to be added to the spray tank:

$$\text{Volume of herbicide to be added to tank} = \frac{\text{content of tank} \times \text{herbicide dosage/ha}}{\text{spray volume/ha (as determined in Step 5)}}$$

Jan de Villiers, Ficksburg





MIELIE-FAMILIE

Baytan® Reg. Nr. L1697 (Wet 36 van 1947). **Baytan**® bevat Triadimenol (Triasool) (Skadelik). **Bulldock**® Reg. Nr. L4540 (Wet 36 van 1947). **Bulldock**® bevat Beta-cyfluthrin. **Belt** Reg. Nr. L 8860 (Wet Nr. 36 van 1947). **Belt**® bevat Flubendiamied (Phthaliek suurdiamied) (Versigtig). **Curaterr**® Reg. Nr. L871 (Wet 36 van 1947). **Curaterr**® bevat Carbofuran (Skadelik). **Decis**® **Forte** Reg. Nr. L6563 (Wet 36 van 1947). **Decis**® **Forte** bevat Deltametrin (Skadelik). **Larvin**® Reg. Nr. L2997 (Wet 36 van 1947). **Larvin**® bevat Thiodicarb (Skadelik). **Laudis**® Reg. Nr. L8525 (Wet 36 van 1947). **Laudis**® bevat Tembotrione & Isoxadifen-ethyl (Skadelik). **Nativo**® Reg. Nr. L8942 (Wet 36 van 1947). **Nativo**® bevat Tebuconazole & Trifloxystrobin (Versigtig). **Poncho**® **Votivo**™ Reg. Nr. L9250 (Wet 36 van 1947). **Poncho**® **Votivo**™ bevat Clothianidin Neonicotonoid & Bacillus firmus (Versigtig). **Zantara**® Reg. Nr. L10011 (Wet 36 van 1947). **Zantara**® bevat Bixafen & Tebuconazole (Skadelik). **Baytan**®, **Bulldock**®, **Belt**®, **Curaterr**®, **Decis**® **Forte**, **Larvin**®, **Laudis**®, **Nativo**®, **Poncho**® **Votivo**™ en **Zantara**® is geregistreerde handelsmerke van Bayer AG, Duitsland. Gebruik slegs volgens etiketaanwysings.

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11/2017

Use pesticides RESPONSIBLY

DR VERDOORN'S ten commandments of responsible pesticide use:

- 1** Plan your production season carefully and purchase only the pesticides and volumes that you will definitely need. If the agent offers anything at a cheap price and you purchase unnecessary products, they will only accumulate.
- 2** Buy only registered pesticides from recognised dealers, in other words agents associated with CropLife South Africa's member companies, in order to ensure that they are of a good quality and legal. If a pesticide does not contain a registration number on the front panel of the label, it is illegal in South Africa. Such a registration number starts with a capital L, followed by four numbers (e.g. L1234) and Act No. 36 of 1947.
- 3** Store your pesticides in a proper storage place that has walls, a roof, ventilation, lighting and locking doors. Many malicious poisonings occur with agricultural substances stolen from producers, and often it is the producer's own animals that die from them.
- 4** Study the label of each agricultural substance carefully and apply it strictly according to the prescriptions. Regulation No. R1716 of 26 July 1992 warns that using an agricultural substance for any purpose or in any manner other than that indicated on the label is a criminal offence in terms of Act No. 36 of 1947.
- 5** Provide your farmworkers with basic training on the safe and responsible use of pesticides. This will lead to more effective and responsible use as well as better production.
- 6** Wear protective clothing, for example a face mask, a cloth cap, long sleeves, long trousers and gloves when mixing and applying pesticides (this applies to the tractor driver who will spray the pesticide as well). Protect yourself against possible splatter, mists and oral intake of pesticides and spray mixtures.
- 7** Calibrate the spraying equipment so that the correct dosage of the pesticide is applied. This includes checking spray heads to make sure that they are not worn or blocked. Spray pressure must also be correct, as must the engine revolutions of the tractor and the speed at which the tractor moves.
- 8** Pesticides must be applied only if the weather is favourable. If the southeaster is blowing or the Highveld thunder clouds are looming, or if it is so hot that everything just evaporates, stop applying the pesticide. The wind may blow the pesticide mists across to the neighbour's potato fields and that might get you into trouble.
- 9** After pesticide containers have been emptied, they should be rinsed at least three times with one-third volume clean water, and the rinse water must be added to the spray tank. Containers should then be dried in the sun and preferably cut full of holes or cut up completely before being supplied to plastics recyclers. See www.avcasa.co.za for the list of recyclers.
- 10** Avoid malicious abuse of pesticides, for example poisoning animals that may cause damage. This is not only illegal and inhumane, but also creates a secondary poison risk for other animals. Poisoning has already seriously affected some species like vultures and the agricultural community is blamed for this.

Contact the author at **082 446 8946** or neshner@tiscali.co.za.

Dr Gerhard H Verdoorn, Griffon Poison Information Centre

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Verantwoordelike onkruidbestuur

Gebaseer op internasionale syfers is daar reeds in 2016 bepaal dat 252 verskillende onkruidspesies weerstand ontwikkel het in 91 verskillende gewasse en 68 verskillende lande. Dit is ook waar dat die laaste nuwe metode van werking in onkruidodders reeds in 1985 ontdek is en daar nie enige nuwe opsies in die nabye toekoms verwag word nie.

2015 – Weerstandige Spesies



Bron: Heap, 2016; www.weedscience.org

Rusland en Turkye word gesien as deel van Europa op hierdie kaart.

Die waarskynlikheid dat onkruidodderweerstandige onkruid sal versprei in die volgende 10 Jaar is ten minste 80%.

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PUBLICATIONS AVAILABLE FROM THE ARC-SG IN AFRIKAANS OR ENGLISH

- 1 *Veldgids vir die identifikasie van koringinsekte in Suid-Afrika.*
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- 5 *Guidelines for the production of small grains in the summer rainfall region (updated annually).*
- 6 *Guidelines for the production of small grains in the winter rainfall region (updated annually).*

For orders, contact Dr André Malan at **058 307 3400** or send an email to malana@arc.agric.za or post your order to ARC-Small Grain, Private Bag X29, Bethlehem, 9700.

PUBLICATIONS AVAILABLE FROM THE ARC-GRAIN CROPS

- 1 *Compact disk (CD) on the production of maize, pests and diseases.*
- 2 *Laserskyf (CD) oor die produksie van mielies, peste en siektes.*
- 3 *Field guide for sorghum pests/Veldgids vir sorghumplae.*
- 4 *Sorghum-produksiehandleiding.*
- 5 *Sonneblomproduksie: 'n Bestuursgids vir die eenprodusent.*
- 6 *Production of soybeans/Produksie van sojabone.*
- 7 *Produksie van grondbone ('Grondbone – Altyd 'n wenner').*
- 8 *Revised common weeds in Southern Africa/Algemene onkruid in Suidelike Afrika.*
- 9 *Mielie-inligtingsgids (MIG) – jaarliks opgedateer.*

For more information or to obtain an order form, contact Mary James on **018 299 6100/6253** or send an email to jamesm@arc.agric.za.

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Contacts: Storage and marketing

| INSTITUTION | EMAIL | NUMBER |
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| National Chamber of Milling (NCM) – wheat and maize | info@grainmilling.org.za | 012 663 1660 |
| Perishable Products Export Control Board (PPECB) | achmadh@ppecb.com | 021 930 1134 |
| South African Futures Exchange (Safex) | info@jse.co.za | 011 520 7000 |
| South African Cereals and Oilseeds Trade Association (SACOTA) | sacotaadmin@afma.co.za | 012 663 9097 |
| South African Grain Information Service (SAGIS) | info@sagis.org.za | 012 941 2050 |



Incoterms

INCOTERMS ARE STANDARD trade definitions most commonly used in international sales contracts. Devised and published by the International Chamber of Commerce, they are at the heart of world trade.

INCOTERMS INCLUDE

- CIF** – Cost, insurance and freight
- CPT** – Carriage paid to
- DDU** – Delivered duty unpaid
- EXW** – Ex Works
- FOB** – Free on board



Scan this QR code to visit the website of the International Chamber of Commerce for more information.

Storage costs

Marketing of grain plays a critical role in its profitability. However, the marketing extends significantly further than pre-season hedging of the grain and in many instances producers are faced with the challenge of whether they should sell the grain immediately and/or rather store it to profit from the possibility of a price increase later in the season. When producers decide to store grain, it is important to make accurate calculations to determine whether it is worthwhile to store or not. Producers

should not only take actual storage costs into consideration, but also the interest expense involved in such a strategy. Producers can use the following link (see QR code alongside) to get help in determining what the real costs are for storing grain for the specific period in order to make better decisions in this regard.



Luan van der Walt, economist, Grain SA



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Grain marketing calendar for 2018

CROP ESTIMATES COMMITTEE AND SAGIS DATES FOR 2018

Monthly information

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----------------------------------|-----|---------|-----|-----|---------|-----|-----|-----|-----|-----|-----|-----|
| SAGIS MONTHLY DATA | 25 | 26 | 27 | 25 | 25 | 26 | 25 | 27 | 25 | 25 | 26 | 21 |
| SAGIS MONTHLY PRODUCT DATA | 5 | 2 | 2 | 6 | 4 | 1 | 6 | 3 | 7 | 5 | 2 | 7 |
| CROP ESTIMATES COMMITTEE | 30 | 15 & 27 | 28 | 25 | 10 & 29 | 27 | 26 | 28 | 26 | 25 | 27 | 20 |

Weekly information

| | | | | | | | | | | | | |
|--|--------------|----|----|----|----|----|----|----|----|----|----|---------------|
| SAGIS WEEKLY BULLETIN | X | | 1 | | 3 | | | 2 | | | 1 | |
| | | 1 | 8 | 5 | 10 | 7 | 5 | 10 | 6 | 4 | 8 | 6 |
| | 11 | 8 | 15 | 12 | 17 | 14 | 12 | 16 | 13 | 11 | 15 | 13 |
| | 18 | 15 | 23 | 19 | 24 | 21 | 19 | 23 | 20 | 18 | 22 | 20 |
| | 26 | 22 | 29 | 26 | 31 | 28 | 26 | 30 | 27 | 26 | 29 | 27 |
| SAGIS WEEKLY IMPORT AND EXPORT DATA | 5 | | | | 3 | | 3 | | | 2 | | |
| | 9 | 6 | 6 | 4 | 8 | 5 | 10 | 7 | 4 | 9 | 6 | 4 |
| | 16 | 13 | 13 | 10 | 15 | 12 | 17 | 14 | 11 | 16 | 13 | 11 |
| | 23 | 20 | 20 | 17 | 22 | 19 | 24 | 21 | 18 | 23 | 20 | 18 |
| | 30 | 27 | 27 | 24 | 29 | 26 | 31 | 28 | 26 | 30 | 27 | 27 |
| SAGIS WEEKLY PRODUCER DELIVERY DATA | 5 | | | | 3 | | | 1 | | 3 | | |
| | 5 | | | | 3 | | | 1 | | 3 | | |
| | 10 | 7 | 7 | 5 | 9 | 6 | 4 | 8 | 5 | 10 | 7 | 5 |
| | 17 | 14 | 14 | 11 | 16 | 13 | 11 | 15 | 12 | 17 | 14 | 12 |
| | 24 | 21 | 22 | 18 | 23 | 20 | 18 | 22 | 19 | 24 | 21 | 20 |
| | 31 | 28 | 28 | 25 | 30 | 27 | 25 | 29 | 27 | 31 | 28 | 28 |

Notes

All publications are released after 12:00 on the scheduled date

~~X~~ = No publication will be released in that week

DATES FOR ALL FIXED MONTHLY CONTRACTS

These contracts are offered 40 business days before the actual delivery month.

| MATURITY MONTH | OFFER | FIRST POSITION DAY | FIRST NOTICE DAY | LAST NOTICE DAY | LAST TRADING DAY | FIRST DELIVERY DAY | LAST DELIVERY DAY |
|----------------|------------|--------------------|------------------|-----------------|------------------|--------------------|-------------------|
| Feb 2018 | 04/12/2017 | 26/01/2018 | 31/01/2018 | 22/02/2018 | 21/02/2018 | 01/02/2018 | 28/02/2018 |
| Apr 2018 | 01/02/2018 | 26/03/2018 | 29/03/2018 | 23/04/2018 | 20/04/2018 | 03/04/2018 | 24/04/2018 |
| Jun 2018 | 04/04/2018 | 28/05/2018 | 31/05/2018 | 25/06/2018 | 22/06/2018 | 01/06/2018 | 26/06/2018 |
| Aug 2018 | 06/06/2018 | 26/07/2018 | 31/07/2018 | 27/08/2018 | 24/08/2018 | 01/08/2018 | 28/08/2018 |
| Oct 2018 | 02/08/2018 | 25/09/2018 | 28/09/2018 | 25/10/2018 | 24/10/2018 | 01/10/2018 | 26/10/2018 |

JSE DATES FOR CONTRACTS

(100 tons of white and yellow maize and 10 tons of wheat, sunflower, soybeans and sorghum)

These contracts are typically offered one year before their maturity date, although they can also be offered earlier if there is a demand for them.

| MATURITY MONTH | FIRST POSITION DAY | FIRST NOTICE DAY | LAST NOTICE DAY | LAST TRADING DAY | FIRST DELIVERY DAY | LAST DELIVERY & CLEARING DAY | OPTION MATURITY DATE |
|----------------|--------------------|------------------|-----------------|------------------|--------------------|------------------------------|----------------------|
| Dec 2017 | 27/11/2017 | 30/11/2017 | 21/12/2017 | 20/12/2017 | 01/12/2017 | 22/12/2017 | 24/11/2017 |
| Mar 2018 | 23/02/2018 | 28/02/2018 | 23/03/2018 | 22/03/2018 | 01/03/2018 | 26/03/2018 | 22/02/2018 |
| May 2018 | 24/04/2018 | 30/04/2018 | 25/05/2018 | 24/05/2018 | 02/05/2018 | 28/05/2018 | 23/04/2018 |
| Jul 2018 | 26/06/2018 | 29/06/2018 | 25/07/2018 | 24/07/2018 | 02/07/2018 | 26/07/2018 | 25/06/2018 |
| Sept 2018 | 28/08/2018 | 31/08/2018 | 21/09/2018 | 20/09/2018 | 03/09/2018 | 25/09/2018 | 27/08/2018 |
| Dec 2018 | 27/11/2018 | 30/11/2018 | 21/12/2018 | 20/12/2018 | 03/12/2018 | 24/12/2018 | 26/11/2018 |
| Mar 2019 | 25/02/2019 | 28/02/2019 | 25/03/2019 | 22/03/2019 | 01/03/2019 | 26/03/2019 | 22/02/2019 |

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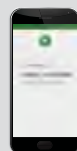


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Trading mind map

PUT

| | |
|---------------------------|--|
| Buy put – ready to sell | Floor price = strike price - premium |
| | In the money: Strike price > forward price |
| | Make a profit when price falls ↓ |
| | Possible loss = premium Possible profit = unlimited |
| Sell put – obliged to buy | Possible profit = premium |
| | Possible loss = unlimited |

CALL

| | |
|-----------------------------|--|
| Buy call – ready to buy | Ceiling price = strike price + premium |
| | In the money: Strike price < forward price |
| | Make a profit when price rises ↑ |
| | Possible loss = premium Possible profit = unlimited |
| Sell call – obliged to sell | Possible profit = premium |
| | Possible loss = unlimited |

FUTURES HEDGING

| | |
|--------------|-------------------------------|
| Long – buy | Price rises = make a profit ↑ |
| | Buyer/miller hedge |
| Short – sell | Price falls = make a profit ↓ |
| | Producer hedge |

Luan van der Walt, economist, Grain SA

Calculation of basic *hedging possibilities*

A PUT OPTION is an option to sell and will typically be used by a producer to determine a minimum price at which he can sell his product in future. The producer buys the put option and then pays a premium on the option. If the price increases from the date when the option was purchased until it expires, the producer is not obliged to make use of the option and the product can be sold at the higher price. When the price falls, he is assured of the minimum price at which he will sell. (See the example in **TABLE 1**.)

TABLE 1: HYPOTHETICAL PRICE CALCULATION FOR WHEN A PUT OPTION IS BOUGHT AND PRICES CHANGE.

| | BASIC CALCULATION | PRICE ↑ | PRICE ↓ |
|------------------------|-------------------|------------------|------------------|
| Forward price | R2 500,00 | R3 000,00 | R2 000,00 |
| Put strike price | R2 500,00 | R2 500,00 | R2 500,00 |
| Put premium | R200,00 | R200,00 | R200,00 |
| NET SAFEX PRICE | R2 300,00 | R2 800,00 | R2 300,00 |

A call option is an option to buy and will typically be used by a miller/purchaser to determine a maximum price at which he will buy his product in future. The miller buys the call option and then pays a premium on the option. If the price falls from the date the option was purchased until it expires, the miller is not obliged to make use of the option and the product can be bought at the lower price. When the price increases, he is ensured of the maximum price at which he will buy. (See the example in **TABLE 2**.)

TABLE 2: HYPOTHETICAL PRICE CALCULATION FOR WHEN A CALL OPTION IS BOUGHT AND PRICES CHANGE.

| | BASIC CALCULATION | PRICE ↑ | PRICE ↓ |
|------------------------|-------------------|------------------|------------------|
| Forward price | R2 500,00 | R3 000,00 | R2 000,00 |
| Put strike price | R2 500,00 | R2 500,00 | R2 500,00 |
| Put premium | R200,00 | R200,00 | R200,00 |
| NET SAFEX PRICE | R2 700,00 | R2 700,00 | R2 200,00 |

TABLE 3: HYPOTHETICAL PRICE CALCULATION FOR A SHORT HEDGING WHEN PRICES CHANGE.

| | BASIC CALCULATION | PRICE ↑ | PRICE ↓ |
|------------------------|-------------------|------------------|------------------|
| Forward price | R2 500,00 | R3 000,00 | R2 000,00 |
| Sell futures | R2 500,00 | R2 500,00 | R2 500,00 |
| NET SAFEX PRICE | R2 500,00 | R2 500,00 | R2 500,00 |

A short hedging is typically used by a producer who wants to protect himself against a fall in price. The producer will therefore sell futures on Safex at the forward price for that specific contract month and in that way he will secure his price at that level.

Grade differentials for wheat

TABLE 1 CONTAINS THE grade differentials for wheat during the 2017/2018 marketing year as announced by Safex. The differentials apply from 1 October 2017 to 30 September 2018. Market participants are reminded that the differentials apply to physical delivery only if futures are fulfilled to facilitate the standardisation of the wheat contract. Grade differentials in the cash market can therefore differ from these.

TABLE 1: GRADE DIFFERENTIALS FOR WHEAT FOR THE 2016/2017 AND THE 2017/2018 MARKETING YEARS:

| GRADE | 2016/2017 R/ton | 2017/2018 R/ton |
|-------|--------------------|--------------------|
| B1 | | |
| B2 | 180 | 96 |
| B3 | 360 | 192 |

The JSE is responsible for calculating the grade differentials for wheat. A set method, approved by the advisory committee, is used for this calculation.

Luan van der Walt, economist, Grain SA

107 Calculation of basic *hedging possibilities*

With the use of short hedging it does not matter whether the physical price increases or falls during the term of the contract. The price at which the hedging was implemented stays unchanged. It is important to remember that when you want to sell a product and you want to safeguard yourself against a fall in price, you have to do a short hedging, in other words sell futures. (See the example in **TABLE 3** on page 107.)

TABLE 4: HYPOTHETICAL PRICE CALCULATION FOR A LONG HEDGING WHEN PRICES CHANGE.

| | BASIC CALCULATION | PRICE ↑ | PRICE ↓ |
|------------------------|-------------------|------------------|------------------|
| Forward price | R2 500,00 | R3 000,00 | R2 000,00 |
| Buy futures | R2 500,00 | R2 500,00 | R2 500,00 |
| NET SAFEX PRICE | R2 500,00 | R2 500,00 | R2 500,00 |

A long hedging is typically used by a miller/purchaser who wants to protect himself against an increase in price. The miller will therefore sell futures on Safex at the forward price for a specific contract month and in that way he will secure his price at that level. With the use of long hedging it does not matter whether the physical price increases or falls during the term of the contract. The price at which the hedging took place stays unchanged. It is important to know that when you want to buy a product and you want to safeguard yourself against an increase in price, you have to do long hedging, in other words buy futures. (See the example in **TABLE 4.**)

Luan van der Walt, economist, Grain SA

IRRIGATION



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General *irrigation tips*

Successful, sustainable crop irrigation goes hand in hand with a holistic approach to the whole farm. In this holistic approach, soil physics and chemistry, water retention capacity of soil, type of crop, cultivars, physiological stage of the plant, plant health and root systems, among other things, are taken into account.

Knowledge of the resources and how they react, as well as the crop requirements, are critical to consider while planning which crops to cultivate. Adapt scheduling and administration to line up with these resources and crop requirements.

Check the delivery of the irrigation pivot and take the trouble to regularly maintain the pivot, pumps and other irrigation equipment.

Soil properties will determine how much water should be administered. Use good remote sensing to ensure that water distribution, infiltration and run off are managed effectively.

Prevent run off at all times by improving water infiltration and scheduling. By covering the soil with crop residue, the infiltration is increased and run off is decreased. Sometimes adding gypsum can also contribute to increasing the infiltration rate.

For effective irrigation scheduling, it is essential that there be no compacted layers in the soil profile and that the season is started with a full profile. Starting with a full soil profile limits seedling damage when the profile has to be brought up to drained upper limit (DUL) within a season. This limits waterlogging of small and young plants and poor nutrient absorption under anaerobic conditions.

Barrier layers in soil cause anaerobic conditions, which trigger nematode and nutrient issues. Sometimes it might be necessary to carry out wet rip actions to ensure that the soil is draining and to prevent the issues mentioned above.

Effective irrigation scheduling is very important throughout the season. Try to administer larger quantities of water at a time, with longer periods in between so that the soil has time to dry somewhat and oxygen can enter the soil.

The root zone in the soil and the depth of the roots should support you in your decision on how much water to administer at a time.

It is also important to know when (physiologically) the plant reaches its water requirement peak. Some crops, for instance maize, have three periods that are sensitive to stress conditions due to water shortages.

Plant health should also be monitored continuously, because sick plants use less water. If sick plants receive too much water, the situation will worsen substantially and total crop yields will decrease.

Monitoring of soil with respect to salts becomes critical in an attempt to farm sustainably. Remote sensing as well as soil sampling can be done at GPS points.

Make sure that there is enough water available to meet the top crop requirement.

Water should not be taken away too soon at the end of the cash crop season. If water is taken away too soon, grain may ripen too soon and kernel weight could be compromised. Therefore, optimal irrigation scheduling should be done throughout the season, otherwise damage might occur.

Calibrate the irrigation pivot at least once a year to ensure that the dosages on the ground are even and so that you know how much water is administered per hectare.

Also read the article about practical tips for your centre pivot, written by S Koster and P Botha, in the *SA Graan/Grain* of October 2017. Scan this QR code to see.



Pietman Botha, agricultural consultant



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Process for buying an *irrigation system*

Currently there is a wide variety of irrigation systems available and each one has its unique application. When choosing an irrigation system, one naturally has to consider the technical as well as the agricultural and economic factors.

DECISION-MAKING PROCESS

It is not an easy task reaching a decision on which irrigation system to buy. Producers who have already bought a system, can testify to this. The following needs to be considered in the decision-making process:

1

Efficiency of irrigation

| IRRIGATION SYSTEM | SYSTEM EFFICIENCIES (net to gross) | |
|--------------------------------|---------------------------------------|----------------|
| | MINIMUM (%) | MAXIMUM (%) |
| Drip (surface and sub-surface) | 90 | 95 |
| Micro-spray | 80 | 85 |
| Centre Pivot, Linear move | 80 | 90 |
| Centre Pivot LEPA | 85 | 95 |
| Flood: Pipe supplied | 80 | 95 |
| Flood: Lined canal supplied | 70 | 90 |
| Flood: Earth canal supplied | 60 | 83 |
| Sprinkler permanent | 75 | 90 |
| Sprinkler movable | 70 | 83 |
| Traveling gun | 65 | 78 |

In new research that looked at the principle of beneficial water use (in other words, the water used to enable crop production), the irrigation efficiency of the different systems produced the following values (table to the left).

The distribution efficiency should also be taken into account with the above.

Water availability and the cost of water will also influence the decision and choice of system. The higher the efficiency, the more expensive the system.

2

Crop choice

Every crop has its own water requirements and the chosen system should meet these. The water requirements of the crop, soil water retention capabilities, rainfall and planting dates are all interlinked. The values vary for the different areas and a thorough investigation and planning is necessary to determine the crop water needs for a specific area.

Although the design can allow for the right amount of water, the timing and quantity applied per interval should be managed correctly.

3

Water

Quantity: Depending on the type of crop, the irrigation system and the design, approximately 3 to 5 (m³/h)/ha is needed. If the crop needs 500 mm in its growth cycle, a net volume of 5 000 m³/ha is needed.

Quality: The soil and crops have certain tolerances for the building up and sensitivity to unnecessary salts, and threshold values can be obtained through testing. The system choice can also be determined by this. It is also important to determine the aggressiveness (is the water eroding or depositing in nature) – which might have an influence on the irrigation equipment.

Purity: This is especially important with respect to the use of the system. Prevent drippers and nozzles from clogging through good filtering and closely monitored management programmes.

4 Soil

Water retention capacity: This is an important attribute that determines the management of the system and whether it will be pivot, overhead or drip irrigation.

A bigger water holding capacity means that a larger application can be applied, and in this way rainfall can be utilised better.

Smaller applications, causing lower water stress, ensure better growth conditions and higher yields – a typical application for drip irrigation. Smaller applications should be avoided with pivot irrigation, as crop losses can be high.

Infiltration: The application rate of any system should adapt to the infiltration ability of the soil. The application rate of pivots can vary between 20 and 80 mm/h and the soil should have the ability to absorb the water without run-off.

Distribution: With drip irrigation, it is important for lateral water movement to occur below the dripper. Generally two crop rows are serviced by one dripper line. Spacing between the drippers and the lines should therefore be such that both the crops rows can benefit from it. For seed germination, the dripper line is usually moved for better water distribution.

7 Costs

The costs of irrigation systems depend on various factors and it is always important to obtain the capital as well as operating costs of a system.

The following can be used as a guideline for the capital costs:

| | | |
|---------------|-----------------|-------------------|
| Flood | – Basin | R15 000/ha |
| Static | – Sprinkle | R25 000/ha |
| | – Drip | R50 000/ha |
| Moving | – Pivot | R40 000/ha |
| | – Traveling gun | R20 000/ha |

TO SUMMARISE

It is important to consider all the different systems and to make good decisions. Calculate, talk to experts and allow a designer to design a system that suits your needs as producer, the soil and the crop.

5 Topography

Topography plays an important role in the layout and use of the irrigation system. As a general rule distribution laterals should be parallel to the contour and feeding lines should be parallel to the slope. The design is better adapted hydraulically and the system functions better. It is also easier to execute the soil conservation programme. When an irrigation pivot is used on a steep slope, the hydraulic difficulties can be overcome by pressure regulators, and with drip irrigation, pressure-compensated drippers can be installed. Costs will obviously be higher in both cases.

6 System aspects

Various systems are currently available in the market. Each one is unique in the sense that the system is designed for the specific topography, soil and crop characteristics as well as the water availability on the farm.

Designs should be left to expert, qualified people. It is the producer who will pay for the system and it is therefore his privilege to appoint the designer and his right to ensure that the system adapts to his requirements and needs.

Therefore, check the advantages, disadvantages, limitations and management aspects before any system is acquired.

8 Purchasing

The choice between different systems lies with the producer's preferences, what his neighbour says about a system, the service a firm provides in the execution, thoroughness, accuracy, aftercare, years in operation and whether the firm will still be around in a few years' time. Financial planning is obviously also important and it is good to do a cash-flow analysis and to analyse the balance between capital costs and operating costs. It is better to make a mistake on paper than to lose a farm!



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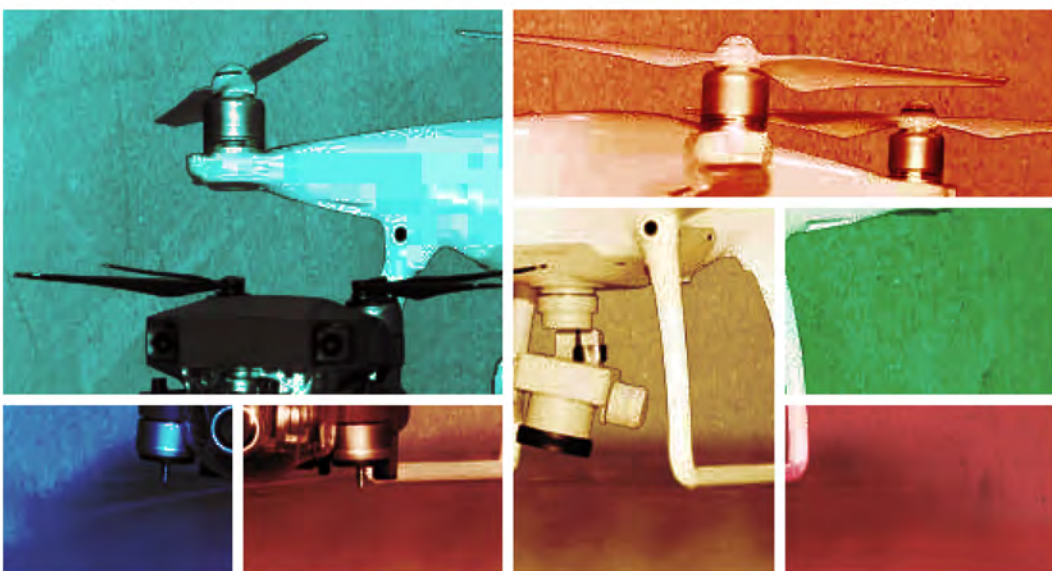
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TECHNOLOGY



Six ways *drones* are revolutionising agriculture

Drones – which were initially developed for military purposes – have been used commercially since the 1980s. The development and commercialising of drones lead to distance-controlled drones even being employed in your farming operation or for leisure activities.

Drones are employed by agriculturalists to inspect livestock, dams and troughs, for the control of problem animals; to track injured animals during hunting or to observe the condition of the veld, cultivated pastures or crops from the air. Although drones aren't equipped with navigation normally, it is possible to add it, e.g. for security purposes.

Drone technology will give the agriculture industry a high-technology makeover, with planning and strategy based on real-time data gathering and processing. PricewaterhouseCoopers (PwC) estimates the market for drone-powered solutions in agriculture at \$32,4 billion. Following are six ways aerial and ground-based drones will be used throughout the crop cycle:

1 Soil and field analysis: Drones can be instrumental at the start of the crop cycle. They produce precise 3D maps for early soil analysis, useful in planning seed planting patterns. After planting, drone-driven soil analysis provides data for irrigation and nitrogen-level management.

2 Planting: Start-ups have created drone-planting systems that achieve an uptake rate of 75% and decrease planting costs by 85%. These systems shoot pods with seeds and plant nutrients into the soil, providing the plant all the nutrients necessary to sustain life.

3 Crop spraying: Distance-measuring equipment — ultrasonic echoing and lasers such as those used in the light-detection and ranging, or LiDAR, method — enables a drone to adjust altitude as the topography and geography vary, and thus avoid collisions. Consequently, drones can scan the ground and spray the correct amount of liquid, modulating distance from the ground and spraying in real time for even coverage. The result: Increased efficiency with a reduction of in the amount of chemicals penetrating into groundwater. In fact, experts estimate that aerial spraying can be completed up to five times faster with drones than with traditional machinery.

4 Crop monitoring: Vast fields and low efficiency in crop monitoring together create farming's largest obstacle. Monitoring challenges are exacerbated by increasingly unpredictable weather conditions, which drive risk and field maintenance costs. Previously, satellite imagery offered the most advanced form of monitoring. But there were drawbacks. Images had to be ordered in advance, could be taken only once a day, and were imprecise. Further, services were extremely costly and the images' quality typically suffered on certain days. Today, time-series animations can show the precise development of a crop and reveal production inefficiencies, enabling better crop management.



Most important *precision farming* suppliers in SA

It is not always that easy to reach the right person quickly when you work with big companies. Below is a list of the contact details of the main suppliers in order to make the search for precision farming systems and services a little easier.

| COMPANY | CONTACT PERSON | NUMBER | EMAIL ADDRESS |
|---|------------------------------|------------------------------|---|
| John Deere | Tavonga Alex Siyavora | 011 437 2600 | SiyavoraTavonga@JohnDeere.com |
| New Holland SA | Rudi du Toit | 073 081 8279 | RudiD@northmec.co.za |
| Northmec | Gideon Grobler | 082 532 6089 | gideon@northmec.co.za |
| Raven | Jaco Stemmet | 082 771 7541 | jaco@agrisolutions.co.za |
| Ronin Precision | Steven Deyssel | 011 608 3666 | steven@roninsystemsolution.co.za |
| Farming Systems - Trimble - DICKEY-John | Hanno Truter Jaco Viviers | 082 319 2301 071 763 1797 | jaco@roninps.com |
| Sitech Southern Africa | Hanno Truter | 082 319 2301 | htruter@clmps.com of hannotruter@sitech.co.za |
| Topcon | Christo Helm | 083 233 5497 | chelm@topcon.com |
| Barloworld Agriculture | Mauritz du Plessis | 076 527 7180 | Mduplessis@bhbw.co.za |

Jim Rankin, Agfacts



▶▶ Six ways *drones* are revolutionising agriculture

5 Irrigation: Drones with hyperspectral, multispectral, or thermal sensors can identify which parts of a field are dry or need improvements. Additionally, once the crop is growing, drones allow the calculation of the vegetation index, which describes the relative density and health of the crop, and show the heat signature, the amount of energy or heat the crop emits.

6 Health assessment: It's essential to assess crop health and spot bacterial or fungal infections on trees. By scanning a crop using both visible and near-infrared light, drone-carried devices can identify which plants reflect different amounts of green light and near infrared light. This information can produce multispectral images that track changes in plants and indicate their health. A speedy response can save an entire orchard. In addition, as soon as a sickness is discovered, farmers can apply and monitor remedies more precisely. These two possibilities increase a plant's ability to overcome disease. And in the case of crop failure, the farmer will be able to document losses more efficiently for insurance claims.

Reference

Mazur, M. PwC. [<https://www.technologyreview.com/s/601935/six-ways-drones-are-revolutionizing-agriculture/>]

FINANCE



Contacts: Finance

| INSTITUTION | EMAIL | NUMBER |
|-------------|--|--------------|
| SARS | contact.central/south/east/north@sars.gov.za | 0800 00 7277 |



CONSUMER RECOURSE: Who can I call?

- **The Ombudsman for Short-Term Insurance** is an independent body and the services are provided free to the public. The ombudsman may be able to assist you if your insurer refuses to pay, e.g. for damage to your vehicle. The service is free to insured consumers. You must complain to the insurance company first and only if you are unable to resolve the dispute with your insurers, then you can refer the matter to their offices. The Ombudsman's decisions are binding on the insurance company, but not on you. Visit www.osti.co.za.
- **The Ombudsman for Long-term Insurance** mediates in disputes between insurers and policy holders (life assurance). See www.ombud.co.za.
- **The Ombudsman for Banking Services** www.obssa.co.za.
- **Credit OMBUD** www.creditombud.org.za.
- For investment problems, talk to the **Financial Services Board (FSB)**. Their website is www.fsb.co.za.
- **National Consumer Commission** www.thencc.gov.za.
- **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>.
- If there is something bothering you about your medical scheme, the **Registrar for Medical Schemes** is the one. Visit www.medicalschemes.com.
- **Pension Funds Adjudicator** www.pfa.org.za.

Website and social media links

INTERNATIONAL WEB LINKS FOR INFORMATION AND PRICES

- Australian sorghum and canola prices: <http://www.asx.com.au/products/grains-derivatives/grains-reports.htm>
- CBOT futures prices: <http://www.cmegroup.com/trading/agricultural/index.html/>
- Dalian Commodity Exchange, China: www.dce.com.cn/portal/cate?cid=1261736328100
- Dow Jones Industrial General Index: <http://www.google.com/finance?client=ob&q=INDEXDXX:DJI>
- FAO Global Information and Early Warning System: <http://www.fao.org/GIEWS/english/index.htm>
- World Agricultural Supply and Demand Report: (WASDE) <http://www.usda.gov/oce/commodity/wasde/>
- FAO Food Price Index: <http://www.fao.org/worldfoodsituation/foodpricesindex/en/>
- Maize: <http://www.scoop.it/t/maize>
- USDA weekly crop progress report: <https://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1048>
- AgWeb: <https://www.agweb.com/markets/>
- Agrimoney: <http://www.agrimoney.com/5/corn/>
- World Grain.com: <http://www.world-grain.com/>
- News now: <http://www.newsnw.co.uk/h/Industry+Sectors/Agriculture/Agricultural+Commodities>
- Dow Jones Industrial General Index: <http://www.google.com/finance?client=ob&q=INDEXDXX:DJI>
- Bloomberg Markets: <https://www.bloomberg.com/markets/commodities/futures/agriculture>

LOCAL WEB LINKS FOR INFORMATION AND PRICES

- Grain SA: www.grainsa.co.za
- SAGIS: www.sagis.org.za
- SAGL: www.sagl.co.za
- South African Grain and Oilseed Market Group: http://www.linkedin.com/groups?gid=4617140&trk=my_groups-b-grp-v
- NAMC supply and demand reports: <http://www.namc.co.za/pages/research-publications/publications/supply-demand-estimates>
- JSE MTM price report: <http://www.jse.co.za/DownloadFiles.aspx?RequestedNode=DownloadableDocuments/Safex/amdmtm>
- Protein Research Foundation: <https://www.proteinresearch.net/>

ECONOMIC INFORMATION

- Finance 24: <http://www.fin24.com/#ticker>
- Business Day: <http://www.businesslive.co.za/bd/>
- Financial Mail: <http://www.financialmail.co.za/>
- Live exchange rates: <https://www.oanda.com/currency/live-exchange-rates/>
- Moneyweb: <https://www.moneyweb.co.za/>
- Reuters: <http://www.reuters.com/>
- Gold and Brent crude oil price: <http://www.fin24.com/Markets/>

WEATHER FORECAST

- Weather Outlook: <http://www.wxmaps.org/pix/prec10.html>
- Weather Outlook and rainfall data: <http://www.rmd.co.za/>
- Weather Outlook: Ventusky: <https://www.ventusky.com/?p=-26.3;26.1;5&l=rain-3h>
- SA Weather Service: <http://www.weathersa.co.za/>
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ANIMALS



Voermol

126



| INSTITUTION | EMAIL | NUMBER |
|--|--|--------------|
| Animal Feed Manufacturers Association (AFMA) | admin@afma.co.za | 012 663 9097 |
| Association of Veterinary and Crop Associations of South Africa (AVCASA) | info@avcasa.co.za | 087 980 5163 |
| ARC-Animal Production, Irene | ULecuona@arc.agric.za | 012 672 9111 |
| ARC-Onderstepoort Veterinary Research | ovi-info@arc.agric.za | 012 529 9111 |
| National Wool Growers Association (NWGA) | nwga@nwga.co.za | 041 365 5030 |
| Red Meat Producers Organisation (RPO) | rpo@lantic.net | 012 349 1102 |
| South African Animal Health Association (SAAHA) | info@saaha.co.za | 087 980 5164 |

JSE carcass contract calendar

TRADING CALENDAR FOR BEEF CARCASS CONTRACTS

| MATURITY MONTHS | CONTRACT | LAST TRADING DAY/MATURITY DAY (SECOND WEDNESDAY OF THE MATURITY MONTH) | CLEARING DAY (TWO BUSINESS DAYS AFTER LAST TRADING DAY) |
|-----------------|----------|--|---|
| Sept 2017 | BEEF | 13/09/2017 | 15/09/2017 |
| Dec 2017 | BEEF | 13/12/2017 | 15/12/2017 |
| Mar 2018 | BEEF | 14/03/2018 | 16/03/2018 |
| Jun 2018 | BEEF | 13/06/2018 | 15/06/2018 |
| Sept 2018 | BEEF | 12/09/2018 | 14/09/2018 |
| Dec 2018 | BEEF | 12/12/2018 | 14/12/2018 |

TRADING CALENDAR FOR ALL CONSTANT MONTH CONTRACTS

The contracts are listed on the first Wednesday of the calendar month before the contract month

| MATURITY MONTHS | CONTRACT | LAST TRADING DAY/MATURITY DAY (SECOND WEDNESDAY OF THE MATURITY MONTH) | CLEARING DAY (TWO BUSINESS DAYS AFTER LAST TRADING DAY) |
|-----------------|----------|--|---|
| Oct 2017 | BEEF | 11/10/2017 | 13/10/2017 |
| Nov 2017 | BEEF | 08/11/2017 | 10/11/2017 |
| Jan 2018 | BEEF | 10/01/2018 | 12/01/2018 |
| Feb 2018 | BEEF | 14/02/2018 | 16/02/2018 |
| Apr 2018 | BEEF | 11/04/2018 | 13/04/2018 |
| May 2018 | BEEF | 09/05/2018 | 11/05/2018 |
| Jul 2018 | BEEF | 11/07/2018 | 13/07/2018 |
| Aug 2018 | BEEF | 08/08/2018 | 10/08/2018 |
| Oct 2018 | BEEF | 10/10/2018 | 12/10/2018 |
| Nov 2018 | BEEF | 14/11/2018 | 16/11/2018 |

TRADING CALENDAR FOR LAMB CARCASS CONTRACTS

| MATURITY MONTHS | CONTRACT | LAST TRADING DAY/MATURITY DAY (SECOND WEDNESDAY OF THE MATURITY MONTH) | CLEARING DAY (TWO BUSINESS DAYS AFTER LAST TRADING DAY) |
|-----------------|----------|--|---|
| Jun 2017 | LAMB | 14/06/2017 | 19/06/2017 |
| Sept 2017 | LAMB | 13/09/2017 | 15/09/2017 |
| Dec 2017 | LAMB | 13/12/2017 | 15/12/2017 |
| Mar 2018 | LAMB | 14/03/2018 | 16/03/2018 |
| Jun 2018 | LAMB | 13/06/2018 | 15/06/2018 |
| Sept 2018 | LAMB | 12/09/2018 | 14/09/2018 |
| Dec 2018 | LAMB | 12/12/2018 | 14/12/2018 |

Independent analysis laboratories in *South Africa*

HERE IS A list of the **feed analysis laboratories** that are members of AgriLASA. These laboratories participate in an inter-laboratory control scheme for each discipline to which they belong. The latter schemes are co-ordinated by AgriLASA. The schemes are the best way for laboratories to verify their results. Each laboratory's achievements can be requested from the laboratory by producers or institutions who want to do business with the laboratory.

| LABORATORIES | CONTACT NUMBER |
|---|----------------|
| Acacia Operation Services, Umbogintwini | 031 949 2082 |
| Animal and Poultry Science, School of Agricultural Sciences and Agribusiness, University of KwaZulu-Natal | 033 260 5158 |
| Animal Production Feed Laboratory (Eisenburg), Department of Agriculture, Western Cape | 021 808 5229 |
| ARC-Irene Analytical Services (ANPI) | 012 672 9292 |
| Agri Enviro Lab, Bethal | 017 647 1150 |
| ALS Analysis and Inspection-Durban (Pty) Ltd | 031 301 1257 |
| Animal Nutrition Laboratory, University of the Free State, Bloemfontein | 051 401 2382 |
| Bio-Industrial Services CC, Edenvale | 011 822 8135 |
| DARD: Soil Analytical Services, Pietermaritzburg | 033 355 9456 |
| Chem Nutri Analytical, Kempton Park | 011 316 8800 |
| Department of Animal Science, University of Stellenbosch | 021 808 4741 |
| Deltamune, Lyttleton | 012 664 5730 |
| Food and Beverage Laboratory, CSIR, Cape Town | 021 658 2770 |
| Intertek Agricultural Laboratory, Bapsfontein | 011 964 1004 |
| Intertek Oil, Chemical and Agri, Durban | 031 274 8000 |
| Labworld, a division of AFGRI Operations Limited, Isando | 011 977 7748 |
| Meadow Feeds, Pietermaritzburg | 033 387 2403 |
| M & L Laboratory Services, Southdale | 011 661 7926 |
| Modderfontein Laboratory Services (Pty) Ltd, Modderfontein | 011 457 1801 |
| Nitrulab, Irene | 083 384 9142 |
| NviroTek Laboratories, Hartbeespoortdam | 012 252 7588 |
| Quantum Analytical Services (Pty) Ltd, Malmesbury | 022 487 1285 |
| Russelstone Protein (Pty) Ltd, Bronkhorstspuit | 012 941 1586 |
| SABS Commercial SOC Ltd, Food and Water Chemistry, Pretoria | 012 428 6868 |
| Southern African Grain Laboratory, Pretoria | 012 807 4019 |
| UP Nutralab, Department of Animal and Wildlife Sciences, University of Pretoria | 012 420 3269 |

| IN-HOUSE LABORATORIES | CONTACT NUMBER |
|--------------------------------------|----------------|
| Crown Chickens, Uitenhage | 041 365 6048 |
| Nutrifeeds, Viljoenskroon | 056 344 2200 |
| RCL Foods, Malelane | 013 791 1393 |
| RCL Foods, Hammersdale | 031 736 7420 |
| Tongaat Hullett Starch, Isando | 011 458 5146 |
| Voermol Feeds, Maidstone | 032 439 5864 |
| Kimleigh Technologies, Potchefstroom | 018 293 1028 |

Vossie Wilsnach, president: AgriLASA

Noordelike Span



Mark Barlow
Noordelike Verkoopbestuurder
082 456 6252



Jeremy Bosman
Hartbeesfontein, Klerksdorp, Oberholzer,
Potchefstroom, Ventersdorp
076 423 4785



Ampie de Jager
Boons, Botswana, Brits, Dwaalboom, Johannesburg, Koedoeskop,
Krugersdorp, Magaliesburg, Northam, Pretoria, Randburg,
Randfontein, Rooopoot, Ruimsig, Rustenburg, Thabazimbi,
Wesonaria, Wonderboom
078 355 3406



DJ Malan
Alldays, Alma, Baltimore, Dendron, Ellisras, Letsitele, Louis
Trichardt, Marken, Messina, Naboomspruit, Nylstroom,
Pienaarsrivier, Polokwane, Roedtan, Settlers, Tolwe, Tomburke,
Trichardsdal, Tzaneen, Vaalwater, Venda, Vivo, Warmbad
076 400 4739



Dev Olivier
Delareyville, Kameel, Louwena, Madibogo, Mafikeng,
Mareetsane, Piet Plessis, Reivilo, Rostrataville, Sannieshof,
Stella, Tosca, Vergelegen, Vryburg
082 850 2700



Dunell Pienaar
Namibië
00264 81 124 2860



Jacques Pretorius
Daniëlskuil, Dibeng, Groblershoop, Hotazel, Kakamas, Kenhardt,
Kuruman, Marydale, Olifantshoek, Pofadder, Postmasburg,
Prieska, Upington, Van Zylsrus
072 875 9726



Douw Steyn
Barberton, Belfast, Burgersfort, Groblersdal, Hoedspruit,
Komatiport, Lydenburg, Machadodorp, Malelane, Marble Hall,
Middelburg, Nelspruit, Witbank
082 927 2471



Riaan van der Merwe
Baifour, Bronkhorstspuit, Cullinan, Delmas, Grootlei,
Heidelberg, Kinross, Nigel, Ogies
083 401 2240



Gerrit van Niekerk
Bambousspruit, Bothaville, Leeudoringstad, Makwassie,
Migdol, Ottosdal, Schweizer-Reneke, Wolmaransstad
083 627 5162



Willie van Tonder
Boschpoort, Bitesiesvlei, Buhrmansdrif, Coligny, Gerdau,
Grootpan, Koster, Lichtenburg, Nooitgedacht, Skuinsdrif,
Swartruggens, Zeerust
082 305 5283

Oostelike Span



CT du Plessis
Oostelike Verkoopbestuurder
072 441 5663



Henrico Coetzer
Bethal, Carolina, Ermelo, Hendrina
072 486 7118



Klasie Klopper
Bergville, Dundee, Ladysmith, Winterton
082 802 8002



Johan Potgieter
Afrikasop, Eeram, Harrismith, Verkykerkop, Warden
083 290 2449



Gavin Rogers
Cedarville, Harding, Kokstad, Matatiele, Port Shepstone,
Swarberg
082 080 0280



Mark Scott
Creighton, Isopo, Underberg
082 771 6659



Koos Uys
Amsterdam, Paulpietersburg, Piet Retief, Pongola, Vryheid
082 322 3423



Neels van der Merwe
Amersfoort, Memel, Newcastle, Utrecht, Volksrust
082 893 5204



Dirk Viljoen
Ascant, Cornelia, Morgenzon, Standerton, Val, Vrede,
Woudtsight
082 449 2789



Angus Williamson
Empangeni, Greytown, Howick,
Mooirivier, Pietermaritzburg
082 564 5481



Kenny Crampton
Nasionale Verkoopsbestuurder
082 888 2184

Sentrale Span



Leon van Dijkhorst
Sentrale Verkoopsbestuurder
072 910 4049



Danie Claasen
Fransfontein, Ooserville, Petrus Sijpe, Bellis, Thuring, Vloers
082 377 8849



Jan Coetzee
Bloubaai, Koshof, Balffontein, Christiana, Druisville,
Hartswater, Hartswater, Hertingsville, Koppiesdal, Jan
Kempster, Thunissen, Torsfontein, Woudhoek
083 300 0989



Pietman Fouché
Arlington, Bellville, Clarens, Dauterive, Teunissenburg,
Krommestein, Luides, Paul Ross
072 407 9757



Robert Harris
Bloubaai, Fransfontein, Druisfontein, Hoffsfontein, Luidesfontein,
Petrusburg, Roodersburg, Southfield, Theophrast, Verkeersdorp,
Wippen
083 282 8110



Sas le Roux
Edenburg, Kwa-Natal, Oudheidfontein, Steynburg, Verkeersdorp,
Vloersfontein, Welkom, Winkberg
082 417 1791



Reinier Muller
Hringsfontein, Koppies, Meyeritz, Parys, Steunburg, Voorsigtig,
Vrededorp
082 924 7835



Eugene Nel
Bally-Wes, Bethulie, Brissos, De Aar, Douglas, Edenburg,
Frontrivier, Grootfontein, Hanterton, Jacobusdal, Kimberley,
Kopjesfontein, Lückhoff, Modderfontein, Petrusville, Philippolis,
Phyllisfontein, Rietfontein, Spangfontein, Steynburg, Trompsburg
072 018 0191



Henk Vermooten
Clarens, Eersterivier, Ficksburg, Luides, Marquard, Rooders,
Seydel
083 274 9024

Tegniese Bestuurders



Ulrich Müller
Tegniese Bestuurder
083 414 5928



Phillip Meiring
Tegniese Bestuurder
083 386 8378



Hendrik van Pletzen
Tegniese Bestuurder
083 456 3636

Suidelike Span



Leon de Klerk
Suidelike Verkoopsbestuurder
082 901 1673



Hans Burger
Ceres, Citrusdal, Clarensfontein, Darling, Dierhoutsdorp, Eersikdal,
Genies, Graafffontein, Herman, Klarens, Kromfontein, Matielandburg,
Moorosi, Op die Berg, Paarl, Philippolis, Plettenberg, Plettersdorp,
Rietfontein, Simonsdorp, Springbok, Stellenbosch, Tullaghan,
Voortvanderburg, Vrededorp, Vrededorp, Vrededorp, Waberg, Waberg
071 208 7090



Peter Dormehl
Albanië-Nord, Bally-City, Boonfontein, Bredafontein, Elliot,
Jansfontein, Lelyburg, Marais, Roodersdorp, Steynburg, Ugt,
Zaaiers
083 272 3199



Nico Klínck
Albanië, Ashfontein, Barmfontein, Bredafontein, George, Hanterton,
Hanterton, Kintberg, Kintberg, Luidesfontein, Luidesfontein,
Montage, Moorosi, Plettersfontein, Roodersdorp, Roodersdorp,
Suidfontein, Winkberg
082 893 6863



Ferdi Naude
Bredafontein, Calabon, Koppies, Koppies, Koppies, Op die Berg, Pletzen,
Rietfontein, Rietfontein, Steynburg
082 934 2577



Bulelani Posiso
De Thronus, De Thronus en De Thronus, De Thronus
073 779 8414



Nelius Rossouw
Cathcart, Dordrecht, Hanterton, King William's Town, Kintberg,
Molnos, Oosfontein, Steynburg, Stellenbosch, Tullaghan
082 297 7214



Raymond Rudman
Albanië, Albanië, Albanië, Bally-City, Bally-City, Bally-City,
Cradock, Golden Valley, Graafffontein, Grootfontein, Jansfontein,
Mantel, Pletzen, Pletzen, Steynburg
082 571 2944



Arnold van der Merwe
Bally-Wes, Bally-Wes, Calabon, Clarensfontein, Clarensfontein,
Fransfontein, Hanterton, Luides, Matielandburg, Moorosi,
Nieuwfontein, Rietfontein, Stellenbosch, Steynburg,
Vrededorp, Waberg, Winkberg
082 229 4497



Paul van der Westhuizen
Aldo, Albanië, Calabon, De Rust, Hanterton, Hanterton,
Jansfontein, Kintberg, Kintberg, Oosfontein, Pletzen, Pletzen,
Pletzen, Pletzen, Steynburg, Stellenbosch, Winkberg
082 453 0141

Management guidelines for *beef cattle*

Guidelines for licks

An example of a basic lick programme for the central Free State and North West (the eastern Highveld can start a month earlier).

| MONTH | TYPE OF LICK | | |
|-----------|-----------------|---|----------------------------|
| | COWS/BULLS | REPLACEMENT HEIFERS (8 TO 12 MONTHS) | STEERS (8 TO 12 MONTHS) |
| January | Summer lick | | |
| February | Summer lick | | |
| March | Summer lick | | |
| April | Transition lick | | |
| May | Transition lick | | |
| June | Winter lick | Production lick | Production lick |
| July | Winter lick | Production lick | Production lick |
| August | Winter lick | Production lick | Production lick |
| September | Winter lick | Production lick | Production lick |
| October | Winter lick | Production lick | Production lick |
| November | Summer lick | Production lick | Production lick |
| December | Summer lick | Production lick | Production lick |

Typical lick intakes

| | | |
|-----------------------|------------------------------|------------------------------|
| Summer salt-phosphate | | 100 g - 240 g/animal/day |
| Transition lick | 10% - 20% Crude protein (CP) | 200 g - 800 g/animal/day |
| Winter lick | 40% - 50% CP | 400 g - 600 g/animal/day |
| Production lick | 25% - 30% CP | 1 000 g - 1 500 g/animal/day |

These remain guidelines. Talk to your livestock scientist to compile the right lick programme for your area.

CARRYING CAPACITY AND DRY MATERIAL INTAKE

LSU for cattle with different frame sizes (Meissner *et al.*, 1983).

| CLASS | SMALL FRAME | | MEDIUM FRAME | | LARGE FRAME | |
|--------------------------|-------------|------|--------------|------|-------------|------|
| | WEIGHT | LSU | WEIGHT | LSU | WEIGHT | LSU |
| Bull | 600 | 1,36 | 600 | 1,38 | 650 | 1,63 |
| Cow, dry (3 years) | 400 | 1,01 | 450 | 1,13 | 500 | 1,27 |
| Cow, dry (mature) | 500 | 1,10 | 525 | 1,21 | 550 | 1,32 |
| Cow, pregnant (3 years) | 400 | 1,01 | 450 | 1,13 | 500 | 1,27 |
| Cow, pregnant (mature) | 500 | 1,10 | 525 | 1,21 | 550 | 1,32 |
| Cow, with calf (3 years) | 400 | 1,22 | 450 | 1,40 | 500 | 1,66 |
| Cow, with calf (mature) | 500 | 1,42 | 525 | 1,55 | 575 | 1,82 |
| Weaner | 180 | 0,44 | 200 | 0,53 | 225 | 0,64 |
| Ox (18 months) | 300 | 0,75 | 350 | 0,90 | 400 | 1,09 |
| Ox (mature) | 490 | 1,10 | 550 | 1,22 | 585 | 1,33 |

Basic norms for the number of cows that a farm with a carrying capacity of 100 LSU can carry with different production systems:

| | |
|---------------------------|---|
| Weaner system: | 1 medium-frame cow = 1,7 LSU = 58 cows for the farm |
| Steer system (18 months): | 1 medium-frame cow = 2,2 LSU = 45 cows for the farm |
| Ox system (30 months): | 1 medium-frame cow = 3,1 LSU = 32 cows for the farm |

Voluntary daily dry material intakes (DMI)

Meissner *et al* (1983) work on an average DMI of 2,5% of body mass for growing animals. If moisture content and hay wastage are included, the average roughage intake (hay) is approximately 3,0% of body mass.

For lactating animals the average DMI is 3,0% (2,7% - 3,3%) of body mass. If moisture content and hay wastage are included, the average roughage intake (hay) is approximately 3,5% of body mass.

HEALTH MANAGEMENT

An example of a basic vaccination programme for a spring calf system:

| CATTLE: SPRING CALF SEASON | | |
|--|--|---|
| VACCINATION | ANIMALS TO BE VACCINATED | MONTH OF VACCINATION |
| Lumpy skin disease, Rift Valley fever | Bulls, cows and replacement heifers | Before calving (Jul/Aug) |
| Blackleg/botulism/anthrax or multiclostridial vaccine + anthrax | Bulls, cows, replacement heifers and suckling calves | Autumn/before weaning (Apr) |
| Contagious abortion | Replacement heifers | S19 – before the age of 8 months (Feb/Mar) RB51 – before weaning (Mar/Apr), repeat twice before heifers are mated for the first time |
| *BVD/respiratory diseases | Cows, replacement heifers and suckling calves | 6 to 8 weeks before mating season (Nov/Dec) Before weaning (Mar/Apr) |
| NB. All animals that are vaccinated with an inactivated (dead) vaccine for the first time must receive a booster three to six weeks later (as prescribed by the manufacturer) to be effective! | | |
| *NB: Make sure in what cases 'live' or 'dead' vaccines can/should be used and the correct positioning of this to prevent possible losses/damage. | | |

Check with your vet to make sure the programme is right for your operations and your area.

Internal parasites that regularly occur in cattle:

| TYPE OF WORM OR NAME OF PARASITE | MONTH OF OCCURRENCE | ANIMALS AFFECTED BY THE PARASITE | ACTIVE INGREDIENTS REQUIRED TO TREAT ANIMALS (DUE TO LIMITED SPACE ONLY THE MAIN ACTIVE INGREDIENTS ARE MENTIONED) |
|---|---|--|--|
| Roundworms (cattle bankruptworm, wire-worm, nodular worm) | Summer months | All, but particularly immature animals | Macrocytic Lactone, White substances (Albendazole, etc.), Laevamisole |
| Liver fluke | Summer months Strategic treatment: Apr/May and Aug/Sept Tactical treatment: Dec/Jan | All | Immature and mature stages: Triclabendazole Early immature and mature stages: clorsulon, Nitroxynil, Closantel, Albendazole, Rafoxanide, Oxyclozanide |
| Conical fluke | Apr to Aug | All | Resorantel, Oxyclozanide |
| Tapeworm | Whole year | Suckling calves | Prasikwantel, Niklosamid |
| Coccidia | Whole year | Young calves (3 weeks +) | Diclazuril, Toltrazuril |

Take the necessary dung sample, have it analysed and ask the assistance of experts to optimise your dosing programme.

Pietman Botha, agricultural consultant

Select the right *feed crop*

To any stock farmer the most important aspect of his farming activities is to ensure that the right quality and quantity of feed are available at all times.

Feed flow planning is vital for making decisions regarding the crops to be planted and used. Every feed crop has its unique properties and growth curve. Adjust this to the stock flow and select the right crop.

The properties of the different types of feed crops and the requirements for successful cultivation are summarised below for your convenience.

Lucerne

The king of feed crops is a high-quality feed with 18 to 20% crude protein and a high level of digestibility. Lucerne can be cultivated successfully under intensive high-production conditions under 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.

Annual sub-tropical crops

These crops establish and produce feed rapidly. Hybrid babala and feed-sorghum hybrids are used as grazing, silage, standing hay and/or green chop respectively.

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 on average produces two cuttings per season.

Intensive grasses and mixtures

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

Perennial sub-tropical crops

These grazings 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 the roots. This enables the grass species to bud in spring and develop rapidly. In addition to 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. The preferences as well as the properties of the crops must be considered before one can be selected.

Dryland winter crops

High-potential oats, triticale and stouling rye cultivars are available, as are cultivar packages that produce good-quality green feed in 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, like wheat cultivars, are divided into spring, intermediary and winter types on the basis of their habit. Each of these types has its own utilisation method in a feed-flow programme. It is therefore important to take note of the properties of each of the types in order to utilise its top benefits.

Most of this information comes from Pannar. Visit their website at www.pannar.co.za for more information, or scan the QR code to gain direct access to their grazing production manuals.



Pietman Botha, agricultural consultant

GRAIN SA

| | |
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Vision

Grain SA is acknowledged by key role-players nationally and internationally to be the grain producers' only and official mouthpiece, and because of its proven expertise and leadership role in the grain industry, it is the leading supplier of industry-strategic services to South African grain producers.

Mission

Through its activities Grain SA provides industry-strategic support to grain producers in South Africa in order to promote sustainable profitability.

Executive Management Committee



Front from left

JANNIE DE VILLIERS (*chief executive officer*) ■ **RAMODISA MONAISA** (*vice-chairperson*)
JACO MINNAAR (*chairperson*) ■ **DEREK MATHEWS** (*vice-chairperson*)

Back from left

PRELINE SWART ■ **CHRIS SCHOONWINKEL** ■ **RICHARD KRIGE** ■ **ANTON BOTHA**

Grain SA's *Executive* per region



REGION 1

MARNUS BOTHMA
082 944 0447

Buhrmannsdrif, Coetzersdam, Kameel, Louwna, Madibogo, Mafikeng, Mareetsane, Piet Plessis, Setlagole, Stella and Vryburg



REGION 2

JOSEPH DU PLESSIS
082 578 7616

Amalia, Migdol and Schweizer-Reneke



REGION 3

DEON BERGH
082 207 6019

Bloemhof, Christiana, Hartswater, Jan Kempdorp, Leeudoringstad, Makwassie, Vaalharts, Warrenton and Wolmaransstad



REGION 4

DANIE REICHEL
083 271 0124

Biesiesvlei, Groot-Marico, Lichtenburg, Rooigrond, Vermaas and Zeerust



REGION 5

JAN GEORGE PRETORIUS
076 308 2875

Barberspan, Delareyville and Sannieshof



REGION 6

NIËL ROSSOUW
082 417 4810

Bospoort, Coligny, Hartbeesfontein, Klerksdorp, Orkney, Ottosdal and Stilfontein



REGION 7

SAREL HAASBROEK
082 454 7410

Carletonville, Derby, Fochville, Koster, Krugersdorp, Randfontein, Rysmierbult, Swartruggens, Syferbult, Tarlton, Ventersdorp and Westonaria



REGION 8

JOSEPH SWANEPOEL
083 759 2373

Brits, Dwaalboom, Ellisras, Hammanskraal, Koedoeskop, Magaliesburg, Northam, Pretoria, Rustenburg and Thabazimbi

**REGION 9**

KALLIE SCHOEMAN
082 388 1001

Balfour, Balmoral, Bronkhorstspuit, Cullinan, Delmas, Devon, Edenvale, Eloff, Greylingstad, Grootvlei, Heidelberg, Kempton Park, Kendal,

Nigel, Ogies, Rayton, Springs and Sundra

**REGION 10**

RYK PRETORIUS
071 692 1519
082 853 1519

Amersfoort, Amsterdam, Badplaas, Barberton, Breyten, Carolina, Chrissiesmeer, Davel, Ermelo, Iswepe,

Morgenzon, Perdekop, Volksrust and Wakkerstroom

**REGION 11**

BART HARMSE
083 327 4172

Arnot, Belfast, Blinkpan, Hendrina, Kaapmuiden, Komati-poort, Laersdrif, Lydenburg, Machadodorp, Middelburg, Nelspruit, Ohrigstad, Steelpoort,

Stoffberg, Waterval-Boven, Witbank, Witrivier and Wonderfontein

**REGION 12**

RUDOLF FOURIE
071 690 3306
082 388 1234

Bethal, Charl Cilliers, Kinross, Kriel, Leandra, Leslie, Platrand, Secunda, Standerton and Trichardt

**REGION 13**

WILLEM GROOTHOF
082 491 8690
082 938 9093

Alldays, Alma, Dendron, Groblersdal, Haenertsburg, Louis Trichardt, Marble Hall, Naboomspruit, Nylstroom, Pienaarsrivier, Pietersburg,

Potgietersrus, Radium, Roedtan, Settlers, Tuinplaas, Vaalwater and Bela-Bela

**REGION 14**

RALF KÜSEL
082 944 0720

Bergville, Bloedrivier, Colenso, Dannhauser, Dundee, Eshowe, Estcourt, Glencoe, Greytown, Harding, Kokstad, Kranskop,

Ladysmith, Matatiele, Melmoth, Mooirivier, New Hanover, Newcastle, Normandien, Paulpietersburg, Piet Retief, Pietermaritzburg, Sheepmoor, Underberg, Utrecht, Vryheid and Winterton

**REGION 15**

EMILE DE KLERK
082 440 8300

Cornelia, Frankfort, Memel, Oranjeville, Tweeling, Villiers and Vrede

**REGION 16**

JAAP VAN DER WESTHUIZEN
082 335 7990

Deneysville, Heilbron, Koppies, Meyerton, Parys, Sasolburg, Vanderbijlpark, Vereniging and Vrededorp

**REGION 17****THEO FERREIRA**
082 775 7371

Aberfeldy, Bethlehem, Clarens, Daniëlsrus, Harrismith, Kestell, Paul Roux, Slabberts, Verkykerskop and Warden

**REGION 18****NEIL CLAASSEN**
082 493 6295

Arlington, Lindley, Petrus Steyn and Reitz

**REGION 19****JACO BREYTENBACH**
083 631 9559

Aliwal-Noord, Clocolan, Excelsior, Ficksburg, Fouriesburg, Hobhouse, Ladybrand, Marquard, Senekal, Smithfield, Thaba Nchu, Tweespruit and Verkeerdevlei

**REGION 20****ANTON BOTHA**
083 274 1924

Bloemfontein, Boshof, Brandfort, Bultfontein, Dealesville, Dewetsdorp, Hertzogville, Reddersburg and Winburg

**REGION 21****CHRIS SCHOONWINKEL**
082 492 7308

Hoopstad and Wesselsbron

**REGION 22****WILLIE MARAIS**
082 820 0722

Allanridge, Edenville, Hennenman, Kroonstad, Odendaalsrus, Steynsrus, Theunissen, Ventersburg, Virginia and Welkom

**REGION 23****COBUS VAN COLLER**
082 561 6375

Potchefstroom, Vierfontein and Viljoenskroon

**REGION 24****DANIE MINNAAR**
082 801 2288

Bothaville

**REGION 25**

GERHARD BRUWER
082 878 5422

Calvinia, Douglas, Edenburg, Fauresmith, Groblershoop, Hopetown, Jacobsdal, Jagersfontein, Kenhardt, Kimberley, Koffiefontein, Luckhoff,

Petrusburg, Petrusville, Philippolis, Prieska, Springfontein, Trompsburg, Upington and Vanderkloof

**REGION 26**

ANDRÉ KIRSTEN
082 335 7990

Ceres, Clanwilliam, Hopefield, Malmesbury, Montagu, Piketberg, Robertson, Vanrhynsdorp, Vredenburg, Vredendal and Worcester

**REGION 27**

RICHARD KRIGE
082 316 3230

Bredasdorp, Caledon, Swellendam, Napier, Greyton, Riviersonderend and Botrivier

**REGION 28**

RAMOSO PHOLO
082 434 1634
073 407 5895

Lichtenburg and Taung

**REGION 29**

GIFT MAFULEKA
072 847 8402
076 838 8602

Louwsburg, Nelspruit and Dundee

**REGION 30**

PRELINE SWART
072 903 6588

Kokstad, Maclear, Mthatha and Paarl

**REGION 31**

ISRAEL MOTLHABANE
082 961 2208

Ladybrand

**REGION 32**

MICHEL GILDENHUYIS
082 946 2287
071 656 9353

East from Breede River: Knysna, George, Mossel Bay, Albertinia, Oudtshoorn, Riversdal, Heidelberg (Cape), Harold, Suurbraak, Buffeljagsrivier and Hartenbos

**Co-opted member**

VICTOR MONGOATO
072 801 2350

Representative:
Farmer Development

**Co-opted member**

ANDRIES THERON
082 873 1350

Co-opted: Specialist
representative for
winter cereals

Chairpersons of specialist working groups and committees



JACO MINNAAR

Maize
Remuneration Committee



ANDRIES THERON

Winter cereals



ANTON BOTHA

Marketing Working
Group



RAMODISA MONAISA

Farmer development



THEO FERREIRA

Editorial Committee



COBUS VAN COLLER

NAMPO Harvest Day Committee
Conservation Agriculture
Working Group



FANIE VAN ZYL

Audit Committee



ANDRÉ KIRSTEN

Production/Input



WILLEM GROOTHOF

Sorghum



GERHARD BRUWER

Groundnuts



JOZEPH DU PLESSIS

Sunflowers and
Soybeans



RICHARD KRIGE

Barley (National Barley
Commodity Committee)



KOOS BLANCKENBERG

Canola Specialist
Committee



RD ERASMUS

Barley (Southern Barley
Commodity Committee)



FRIKKIE MAREE

Barley (Northern Barley
Commodity Committee)

Grain SA widely represents members

(as at 28 September 2017)

TRUSTS

Maize Trust

White maize

Derek Mathews

Yellow maize

Chris Schoonwinkel

Oil and Protein Seed Development Trust (OPDT)

Commercial producers

Anton Botha (Chief delegate)

Jozeph du Plessis (Alternate)

Developing producers

Ramodisa Monaisa (Chief delegate)

Israel Motlhabane (Alternate)

Sorghum Trust

Commercial producers

Willem Groothof

Developing producers

Ramoso Pholo

Winter Cereal Trust

Wheat

Richard Krige

Barley

Jannie de Villiers

Sasol Research Trust

Jaco Breytenbach

Jannie de Villiers

Western Cape Agriculture Research Trust

Richard Krige

FORUMS

Oilseed Forums

Sunflower Forum and Soybean Forum

Jozeph du Plessis (Sunflower)

Ralf Küsel (Soybean)

Joseph Swanepoel (Alternate)

Groundnut Forum

Gerhard Bruwer (Chief delegate)

Jan George Pretorius (Alternate)

| | |
|----------------------|---|
| Wheat Forum | <p>Andries Theron Jannie de Villiers</p> <p><i>Steering committee of Wheat Forum</i> Jannie de Villiers</p> |
| Sorghum Forum | <p>Willem Groothof (Chief delegate) Jaap van der Westhuizen (Alternate)</p> |
| Maize Forum | <p>Chris Schoonwinkel Jannie de Villiers</p> <p><i>Steering committee of Maize Forum</i> Jannie de Villiers (Chief delegate) Marinda Visser (Alternate)</p> |

ADVISORY COMMITTEES/TECHNICAL COMMITTEES (RESEARCH)

| | |
|--|--|
| Oilseed advisory committee (OAC) for Oilseed Trust | <p><i>Commercial producers</i> Jozeph du Plessis (Chief delegate) Anton Botha (Alternate)</p> <p><i>Developing producers</i> Israel Motlhabane (Chief delegate) Ramodisa Monaisa (Alternate)</p> <p><i>Priority committee</i> Marinda Visser (Functionary)</p> |
| Technical committees winter cereals for Winter Cereal Trust | <p><i>Wheat technical committee</i> Andries Theron Richard Krige</p> <p><i>Barley technical committee</i> RD Erasmus</p> <p><i>SABBI (Barley Research)</i> RD Erasmus (Southern production regions) Frikkie Maree (Northern production regions)</p> |

AGRI SA

| | |
|------------------------|--------------|
| General council | Jaco Minnaar |
|------------------------|--------------|

AGRI SA

Commodity chamber

Jaco Minnaar
Derek Mathews
Preline Swart
Ramodisa Monaisa
Chris Schoonwinkel
Jannie de Villiers

Functional committees

Natural resources

Gift Mafuleka

Labour and social

Derek Mathews

Agricultural development committee

Jaco Minnaar
Jannie de Villiers
Derek Mathews
Ramodisa Monaisa

Commercial

Jaco Minnaar
Chris Schoonwinkel

Law and order

(None)

PROVINCIAL AGRICULTURAL UNIONS

Free State Agriculture

General council

Jaco Breytenbach (Chief delegate)
Neil Claassen (Alternate)

KwaZulu-Natal Agricultural Union (KWANALU)

General council

Ralf Küsel (Chief delegate)

Mpumalanga Agriculture

General council

Rudolf Fourie (Chief delegate)
Bart Harmse (Alternate)
Ryk Pretorius (Alternate)

TAU SA

General council

Joseph Swanepoel (Chief delegate)
John Rankin (Alternate)

| | |
|---------------------------|---|
| Agri NW | <p><i>General council</i> Danie Reichel (Chief delegate) Deon Bergh (Alternate) Ramoso Pholo (Alternate)</p> |
| Agri Northern Cape | <p><i>Executive committee</i> Gerhard Bruwer</p> |
| Agri Western Cape | <p><i>Commodity chamber</i> André Kirsten (Chief delegate) Richard Krige (Alternate) Preline Swart (Alternate)</p> |
| Agri Limpopo | <p><i>General council</i> Willem Groothof</p> |
| Agri Eastern Cape | <p><i>General council</i> Victor Mongoato (Chief delegate) Thabang Tshephe (Alternate)</p> |
| Agri Gauteng | <p><i>General council</i> Sarel Haasbroek Gift Mafuleka</p> |

OTHER COMMITTEES AND BOARDS OF DIRECTORS

| | |
|---------------------------------------|---|
| Soybean PRF working group | Andries Theron |
| Canola PRF working group | Koos Blanckenberg |
| SAGL | <p><i>Wheat:</i> Marinda Visser <i>Maize:</i> Derek Mathews <i>Soybeans:</i> Bart Harmse <i>Alternate Director:</i> Jannie de Villiers</p> |
| Safex advisory committee (JSE) | Chris Schoonwinkel (Chief delegate) Dirk Strydom (Alternate 1) Theo Ferreira (Alternate 2) |
| SACTA | Andries Theron (Director) Marinda Visser (Director) Jannie de Villiers (Alternate director) |
| Alenti body corporate | Nico Vermaak |

Grain SA membership = economic welfare

GRAIN SA:

- Is an autonomous and voluntary industry organisation.
- Acts collectively in the interests of the economic welfare of the grain producers of South Africa.
- Is the combined voice of grain producers to address commodity matters and issues with the government and other role-players in the industry.

HOW IS MEMBERSHIP OBTAINED?

Only complete the authorisation form which is available on Grain SA's website or scan the QR code below:



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

WHAT IS THE CURRENT LEVY PER TON?

The current levies (excluding VAT) per ton are as follows: Maize: R2,70, wheat: R3,20, sunflowers: R5,40, groundnuts: R10,70, soybeans: R5,40, sorghum: R2,70, canola: R4,30 and barley: R3,20.

Full payment: A minimum of R1 000 (excluding VAT) is prescribed for full membership.

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?

- Ordinary members (natural persons), trusts and any legal entities who produce grain for marketing.
- Persons who pay the prescribed membership fee and commodity levy to Grain SA.
- Any person who underwrites the objectives of Grain SA.

WHAT DOES MEMBERSHIP OF GRAIN SA OFFER ME AS PRODUCER?

- A mouthpiece for the producer which ensures that the regulatory environment functions effectively on all levels.
- Regular and timeous information on production conditions.
- Daily market reports via email.
- Biweekly newsletter with relevant information.
- Access to advice with regards to the diesel rebate.
- Access to experts with regards to input, production and the market environment.
- Input quality monitoring, e.g. fertiliser.
- Continuous input monitoring locally and internationally.
- Obtain information with regards to the most recent research, technological developments and production practices which will ensure effective and profitable production.
- Obtain information with regards to the local and international market and trade environments.
- By becoming a member of Grain SA you also gain access to Momentum's financial welfare solution for members and their farm workers.
- Become part of the NAMPO Harvest Day, and familiarise yourself with the most recent agricultural products, technology and services. All input providers on the same premises.
- Guaranteed research and development.

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%, recover 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 deposit

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

Grain SA's account details are as follows:

Account holder: Grain SA

Bank: Absa

Account number: 790 810 007

Branch code: 334136 (632005 electronically)

Production conditions

Market environment

Input environment

Exclusive Grain SA APP

Why / Benefits

- o Benchmarking
- o Empowering members
- o Access to exclusive market information
- o Production productivity

Adding value

- o In future production costs and more specifically input costs will be comparable – giving you the average price of key inputs in your area
- o Credibility of the information is dependent on its users – the more users the better the information

Information

- o Explanatory source
- o Comparison source
- o Compare conditions in district as well as nationwide



Allowing members to

- o Evaluate and compare high production conditions across the country to make better marketing decisions

Functions

- o Rainfall figures
- o Plant intentions
- o Planting progress
- o Harvest conditions
- o Harvesting progress



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vrey@actionford.co.za for your special offer



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Grain SA

Knowledge partner and official mouthpiece of *Grain SA*

- SA *Graan/Grain* is the official magazine of Grain SA.
- It is a specialist publication that is regarded as one of the top agricultural publications.
- Between 17 500 and 18 000 copies are distributed by direct mail across South Africa every month.
- SA *Graan/Grain* is bilingual and articles and adverts are presented in Afrikaans and in English.
- The address list is updated monthly. Changes of address can be sent to marina@grainsa.co.za by email.
- SA *Graan/Grain* is available as an e-book and can be downloaded from <http://www.grainsa.co.za/sagrain/Oktober2017/>. Replace the date in the example with the edition you want to download.
- The magazine has a special focus on a specific topic every month, and this is developed through articles, adverts and product information articles.

CONTACT DETAILS



Manager:
Grain Economics
and Marketing,
Grain SA

DR DIRK STRYDOM
086 004 7246
082 852 4810
dirks@grainsa.co.za



**Managing
editor**

JOHAN SMIT
018 468 2716
082 553 7806
johan@infoworks.biz



Editor

ESTIE DE VILLIERS
081 236 0534
083 490 9449
estie@infoworks.biz



**Editorial
assistant**

ELMIEN BOSCH
018 468 2716
elmien@infoworks.biz



**Advertising
consultant**

RUTH SCHULTZ
(Infoworks)
081 480 6413
083 583 5243
ruth@infoworks.biz



**Advertising
co-ordinator**

JURGEN VAN ONSELEN
(Kolbe Media)
021 976 4482
082 417 3874
jurgen@kolbemediaco.za

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MARCH

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| 23 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 24 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 25 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 26 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 27 | 30 | | | | | | |

SEPTEMBER

| | Su | Mo | Tu | We | Th | Fr | Sa |
|----|----|----|----|----|----|----|----|
| 36 | | 1 | 2 | 3 | 4 | 5 | 6 |
| 37 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 38 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 39 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 40 | 29 | 30 | | | | | |

DECEMBER

| | Su | Mo | Tu | We | Th | Fr | Sa |
|----|----|----|----|----|----|----|----|
| 49 | | 1 | 2 | 3 | 4 | 5 | 6 |
| 50 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 51 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 52 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 53 | 29 | 30 | 31 | | | | |

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*Gratis subskripsie ingesluit vir die eerste 24 maande.



Kontakbesonderhede: Alfred Andrag | c: 082 824 1214
t: 021 950 4111 | f: 021 950 4208 | alfred.andrag@agrigo.co.za

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