



GRAIN SA MAGAZINE FOR DEVELOPING FARMERS



## PULA IMVULA

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### **A WORD FROM...** Du Toit van der Westhuizen

AN ONE BELIEVE THAT THE FIRST QUARTER OF THIS YEAR IS ALMOST GONE? IT FEELS AS IF WE JUST FINISHED PLANTING LAST WEEK AND THE SUMMER CROP IS ALREADY BUSY MATURING. THIS PAST PLANTING SEASON WAS A REAL STORMY SEASON AS WE RECEIVED GOOD RAIN IN MOST OF THE PROVINCES, NOT ONLY STORMY CLIMATE BUT ALSO DIF-FICULT WORKING CONDITIONS.

Isn't it scary to experience that some areas had drought while some areas were flooded? So much so that some farmers could not plant because of drought or late rain and others could not plant because of floods. For those who really tried their best to plant and those who worked very long hours ... well done!

Please farmers, don't think that if you have finished applying topdressing and spraying the lands for weeds that you are done and that you can relax. My advice to farmers is to get your footprint in your fields on a daily basis. Remember, with all the good rain that most of us had the lands look like a paradise, but do not forget that every paradise has its own snake.

Take time, walk through your crops, and inspect for diseases and pests. As you walk through your lands try to identify patches in the lands where some areas differ from one to the next and by doing that you will see which parts of your field has problems. After you have harvested you can take soil samples on those patches and add whatever is needed there. It is nice to receive a lot of rain but unfortunately with all the rain the pests will also come in. Place your herbicide and pesticide representatives' number on speed dial and please don't hesitate to call these experts. Remember, you can do everything perfectly with the best fertiliser, the best seed and the best tractors but if you don't spray your crop on time and if you don't control late weeds and pests everything will be down the drain.

The best fertiliser you can give your crop at this stage is to be present in your fields. Enjoy the beauty of your hard work and your yield will be enormous! Get your footprint in your lands.

Greetings Ntate Thabo 📕

## **MARCH MADNESS** Keep your eye on the crop

EEPING YOUR MAIZE CROP HEADING IN THE RIGHT DIRECTION DURING THE GROWING SEASON CAN BE CHALLENGING AS THERE IS ALWAYS A LOT ON THE GO, AND YOUR TIME IS SPREAD THIN. HAVING A CLEAR PLAN OF ACTION IS ESSENTIAL. IF THINGS DON'T GO ACCORDING TO PLAN, AND THIS IS DEFINITELY THE CASE IN THE FARMING WORLD, THEN WE NEED TO GO INTO 'CRISIS CONTROL MODE'.

A lot about the farming profession is hinged on your ability to handle and manage pressure. Rudyard Kipling says in his well-known 'IF' poem; that: 'if you can keep your head when all about you are losing theirs and blaming it on you ... then you will be a man my son.' Well, I think we could say: If you can keep your head when chaos strikes – then you will be a good farmer.

In the month of March chaos may strike, and at this time of year it usually comes in a few different forms. It could be disease, fungus, pests or any number of other problems that may arise. The key to combating these is to keep your head and deal with each issue as it arises. Remember, that you can only do as much as you can each given day. Therefore, it is crucial to manage your time well and when tackling a problem, do it fully and finish the job.

> Consult your chemical representative to give you a recommendation and be sure to follow the programme that he gives you accurately.

#### HOW TO MANAGE TIME IN TIMES OF CRISIS

Prevention is better than cure, is a rule which one should always try to live by. However, things do happen which we can't always predict such as the Fall Army Worm outbreak which happened in 2016 across maize production areas of South Africa and continues to be a problem at times. The farmers who managed to control this outbreak effectively were the ones who were diligently monitoring their fields and picked up the outbreak early on.

Monitoring is a very important part of mitigating any form of outbreak that may occur in your crops. Scout your fields diligently and thoroughly. You could consider having a weekly route where you make a stop in all your fields to assess their progress and their health. Look at the leaves, make sure that they are healthy and clear of rust and that they have a good colour. Check the stems of the plant from top to bottom. Look for any damage caused by pests. If the plant is making cobs you can assess the progress of pollination. If all looks clear and healthy be sure to keep checking regularly as things can happen very quickly!

The important thing to bear in mind when a crisis occurs is that panic and chaos never solved any problems, so don't panic. Try and

Gavin Mathews, Bachelors in Environmental Management. Send an email to gavmat@gmail.com





Look at the leaves, make sure that they are healthy and clear of rust and that they have a good colour.

keep a clear head so that you can think carefully and be decisive in your actions. Firstly, one should accurately identify the problem and if you are not sure rather call on the advice of a professional or a knowledgeable farmer who you trust. With modern technology and access to the internet it is becoming much easier to identify diseases and pests etc. But it is still safer to get a second and even third opinion.



The important thing to bear in mind when a crisis occurs is that panic and chaos never solved any problems, so don't panic.



Next you should assess the extent of the damage or infestation. If you are good about doing your crop scouting then you should be able to catch it early before the problem is at an uncontrollable level. Once you are sure what the problem is – and to what extent it is present in your field – then you should devise a plan of action to combat the issue at hand. Often there will be some form of chemical control measure which you can apply to tackle the problem – but using the correct product is essential! Consult your chemical representative to give you a recommendation and

be sure to follow the programme that he gives you accurately.

Remember that you are ultimately trying to minimise the financial loss that your potential yield loss will incur by leaving the problem untreated. If your crop is too tall to get in with a regular tractor drawn boom spray, then you will need to look at options like contracting a high-rise sprayer or an aerial crop sprayer to get the job done. This can be an expensive outlay, but as I mentioned before you should bear in mind the overall damage and loss that you may experience when leaving the problem unattended.

2020 MARCH

#### CONCLUSION

Crop scouting is an important task to perform, but it can be very rewarding. It can give you time to reflect and plan for the season ahead. It can also give you time to prioritise. Enjoy this time that you set aside to check on your crops and monitor their progress. Keep your boots dirty and your mind clear!

 You know you are on the road to success if you would do your job, and not be paid for it.

 OPRAH WINFREY

## What is a **DIESEL LOGBOOK** and how it works

ARMERS PRODUCING GRAIN CROPS WITH MODERN MECHANISATION METHODS AND VEHICLES USE DIESEL IN HIGH OR RELATIVELY LOWER VOLUMES DEPENDING ON THE SIZE OF THE AREA BEING FARMED. DELIVERY TRUCKS, 4X4 BAKKIES, GEN-ERATORS, IRRIGATION PUMPS AND ALL THE OTHER DIESEL DRIVEN MACHINES ADD TO THE DIESEL USED BY A TRAC-TOR OR IN MANY CASES A FLEET OF TRACTORS.

#### QUANTITY AND CONTROL OF THE DIESEL USAGE

Let us assume that your average annual usage per hectare for crops is about 70 l/ha. This could be much higher or lower depending on the kilowatt size of tractors and the widths of implements drawn and efficiencies of the engines and have a different range depending on whether you use a full mechanical or minimum tillage programme in your operation.

The above assumption thus implies an expense of R1 155 per hectare for diesel. The total diesel usage and cost for crop production on an annual basis for various areas is shown in Table 1.

See which of your production parameters and farm size fit the chart. The total quantity of diesel used by all the other vehicles and machines on the farm must be added to Table 1 to calculate the actual annual total diesel cost.

#### SARS DIESEL REBATES

To financially assist farmers and other industries and to encourage primary sector food production the diesel rebate system was introduced. These rebate payments on total diesel production are sourced from the general fuel levy which is about R3,40 per litre. The rebate is calculated at 40% of the general fuel levy which equals about Written by a retired farmer



R1,35 per litre. Only 80% of the qualifying 'eligible' diesel consumption in a farming operation may be used as the basis for the rebate calculation. 'Eligible' diesel would be only fuel that is directly used for production purposes.

Using Table 1 as a reference, the rebate amounts that could be claimed are seen in Table 2.

The farmer can decide from Table 2, at which value point it is viable or prudent to follow the SARS registration process to qualify for the rebate. There is much record keeping and administration time involved in submitting a valid claim to SARS.

#### SARS REQUIREMENTS TO QUALIFY

The diesel rebate is administered through the VAT collection system so famers must be registered for VAT to qualify, (VAT 101 form). When registered for VAT the farmer can apply to be registered for the diesel refund scheme by completing the VAT 101D registration application form. Please refer to the SARS website for all the detailed requirements to qualify for the above. Once registration is accepted, the diesel rebate claim is submitted with your usage amounts as shown above, on the VAT 201 return form. This could be monthly or six monthly depending on your registration conditions.

Most farmers would have a control system for monitoring their diesel usage by using the delivery receipts and invoices paid and by keeping detailed logbooks of all deliveries to main tank storage and usage by individual tractors, trucks and LDV's.

This however becomes mandatory and SARS only accepts hand recorded or electronically approved monitoring systems subject to

inspection. Although SARS will accept the amounts as given on the VAT 201 return

Total diesel usage and cost for crop production on an annual basis.

							on eriling, you can be
Area for crops	Usage/ha	Total usage	Diesel price	Total cost			subjected to an inten-
(ha's)	litres	litres	per litre	to farm		1. 200	sive audit by SARS
100	70	7 000	R16,50	R115 700	ALCON .	1	at any time. Both a
250	70	17 500	R16,50	R288 750 🧳		10	
500	70	35 000	R16,50	R577 500			
1 000	70	70 000	R16.50	R1 157 000			
2 000	70	140 000	R16,50	R2 310 000			17 9.20

#### Rebate amounts that could be claimed.

Crop area ha's	Total usage in litres	Eligible diesel use 90% of total	Non-eligible diesel use	80% of eligible diesel usage	Claim at R1,35 per litre
100	7 000	6 300	700	5 040	R6 804
250	17 500	15 750	1 750	12 600	R17 010
500	35 000	31 500	3 500	25 200	R34 020
1 000	70 000	63 000	7 000	50 400	R68 040
2 000	140 000	126 000	14 000	100 800	R136 080

#### An example of a diesel storage logbook for farmers.

Description			Number		Farm				
Main diesel storage depot			1		Wilgedraai farm				
Opening reading – metre pole or electronic scale				Purchase receipts/invoice					
Item	Date	Opening balance (litres)	Supply company	Date	Invoice number	Litres received			
1	2020-02-01	12 500	Sasol	2020-02-11	S23456	2 000			
2		14 410							
3		14 210							
4		14 145							
5		14 070							
6		14 025							
Summary									
Month	February	12 500			Total received	2 000			

Format partly sourced from SARS's website

#### 4 An example of a diesel storage logbook for farmers.

GPS co-or	dinates									
Metre reading before disposal	tre ding fore Disposal/use and purpose of use posal				Metre reading after disposal	Drivers signature/ initials/ name				
Closing balance (litres)	Date	Litres disposed (if losses occurred record here)	Disposal to each vehicle unit or diesel cart to be shown separately			Purpose of disposal (state whether eligible or non-eligible)			Opening balance plus receipts minus disposals	
			Туре	Code	Registration	Purpose of Disposal (state)	Eligible	Non- eligible		
14 500	2020-02-12	90	Tractor	JD 1	ABC456FS	Ploughing	Yes		14 410	Pule
	2020-02-14	200	Diesel cart	DC 1	DEF789FS	Transfer to lands	Yes		14 210	Jan
	2020-02-16	65	Tractor	MF 3	GHI192FS	Planting	Yes		14 145	Morena
	2020-02-22	75	Tractor	JD 2	JKL348FS	Ripping	Yes		14 070	Piet
	2020-02-22	45	4x4 DC	FD 1	MNO123FS	Holiday		Yes	14 025	Farmer
	2020-02-26	102	Tractor	JD 1	ABC456FS	Planting	Yes		13 923	Joseph
	2020-02-28	577						Closing balance	13 923	Farmer

diesel storage and dispensing and a diesel usage logbook must be duly be kept in detail.

An example of each is shown in **Table 3 to Table 4**. Please look carefully in the column headings to see what is legally required and you will have an idea what a diesel logbook should look like. If you can afford it, buy electronic monitors for all tanks, tractors and machines that can record all this data in digital format. All operators have tags which are used at every fill up. The managers can then monitor all usage remotely in real time from a computer for control and be able to submit very accurate data to SARS.

#### CONCLUSION

If you wish to qualify for a diesel rebate, reliable and accurate records must be kept on the farm in a format that can be submitted to SARS with confidence.

## Farmers and financing – friend or foe?

HIS ARTICLE AIMS TO ADDRESS THE ISSUE OF FARMER FINANCING AND FOCUSES ON WHY FINANCE IS NECESSARY IN THE AGRICULTURAL SECTOR AND WHAT A FARMER'S RESPONSIBILI-TIES ARE IN LIGHT OF PROVIDING A TRANSPARENT AND TRUTHFUL BUSINESS PLAN AND IN TERMS OF HONOUR-ING DEBT REPAYMENTS ON LOANS ACQUIRED.

#### WHAT IS AGRICULTURAL FINANCE?

Agricultural financial services are offered for agricultural production, processing and marketing. The loans offered may be short, medium- or long-term loans and may include crop and livestock insurance plans. The institutions lending finance need to know exactly who they are lending money to and what they are loaning the finances for. When applying for financing, it is the farmer's responsibility to present a solid business plan which truthfully represents the business status and prospects in the form of a business proposal.

The financial institution, by loaning the farmer money, essentially becomes an 'investor' in the farmer's business. It is their rightful intention to get a reasonable and reliable return on their investment (by collecting interest against the amount loaned). This means it is their job to ensure that their money is placed in the hands of a potentially successful enterprise operated by good managers. The investors will thus thoroughly investigate the business to understand potential opportunities and identify possible weaknesses.

#### WHY DO FARMERS NEED LOANS?

There are a number of different reasons for farmers needing access to finance. Among these are:

- Purchase of new inputs production inputs including seed, fertilisers, pesticides, herbicides and fuel etc. are increasingly costly. If the farmer does not have the funds to plant a crop and ensure it has optimal growing conditions, then he may as well not even plant to begin with. The high cost of inputs sees many farmers relying on input finance.
- **Purchase of implements** this may be to improve production potential or to work more efficiently and to enable a farmer to further diversify his farming enterprise.
- Manage risk efficiently a farmers' financial position enables him to insure his crop, livestock and storerooms in times of high risk.
- **Investment in the farmland** make improvements, build sheds, drill boreholes and install dams, improve the soils by investing in long term liming and fertilisation programmes etc.
- Improved marketing opportunities if a farmer is financially supported, he is better equipped to hold his crops and sell them at the best possible opportunity, rather than accept the market price as the crop comes off the land. This is the moment when prices are invariably lower due to increased availability of the product. It has become increasingly more important for maize producers to participate in the futures markets. A good financial standing is empowering and enables the timeous buying and selling of 'puts' and 'calls' which assist with the marketing of maize.

### HOW FINANCIAL INSTITUTIONS MIGHT EXAMINE THE RISK INDICATORS TO A FARMING ENTERPRISE

It is widely accepted that farmers will access finance for different reasons and agricultural finance enterprises, <u>banks and agribusinesses</u> Jenny Mathews, Pula Imvula contributor. Send an email to jennymathews@grainsa.co.za

will readily look at applications to make loans to farmers. There are a few important aspects that farmers need to be aware of when planning to apply for funding. Potential investors need to know and understand your integrated risk structure as it is influenced by yourself, the climate, production potential, market risk, input

• The farmer – what are the farmer's work and health risks? Is the business carrying capital risk? What other business and tax risks are relevant? What does the farmer's cash flow look like? What does the farmer have to offer as collateral?

prices and other investments.

- The climate what are the potential risks to natural resources? What are the risks of natural disasters? How does the farmer mitigate against risk?
- The production process does the farmer have the knowledge, technical and managerial skills required to run the operation? Is there a machinery/capacity risk for the hectares to be planted? Is there a production/crop loss risk? Is there risk of disease or pests? Is there any managerial capacity/human resource risk?
- Input risk what risk is there regarding inputs i.e. availability, accessibility, price volatility? What has the historic return on production input been i.e. has crop yield justified the investment made into production inputs? Have the farmer's agricultural practices been of a high standard? Has the farmer invested in the soil with good fertilisation? Does he prioritise purchasing certified seeds for higher yields?
- Investments is there any risk to the enterprise arising out of poor investments made? How reliable has the farmer been at repaying other credit on other financial loans? What is the farmer's business reputation like? How accountable has the farmer been to other financial





institutions? This will be examined in detail. This process is known as 'conducting due diligence' and will enable the institution to determine if the investment in the nature of a loan is a wise one.

• Market risk – how well does the farmer understand the marketing process? Can he or she fix contracts? Has he or she got well established marketing channels? Does he deliver produce of a high standard?



#### HONOURING THE TERMS OF THE LOAN

Farmers who have been fortunate enough to be supported financially generally consider it a high priority to honour the process by making the repayments due within the set time frames. This action will always prove beneficial to one's reputation and future lending prospects. Should a farmer not honour this process, despite a successful season, this immediately brings the farmer and the business's integrity into the question and sets a black mark against his or her name.

> When applying for financing, it is the farmer's responsibility to present a solid business plan which truthfully represents the business status and prospects in the form of a business proposal.



#### BUT WHEN THINGS DON'T GO AS PLANNED

The high exposure of the agricultural sector to external risks which often lie way beyond the scope of the farmer's responsibility calls for planning for differentiated treatment of loan repayments. **The absolute key ingredients in this case are transparency and communication**. Always bear in mind that it is in the best interests of the lending institution to help the farmer manage his or her way through a crisis period. In this way they can contribute to increased stability in the agricultural sector and at the same time find a way to ensure the defaulter is eventually better positioned to make the repayments due to the financing institution.

As for the defaulter it is best to act sooner rather than later. It is not helpful to adopt a hostile attitude to the lending institution. They have not suddenly become enemy number one – they are merely a business which also must make money (and by taking out a loan with them – your business became interwoven with their business profitability!). If you stay silent and simply stop making repayments that are due, your credit scores will fall, and you'll end up owing even more money as penalties, fees and interest charges build up. On the other hand, if you talk to the institution that has loaned the money it may be possible to find a way to mediate the process over a longer term in the hopes of repositioning and rebuilding credibility as a lender. Some options may be to:

- 1. Pay later but pay what was due.
- 2. Consolidate the debt or refinance.
- 3. Agree to sell off something which will enable repayment on the loan.
- 1. Talk to the lender and try to negotiate a settlement.
- Prioritise payments this may require some difficult decision making as to which loans to repay and which to delay.
- 6. Get help seek debt counselling from experts who aim to help you get back on track.

All of the above options require that you are open and honest about the situation you are in as far as loan repayments go. There is never a time when it is acceptable to simply not honour your business agreements and channel your funds into other spending ... and remember Proverbs 22 v.1: 'A good name is to be chosen rather than great riches; and favour is better than silver or gold.'

# Scenarios for maize exportable

## surpluses in 2020/2021

S WE KNOW PRODUCTION DETERMINANTS ARE AREA PLANTED AS WELL AS YIELD; HOW-EVER, THESE TWO VARIABLES ARE CON-TINGENT ON WEATHER. CONSIDERING THE UNCERTAINTY BROUGHT BY THE WEATHER ON INTENTIONS TO PLANT, THIS ARTICLE HYPOTHESISES DIF-FERENT SCENARIOS USING THE CROP ESTIMATE'S COM-MITTEE (CEC) AREA PLANTED AND AVERAGE YIELD AS THE BASELINE (TABLE 1).

Furthermore, Table 1 shows the 2019/2020 consumption of 11,5 million tons, which is about a 20% increase compared to the previous three season's average of 10,1 million tons. Area intended for planting has also increased by about 10% compared to the previous season.

#### Baseline figures for maize supply and demand.

Total Maize	
CEC intentions to plant (ha)	2 519 300
Average yield (t/ha)	4,86
Carry-over stocks 2019/2020 (ton)	1 700 000
Total local consumption	11 500 000
Pipeline stocks (± 1,5 months) (ton)	1 437 500

Source: Grain SA, SAGIS, S&DEC, CEC

**Table 2** indicates the CEC's estimated maize area of production at 2 519 300 hectares (horizontal axis), with an average yield of 4,86 t/ha (vertical axis), which would ideally give a surplus of 1 006 298 tons. The exportable surpluses shown in the sensitivity analysis are green when there are less than 1,5 million tons for the season and red when there are more than 1,5 million tons. Without exportable surpluses, the cells are indicated in red with a strikethrough.



Ikageng Maluleke, Junior Economist, Grain SA. Send an email to Ikageng@grainsa.co.za

Going towards the right of the CEC intentions, if area planted deviates by +5%, +10% or +15% above the intentions at the average yield of 4,86 t/ha, this could leave us with an exportable surplus of between 1 618 488 and 2 842 868 tons. With the current weather conditions, this is likely to happen. Going towards the left of the CEC intentions, if area planted deviates by -5%, -10% or -15% less than the intentions at an average of 4,86 t/ha, the surplus could only be 394 108 tons at -5% deviation, while no surpluses can be expected at -10% and -15% deviations. With the same hectare deviation but lower yield, there are no surpluses expected at all.



As we have already established, supply and demand of a commodity, in this instance of maize has a direct impact on prices. With an exportable surplus above 1,5 million tons, prices will be at export parity level (lower); this is due to surplus production. With at an exportable surplus below 1,5 million tons, prices will be at import parity level (higher); this is due to a shortage in production. With the current weather conditions, production is most likely going to be according to CEC intentions or just above the intentions, which could lead to price suppression.

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#### Sensitivity analysis of maize executable surpluses given various planting and yield scenarios for the 2020/2021 marketing year.

< 1 500	000 ton	Area planted (ha)						
> 1 500 000 ton		-15%	-10%	-5%	CEC intentions	+5%	+10%	+15%
No-surpluses		2 141 405	2 267 370	2 393 335	2 519 300	2 645 265	2 771 230	2 897 195
	3,36	-4 042 379	-3-619-137	-3-195-894	-2 772 652	-2-349-410	-1-926-167	-1-502-925
	3,86	-2 971-677	-2 485 452	-1-999-227	-1-513-002	-1-026-777	540-552	-54-327
Yield	4,36	-1-900-974	-1-351-767	802-559	-253-352	295 855	845 063	1 394 270
	4,86	830-272	218-082	394 108	1 006 298	1 618 488	2 230 678	2 842 868
(t/ha)	5,36	240 431	915 603	1 590 776	2 265 948	2 941 120	3 616 293	4 291 465
	5,86	1 311 133	2 049 288	2 787 443	3 525 598	4 263 753	5 001 908	5 740 063
	6,36	2 381 836	3 182 973	3 984 111	4 785 248	5 586 385	6 387 523	7 188 660
	6,86	3 452 538	4 316 658	5 180 778	6 044 898	6 909 018	7 773 138	8 637 258

Source: Grain SA, SAGIS, S&DEC, CEC

# Investigating the riddle of PLANTING DEPTH

HE FOLLOWING FACTORS ARE NECESSARY FOR ANY SEED TO GERMINATE OPTIMALLY: LIVE SEED, ENOUGH MOISTURE, A FAVOURABLE TEMPERA-TURE, AND A MEDIUM THROUGH WHICH THE COLEOPTILE/HYPOCOTYL CAN GROW EASILY.

The basis for optimal crop performance is an even and proportionate emergence. There is a big difference between monocots and dicots. Monocots (the so-called monocotyledons) like maize have a coleoptile that pushes through the soil and then unfurls leaves on top, compared to the dicots (or dicotyledons) like sunflowers and bean types that actually germinate in the seed and draw the hypocotyl through the soil to unfurl on top.

#### **TEMPERATURE**

**Photo 1** on page 12 shows that seed require heat to germinate. The optimum temperature will vary from one crop to the next. Buckwheat can still germinate at 40,5 °C, while the seeds from various grasses will die at such high temperatures. The optimum germination temperature for maize is 25°C.

The deeper one plants, the colder the soil becomes. If the planting date is outside the normal planting window, temperatures and other environmental influences will naturally have an effect on germination.

If planting is done early, it is advisable to reduce the planting depth in order to get more heat to the germinated seed, but the moisture content of the soil should also be kept in mind. With later planting dates, the soil temperature tends to rise and the planting depth can be increased to protect seed against drying out.

The planting date is and remains a critical management factor and the possible risk experienced in suboptimum germinating conditions should be kept in mind. As soon as the optimum depth is increased or reduced, a risk factor comes into play.

If the planting date is outside the normal planting window, temperatures and other environmental influences will naturally have an effect on germination.

From Photo 1 it is clear that seeds will first start developing a root system, and then the coleoptile – that is how maize usually germinates. Seeds must be exposed to optimum moisture conditions for at least 48 hours to absorb sufficient moisture for germination.

#### **MOISTURE**

As soon as seed come into contact with moisture, they will start absorbing that moisture. If living seed is exposed to sufficient moisture and a favourable temperature for long enough, germination will occur.

Planting depth is very important for the seed to be able to absorb sufficient moisture and also to break through the soil surface. If the Pieter Rademeyer, chief agriculturist, Pannar Seed. First published in SA Graan/Grain March 2019. Send an email to pieter.rademeyer@pannar.co.za



seed is planted too deeply, it can start to germinate and not penetrate to the surface. If it is planted very deeply, the seed may only swell and then display no further signs of germination.

#### PLANTING DEPTH

The bigger the seed, the deeper it will be able to germinate and still appear above the surface of the soil. Smaller seed, for instance teff, cannot germinate at the same depth as maize. Planting depth is an important factor that contributes to good plant populations and seedling establishment, and eventually to a good yield.

From **Photo 2a** and **2c** (on page 12) it is clear that maize can germinate at a relatively great depth. As soon as planting depth is too great, no germination can occur and the seed will die. **Photo 2b** (on page 12) shows the benefit of the optimum planting depth, as opposed to a too shallow or too deep planting depth.

It should also be kept in mind that kernel sizes differ, and that there are differences between cultivars with respect to the planting depth for optimum germination too. A greater planting depth can lead to plants appearing above the surface of the soil only later. This can lead to poorer plant establishment because the coleoptile turns or even opens up below the surface of the soil, grass herbicide damage because the coleoptile is exposed for longer to the grass herbicide, as well as an increased chance of ear and tassel smut because of longer exposure to the soil, which could lead to infection.

The coleoptile can press through the soil thanks to the energy stored in the endosperm. If the planting depth is too great, the reserves of the germ can be exhausted and the plant will never appear above the surface.

A trial carried out in Vaalharts (**Graph 1** on page 12) demonstrates that if maize seed is planted too shallowly, yield can be affected negatively.

#### ROOTS

The secondary or main root system of maize that is planted too shallowly is affected negatively. Shallow planting leads to a smaller root system, which, in turn, leads to poorer absorption of water and nutrients. Plants that germinated too close to the surface can easily lodge

Average planting depth for differen
-------------------------------------

Crop	Ideal planting depth cm	
Maize	5 - 6	
Sunflowers	3 - 5	
Dry beans	3 - 5	
Wheat	3 - 7	
Sorghum	3 - 5	



#### Investigating the riddle...



The effect of temperature on the germination of maize. From right to left it starts on day two after planting.

while they are still small. The phenomenon is particularly common in extremely dry conditions, and where heavy rain is followed by strong wind.

Seeds have the ability to germinate even above ground if the moisture and temperature are adequate. It is common to see the kernels of ears that have broken off germinating above ground (**Photo 3**).







Planting depth of maize and wheat. Emergence can be affected negatively if the planting depth increases.

If there is living seed and adequate moisture and heat, germination will occur.

#### CRUSTING

Severe crusting on the soil surface or any compaction will restrict the ability of the coleoptile to push through the soil and cause it to unfurl below the surface, or to die. If the soil is full of clods, the sunbeams may penetrate in between the clods and cause the coleoptile to unfurl prematurely below the clods because it has been exposed to light.

Avoid excessive tilling of the seedbed just before planting, particularly if rain is predicted after planting and before emergence. A powdery seedbed easily forms a crust.

Also avoid excessive downward pressure on the closing wheels of the planter, particularly if the soil is very wet. In too wet conditions the planter furrow can be covered up, which will lead to weak seedlings.

#### STUBBLE

High volumes of stubble on the surface require high management inputs. Stubble in itself contains a quantity of water and the soil is

#### **GENERAL TIPS**

- Check planting depth where the planting equipment planted at operational speed, and not where planting was done very slowly.
- Check seed-soil contact and aim for a firm seedbed. A slower planter speed leads to a better and more even planting depth. Planting too fast sometimes leads to seed hopping in the planter furrow, and this causes uneven planting depth.
- Use row cleaners where there is a lot of stubble on the surface. This causes a higher temperature in the plant furrow. Planters with a downward pressure mechanism improve even emergence.
- Success can also be obtained with furrow openers, where the soil in the plant furrow is moved away to get to the moisture. However, problems may develop, especially when high-intensity rainfall follows shortly after the planting process, which then leads to the plant furrow silting up and thus covering the seed too deeply to emerge. The same phenomenon can be seen with sandy soil, which is prone to blowing, and where the plant furrow is then covered with windblown material.
- Where fertiliser is administered with the planter in the plant furrow, one needs to keep in mind that if fertiliser is placed too close to the seeds it can burn seeds due to a too high salt content. A general rule is 5 cm away from and 5 cm below the seed.
- Check fertiliser placement when using a furrow opener. There are planter types that can place the fertiliser closer to the seed or even above the seed. Fertiliser placed directly next to the seed or even above the seed can influence germination negatively.

usually colder in a field with stubble. The stubble also deprives the seed of valuable heating units that are required for germination.

Conservation tillage practices like no-till pose major challenges, particularly when it comes to management. To mention a few: The temperature of the soil, the resistance offered by the stubble during the planting process and uneven planting depth can lead to stunted plants.

If there is too much stubble, it is recommended that a row cleaner be used, like in the case of strip-till. A row cleaner moves the stubble in the furrow in order to prepare a clean strip without plant residues (**Photo 4**). This also gives the soil the opportunity to absorb heat in the planting furrow more rapidly than the untilled soil alongside. In this way, seeds are not exposed to colder temperatures and a low imbibition temperature (the absorption of cold moisture by the seed).

The occurrence of seedling disease and insects is reduced in this way. Seed treatment dramatically reduces this effect, but the longer the seed takes to germinate, the greater is the risk of damage. If it is cold enough, damage will usually occur in spite of the best genetics and seed quality.

The average planting depth for different crops is displayed in **Table 1** (on page 11). Always keep the temperature in mind during the planting process.



A maize ear germinates above ground. Photo: Purdue University



If there is too much stubble, it is recommended that a row cleaner be used, like in the case of strip-till.





## UNIDENTIFIED seed placement errors are costly

HAT THE EYE DOES NOT SEE, THE HEART DOES NOT GRIEVE OVER.' THIS EXPRESSION IS ALSO APPLICABLE TO PRODUCERS WITH REGARD TO SEED PLACEMENT AND PLANT ESTABLISH-MENT. TEN PER CENT OF THE YIELD MAY BE FORFEITED VERY QUICKLY DUE TO FAULTY SEED PLACEMENT, AND THE WORST THING IS: THE PRODUCER DID NOT EVEN KNOW ABOUT THIS.

Many planters are equipped with the best technology, but due to poor maintenance they do not work as they should. Seeds are sometimes not picked up, spaced incorrectly or, even worse: The planter plants two seeds simultaneously. Seeds can sometimes be placed too closely together, and in other areas too far apart. To the naked eye everything looks fine, but the plants do not agree. Pietman Botha, SA Graan/Grain editorial team. First published in SA Graan/Grain March 2019. Send an email to pietmanbotha@gmail.com



However, the planter is not necessarily the culprit – planter speed also plays a major role. If the planter moves too quickly, the seeds can bounce and roll or, even worse, the interplant spacing can be extended. The effect is that fewer seeds are planted per hectare, which leads to a lower yield and a loss at the bank.

Various trials have been conducted to quantify this loss. However, it is not that simple: the better the rainfall distribution, the smaller the expected loss will be. In a difficult year, the effect will be clearer.

A trial was done at Bothaville, where the effect of poor plant spacing was tested. The trial was laid out in 1,3 m rows, where the seeds were



planted by hand to get the correct spacing and placement. The rest of the tillage, fertilisation and weed control were the same everywhere.

- The trial included three actions:
- A 100%-correct seed placement where the plant establishment was 30 000 plants/ha or the interplant spacing was 25 cm.
- A 30 000 plant establishment/ha where the correct seed spacing covered 70% of the area.
- A plant establishment of 25 000 plants/ha or plants spaced 30 cm from one another.



Clear differences between the treatments were already visible right after germination. The follow-up rain after emergence was sufficient and in time to ensure a very good yield. The timely rain should have been able to fix the effect of the wrong plant establishment, but at the establishment trials the effects were still clearly visible regardless of the good rain.

The results of the different spacing and plant establishment trials.

The young plants that were planted close to each other displayed signs of stress from the start. These young seedlings were noticeably more yellow than the other plants. The plants that stood far from one another were also visibly weaker. This observation cannot be explained – perhaps the effect of the wind was greater on these plants than on the rest.

During the specific year the rainfall was sufficient to ensure a very good harvest.

Where the plant establishment varied, fewer differences were visible. At first glance, no differences were visible between the plants from the two plant establishment sites. The ears appeared to be the same size, although we would have expected the ears from the lower plant establishment to be a bit bigger. The scale had the final word in the end.

#### **RESULTS OF THE PLANT ESTABLISHMENT TRIAL**

**Table 1** shows the results of the different spacing and plant establishment trials. All tillage, weed control and fertilisation were equal in allthe trials and were done in the same way.

Given the exceptionally good rainfall year, the role of plant spacing was not expected to be so great. The results tell a different story, however. Where it was generally expected that the lower plant establishment would have a much greater ear mass than the others, this was not completely true.

There were no significant ear-mass differences between the normal plant establishment and the lower plant establishment. This is

Treatment	Yield measured ton/ha	Plants/ metre	Number of ears/metre	Average ear weight	Yield % variance between normal 30 000 establishment and others
Normal establishment 30 000 plants/ha					
or 25 cm from one another	7,5809	4,00	6,83	218,05	
Poor spacing of 30 000 plants/ha	6,8906	3,83	6,83	197,54	(9,11%)
Normal establishment 25 000 plants/ha					
or 30 cm from one another	6,7219	3,67	6,00	219,07	(11,33%)

#### The economic results of the different spacing and plant establishment trials.

Treatment	Yield/ha	Income (R)/ha @ R2 000/ton grain	Cost of number of seeds/ha @ R0,04/seed	Margin above seed cost (R)	
Normal establishment 30 000 plants/ha					
or 25 cm from one another	7,5809	15 161,82	1 200,00	13 961,82	
Poor spacing of 30 000 plants/ha	6,8906	3 781,27	1 200,00	12 581,27	
Normal establishment 25 000 plants/ha or 30 cm from one another	6,7219	13 443,77	1 000,00	12 443,77	





#### Unidentified seed placement...

perhaps an indication that the crop reached its optimal ear size given the rainfall and fertiliser.

The average ear mass of the poorly spaced plant establishment (30 000 plants) was 9,41% lower than for the correctly spaced plant establishment planting (30 000 plants). Given the climate and fertiliser, these yields may be at the top of what could be reached. These ear weights explain the 0,69 tons/ha yield difference. In drier production years these differences can be expected to be a lot bigger.

The explanation for the yield differences between the 30 000-plant establishment and the 25 000-plant establishment is the number of ears per metre. The 30 000-plant establishment had an average of 6,83 ears per metre. The 25 000-plant establishment had only 6,00 ears per metre. This explains the 0,86 ton/ha difference between the treatments. In drier production years, these differences can become smaller.

#### ECONOMIC EVALUATION OF THE TRIAL RESULTS

Yield is one thing, but what did it cost the producer to produce the grain? **Table 2** on page 15 show the economic results. It was assumed that the value of the grain was R2 000/ton and the cost per maize kernel R0,04.

The information in Table 2 clearly shows that the margin in this trial is driven by the yield and the cost per hectare. The higher the yield, the higher the income. The margin above the seed cost is determined by the income and the seed cost per hectare.

Where the establishment was planted correctly and the establishment was 30 000 plants/ha, the margin above seed cost is R13 961,82/ha. That is R1 380,55 (10,02%) more than where the spacing was wrong, and R1 518,05 (11,29%) more than where the establishment per hectare was lower.



Never assume that a planter plants correctly. Rather have the planter bins taken to specialists like Cerealis Precision in Lichtenburg, where they can be tested and repaired. A mechanic should also check the planter properly before the season, especially the electronics. It will definitely prove to be value for money.

Last, but not least: Consider getting another planter. This will relieve the pressure on the other planters and planting can be done at the right speed.



A photo showing the difference in plant establishment beautifully. This trial was done in Argentina by INTA and the difference in yield was 630 kg/ha.



# The power of relationships – a story of two game rangers

AME RANGERS ALEX VAN DEN HEEVER AND RENIAS MHLONGO HAVE WORKED TOGETHER FOR MORE THAN 23 YEARS. HOLDING UP A LARGE BROWN SEED, ALEX DEMONSTRATED THEIR SYM-BIOTIC RELATIONSHIP IN THE BUSH. NEITHER THE THUMB NOR FOREFINGER ALONE ENABLES ONE TO SUCCESS-FULLY HOLD THE SEED TO ACCESS ITS POTENTIAL. HOWEVER, WHEN USED 'IN PARTNERSHIP', THE SEED IS HELD WITH EASE AND IT BECOMES A SIMPLE TASK.

Their relationship began at Londolozi Private Game Reserve when as a young, 'greenie' game ranger Alex, who had little more than the right qualifications and the ability to drive a Landrover – and virtually zero bush wisdom – was assigned to work with the older, wiser and more experienced Renias. A man who'd grown up learning the ancient wisdom of the Shangaan hunter-gatherers, tracking and living in the bush – a place where he was completely at ease and totally confident.

Despite coming from very different, even polarised backgrounds, these men had to work together in a potentially risky environment where they had to depend on one another to keep each other and their paying guests safe. Alex quickly realised that he needed to learn to build a good rapport with this big man from the bush if he wished to survive and have a successful career.

An extremely close encounter with a beautiful but dangerous leopard, reinforced the importance of the relationship between the two rangers. The two men had been searching for a leopard in her well-known haunt to show guests one of these predators before they returned to Toronto. Seated on the vehicle travelling at 30 km/h - 40 km/h, Renias spotted leopard tracks. He identified it as female, named which leopard it was and recognised that the tracks were fresh.

Travelling further on foot, while Renias was focussing his eyes on the ground, Alex had the job of holding the rifle and scanning the terrain. Renias suddenly whispered that they were very close. The next moment, with no time to realise what was happening, let alone lift his rifle, a tree squirrel trilled out an alarm and the leopard exploded from beside a log, sending dust flying and filling the air with her fierce snarling. In no time at all Alex found himself pinned beneath a very unhappy leopard with Renias softly telling him to wait.

> Apart from being unable to move, in that moment Alex realised he had to completely and implicitly trust Renias. He was instructed not to look the cat in

> > the eyes at all and to slide back-

Friends and colleagues, Renias Mhlongo and Alex van den Heever, had the audience spellbound with their stories.

Jenny Mathews, SA Graan/Grain contributor. First published in SA Graan/Grain April 2019. Send an email to jennymathews@grainsa.co.za



wards slowly ... even more slowly. Eventually he saw that she was calming down and he could put space between himself and the angry cat.

Renias added that he had realised in that moment that he too had a problem – because he had never taken the time to train Alex how to act in such a situation! He then asked the producers present at Congress whether they trained their staff on how they should act or react to different challenges.

Alex added that at that moment, shaken and blinded by sand in his eyes, he was nobody's protector and that he needed Renias to pick up the gun and get them back to their vehicle safely. It was seeing Renias' competence in that situation that had enabled Alex to learn to trust him.

In this country where distrust and suspicion are so much a part of society, we all need to work harder at showing our trustworthiness.

The working relationship and friendship between these two men have evolved and grown over the years as they have learnt more about each other's 'differentness' – including visiting each other's homes and learning to respectfully appreciate each other's life experiences within the context of background and culture. Learning more about what matters and what troubles them, gives deep insights into another person. Gaining insights into a challenge as simple as fetching and heating water for a bath, will change your intrinsic understanding of another person.

In turn Renias equally had to cross bridges in his mind when he invited a white friend to stay at his home. He wondered what the family and neighbours would think, but he decided that he had to be prepared to take a risk if he was serious about forming an intercultural relationship.

Alex challenged the producers present by asking them if they had ever spent the night at the home of a friend from a different culture. These insights create empathy and build trust. Productive relationships are built when you understand the life story of the person you are dealing with.

When a working relationship has been founded on trust and understanding, so much more can be achieved together. Once Renias was convinced of the sincerity of Alex's friendship, he instinctively began teaching him more and more about life in the bush and how to speak the language of the Shangaan. This has empowered Alex in his career. It also became clear that their guests enjoyed being with two guides who liked working together. Not only did the two friends benefit, the guests and the company they worked for also benefited from their positive relationship.

Their shared experiences led the two men into new careers as they left to establish a business together in 2010 – The Tracker Academy. The aim of this non-profit NGO is to protect the ancient art of tracking by teaching unemployed young people living near the bush to become professional trackers and to see them placed in conservation jobs.

#### **LESSONS LEARNED**

The more we are prepared to engage, the more we are open to listening and the greater our chance of forming a relationship we never imagined was possible to begin with.

This is not theory – it's an act of the heart. It may take time and effort – and it may even be uncomfortable along the way.

The time has now come to go beyond cordial greetings to listen to and to understand each other ... if we get this right, we will walk with the lions together!



# Planning your FORAGE CROP

ULTIVATED FORAGE CROPS ARE USUALLY PLANTED TO COMPLEMENT NATURAL GRAZING AND FIELD CROP RESIDUE. MOST CROPS ARE GRAZED OR USED TO MAKE HAY OR SILAGE. WHEN GRAZED, IT CAN BE USED IN A GREEN STATE WHEN IT IS ACTIVELY GROWING OR AS FOGGAGE (STANDING HAY) AFTER THE CROP HAS MATURED. IN THE CASE OF HAY OR SILAGE THE FEED IS PRESERVED TO BE USED AT A LATER STAGE AS A FEED SUP-PLEMENT OR WHEN FEED IS SCARCE.

Crop options for grazing or foggage include the following:

- Summer crops: maize, forage sorghum, perennial grasses e.g. smuts finger and weeping love grass and lucerne.
- Cool season crops: ryegrass, Japanese radish, oats, triticale and stooling rye.

In the case of crops for hay or silage, the following crops can be considered:

- Hay production: teff, weeping love grass and lucerne.
- Almost any crop is suitable for making silage, but the least complicated crop by far, is maize as it is widely adapted, easy to cultivate and least complicated to ensile.

#### **PRODUCTION PLAN**

In developing a production plan suited to individual production systems several considerations need to be well-thought-out. These include which pastures would be best suited, economies of scale as well as the end-use of the pasture. All these considerations and their implementation will ultimately affect the profitability of the enterprise.

- The choice of species and variety would depend on the soil type, the availability and efficiency of irrigation, the climate and for which type of animal production purpose the pasture will be used. For example: Is there a need to plug the autumn quality gap? Is the pasture required for intensive animal production e.g. milk production, finishing of weaners or lambs, or is it required to maintain the condition of the breeding stock?
- Extensive dryland pastures usually require a long recovery period between grazings. Some pastures respond to rotational grazing better than others.
- Fertilisation practices should be geared to the pasture's potential within the constraints of moisture availability (rainfall and/or irrigation) and soil type. Take a soil sample and have it analysed in order to correct the basic fertility before planting.

Once the basic fertility of the soil has been rectified, then fertilisation should be based on nutrient removal. A ton of grass hay or silage dry matter (DM) taken off a pasture will remove approximately 20 kg of nitrogen (N), 15 kg







Intensive pastures, particularly those under irrigation, can cause internal parasite and fungal disease problems. An up-to-date dosing programme should be included in the plan, and in the case of sheep and dairy cows there should be foot rot preventive measures.

Article submitted by Reggie Mchunu

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- Annual forage crops such as sorghum, millet, Japanese radish or the forage cereals (oats, triticale and stooling rye) should be grown as a supplementary source of feed. For example: Whilst perennial pastures are being established or when insufficient winter grazing is available from irrigated lands, the cereals can be sown on dryland.
- Mid-February to March/April are usually the most suitable months for pasture establishment, because there is less competition from weeds which must be controlled during the preceding months. The soil moisture status is usually better at this time of the year. Prepare a fine, firm and weed-free seedbed. For economic reasons, plant as early as possible (February/March).
- Pastures are preferably sown in narrow rows of about 180 mm for irrigated and intensive pastures to 0,9 m rows for extensive dryland pastures (e.g. forage sorghums). Speak to your Pannar representative or agronomist for a tailor-made recommendation. Seed that is broadcast and rolled will also result in a well-established pasture. The individual plants are not as robust as in a row planted pasture. It is recommended to plant pastures in rows in the drier areas.
- All pastures will benefit from a good rolling after sowing. Small seed in particular should be well rolled, and the soil of some soil types should be rolled before sowing as well. Only the larger seeds need to be buried at sowing, the small seeds should only be pressed into the soil.
- Newly established pasture should not be grazed too soon, it must be allowed to develop a good root system. Annuals are generally only ready for grazing 6 to 8 weeks after sowing, and perennials 8 weeks or more. Perennial pasture will take up to two years to reach full production. Heavy grazing after establishment should be avoided at all costs.
- If weed control is necessary in a newly established pasture, the first option should be a mower, and only if the weeds continue to be a problem, should a selective herbicide be used.
- The costs of establishing a pasture are high, and therefore attention to detail, particularly when establishing perennial pasture, will more than compensate for the effort involved.

of potassium (K) and 3,5 kg of phosphorus (P). Legumes will remove more potassium and phosphorus, but well nodulated legumes can make a meaningful contribution towards the nitrogen needs of a pasture.

Up to 85% of the potassium is returned to the pasture via the grazing animal, but in the case of nitrogen, most is lost and only about 30% is utilised by the plant. Nitrogen fertiliser guidelines in this article are for zero grazed pastures (total removal of material). If pastures are grazed the recommended nitrogen application could be reduced.



# THE CORNER POST

### GRAEME ENGELBRECHT It is not just about agriculture

S PROVINCIAL CO-ORDINATOR AT THE DUNDEE OFFICE IN KWAZULU-NATAL, GRAEME ENGELBRECHT SUPERVISES AND MAN-AGES THE MENTORS AND SEES TO ALL THE NECESSARY ADMINISTRATIVE TASKS. WITH THE SUBSISTENCE FARMERS HE IS NOT REALLY DIRECTLY INVOLVED WITH MENTORING, BUT THE LARGER SCALE FARMERS ARE SERVICED WITH REGULAR VISITS TO SUPPORT, GUIDE AND HELP IMPART KNOWLEDGE.

Two of the 2019 Farmer of the Year winners were from his area – Dumisane Hadebe who won the category Smallholder Farmer of the Year and Sabatha Mthethwa who was announced as the Potential Commercial Farmer of the Year. Although Graeme was not directly involved as mentor in their farming operations, he was 'a brain to pick, an ear to listen and someone who could give a push in the right direction' – which is the American politician, John Crosby's definition of a mentor.

#### MENTORING IS ABOUT GIVING AND RECEIVING

Graeme comes from a rural background of trading stores and farming in northern Zululand dating back to the late 1800s. After school he studied agricultural management (BAgricMgt) at the University of KwaZulu-Natal in Pietermaritzburg and also completed a National Diploma in Nature Conservation at the Technikon Pretoria, now the Tshwane University of Technology.

In 2012 he started working with Grain SA as a trainer. Being fluent in IsiZulu he worked wherever the language was the medium of communication in KwaZulu-Natal, Mpumalanga and Gauteng. He became a mentor with the ARC/Monsanto project in 2014 and was appointed as a Grain SA provincial co-ordinator in 2015 where he currently oversees the whole of KwaZulu-Natal excluding the southern area and the Zululand district.

He sees a mentor as someone who is involved and aware of the day to day challenges the farmer is facing and not someone who takes over and runs the business/farm. 'Good practical experience is imperative, as is patience and a heart for agriculture and the people involved in it.'

To Graeme the Grain SA Farmer Development Programme is not just about advancing agriculture. It is also about uplifting people and improving the lives of those in rural communities, therefore honesty, integrity and humanity are vital. 'A mentor needs to have the trust of the farmer both personally and as far as his knowledge and capabilities are concerned.' He says being able to communicate in the farmer's own language and have an understanding of his culture and outlook, are also beneficial.

Graeme has witnessed how the farmers' appreciation for the help, guidance and assistance the mentor gives, motivates the mentors involved in the Farmer Development Programme. 'The scepticism from all sides of the racial divide can make it difficult to convince someone to become involved in the programme as a mentor. I normally urge them to give it a try without obligation. Once the emerging farmers express Louise Kunz, Pula Imvula contributor. Send an email to louise@infoworks.biz



their appreciation for his willingness and knowledge, the new mentors seldom look back.'

There are many challenges facing mentors like initial mistrust by the farmers, the logistics of deep rural areas which makes access difficult, farmers with poor agricultural knowledge as well as politically inspired perceptions and expectations. These however also diminish when appreciation is expressed by the farmers.

#### **CHANGE IS INEVITABLE**

The Dundee office has 2 148 registered active farmers and Graeme encourages them to take part in the projects to get the best assistance. This year there are 659 Beyond Abundance farmers and ten AB InBev funded farmers under the guidance of the Dundee office. 'I try to meet on a monthly to six weekly basis with the study group or individual farmers in the case of the larger farmers.'

Apartfrom the individual visits and study group meetings, specialists often accompany him to meetings/visits to give further guidance. Telephonic support is also given. The assistance is not limited to those who have entered the projects, but to all who are members and need support.'

In the beginning farmers lack self-confidence. Stumbling blocks limiting their success are outdated knowledge, finance, theft, cultural traditions and support. There has however been substantial progress in the area since the mentorship programme began. At a meeting or farm visit, farmers who have been getting more mentoring help impart knowledge to the newer farmers. 'The yield potential has increased since establishing key agricultural practices like soil nutrition, technical and financial skills,' says Graeme.

Since being involved in the programme, Graeme has developed patient perseverance. This is something which some of the farmers have to develop too as they want to go too big too fast. It is important to guide them on how to grow their farming operation as any dream is realisable – just be patient, persevere and continue working hard.

His dream for agriculture is that more commercial farmers will get involved in the programme and that decisions being made at government level will be for the good of agriculture and the country.

There's a Chinese proverb that says: 'If you want a harvest in a year, grow a crop. If you want a harvest in ten years, grow trees, but if you want a harvest that will last a lifetime, grow people.' Perhaps that is why Grain SA's Farmer Development Programme can share so many inspirational success stories.



### INSPIRED BY NATURE, DRIVEN BY SCIENCE HELPING ALL FARMERS STAND AS TALL AS THEIR CROPS

At Pannar we embrace the transformative power of seed technology to increase crop productivity and improve farmer's livelihoods. We will continue to make the latest technological developments accessible to all farmers, helping them to achieve success.

