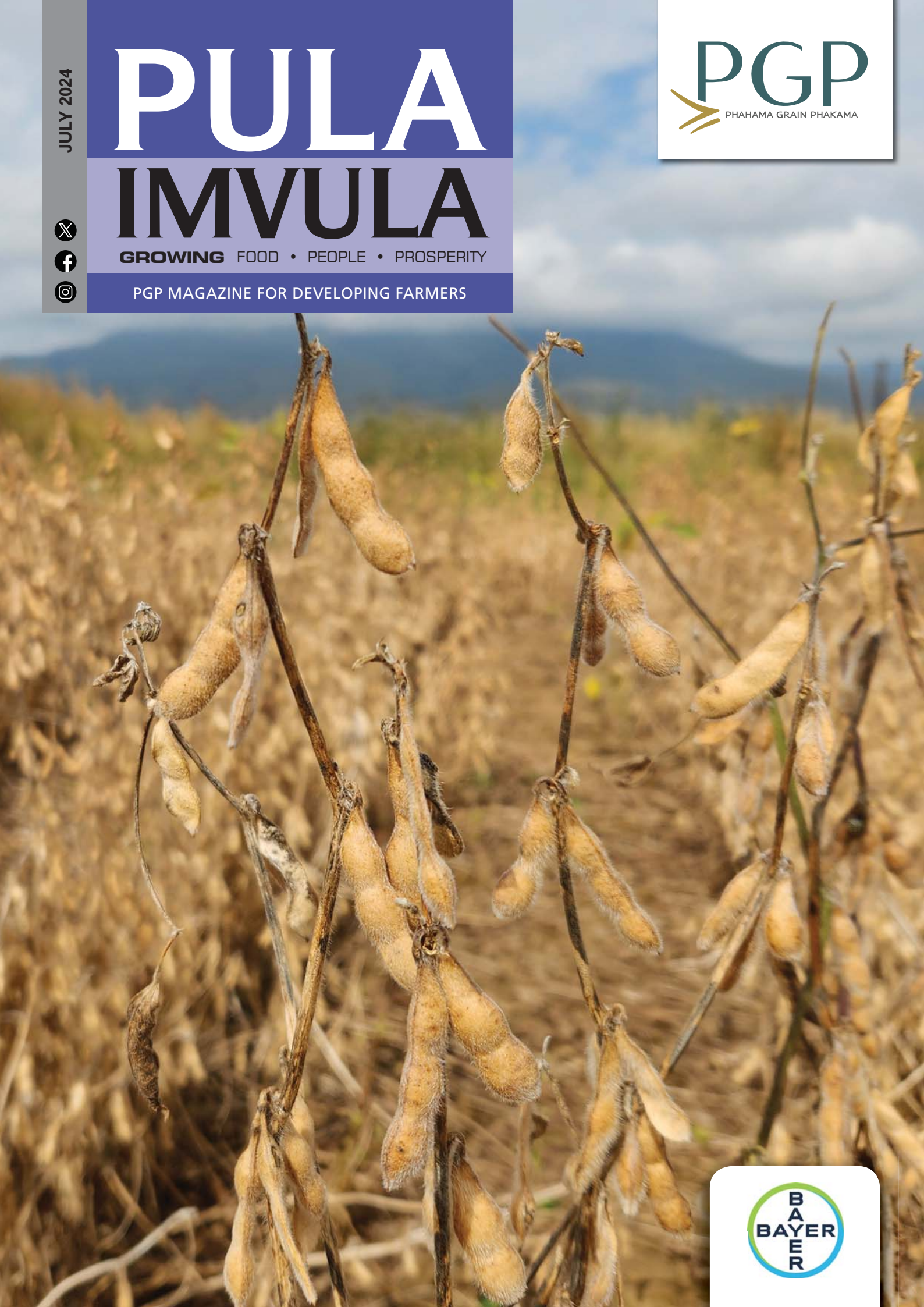


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PULA IMVULA

GROWING FOOD • PEOPLE • PROSPERITY

PGP MAGAZINE FOR DEVELOPING FARMERS



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CONTENTS



**ADD SOYBEAN TO
YOUR PRODUCTION**

12

**AGRICULTURE IS
CELEBRATED AT
NAMPO HARVEST DAY**

04



06

**GRAIN MARKETING
PLAN AHEAD TO
ENSURE A PROFIT**

09



**DRY BEAN PRODUCTION
THWARTED BY OPPORTUNISTIC
SEED-BORNE DISEASE**

16



18

ANIMAL IDENTIFICATION IS ESSENTIAL

19

HAVE YOU HEARD?

20



15



21

A PROGRAMME THAT IS CHANGING LIVES

22

A WORD FROM... Pieter de Jager



IT WAS A GREAT HONOUR TO GET RECOGNITION FROM THE GRAIN INDUSTRY FOR SOMETHING I AM PASSIONATE ABOUT. A COMMENDATION FROM THE INDUSTRY SHOWS THAT YOU ARE DOING SOMETHING RIGHT AND THAT PEOPLE NOTICE IT.

For me the biggest value of the Grain Producer of the Year evaluation process was what I learned about myself and my farming operation. It's not just about winning, but about self-development and I believe this is also what Grain SA wants to achieve through this competition.

The completion of the questionnaire gave me good insight into my business and farming methods. I discovered what my strengths are, and which areas still needed some polishing. Therefore, I would like to share some advice that has contributed to my success as a farmer with *Pula Imvula* readers.

- Ask questions because this is how you learn, but don't just copy someone else's methods – make sure the advice can work for your unique situation.
- Be dedicated because farming is hard work. It is not an eight-to-five job. When you think you are done, there is always something else to do.
- Set goals – medium-term and long-term goals, because this is how your business will grow.
- Practise sound financial management and practices. It makes no sense to spend a lot of money on soil health, just to discover there is no money left for diesel when you want to plant.
- If you want to be successful, you must take responsibility for your own business. You can't blame anyone else when things go wrong. Other people may assist you, but at the end of the day the responsibility is yours.

– Pieter de Jager was the 2023 Grain SA/ Syngenta Grain Producer of the Year and farms in the Albertinia region in the Western Cape. ■



Agriculture is celebrated AT NAMPO HARVEST DAY

GRAIN SA'S 56TH NAMPO HARVEST DAY WAS HELD ON 14 TO 17 MAY 2024 AT NAMPO PARK, JUST OUTSIDE BOTHAVILLE. A RECORD NUMBER OF 86 474 VISITORS OVER THE FOUR DAYS, AS WELL AS 865 EXHIBITORS, CONFIRMS THE TRADE FAIR'S POPULARITY AMONG FARMERS, EXHIBITORS, OPINION MAKERS AND EVERYONE IN SOCIETY WHO HAS A HEART FOR AGRICULTURE.

'It is a great privilege for Grain SA to host NAMPO. The real success of NAMPO is about the close partnerships and collaborations we establish in the industry – such as farmers who have stronger partnerships with their suppliers and customers, and who can make better plans to do even better next year,' said Dr Tobias Doyer after his first NAMPO as chief executive officer (CEO) of Grain SA.

A new record attendance on a single day in a normal year was recorded this year on Wednesday, 15 May, with 25 505 visitors. Thursday's attendance was a short head behind the previous day with 24 021 visitors, while the Tuesday and Friday each received good traction. NAMPO Park's airfield hosted 290 fixed-wing aircraft and 82 helicopters during the show days.

'A noticeable calm atmosphere prevailed at NAMPO Park throughout the week and everything flowed as it should, without any serious incidents at the park. We were blessed with a good NAMPO,' said Dr Dirk Strydom from Grain SA and main organiser of NAMPO. 'With lovely sunny weather, it was the warmest NAMPO in years, which certainly also contributed to the good attendance,' he added.

Danie Minnaar, chairman of Grain SA's NAMPO Harvest Day Committee, says the feedback he has received from exhibitors is that they are very satisfied with the business conducted at NAMPO. He is also

The minister of agriculture, land reform and rural development, Thoko Didiza, paid a quick visit to NAMPO on Wednesday, 15 May. Here she is with Derek Mathews, chairperson of Grain SA, thoroughly enjoying the hospitality and atmosphere of the NAMPO Harvest Day.



Two well-known personalities who visited NAMPO were Wandile Sihlobo, chief economist at Agbiz, and Moeletsi Mbeki, political and economic commentator, who were both part of the Nation in Conversation panel discussing the 2024 election.



Grain SA members enjoying the members' lounge.



Some of the visitors who attended NAMPO 2024.



satisfied that visitors had the opportunity to fully experience NAMPO. "The overall friendliness and spontaneity of exhibitors and visitors that you noticed everywhere on the site was just nice," he said.

NAMPO, A NATIONAL ASSET

'NAMPO is a national asset in which the entire agricultural sector participates. It's a wonderful opportunity where leaders can rub shoulders and build relationships that will carry us through the next year's decision-making and working together to make agriculture successful as a whole,' Doyer continued.

'Farmers must be focussed all the time because there is little room to stumble. After a challenging production season and with a national election imminent, NAMPO helped to create an atmosphere of optimism, but with realistic plans to carry it out.

'This year's NAMPO theme, *Agriculture in a digital era*, has come into its own, because agriculture is at a turning point of great things to come. I am amazed at what producers today have at their disposal to control matters at production level – from genetic and chemical technology to an immense amount of data thanks to the automation of agriculture.'



STAY TUNED FOR MORE

- The NAMPO app, which gave visitors the opportunity to search for exhibitors, navigate to stalls and research products and special offers, went live on 1 July with relevant exhibitor information, as well as virtual tours of the 2024 NAMPO exhibitors.
- Grain SA is further looking forward to NAMPO Cape which will be presented at Bredasdorp from 11 - 14 September and NAMPO ALFA, the Livestock, Hunting & Outdoor expo which will be presented from 17 - 19 October at NAMPO Park. Come enjoy and use NAMPO; it is nice if you come and farm with us on this site.
- NAMPO's dates for next year have been set for **13 - 16 May 2025** at NAMPO Park. Visit www.nampo.co.za for more information or follow NAMPO's social media platforms. ■

EDITORIAL TEAM

How to FEED your crop, not the WEEDS

FERTILISATION IS ONE OF THE PRACTICES USED TO BOOST PRODUCTIVITY AND THE COMPETITIVENESS OF CROPS AGAINST WEEDS AND OTHER ENVIRONMENTAL ELEMENTS. PRECISE FERTILISER PLACEMENT PLAYS A PIVOTAL ROLE IN EFFECTIVE CROP MANAGEMENT. IT SIGNIFICANTLY ENHANCES THE NUTRIENT UPTAKE BY PLANTS, THEREBY PROMOTING OPTIMAL YIELDS IN AGRONOMIC CROPS.

Fertilisation is a crucial practice to enhance crop productivity and competitiveness, aiding in combatting weeds and other environmental challenges. Precise fertiliser placement plays a pivotal role in effective crop management.

WHY FERTILISE?

Soil consists of a blend of finely divided rocks, minerals and organic materials, encompassing components such as sand, silt, clay and organic matter. While these elements contribute to soil tilth, aeration and water absorption, they often lack sufficient nutrients to sustain consistent, healthy crop growth.

Fertilisers play a vital role in replenishing the nutrients depleted by crops from the soil. Without the addition of fertilisers, agricultural

productivity and crop yields would significantly decrease. This is why fertilisers are used to boost the soil's nutrient reserves with minerals that can be quickly absorbed and used by the crops.

Meeting the needs of a growing population with limited resources poses significant challenges. Declining soil fertility, weed proliferation and nutrient deficiencies have contributed to a decline in agricultural output, underscoring the crucial role of fertilisers in modern agriculture.

These chemical compounds applied to crops to enhance their productivity. Farmers rely on these substances regularly to boost their crop yields. Fertilisers contain vital nutrients that are essential for plant growth, such as nitrogen, potassium and phosphorus.

Fertilisers can be important to plants in the following ways:

- Increases plants' tolerance towards pests.
- Improves the water use efficiency of plants and increases root depth.
- Strengthens the straws and stalks of the plants.
- Improves faster development of the root system and formation of seeds in the plants.
- Enhances the growth of plants, which can be characterised by the green colour of the plants.

1 Functions of different plant elements contained in fertilisers.

Nitrogen (N)	Potassium (K)
<ul style="list-style-type: none">• Promotes rapid vegetative growth (leaf and stems).• A vital element in the formation and function of chlorophyll, the key ingredient imparting a dark green colour.• Synthesises amino acids, which in turn form protein.• Regulates the uptake of other nutrients.• Basic ingredient of vital compounds – nucleic acid and enzymes.	<ul style="list-style-type: none">• Aids in the development of stems and leaves.• Increases disease resistance.• Strengthens cell walls and reduces lodging.• Affects water intake by plant cells. Plants with inadequate potassium may wilt in the presence of ample moisture.• Essential to the formation and translocation of protein, starches, sugar and oil, improving the size and quality of fruit, grains and tubers.
Phosphorus (P)	Secondary plant food elements
<ul style="list-style-type: none">• Stimulates early root formation and growth – getting plants off to a good start – and forms a root filter system in the soil to efficiently pick up the other available plant nutrients and water.• Accelerates crop maturity.• Stimulates flowering and seed development.• Causes energy transformation and conversion processes in which sugars are converted to hormones, protein and energy to grow new leaves and fruit.• Vital for photosynthesis (greening for plants).• Essential for cell division.	<p>They are used in smaller quantities than the primary elements, but they are just as essential for plant growth and quality.</p> <ul style="list-style-type: none">■ Calcium (Ca) Calcium is an essential part of the cell wall structure and must be present for the formation of new cells. Deficiency of calcium causes weakened stems and premature shedding of blossoms and buds.■ Magnesium (Mg) Essential for photosynthesis. Activator for many plant enzymes required in the growth process.■ Sulphur (S) A constituent of three amino acids and is therefore essential in the formation of protein. Helps to maintain the green colour in plants.

FERTILISER PLACEMENT

The objective of fertiliser placement is to enhance the interaction between roots and nutrients, particularly during the initial stages of crop and root growth, while avoiding any hindrance to emergence or establishment. It's crucial to place fertiliser where fine roots are most concentrated or where it will naturally migrate to such regions to maximise the yield potential.

The allocation of nutrients is a critical aspect of nutrient management, as it significantly impacts the subsequent availability of nutrients. Incorrect placement may diminish the yield potential and lead to financial losses. When addressing the nutrient placement, factors to consider include:

- The type of fertiliser being applied.
- Tillage and crop rotation practices.
- Choice of crop.
- Access to necessary equipment.
- Nutrient mobility in the soil.
- Soil characteristics.

Common fertiliser placement methods

1. Broadcasting

Broadcast fertiliser application refers to a uniform distribution of material on the soil surface. When applied after planting, a broadcast application is often referred to as a top-dress application. When a broadcast application is incorporated into the soil, it is referred to as broadcast incorporated.

Advantages

- Easy to apply.
- Reduced labour costs.
- Results in relatively uniform fertiliser distribution.
- Requires inexpensive application equipment.
- Reduced risk of nutrient imbalances.
- Flexibility in timing.

Disadvantages

- Leaves more fertiliser available to weeds.
- Enhances N losses by volatilisation, denitrification and erosion compared with placement in the soil.
- Requires rainfall or irrigation to move N into the plant root zone.
- Leaves non-mobile nutrients (P, K and some micronutrients) almost totally on the soil surface, making them unavailable to the plant root system.

2. Banding

Banding refers to placing nutrients below, above, on one side or on both sides of the seed or seedlings at planting. The aim of this placement method is to ensure application of specific fertiliser formulations close to seeds or plant roots to ensure high nutrient availability. Fertiliser bands should be placed at least 4 cm away from the seed and 4 cm below the seed to prevent salt damage and ammonia toxicity.



A fertiliser band that was placed too far from the crop row. With the high price of fertilisers, farmers can't afford to have it misplaced or to reduce its efficiency.

Advantages

- It places fertiliser where seedling root systems can more readily use the nutrients.
- Improves nutrient use efficiency.
- Positions fertilisers so that they are more available to the crops than to the weeds.
- Retains nutrients during soil erosion.
- Promotes rapid early plant growth by increasing P availability.
- Lessens P and K fixation by limiting surface area contact with the soil.

Disadvantages

- Increases N and S leaching losses compared with surface placement.
- Slows planting if applied with a drill.
- Requires more costly equipment or equipment modification.
- Salt burn to plants if done incorrectly.
- Costly and slow.
- Labour-intensive.
- Limited coverage.

IMPACT OF FERTILISER PLACEMENT

Root development

The primary root develops first, followed by the first seminal pair. Less soluble fertilisers, such as P, placed below the seed will be accessed earlier in the growing season than fertilisers placed at the side of the seed on the same depth (**Figure 1** on page 11).

Next, seminal pairs and crown roots develop and can access fertiliser placed at the side of the seed (**Figure 2** on page 11). The proper band should be 4 cm to the side and 4 cm below the seed for the developing roots to hit the banded fertiliser soon after development.

Mature root systems generally grow much deeper than the depth of applied fertiliser, although the final depth is dependent on the crop and soil moisture. Deep roots can access mobile nutrients, such as nitrate, which are in fertiliser placed on or near the surface if the moisture is sufficient.

Fertiliser and weed competition

The broadcasting of fertiliser makes the fertiliser available for weeds at a much larger scale. On the other hand, placing fertiliser in the soil near the seed or concentrated in the root zone positionally favours



2

Weeds also benefit from a fertiliser application.

How to feed...

the crops and limits the supply to weeds. Weeds close to banded fertiliser must be controlled because competition is more intense where nutrients are concentrated.

It is very important that planters are calibrated and monitored constantly during planting to ensure that fertiliser is still being applied at a desired depth and distance from seed. Any fertiliser that is banded incorrectly may result in poor crop development and gives the weeds that receive it an advantage (**Photo 1** on page 7).

If you limit the application of fertiliser to your crop, this will give it a good competitive advantage against the weeds. The improper placement of fertiliser will lead to a decline in the crop yield and may increase the cost of weed control, which is reducing the farmer's income.

P availability

Choosing a fertiliser application method is an important management decision for producers, from both efficiency and environmental standpoints. Due to P being relatively immobile in the soil profile, the application distance is important to maximise the P uptake efficiency.

The P movement in water runoff causes eutrophication, which promotes algal growth in water bodies and is an increasing environmental concern. Broadcast P application is often the simplest method and is suited for higher rates of fertiliser application. This maximises fertiliser contact with soil constituents over a larger volume of soil, thus increasing the potential for P fixation. Because of strong P adsorption to soil particles, broadcast application increases the risk of runoff to nearby rivers and streams.

Band application of P can provide many advantages over broadcast application at low soil test levels. By fertilising only a small volume of

soil, soil-to-fertiliser contact is reduced, resulting in decreased P fixation and increased plant uptake.

How much to apply

The potential yield of an area is typically influenced by factors such as the rainfall, soil potential and soil condition, which can be altered by different cultivation methods. The fertiliser requirements for achieving a specific yield are closely tied to the soil test results, soil condition, soil potential and local rainfall patterns.

Collaborating closely with fertiliser representatives is crucial for farmers to obtain accurate analyses and recommendations tailored to their environment and financial circumstances. For those seeking general recommendations, the fertiliser handbook compiled by the Fertiliser Association of South Africa (FERTASA) provides guidelines for various crop fertiliser requirements.

CONCLUSION

Neglecting regular checks on your planter operations is inexcusable. Planting with fertiliser inadvertently deposited on the surface due to uncalibrated equipment or obstructed/broken tubes can significantly diminish yields, transforming your endeavours from profitable to costly. Every effort must be exerted to ensure proper nourishment of the crop, providing it with optimal conditions to achieve target yields.

Since fertiliser stands out as one of the most substantial expenses, its application, particularly in terms of placement, should be executed with utmost effectiveness. The strategic placement and timing of fertilisers have the potential to maximise both yield and nutrient utilisation efficiency, ultimately boosting net profits for producers.

PLAN AHEAD TO ENSURE A PROFIT

MAKING A PROFIT STARTS WITH FINANCIAL PLANNING. FINANCIAL PLANNING WILL HELP WITH THE DECISION OF WHAT TO PLANT AND HOW TO PLANT IT – AND MOST IMPORTANTLY, HOW TO DO PRICE MANAGEMENT. THIS ARTICLE WILL DELVE INTO THE DETAILS OF A PRODUCTION BUDGET FOR CROP PRICE MANAGEMENT.

PRODUCTION BUDGET

Table 1 (on page 10) illustrates the production budget for the 2024/2025 season, focussing on North West for BT white maize, sunflower and soybeans. The first column serves as a reference for explaining the budget.

The income or gross production value is firstly explained, followed by the direct allocated cost to calculate the gross margin, including the fixed cost, and lastly the crop net margin. The crop income is the expected yield multiplied by the expected crop price.

Line 1 displays the farmgate price per ton that the farmer will get for his grain and oilseeds, calculated as the Safex market price minus the marketing cost, like the transport differential, silo handling costs and transport from the farm to the nearest silo (line 23).

Line 2 outlines the anticipated yield per hectare, with an estimated example of 4,5 tons for white maize and 1,5 tons for sunflower and soybeans. The yield must be based on the long-term production or the potential of the soil. Line 3 represents the gross production value, obtained by multiplying the value per ton (line 1) with the expected yield (line 2) to determine the projected crop income per hectare.

The direct variable costs are the inputs that are essential to produce the crop. These inputs will be increased or decreased according to the yield expectations. From line 4 to line 16, all the major inputs are itemised and the total direct allocated variable cost (R/ha) (TDAVC) is calculated in line 17 (the sum of line 4 to line 16).

The gross margin (R/ha) is in line 18, and it is calculated by subtracting the total direct allocated variable cost from the gross production

value. If the gross margin is negative, it does not make sense to produce this crop at all.

Unfortunately, farmers still have other costs to pay expenses such as salaries, electricity and the household costs. These costs are known as the fixed or overhead costs. Line 19 encompasses the total overhead costs per crop.

If the total overhead cost (R/ha) is deducted from the gross margin (R/ha), the net margin (R/ha) is calculated. This figure tells a farmer if, according to the assumptions, a profit is expected or not. If the figure is negative, try to find the problem and correct it. This can be done by bringing down the costs or increasing the income. Only the farmgate price or the yield can make a difference to increase the income. Most farmers experience a loss due to bad price management.

Grain and oilseed price management starts with knowledge of how much it costs to produce a ton of grain or seed. This production cost per ton is calculated by adding the total direct allocated variable cost (R/ha) to the total overhead cost (R/ha), and then dividing it by the expected yield per hectare. This figure is the first input to calculate the breakeven price per ton needed. By adding the total cost per ton to the marketing cost per ton, the breakeven price is calculated, which can then be compared to the Safex price.

In the table, the total cost per ton, the marketing cost per ton and the breakeven prices are calculated in lines 22 to 24. By comparing the breakeven prices with the current Safex delivery month price, a farmer can decide what to plant.

Line 25 displays the Safex market price on 8 May 2024 for July 2025 white maize, and the May 2025 sunflower and soybeans prices. Farmers must remember that the prices will change every day and therefore this aspect needs constant attention.

PRICE MANAGEMENT STRATEGY

The aim of price management is to implement a strategy to determine a minimum price, with the opportunity to get a better price if the price moves upwards. Although this sounds like a very difficult action, it is relatively simple if all the price hedging tools are understood and implemented.

In South Africa, Safex determines the daily demand and supply for daily future contract prices. Safex doesn't only operate the future market, but also the option market. The put and call options are traded on the option market. Today the Safex future market trades a price for a certain product for delivery on a certain future date. This means you can sell your product today at a certain price for delivery in the future.

The option market is a market where the rights to sell and buy at a certain price are traded. If a farmer buys a put option, he obtains the right to sell his product at a certain price. When a farmer buys a call option, he obtains the right to buy a product at a certain price.

The question is what a farmer can do to manage his product price, which is called the price hedging strategy. Several strategies with specific outcomes are available. The first strategy is to do nothing. You produce the crop, take it to the silo and sell it at the price for that delivery day or the spot price.



Plan ahead to...

1 The production budget for the 2024/2025 season for BT white maize, sunflower and soybeans in North West.

Line reference		BT white maize	Sunflower	Soybeans
1	Farmgate product price for the best grade (R/ton) (Safex less marketing cost)	R4 987/ton	R8 894/ton	R8 835/ton
2	Estimated yields (t/ha)	4,5	1,5	1,5
3	Gross production value (R/ha)(GPV)	R20 673	R12 677	R12 786
4	Direct allocated variable costs (R/ha)			
5	Seed	R1 734,95	R832,00	R1 106,66
6	Fertiliser	R3 784,73	R1 706,00	R1 984,25
7	Lime	R203,13	R203,13	R203,13
8	Fuel	R1 662,69	R1 342,66	R1 150,21
9	Reparation	R715,07	R618,04	R620,19
10	Herbicide	R1 400,46	R553,63	R1 421,27
11	Pest control	R747,87	R110,20	R220,51
12	Input insurance	R673,92	R234,20	R232,33
13	Grain hedging	R1 360,04	R196,93	R391,42
14	Contract harvesting	R -	R -	R -
15	Harvest insurance	R392,73	R240,21	R834,02
16	Interest on production R/ha	R744,69	R354,67	R479,63
17	Total direct allocated variable cost (R/ha)(TDAVC)	R13 420,27	R6 391,67	R8 643,62
18	Gross margin (R/ha)(GPV-TDAVC)	R7 252,73	R6 284,83	R4 142,38
19	Total overhead cost R/ha	R3 600,00	R3 500,00	R3 500,00
20	Net margin (R/ha)(gross margin less total overhead cost)	R3 652,73	R2 784,83	R642,38
21	Total cost per hectare (R/ha)	R17 020,27	R9 891,67	R12 143,62
22	Total cost per ton cost (R/t)	R3 782,28	R6 594,45	R8 095,75
23	Marketing cost (R/t)	R393,00	R393,00	R393,00
24	Breakeven price	R4 175,28	R6 987,45	R8 488,75
25	Current Safex price	R4 987,00	R8 894,00	R8 835,00
26	Gross margin (R/ha)	R7 253	R6 285	R4 142
27	Net margin (R/ha)	R3 653	R2 785	R642

Disclaimer: The information herein has been obtained from various sources, the accuracy and/or completeness of which Grain SA does not guarantee and for which Grain SA accepts no liability. Any prices or levels contained herein are preliminary and indicative only and do not represent bids or offers. These indications are provided solely for your information and consideration.

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MAIZE TRUST

The second strategy is to sell your grain at a fixed price before it is delivered. The third strategy is to make use of the future market by using the future or option market. Each strategy has its own cost, advantages and disadvantages.

However, before delving into these strategies, it's essential to grasp a fundamental concept. The breakeven price budget's line 24 denotes the threshold price where selling grain above it ensures a profit. Regardless of the chosen strategy or method of selling grain,

profitability is achieved when the selling price per ton exceeds the breakeven price per ton.

SPOT STRATEGY

The spot strategy involves the farmer refraining from selling any grain throughout the season. Instead, he sells his entire harvest at the current market price on the day of delivery to the silo. To illustrate this, consider soybeans as an example. In column four, line 24, of

the budget, it is observed that the breakeven price for soybeans is R8 488,75 per ton.

If the farmer delivers soybeans on 8 May 2025, as indicated by the market price in the same column (line 25), he will sell his grain at R8 835 per ton. Consequently, he would achieve a profit of R346,25 per ton (R8 835 - R8 488,75). However, if the price on the delivery day was R6 890, he would incur a loss of R1 598,75 per ton (R6 890 - R8 488,75).

THE FIXED PRICE STRATEGY

Farmers can also sell their crop on the fixed price contract. This means that the farmer signs a contract that he will deliver a certain grade at a certain price, regardless of what happens to the price. If the price drops or increases, farmers will get the agreed price. Farmers must remember that these contracts should be honoured to avoid paying penalties.

It makes sense to use more than one fixed contract to hedge your average grain price. The three times strategy entails the farmer to sell his grain on three contracts according to the delivery date, but at three different times. This can be illustrated with maize, which has a breakeven price of R4 175,28 (as shown in column two, line 24). The first contract is secured after planting (December), the second during the pollination phase (February), and the third and final one after harvesting (July). Consequently, the farmer sells only a third of the crop at each of these times.

For instance, it can be assumed that the first contract is priced at R4 700 per ton, the second at R4 100 per ton and the third at R3 800 per ton. Although the price of the last contract is lower than the breakeven price, the average price of the three contracts is R4 200, which is still above the breakeven price. Therefore, the farmer realises a profit of R25 per ton. However, if the average of the three prices was lower than the breakeven price, the farmer would incur a loss.

PUT OR OPTION STRATEGY

The put strategy utilises a put option derivative instrument as a way to sell grain. A put option grants the holder (the farmer) the right, but not the obligation, to sell the underlying instrument. Simply put, the farmer can establish a price, known as the strike price, at which he wishes to sell his grain.

If the prevailing market price on the expiration date is lower than the strike price, the farmer sells his grain at the strike price. However, if the market price exceeds the strike price, the farmer has the option to sell at the higher market price instead, although this flexibility requires paying a premium.

For instance, consider sunflower. In column three, line 24 of the budget, it is observed that the breakeven price for sunflower is R6 987,45 per ton. In the put strategy, the farmer purchases a put option covering his entire production after planting, with an expiration date in June 2024.

At the time of purchasing the put option, the Safex price is R8 894 (matching line 25), resulting in a profit of R1 906,55 per ton (R8 894 - R6 987,45). It's crucial to note that as long as the strike price exceeds the breakeven price, the farmer will profit, regardless of the price movement. ■

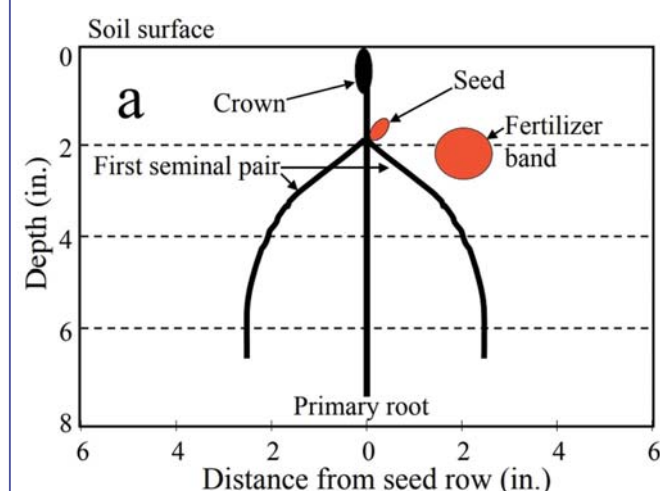
**PIETMAN BOTHA, INDEPENDENT
AGRICULTURAL CONSULTANT AND
JOHAN TEESEN, AGRICULTURAL
ECONOMIST INTERN, GRAIN SA**



8 How to feed...

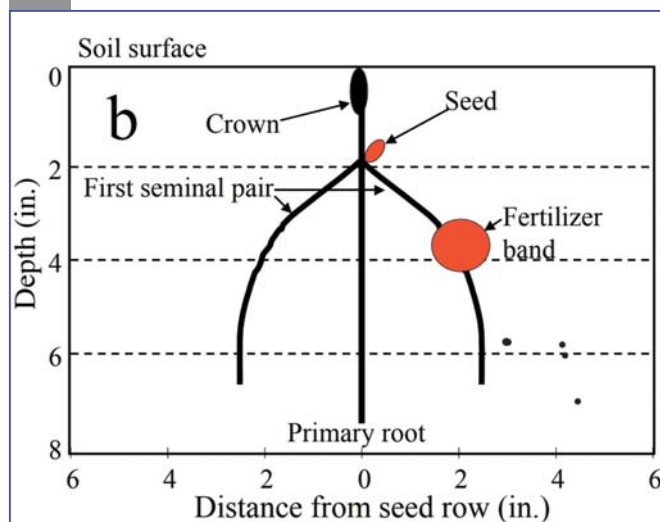
1

Fertiliser placed too shallow could lie in dry soil and is not reachable by the roots.



2

Fertiliser placed correctly for good root-nutrient contact.



REFERENCES

- <https://dutchopeners.com/choosing-the-right-fertilizer-placement-method/>
https://www.ctahr.hawaii.edu/mauisoil/c_placement.aspx
 Rees RM, Roelcke M, Li SX, Wang XQ, Li SQ, Stockdale EA, McTaggart IP, Smith KA and Richter J, 1996. The effect of fertiliser placement on nitrogen uptake and yield of wheat and maize in Chinese loess soils. *Nutrient Cycling in Agroecosystems*. 47:81-91
 Sindt MR, 2015. Impact of phosphorus placement on corn rooting dynamics under long-term strip-tillage. B.S., Concordia University, Nebraska, 2015
 Steusloff TW, Nelson KA, Motavalli PP and Singh G. 2019. Fertiliser placement affects corn and nitrogen use efficiency in a clay pan soil. *Agronomy Journal*. 11(5):2512-2522 ■

**LEONARD THAPHATHI,
MANAGER: DEVELOPING
AGRICULTURE AT NWK**



Add SOYBEAN to your PRODUCTION

SOYBEAN PRODUCTION HAS BECOME MORE POPULAR IN SOUTH AFRICA – IT HAS INCREASED FROM SLIGHTLY OVER 500 000 TON PER YEAR IN 2012 TO MORE THAN 2,7 MILLION TONS IN 2023. THIS CROP HAS THE POTENTIAL TO SPREAD THE RISK OF CROP FAILURE. IT CREATES AGRONOMIC ADVANTAGES AND CAN ALSO EARN A FARMER A GOOD INCOME.

Although South Africa's dryland crop production in the summer rainfall area is dominated by maize production, soybean production is worth considering as an alternative for maize on a part of the farm. Add to this the 'kick-up' effect of maize yields planted after soybeans in a crop rotation system. In most cases, the maize yield will increase with 10% or more if it is planted after soybeans.

Price differentials may also favour soybean cultivation. Also consider the fact that almost no nitrogen (N) fertiliser is needed. Soils and a climate that favour maize production, will in most cases be the same for soybeans.

FACTORS TO CONSIDER

The following factors should be considered before planting soybeans:

Soil requirements

- Start with your soil. Soybeans will thrive in deep soils with a pH of about six. Fortunately it will tolerate lower pH values, even better than maize.
- Phosphorus (P) and potassium (K) levels of 20 parts per million (ppm) and 100 ppm (depending on the soil and extraction method) are ideal, but once again soybeans are adaptable to grow under lower levels.
- Consider any weeds in the field as your enemy and remove it. Ensure that the herbicide used on a previous crop will not damage soybeans.
- Make sure that your crop field is reasonably level, as soybeans should not be planted deeper than 5 cm, with 250 000 to 300 000 plants per hectare.
- Row spacing depends on the implements used, but narrow rows (less than 90 cm) normally yield more in normal years.

Cultivar selection

- A vast range of soybean cultivars is available. To select the right one for your area, make use of information available from the Agricultural Research Council's (ARC's) *Soybean Cultivar Recommendations*, seed companies and the adviser in your area.
- Make sure that the maturity group of the cultivar you consider fits into the area where you plant the crops.
- If possible, plant more than one cultivar with different growing periods – this will lengthen the harvesting period. Never mix seed – plant different cultivars in separate fields.
- The planting date will also influence your cultivar choice. Consider these planting date guidelines:
 - Cool areas: End of October until end of November.
 - Moderate areas: November until beginning of December.
 - Hot areas: Middle November until end of December, where frost is not expected early in the autumn.

Inoculation of seed

This is by far the most important operation for the successful cultivation of soybeans. Take note that a farmer can save more than 60 kg of N for every ton of soybeans produced if inoculation is done properly.



According to Dr Erhard Briedenhann, chairman of the Oilseeds Advisory Committee (OAC) and vice-chairman of the Protein Research Foundation (PRF), the total oilseed crop production in South Africa has increased from 1,32 million tons to 2,75 million tons in the past ten years. The soybean industry is at the forefront of this exceptional increase and in 2022/2023 a record of 1 148 300 ha soybeans were planted in South Africa, with a record harvest of 2,75 million tons. (SA *Graan/Grain*, 31 August 2023)

Biological nitrogen fixation (BNF) is only possible with successful inoculation with Rhizobium bacteria. This process starts with the mixing of the right Rhizobium strain with soybean seed and if possible, also Rhizobium in suspension in the planting furrow. Seed should be moistened with a wetting agent.

Handle the inoculant with care, store in a cool place and keep it out of direct sunlight during mixing. Successful BNF will ensure enough N for a good crop.

The planting of soybeans should be done as soon as the seed is mixed. Never leave the inoculated seed for the next day, except



A healthy looking soybean crop in the Dundee region, taken in 2023.



where the inoculum is pre-treated to allow for longer retention periods. Make sure you follow the instructions.

All other nutrients should be applied as needed. Molybdenum is essential for effective N-fixation. Therefore, it should be applied as a micronutrient.

Keep in mind that soybeans require 6 kg to 9 kg P and more than 20 kg of K per ton of grain. Sulphur (S) may also be in short supply. At least 2 kg of S is removed for every ton of grain produced. A soil analysis will give a good guideline for a fertiliser recommendation.

Planting date

Irrespective of other considerations, never plant in dry soil. Soybeans take up 50% of its seed weight before germination, but for maize it's only half this amount.



If possible, plant more than one cultivar with different growing periods – this will lengthen the harvesting period.



Weather conditions will be the driving force, but where possible, early planting with the right cultivar will yield the best. *Sclerotinia* stalk rot is also more prevalent with late plantings, especially when it's cold and wet during flowering.

Avoid crust formation in the first week after planting. Keep the crop fields free of weeds, pests and diseases as far as possible.

Like maize, soybeans are also more sensitive to adverse conditions during the reproductive stage. Fortunately soybeans stay longer at this stage, thus it could cope with such conditions a little longer than maize. The crop can also cope better with waterlogged conditions than maize.

Harvesting

The last crucial part of the soybean production process is harvesting. If the fields are too big for hand harvesting, a combine is needed. Make sure that you have access to such a machine at harvest time. Soybeans will shatter after the R8 stage, when 95% of the pods turn brown. ■



**DR JAN DREYER, RETIRED
AGRONOMIST. FIRST
PUBLISHED IN PULA IMVULA,
JANUARY 2023**



*Behind every farm gate lies a story of
hard work, perseverance, and community.*

~ FREE STATE AGRICULTURE



Compile a BUSINESS PLAN for your farming operation

TO BEGIN FARMING, YOU NEED KNOWLEDGE OF FARMING PRACTICES, WHERE TO OBTAIN THE RIGHT INPUTS AND MONEY TO BUY THE INPUTS. TO BECOME A SUCCESSFUL FARMER REQUIRES PROPER PLANNING. A BUSINESS PLAN CAN HELP YOU TO ESTABLISH EXACTLY WHAT YOU WANT TO DO, HOW YOU ARE GOING TO DO IT AND WHAT RETURNS YOU CAN EXPECT, BEFORE YOU SPEND ANY MONEY TO FARM.

A business plan represents the roadmap of the future for successfully developing or expanding a farming business. It spells out where the farm is heading and explains how it intends to reach this destination. **Figure 1** illustrates a business roadmap for the future, containing elements to be included in a business plan.

Every business has a past, present and an ideal future. If you are only starting on your farming journey, the past will be very short – but if you have been involved in farming for a while, the past will include some aspects such as:

- Your journey as a farmer.
- Where you worked before you started farming.
- What type of experience you have.
- What you have done that worked well and what did not work out at all.

The future is unknown, everybody needs to have a picture of where they want to go and what it will look like.

The current reality will describe the farming business' present characteristics, including aspects such as:

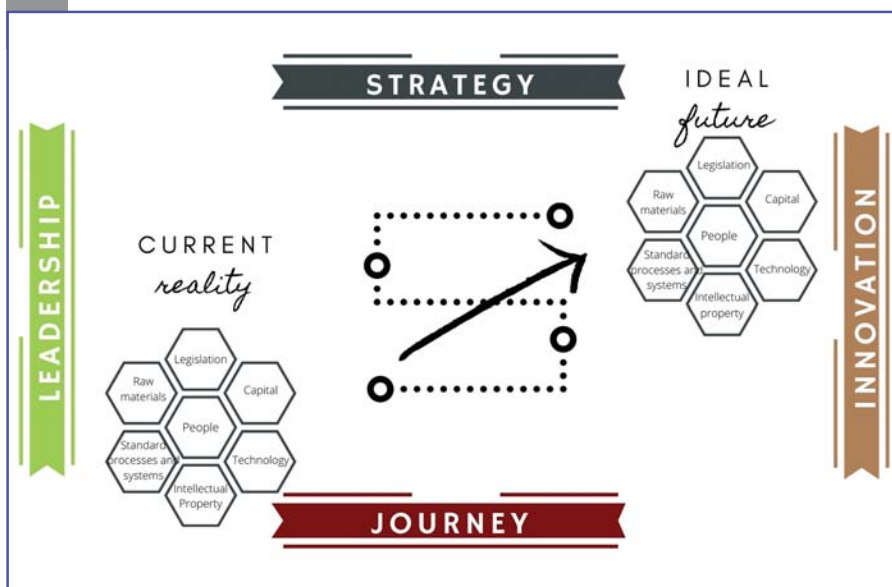
- Do you have access to land and if so, how many hectares?
- Are you producing anything currently? List the animals and crops, as well as the income that is currently being generated on the farm.
- How many people are working on the farm?
- What are your strengths, weaknesses, opportunities and threats?

For some farmers, the reality will be good, while for others it may be a bad situation. However, it does not matter whether it is good or bad – it is necessary to understand what your current reality looks like so that you know whether you want to do something about it or not. If your current reality is already good, you may find that you do not want to change it, but rather want to find ways to keep it up.

When describing your farm's ideal future, you will answer the same questions listed above, but the answers will include your

1

Illustration of a business roadmap for the future.



dreams of what you want your own and your farm's ideal future to look like. Although the future is unknown, everybody needs to have a picture of where they want to go and what it will look like. Some businesses refer to it as their vision and mission, or the reason why they do what they do.

A business plan for your farm is a written plan mentioning your past, present and ideal future. Lists the decisions, steps and actions you are going to take to move the business from where it is now to where you would like to see it in the future. As you can see, it will require time and effort to compile a business plan. So why would you invest time and effort into compiling one?

A business plan can be compiled to:

- Support a loan or finance application.
- Determine project feasibility.
- Define new business goals and steps to achieve them.
- Evaluate the effectiveness of business and marketing strategies.
- Attract possible outside investors.
- Set directions for the business for the next five to ten years.
- Provide a growth and development plan for an established business.

And also for possible future mergers and strategic alliances, getting contracts and off-take agreements and to qualify for funding and support from government programmes. The next article in this series will focus on how to write a business plan. ■

YOLANDI KRUGER,
AGRICULTURAL ADVISOR
AT DUNAMUS



DIGITAL AGRICULTURE PLATFORMS in support of BIOSECURITY

PESTS AND DISEASES OF CROPS HAVE THE POTENTIAL TO IMPACT A PRODUCER'S YIELD AND MAY AFFECT TRADE DEPENDING ON THE QUARANTINE STATUS OF THAT PEST OR DISEASE. THEREFORE, EFFECTIVE MONITORING AND SURVEILLANCE OF THE RELEVANT PESTS AND DISEASES ARE AN IMPORTANT COMPONENT FOR IMPLEMENTING IMPACTFUL MANAGEMENT STRATEGIES AND POLICIES.

However, serious limitations to monitoring and surveillance continuously arise, as extension services are not always able to reach affected farms in a timely and efficient manner. To mitigate these limitations, the Biosecurity Africa App (a product of Cropwatch Africa) and the Innovation @UP Information Hub platform were developed to gather information on the spread of agricultural pests and diseases across South Africa. These apps allow users to efficiently capture, analyse and visualise vital information from widespread regions, including those which were previously difficult to access.

Should a producer require further diagnoses of the pests and diseases recorded on these apps, the Information Hub can be used to link these producers to the Grain Pest and Disease Diagnostic Clinic based at the Forestry and Agricultural Biotechnology Institute (FABI) for further diagnostic confirmation.

EXPOSURE TO TECHNOLOGIES

In August of 2022, members from the University of Pretoria, including Dr Osmond Mlonyeni (Innovation Africa @UP programme manager), Dr Mahlane Godfrey Kgatle (Grain SA), Ntombizodwa Maduna (National Grain Research Programme (NGRP) diagnostic clinic technician) and Matthew Jackson (MSc candidate, FABI) travelled to the Eastern Cape to promote the new digital biosecurity platforms for monitoring South African pests and diseases of agriculture.

Although commercial grain production in the Eastern Cape currently lags behind other provinces, its rich soils and ideal climatic conditions give the province immense potential in terms of the contribution it could bring to the grain industry and the South African economy. It is therefore critical that producers and researchers in the region have exposure to technologies and tools that can help to strengthen their ability to increase yields.



Training on how to send disease and pest samples to the FABI diagnostic clinic was also provided.



Matthew Jackson (in front) with attendees of the Eastern Cape workshop where the new digital biosecurity platforms for monitoring South African pests and diseases of agriculture were promoted.

The Cropwatch Africa and @UP Information Hub platforms were introduced to local extension officers and researchers from the Eastern Cape during a four-day-long workshop in Stutterheim and Mthatha. The workshop was conducted in collaboration with Social Coding SA, a non-profit organisation which provides digital education to rural communities across South Africa.

Dohne Research Centre in Stutterheim was the venue for the first three days of workshops, where training was given to both extension officers (agricultural advisors and senior agricultural advisors) and researchers from across the five regions (Alfred Nzo, Amathole, Chris Hani, Joe Gqabi and OR Tambo) of the province. Training on how to send disease and pest samples to the FABI diagnostic clinic was also provided.

The final workshop was presented to Ukhanyo Farmer Development (UFD) in Mthatha. UFD is a non-profit, youth-owned, female-led commercial grain development entity, which was formed by 36 young graduates. The UFD's aim is to address the challenges which hinder small-scale farmers from reaching commercial status in the Eastern Cape. UFD offers mentorship to 2 600 farmers across all five high-potential maize-growing regions of the Eastern Cape. The surveillance apps and training provided will help these farmers to increase their yields and the quality of their produce.

Potential information collected via the digital platforms from over 2 000 plots in the Eastern Cape will add critical insight on the spread and outbreak patterns of pests and diseases. It will contribute to building a food-secure and economically prosperous grain industry well beyond the province. Efforts are underway to introduce this technology to producers throughout South Africa, in order to expand its impact by reaching an even wider geographic user range.

This work is being funded by the Department of Science and Innovation, the Technology Innovation Agency and Innovation Africa at the University of Pretoria along with its partners. ■

MATTHEW JACKSON (IN COOPERATION WITH THE NGRP TEAM), FABI, UNIVERSITY OF PRETORIA. FIRST PUBLISHED IN SA GRAAN/GRAIN, JUNE 2023.

SA Graan Grain



**MADE POSSIBLE BY
BAYER**

DRY BEAN production thwarted by

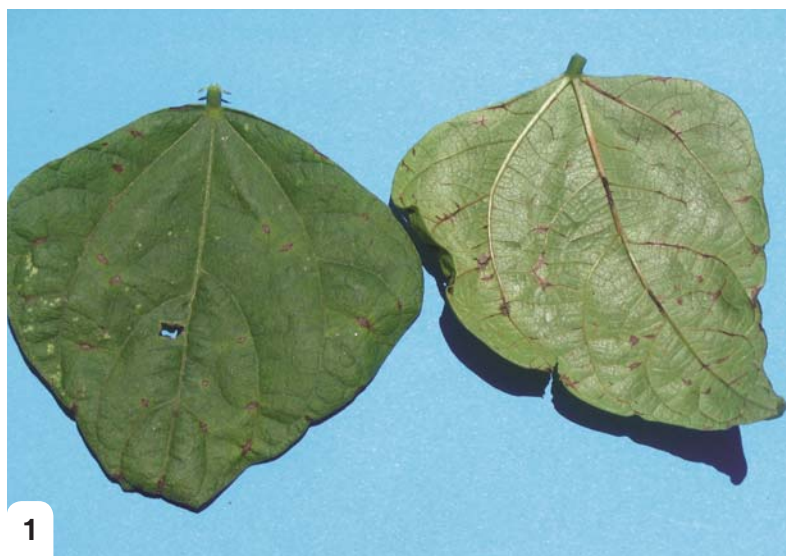
IN SOUTH AFRICA DRY BEANS ARE PRODUCED BY SUBSISTENCE, SMALL-SCALE, COMMERCIAL AND LARGE-SCALE COMMERCIAL FARMERS IN THE FREE STATE, GAUTENG, KWAZULU-NATAL, LIMPOPO, MPUMALANGA, NORTH WEST AND NORTHERN CAPE. THREE TYPES OF DRY BEANS PRODUCED BY THESE FARMERS INCLUDE RED SPECKLED BEANS, SMALL WHITE BEANS AND LARGE WHITE KIDNEY BEANS.

This crop is primarily grown for its nutritional benefits as it contains selenium, molybdenum, potassium, magnesium, folate, iron, zinc, thiamine, vitamin B6, folic acid and protein for human diets. It is furthermore commonly used in local school feeding schemes. A small percentage (15%) of the local dry bean crop is allocated for canning purposes.

South Africa's dry bean production has historically been very small. However, during the last five years dry bean production only averaged around 65 000 tons, which accounted for less than 1% of the entire summer crop production area. The incidence and



2 Anthracnose symptoms on the pods.



1 Anthracnose symptoms on leaves.

severity of diseases were among various reasons for the decline of the dry bean production area. Anthracnose, caused by a fungus *Colletotrichum lindemuthianum*, is a common, opportunistic seed-borne dry bean disease that is very damaging and results in severe yield and quality losses of commercial cultivars of up to 100% in disease-favourable climates.

DISEASE CYCLE AND EPIDEMIOLOGY

Anthracnose is classified into several races based on its ability to infect specific bean cultivars by region, location and variety. *C. lindemuthianum* can be transmitted through seed, air and water and can survive for several years on crop residues retained in the field, particularly when the infected residue is on the soil surface. Dry beans are susceptible to infection from seedlings to maturity, depending on climatic circumstances conducive to disease infection and progression. Early infections will result in higher yield losses and increase seed transmission rates.

Primary infections occur at the beginning of the season and primary inoculum originates from soil and dry bean stubble retained on the field. Secondary infections occur when spores develop on mature plant lesions which are then distributed by wind, rain or equipment moving through an infested field. When cool, rainy weather prevails the epidemic develops at a rapid rate.

As anthracnose is a polycyclic disease, secondary infections occurring later in the growing season may infect seed but show no visual symptoms. Long-term wet, humid conditions lead to serious epidemics that can cause major yield and quality losses.

SYMPTOMS AND OCCURRENCE

The pathogen can infect the hypocotyl and cause stem collapse when the stem is girdled. However, the black to dark purple necrotic lesions appear primarily on the plant's aerial parts (leaves, stems, and pods). Lesions can be easily spotted in the early stages of disease development as small, elongated, dark brown patches that appear on petioles following the vein patterns. Lesions on both sides of the leaf indicate the final stages of disease development.

opportunistic seed-borne disease



3 Anthracnose symptoms on the seeds.

Severe leaf infections may result in premature defoliation (**Photo 1**). On the pods, the fungus causes reddish rust lesions or specks that grow into sunken tan lesions encircled by black rings (**Photo 2**). These lesions can range in size from 1 mm to 10 mm. Contaminated pods may drop or abort developing seeds, resulting in contaminated seed. Lesions on infected seeds cause them to discolour, distort, or shrink. Infected seeds are also likely to have a low germination rate (**Photo 3**).

DISEASE MANAGEMENT

Anthraco­nose spores have been recorded to survive up to five years in the soil in some cases, but outbreaks can be effectively controlled by implementing an integrated control programme with the help of a certified plant pathologist. A weekly field scouting for anthracnose symptoms is strongly recommended to ensure the implementation of timely control measures which include the following:

Host resistance

Planting resistant dry bean cultivars and varieties in fields with a history of the disease will reduce yield losses. However, the possibility of resistance breakdown due to pathogen adaptability and the development or emergence of new races of the pathogen may render previously resistant hybrids susceptible, and should therefore be monitored.

Dry bean farmers are urged to communicate with their nearest plant pathologist for assistance in developing an integrated disease management system custom made to their needs. They are advised to contact us, the authors, at the ARC-Grain Crops in Potchefstroom on 018 299 6100 for any advice.

Should farmers notice any disease symptoms in their fields, they are requested to contact us telephonically so we can arrange to fetch or courier isolates. We are always in need of isolates from a wide variety of localities for research purposes and the assistance of farmers will be most welcome.

Cultural control

After an anthracnose epidemic, rotating with alternate crops such as cereals and non-host crops for at least two years should reduce initial inoculum levels by enabling infected stubble to break down over time. Conventional tillage will also aid in reducing initial inoculum levels.

Correct plant spacing and adequate weed control improve air circulation and reduce moisture in the foliar canopy that can develop conditions favourable to anthracnose infection. Planting dates can be manipulated to avoid cooler conditions that stimulate infection and development of anthracnose epidemics.

Overhead irrigation on fields with a history of anthracnose is not recommended because the increased moisture and humidity result in high initial infections and the release of fungal spores from existing lesions on the leaves as secondary inoculum and infection.

Disease-free seed schemes

Planting certified, disease-free seed will prevent the spread of the disease to new areas with no infection history. Seed retained from previously infected fields should not be planted or sold as seed.

Biological control

Individual fungi (such as *Trichoderma viridae*, *T. harzianum*, *T. hamatum* and *Gliocladium virens*) were used in research studies to cover anthracnose-infected seeds for 15 minutes and dry them overnight before planting. The approach has been reported to be effective in reducing anthracnose and improving seed germination. Biological control of anthracnose is a cost-effective and environmentally friendly strategy, but has gotten little attention.

Prior to applying biocontrol agents, farmers should request efficacy data from companies marketing such products. Application of ineffective biocontrol products can prove costly and reduce economic income.

Chemical control

Various foliar and seed treatment fungicides are registered and are effective in controlling anthracnose on dry beans. Seed treatment fungicides increase seed germination, reduce anthracnose severity and the occurrence of seed-borne infections. However, seed treatments will not be sufficient when applied to severely infected seed. Foliar fungicides are often used to control anthracnose and improve grain quality and yield. Most foliar fungicides inhibit spore germination but have a limited curative effect once plants are infected. Established field infections may require follow-up fungicide applications. ■

LUCIA ZINZI NDLALA AND
DR BRADLEY FLETT, BOTH FROM
ARC-GRAIN CROPS, POTCHEFSTROOM. FIRST PUBLISHED IN
SA GRAAN/GRAIN, MAY 2024

SA **Graan**
Grain



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PROTECT LIVESTOCK THROUGH BIOSECURITY

INFECTIONOUS DISEASES CAN HAVE A DEVASTATING IMPACT ON THE PRODUCTIVITY OF ANY LIVESTOCK OPERATION. VIRTUALLY EVERY DISEASE RESULTS IN PRODUCTIVITY LOSSES, AND IN SOME CASES, THESE LOSSES CAN BE SUBSTANTIAL, PARTICULARLY IN LARGER OPERATIONS WHERE MORE ANIMALS ARE AT RISK. PRODUCTION AND QUALITY CAN DECREASE, RESULTING IN NEGATIVE FINANCIAL CONSEQUENCES.

BIOSECURITY GUIDELINES

The following biosecurity guidelines should be taken into consideration:

Disease familiarity

To prevent the spread of diseases, farmers need to have basic knowledge about the common diseases that are prevalent in their area – this includes symptoms and treatments.

Contact with wildlife

Livestock should have minimum access to cats, dogs and wildlife – all of which can spread diseases.

Isolating new additions

When buying animals, ensure that you know their disease status. Ask for a veterinary certificate to prove that the new livestock are free from diseases. Follow these steps:

- Upon arrival, the new livestock may have been exposed to disease but are not yet showing clinical signs.
- Isolate new livestock for 28 days.
- The quarantine camp should be a minimum of 20 m to 30 m away from the home herd.
- Isolation areas should be located downwind and downflow from the home herd.
- No feed bunks or water sources may be shared between the two herds.
- Ensure you know the vaccination programme of the previous farm – this will help you to know for which diseases they have been vaccinated.



Vaccinating against the most economically devastating diseases is added insurance against disease outbreaks.



Controlling traffic

Employees or visitors, especially those who have contact with animals from other livestock operations, can introduce disease agents from another farm via their boots, clothing, vehicles or other equipment. Follow these directions to prevent this:

- Limit the number of people dealing with animals and accessing facilities.



Photo: Gerda de Kock

A footbath is a very simple form of biosecurity that helps prevent the potential spread of disease.

- Implement the use of footbaths and wheel baths on your farm. Make sure that everyone uses them, and regularly clean and refill them with an appropriate product to ensure effectiveness.
- Begin working with the animals that are the youngest and most susceptible to diseases first.
- Control vehicle traffic, particularly rendering or delivery trucks.
- Keep a record of visitors.



Sanitation

Understanding and implementing waste management procedures, as well as maintaining clean operating facilities and equipment, are critical biosecurity management tactics for which all employees should share the responsibility. These are important rules to implement:

- Ensure that everybody wash their hands regularly.
- Always wash and sanitise boots before and after entering the areas where separated groups of animals are kept.
- Ensure that all overalls are washed on a regular basis.
- Keep all feed ingredients clean, dry and as free as possible of rodents, which are notorious disease-carrying pests.

Vaccination plan

Vaccinating against the most economically devastating diseases is added insurance against disease outbreaks.

- Customise a vaccination plan for your farm.
- Consider compulsory vaccinations.
- Vaccinating young animals helps to build a well-protected herd/flock.
- Maternal antibody interference with the vaccination, the impact of stress, nutrition and infectious organisms, the importance of boosters and adverse reactions should also be considered.

Colostrum

Newborns need time to develop antibodies and therefore must rely on antibodies obtained from the mother via colostrum, which immediately helps to protect the youngsters.

Newborns should get 10% of their body weight through high-quality colostrum within the first twelve hours of their lives. Within six to nine hours after birth, they lose 50% of their ability to absorb antibodies via the colostrum. After 24 hours, virtually all antibody absorption ability is gone. Make sure you deworm youngsters and ensure the drinking water is not stagnant.

Mortality

Animal deaths represent the least desirable health outcome. Once a death has occurred, it is important to determine the cause to prevent future deaths and improve the health of the herd.

- Animals should not be allowed to go anywhere near the material of a dead infected animal, such as a carcass, saliva or blood. Animals should also be kept away from grazing in an area where a diseased animal died.
- The animal material should be disposed of properly by burial/burning in a secluded area. ■

Animal identification IS ESSENTIAL

THE PREVIOUS *PULA INVULA* FEATURED AN ARTICLE, 'STOCK THEFT UNDER THE SPOTLIGHT'. THE *STOCK THEFT ACT (ACT 57 OF 1959)* AND THE *ANIMAL IDENTIFICATION ACT (ACT 6 OF 2002)* GIVE CLEAR GUIDELINES, SO MAKE SURE YOU KNOW THE LAW!

Here are some of the guidelines in the **Animal Identification Act**:

- Stock may not be sold or disposed of without the owner's registered mark on it.
- Receiving stock without a mark as required by law may constitute the receiving of suspected stolen stock, which is a criminal offence and can lead to immediate arrest.
- The seller must provide the buyer/receiver with a Section 6 document called a 'document of identification'.
- No person may receive stock without obtaining a document of identification at the time of delivery – such document must contain **all** the specified information as noted below, otherwise it will not be considered as a document of identification.

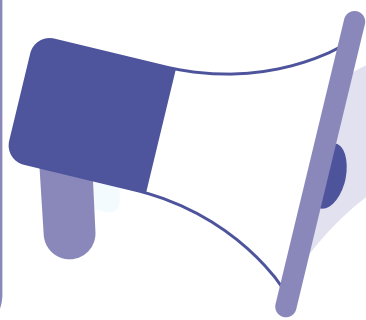
The **document of identification** must contain the following information and it is the responsibility of the seller to ensure that all the information is in the document:

- Full names and address of the seller and, if sold on behalf of the seller, the full names and address of such authorised person as well.
- Full names and address of the receiver of such stock.
- The date on which the stock was sold or disposed of.
- A certification that the stock is the property of the seller or that the representative of the seller is authorised by the owner to sell or dispose of such stock.
- The breed or kind of stock.
- The number of stock.
- The brand, ear or tattoo mark on the stock.
- If the stock has no mark, then the sex and number of each animal and the colour thereof.

Download the document and make sure that you adhere to the law. ■



Scan the QR code to download the document containing both acts.



HAVE YOU HEARD?

UPDATE ON THE RESEARCH DEPARTMENT

- Grain SA's research team did a presentation about the activities of Grain SA to third-year students studying plant pathology at the University of Pretoria (UP). The presentation covered various topics including an overview of the organisation, the operations of its different departments and its research initiatives. The students were intrigued by the direct impact their current studies have on food security, both locally and globally. They were particularly interested in understanding how plant diseases, which can significantly affect crop yields, also pose biosecurity risks with implications for international trade.
- The team also participated in a discussion at the Plant Disease and Epidemiology Modelling Winter School, organised by the Department of Plant and Soil Sciences at UP. The course was facilitated by world-renowned experts from the USA and France.



LOCAL AND INTERNATIONAL WINNERS

Food For Mzansi's Farmer's Inside Track podcast won best podcast at the Digital Media Awards Worldwide, which was held in Copenhagen, Denmark. The award highlights the podcast's global impact and engaging content that empowers farmers in 92 countries. The co-founders of the company, Ivor Price and Kobus Louwrens, technical producer, Meagan van der Vent, head of creative and development, Gareth Davies, and host, Dawn Noemdoe, celebrated their win.



Photo: Food for Mzansi

The Agricultural Research Council (ARC) was awarded the gold medallion and trophy for Best Government Organisation Display at the 2024 Royal Agricultural Exhibition. The show took place on 23 to 28 May in Pietermaritzburg.



LET'S LOOK AT ANIMAL HEALTH

The ARC-Animal Production Irene Campus hosted an international delegation on a trade mission to South Africa, organised by the Brazilian Association of Zebu Breeders (ABCZ), on 31 May 2024. The delegates included the agricultural attaché (Ministry of Agriculture and Livestock) and the ABCZ representatives responsible for international cooperation, trade promotion and regulation.

The industry representatives were Brahman breeders, companies involved in the production of animal health and biological products, and machineries for animal feed production. Two visitors from Mozambique Agrifood, wishing to venture into the livestock market, also participated in this visit.



GOOD NEWS FOR CHICKEN FARMERS

The Namibian chicken industry is rejoicing after the government's decision to lift the one-year prohibition on importing chickens from neighbouring South Africa. The prohibition on imports, which was implemented in September 2023, resulted from an outbreak of highly pathogenic avian influenza (HPAI) in South Africa. The poultry industry in Namibia was greatly affected by this outbreak.

This decision, which has been well received by the Poultry Producers' Association of Namibia (PPA), provides much-needed relief and lays the groundwork for a more stable poultry market. The fact that only chickens from South African farms certified as free of avian influenza will be imported, highlights the significance of biosecurity. ■



Corner Post

BY LOUISE KUNZ, ASSISTANT EDITOR

JACOB TSHABALALA (34) BELIEVES HIS SUCCESS AS A FARMER IS BUILT ON THREE CORNERSTONES – PASSION, GOOD PLANNING AND LEARNING THROUGH ENGAGEMENT WITH OTHERS. THIS YOUNG FARMER WAS ONE OF THE FINALISTS IN THE 2023 PGP/ABSA/JOHN DEERE FINANCIAL NEW ERA COMMERCIAL FARMER OF THE YEAR CATEGORY.

The people who played the biggest role in his development as a farmer are his dad, David Tshabalala, a fellow farmer, Vuyani Lolwane, and the Phahama Grain Phakama (PGP) team. Jacob's father ignited a passion for farming in his son. Although David's role on the farm has decreased, he still lends a helping hand tending to the livestock and is there when his son needs advice.

Vuyani Lolwane (2018 PGP/Absa/John Deere Financial New Era Commercial Farmer of the Year) saw that Jacob was doing a good job but told him that he could do much better if he joined Grain SA. 'He proved to be right,' says Jacob of his friend and mentor, who sadly passed away due to Covid-19 complications in 2022. 'Vuyani was a true inspiration and I know he would have been very proud of me.'

Jacob has immense appreciation for the PGP team, who has played a significant role in his success as a farmer, and he also benefits from his participation in NWK's young farmers' programme. His farming operation is slowly growing, and he dreams of owning his own land in the future.

Maize and sunflower are produced on communal land of Driehoek Village Trust. Jacob started planting a mere 15 ha in 2013 and this year he planted 170 ha – 60 ha maize and 110 ha of sunflower. He realised a yield of 6 t/ha last season, which helped to take care of his production loan and made it possible for him to plant this year.

This season he planted later than usual, as North West waited long for the rain to fall. He also discovered that the soil was acidic and had to apply lime before he could plant. 'Everything is looking good now. I did my part,' he said.

Jacob uses his own equipment, except for the harvesting, which is done through contractors. He is also putting away money with NWK and has bought shares to help him with securities in the future. His wife, Lerato, is his right hand in the office and makes sure that all administration is up to date. Their young son is already showing a keen interest in farming and Jacob would love to have a third-generation Tshabalala farmer.

JACOB'S STORY

WHAT IS IMPORTANT TO SUCCEED AS A FARMER?

A farmer should be self-driven and keen to learn. I talk to many people who know more than me – neighbours, commercial farmers, representatives – because together we make a big engine that moves forward! It is also important to do the right thing at the right time, with the right product. People want to take shortcuts, but if your budget only allows for 50 ha, don't try and plant 100 ha because you will fail. Rather plant 50 ha and produce excellent quality.

WHY IS FARMING A GREAT CAREER?

When you get up in the morning, you know you can do what you love. Nobody has to force me to go to work. I am proud to be a farmer. The worst thing for me is being on communal land, as there are no fences. I must pay people to guard my maize. ■

TIPS FROM A YOUNG FARMER

1. Be self-driven and passionate.
2. Ask questions and learn from others who know more than you.
3. Do the right thing at the right time – don't take shortcuts.



FARM FACTS

Farm: Communal land of Driehoek Village Trust
Nearest town: Lichtenburg
Region: North West
Size: 185 ha
Type of farming operation: Mixed – crops (maize and sunflower) and a Brahman herd

PGP'S CONTRIBUTION

- Joined Grain SA in 2018
- Lichtenburg Study Group
- Member of 500 Ton Club: 2022

Training courses completed:

Has completed several courses including:

- Introduction to soybeans
- Introduction to maize
- Introduction to dry beans
- Introduction to farm management
- Business ethics and farm management

A mentor's view:

Du Toit van der Westhuizen, regional development manager in North West, is very proud of Jacob. He says that since Jacob attended his first study group meeting in 2018, he has embraced every opportunity to learn and develop as a farmer. 'Jacob is always open to advice and works hard towards every goal. He is proud to be a farmer.'

Du Toit van der Westhuizen



A programme that is changing lives



2024 Farmer of the Year nominees welcome the judges

THE MAIN GOAL OF THE FARMER OF THE YEAR COMPETITION IS NOT ABOUT WINNING, BUT ABOUT CELEBRATING THE LEARNING, GROWTH, DEVELOPMENT AND HARD WORK OF THE FARMERS WHO ARE PART OF THE PHAHAMA GRAIN PHAKAMA (PGP) FARMER DEVELOPMENT PROGRAMME.

This yearly competition is not only a highlight for all the farmers, but for the Grain SA and PGP teams as well. The adjudication panel recently travelled many kilometres to visit all the farmers who were nominated for the farmer of the year competition.

Grain farmers who are active members of the programme work hard every single day to build their farming businesses and provide for their families. This competition offers them the opportunity to highlight their hard work and determination. It is always encouraging to see the progress of these farmers.

Unfortunately, it is impossible to enter every deserving farmer, so only a handful of candidates from each province are nominated in the four categories according to a strict criteria.

The four categories are:

- Subsistence: 1 ha to 3 ha
- Smallholder: 4 ha to 49 ha
- Potential commercial: 50 ha (or 101 t) to 249 t
- New era commercial: more than 250 t

A DAY TO CELEBRATE

In 2008 the decision was made to take one day off from facing agricultural challenges, to celebrate and recognise the many different individuals and institutions involved in the field. At the Day of Celebration the finalists and winners in the different categories are announced and everyone who makes the programme possible receives acknowledgement. The 2024 Day of Celebration will take place on Wednesday 18 September at NAMPO Park near Bothaville in the Free State.

Furthermore, to inspire and encourage all the farmers The 250 Ton Club was established with different levels of membership recognising farmers who produce: Bronze (250 Ton), Silver (500 Ton), Gold (1 000 Ton) and Platinum (1 500 Ton).

AT GRASS ROOTS

Here are some photos of the visits that took place when the adjudicators visited the nominees. The four adjudicators travelled close to 7 000 km for these farm visits.





Getting ready for the harvest

IT has been a very busy time for the Phahama Grain Phakama (PGP) team, who did 101 farm visits from 15 April to 13 May: Dundee – 26, Kokstad – 5, Free State East – 26, Free State West – 4, Louwsburg – 22 and Mbombela – 18. Apart from looking at the moisture content and the ripening of the crop to get ready for harvesting, the marketing of the produce was also discussed.



Farmer Laswell Mthethwa has begun harvesting his soybean crop. The first few hectares were yielding 1,6 t/ha, which was better than expected.



Harvesting had to be done by hand on the farm of Alfred Gondo in the Mbombela region, as it was too wet to harvest with a combine. During the time of the farm visit, Alfred had already harvested 8 ha. The early planted maize was drying off well and almost ready to be harvested.



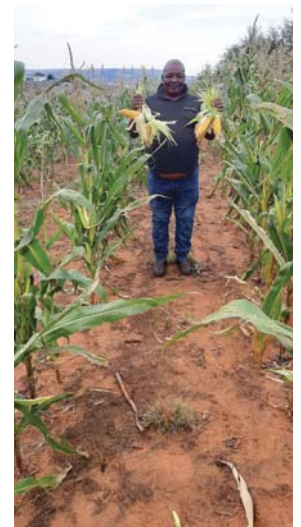
Just before his retirement, Jerry Mthombothi (left), who was the regional development manager at the Mbombela office, visited a farm near Badplaas. Xolani Gumede planted 180 ha of soybeans and 40 ha of maize, as well as 100 ha of soybeans and 65 ha of maize near Piet Retief.



During the farm visit to Amos Vilikazi in the Louwsburg region, it was clear that the soybean yield was going to be much less than expected. Parts of the crop still had leaves, while most of the plants were dry. Waiting for the leaves to fall would have had major consequences, because the pods had already started popping.

Project shows POSITIVE RESULTS

YIELD assessments for the Beyond Abundance Project were done at the end of April for the subsistence farmers who plant between 0,5 ha and 3 ha. Here are some of the results of the 49 study groups' yield assessments that were finalised:



Here are two farmers from the Taung area where crops were looking very good and it was clear that effort was made to control weeds.



The farmers of the Emangweni Study Group can expect average yields due to the weather conditions and other challenges.



Two farmers from the Elukwatini Study Group had already harvested when the team's visit took place. The harvested maize was used to estimate the yield.

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