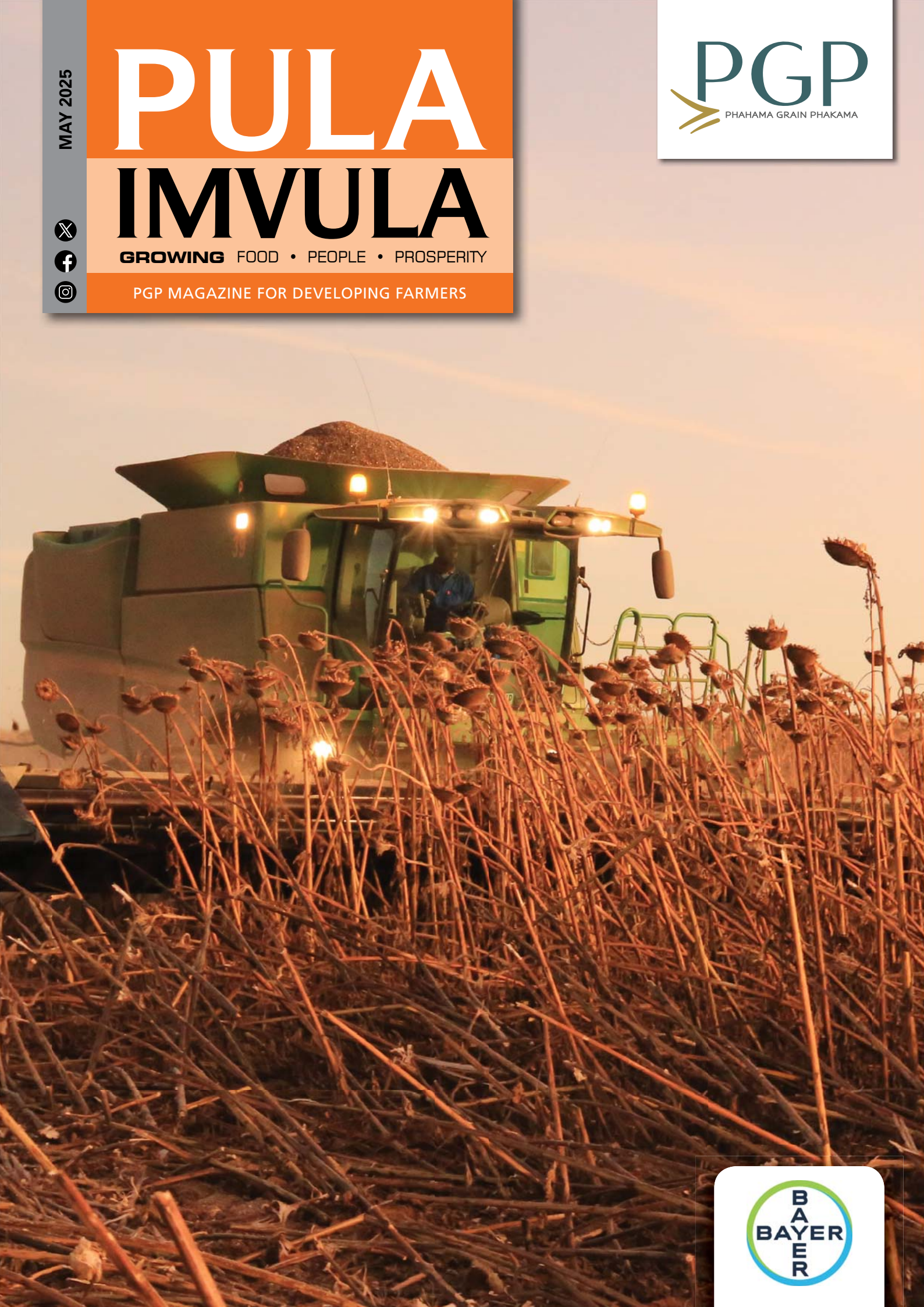
MAY 2025

PULA IMVULA

GROWING FOOD • PEOPLE • PROSPERITY

PGP MAGAZINE FOR DEVELOPING FARMERS

PGP
PHAHAMA GRAIN PHAKAMA



BAYER

PULA IMVULA

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Cover photo: Tiani Claassen.

From the PGP desk

PHAHAMA GRAIN PHAKAMA

THE PHAHAMA GRAIN PHAKAMA (PGP) TEAM AIMS TO SUPPORT AND EQUIP DEVELOPING FARMERS OF ALL LEVELS THROUGH THE FARMER DEVELOPMENT PROGRAMME (FDP). THESE THREE YOUNG MEN ARE NOW ALSO HELPING FARMERS TO EXPAND THEIR KNOWLEDGE.

Mlibo Qotoyi (27), who achieved a diploma in agriculture and an honours degree in agricultural economics, is an economist intern at Grain SA. As part of the PGP team, he assists with training sessions and farm assessments. To Mlibo, being part of the FDP offers him the opportunity to empower developing farmers with practical knowledge, data-driven decision-making tools and support that strengthen their operations. 'It's incredibly fulfilling to contribute to the growth of a more inclusive and resilient agricultural sector,' says Mlibo.

With two national diplomas behind his name – one in plant production and one in animal production – **Neo Koqo** (38) has 15 years of experience in the agricultural sector, mainly in the mechanisation field. His role is to collect data through doing farm evaluations. Neo is passionate about training and mentoring. The farm evaluations give him insight into the needs of farmers in terms of fully integrating mechanisation and better understanding the environment, which in turn helps the farmers to be more efficient.

Molefe Seodi (34) obtained a BCom Economics degree and his role in the team is from a financial literacy reference. 'I try to bring our developing farmers closer to their financial records by normalising record-keeping and keeping updated financial statements to help farmers make sound decisions to inform their growth strategies,' he explains. Molefe feels honoured to be part of the PGP team and wants to add value to the team while continuing to learn from the other members.

PULA EDITORIAL TEAM

Cutworm larvae have a smooth, waxy appearance and are dirty grey or brown in colour.
(Source: http://www.pyrgus.de/Agrotis_segetum_en.html)

Characteristic cutworm larvae damage to a seedling is clearly visible.
(Source: Clemson University – USDA Cooperative Extension Slide Series, Bugwood.org)

CONTROL WINTER WEEDS to avoid trouble

MANAGING WINTER WEEDS IS ESSENTIAL, NOT OPTIONAL. BY SPRING, FIELDS MUST BE FREE OF THESE WEEDS, AS THEY CAN BECOME A SIGNIFICANT ISSUE. THESE WEEDS ARE ADAPTED TO WINTER CONDITIONS, ALLOWING THEM TO SURVIVE AND GROW EVEN DURING DRY PERIODS. WINTER WEEDS CAN ALSO USE WATER EFFICIENTLY, WHICH ENABLES THEM TO GROW RAPIDLY AND UNCONTROLLABLY AFTER THE FIRST SUMMER RAINS.

Normally weeds don't grow above the ground in the winter, but their roots grow rapidly under the ground. With a well-developed root system, winter weeds can utilise the moisture in the soil and with the first rain this leads to rapid growth. The plants will utilise the first rain moisture effectively and expand rapidly, with the result of fields being too dry to cultivate or plant.

Conyza spp. are common winter weeds that need to be controlled. These include:

- Fleabane (*skraalhans*) – **photos 3A and B**.
- *Senecio consanguineus* or ragwort (*radiatorbossie*) – **photos 4A and B**.
- *Argemone ochroleuca* or Mexican poppy (white-flowered blue thistle) – **photo 5**.

Farmers who control winter weeds normally harvest better yields than those who do not. The main reasons for this are that there is more moisture in the soil at planting when there are no weeds present and better cutworm control before planting. Farmers need moisture and plants to produce a crop. With the absence of one, the yield will be lower.

> One cutworm larva can destroy many seedlings in a single night.

THE IMPORTANCE OF CUTWORM CONTROL

Several Agrotis cutworm species (*Lepidoptera: Noctuidae*) are present in South Africa, but the common cutworm (*Agrotis segetum*) is the most prominent species. The larvae (**Photo 1**) are dirty grey or brown in colour with a smooth, waxy appearance.

The cutworm's lifecycle starts in the autumn when the cutworm moths lay eggs, which give rise to larvae. These larvae develop into full-grown larvae that remain in the soil until the end of the winter and the beginning of spring. The larvae will survive the winter by eating winter weeds and winter crops.

During August and September, the overwintering larvae pupate and about two weeks later, the first moths of the season appear. These moths pose a threat to planted seedlings. At night the cutworm moths fly and lay eggs on the leaves of weeds and crops found in the fields. Within a week, larvae hatch and feed on the leaves of the weeds or crops.

After the second moult, the larvae crawl into the soil and only come out at night to feed. Cutworms move from seedling to seedling, eating each one at ground level. In this way, one larva can destroy many seedlings in a single night.

By controlling the winter and early spring weeds (including the volunteer crop plants), the cutworm's lifecycle can be impacted negatively. Please ensure that the fields have been clean of weeds for 35 days before planting (where practically possible).

According to Hiresh Ramanand, stewardship coordinator at CropLife, a minimum of 35 weed-free days prior to planting is generally required in order to starve larvae.

HOW TO CONTROL WINTER WEEDS

Normally, a shallow tillage or diss action as early as possible, as well as herbicide application to younger, smaller plants during late March or early April can control winter weeds. However, this is not normally possible because the crops are not harvest ready. It means that the fields must be worked as soon as possible, while the weeds are still young. For instance, the *Conyza spp*. must still be in the rosette stage for herbicides to work properly.

In maize fields, applying herbicides during late March or early April can be difficult. Normally aerial spraying or a high-boy sprayer is needed. The problem is that the herbicide is not necessarily registered for this practice, which makes it very difficult to spray winter weeds with great success. The lower temperatures during June, July and August also have a negative influence on herbicides. This means the use of implements is a good option in a conventional production system.

When shallow cultivators are used, farmers must ensure that the implements work effectively and that all winter weeds are worked out.

The faster the fields are cultivated after harvesting, the better the winter weed control will be.

Using herbicides

Suppose a farmer wants to use herbicides to control sedges in particular. Scientific studies mostly support the use of glyphosate in mixtures with other herbicides, with different effects regarding the alternation or rotation of herbicides in the management of resistance development. According to label instructions, 2,4D can be sprayed in combination with glyphosate or atrazine. However, be warned about the residual effect of atrazine on subsequent crops.

Dr Maryke Craven, senior researcher at ARC-Grain Crops, recommends using Paraquat, a non-selective weed herbicide. Ensure that the weeds are fully wetted, with at least 300 litres of water per hectare.

Glyphosate can also help control ragwort (*radiatorbossie*) and Mexican poppy (white-flowered blue thistle). Just make sure that you consult your herbicide representative to make the best decision for winter weed control.

Crop rotation

Don't overlook crop rotation in the combat of winter weeds. Sunflowers and soybeans give farmers the option to control and manage the weeds earlier. These crops don't have as much stubble as maize and therefore the control is normally better. The fields can also be used for grazing, and lime can also be spread.

3A

Young* Conyza *plants.

3B

A flowering fleabane bush.

5

An* argemone *(Mexican poppy) or white-flowered blue thistle plant.

4A

A seedling of the ragwort plant.

4B

An adult ragwort bush.

Farmers must manage winter weeds carefully. Discuss it with your herbicide representative in advance so that a plan can be made to find the best options to control weeds. Consider all the planned cultivation actions to find the best solution.

CONCLUSION

If you decide to control winter weeds chemically, focus on efficiency.

- Do it in time. Spray winter weeds when they are young. Don't wait too long, as it is very difficult to control the weeds when they have matured.
- Calibrate the sprayer.
- Follow the recommendations on the label carefully and ensure that enough water is applied. ■

PIETMAN BOTHA, INDEPENDENT AGRICULTURAL CONSULTANT

CONGRESS 2025

Grain farmers should THRIVE AND NOT JUST SURVIVE

THE 2025 GRAIN SA CONGRESS WAS HELD ON 12 AND 13 MARCH UNDER THE THEME *A PRODUCER'S JOURNEY, FROM SURVIVING TO THRIVING*. DISCUSSIONS FOCUSED ON POLICY ENGAGEMENT, TECHNOLOGICAL ADVANCEMENTS, ECONOMIC RESILIENCE, AND GLOBAL MARKET TRENDS AFFECTING SOUTH AFRICAN GRAIN PRODUCERS.

In his farewell address, outgoing Grain SA chairperson, Derek Mathews, highlighted the strength and commitment of South African grain farmers. He applauded the agricultural sector's ability to adapt to economic volatility, climate challenges and shifting legislative landscapes while reaffirming Grain SA's dedication to farmer development and national food security.

'As farmers, we have shown resilience in the face of numerous challenges, but we must continue working together to secure a sustainable future for grain production in South Africa,' Mathews stated, expressing gratitude to industry partners and the farming community for their support during his time in office.

Richard Krige was elected the new chairperson, joined by vice-chairpersons Danie Minnaar and Jeremia Mathebula. This leadership team is committed to building on the strong foundation laid by their predecessors and ensuring that Grain SA remains the trusted voice of South African grain producers.

'As we move forward, our focus will remain on ensuring that grain producers are well-represented, that their interests are safeguarded, and that we work collectively to overcome challenges while seizing new opportunities,' said Krige.

OTHERS HAVE THEIR SAY

South Africa's minister of agriculture, **John Steenhuisen**, addressed Congress, acknowledging the critical role of the grain sector in ensuring national food security, economic growth and rural employment. He pledged government support to help the sector navigate challenges such as climate change, economic pressures, rural safety and regulatory inefficiencies.

Paul Temple, a UK grain producer and vice-chairperson of the Global Farmer Network, delivered a keynote address emphasising adaptability in the face of evolving global agricultural landscapes. He highlighted the importance of conservation agriculture, sharing his personal transition from high-intensity cultivation to minimum till farming and cover cropping. By adopting these sustainable practices, he significantly reduced input costs while improving soil health. He encouraged South African grain farmers to embrace similar approaches, noting that soil regeneration is a crucial investment in long-term productivity.

The 2025 congress once again brought together key stakeholders, industry experts and policymakers to address pressing challenges and opportunities in the grain sector.

William Raphoto is the elected Board member for region 28.

Shadrack Mbele has been elected to represent region 31 on the Board.

The new chairperson, Richard Krige, who ensured farmers that Grain SA's focus will remain on ensuring that the interests of grain producers are safeguarded.

During the **panel discussions** a panel of experts explored strategies for strengthening South African grain production. A key theme of the discussion was the importance of understanding economic cycles and cost structures. With grain and oilseed prices experiencing downward trends while input costs remain high, farmers were urged to closely track their cost of production.

Panelists stressed the need for a shift from short-term survival strategies to long-term planning. While many producers focus on immediate financial survival, a more strategic approach – such as investing in technology, improving efficiency, and diversifying income sources – was recommended to ensure competitiveness in an unpredictable market.

Todd Heap, Bayer's Global Corn Strategy Lead, provided insights into cutting-edge innovations in maize production and the importance of continued investment in agricultural technology. He emphasised that technological advancements, including seed genetics, precision breeding, and digital agriculture, are essential to improving yields and reducing environmental impact. Heap highlighted the development of shorter stature maize hybrids, designed to improve drought resilience by increasing root mass and water retention.

We were there








Photo's by: Lizel Snyman.

Derek Mathews

Pietman Botha, a regular contributor to* Pula, *with Ranko Tsotetsi, the 2024 New Era Commercial Farmer of the Year.

SUMMARY

The 2025 Grain SA Congress underscored the sector's transition from surviving to thriving. With ongoing advancements in seed genetics, digital insights, and resilient crop protection strategies, South African grain producers are well-positioned for sustainable growth and global competitiveness.

Grain SA reaffirmed its commitment to supporting farmers through economic challenges by providing access to information, facilitating discussions on best practices, and advocating for policy changes that benefit the industry. Farmers were encouraged to embrace long-term strategic planning, invest wisely in technology, and strengthen collaborations across the value chain to build a resilient and thriving agricultural sector.

As the Congress concluded, industry leaders emphasised the need for continued innovation, policy engagement, and knowledge-sharing to ensure that South African grain producers remain at the forefront of global agricultural advancements.

PULA EDITORIAL TEAM

Fire season: Prevention is vital

FIRE IS A MERCILESS MASTER – SWIFT, UNFORGIVING AND ALL-CONSUMING. IN SECONDS, IT TURNS HARD WORK INTO ASHES, REMINDING EVERYBODY THAT PREPARATION IS NOT AN OPTION BUT A NECESSITY.

In South Africa, an increase in the frequency of veld fires has caused extensive damage to farmlands.

According to Working on Fire (WOF), the 2024 winter fire season tragically claimed over 30 lives and destroyed thousands of hectares of land and livestock. In 2021, fires in the Northern Cape destroyed some 709 568 ha farmlands, eight homesteads and 22 warehouses and barns.

Trevor Abrahams, managing director of WOF, said on 11 January this year in an eNCA interview that climate change has a serious effect on the prevalence of veld fires. Therefore, he encourages farmers to ensure that preventative and evacuation protocols are in place.

The leading causes of veld fires include lightning, human activities (discarded cigarette butts, uncontrolled burning or arson) and extreme weather conditions such as strong winds and heatwaves.

Every burned hectare means lives that are lost or injured humans and animals, families that are displaced as well as destroyed wildlife and ecosystems which all has a negative impact on food security as well.

With the winter approaching, it is now the time for farmers to take preventative measures. Knowledge is the key to preventing fires.

FIREBREAKS

According to Eric Stoch, chairman of the North West Umbrella Fire Protection Association (NWUFPA), firebreaks do not necessarily have to be burnt. 'Areas can be ploughed, scraped, raked, chipped with weed hoes or sprayed with herbicides. Trees can be cut back to prevent them from spreading wildfires,' he says.

If you prefer to create firebreaks, remember they should be in the right place, cost-effective and practical to implement. It is also a good idea to document your agreed firebreaks with neighbours.

There are also specific regulations and best practices to consider before starting.

1 Understand the legislation

According to the *National Veld and Forest Fire Act (No. 101 of 1998)*, property owners must:

- Have a fire control committee or work in accordance with their local Fire Prevention Association (FPA).
- Inform their neighbours of the planned burning of firebreaks.
- Have sufficient equipment and personnel on hand to control the fire.

2 Plan the firebreaks

- Timing: Conduct firebreaks outside of the fire season.
- Weather conditions: Choose a day with low wind speeds (less than 15 km/h), high humidity (more than 30%) and moderate temperatures.
- Demarcation: Mark the firebreak areas by cutting the grass or ploughing.

3 Get the right equipment and personnel

- Fire protection equipment: Water pumps, firefighting systems and fire beaters are necessary.
- Safety measurements: Always have an escape plan and medical emergency equipment available.

4 Perform the fire-breaking

- Start against the wind, allowing the fire to spread slowly.
- Use the back-burn technique, where a fire is set on the windward side to combat a bigger fire.
- Continuously monitor the fire and be ready to extinguish it if necessary.

5 Extinguish and monitor

- Ensure that the fire is fully extinguished and no smouldering areas remain.
- Control the area for at least 24 hours afterwards.

Please note that firebreaks:

- Should be wide enough and long enough to have a reasonable chance of preventing a fire from spreading to or from neighbouring land. Check with your local municipality or fire brigade to confirm the rules and regulations for your area.
- Must not cause or contribute to soil erosion.
- Must be reasonably free of flammable material.
- Should be maintained.

HOW TO RESPOND TO A FIRE

- If you are in the veld and see a fire, move away from it immediately.
- Never ignore a fire, even if it seems far away – it can quickly become bigger and engulf you.
- If you feel threatened and think you cannot outrun the fire, or if you are surrounded, try to find a 'safe zone'. This can be an area that has already been burnt or is completely clear of any fuel that can burn, such as a wide road or homestead.

Source: hortgro.co.za

WHERE TO GET MORE INFORMATION

Provincial fire protection associations

- North West Umbrella Fire Protection Association (NWUFPA) – *nwufpa.org*.
- Mpumalanga Umbrella Fire Protection Association (MUFPA) – *nwufpa.org*.
- Platorand Area Fire Protection Association (PAFPA) – *papfa.org*.
- KwaZulu-Natal Fire Protection Association (KZNFPA) – *kznfpa.org*.
- Lowveld and Escarpment Fire Protection Association (LEFPA) – *lefpa.co.za*.
- Free State Umbrella Fire Protection Association (FSUFPA) – *fsuppa.co.za*.

Other sources of information

- Department of Forestry, Fisheries and the Environment: *dffe.gov.za*.
- Fire Protection Association of Southern Africa (FPASA): *library@fpasa.co.za* or 011 397 1618.
- Working on Fire: *workingonfire.org*.

Working on Fire (WOF) is a South African programme that was launched in 2003 as part of the government's initiative to create employment and alleviate poverty. The programme focusses on training and employing young people as veld and forest firefighters. Currently about 5 000 youngsters participate in this programme, which operates from over 200 bases countrywide.

WOF implements an integrated firefighting strategy that includes fire prevention, readiness, response and rehabilitation. They work closely with local authorities and fire prevention associations (FPAs) to minimise the impact of veld fires. In collaboration with FPAs, they provide training in firefighting, fire management and prevention, which is especially beneficial for farming communities.

In February, it became known that WoF laid off thousands of people and cancelled critical contracts because the government allegedly refused to transfer the necessary funds. The government, however, denied these claims, stating that all payments were made where the correct administrative processes were followed.

Source: AgriOrbit, 24 March 2025

TIPS TO MANAGE WILDFIRES

- Maintain your property by trimming trees and shrubs, removing dead leaves and debris, and making sure your gutters are clean.
- It is a good idea to join your local fire protection association or a WhatsApp group in your community so that you can be informed of wildfires in the area.
- Always have emergency numbers handy of people you can contact for assistance.
- Be aware of different evacuation routes to leave the area in case a fire spreads to your farm.
- Plan what to do with your livestock in the event of a fire.
- Have the necessary equipment, protective clothing and trained personnel to extinguish fires.
- Stock up on emergency supplies, including masks and/or respirators that filter out particles from the air you breathe.
- Keep an outdoor water source filled. Sand is also a highly effective method of fire control if water is not readily available. ■

KARINA MULLER, PULA CONTRIBUTOR

A smart farmer
SELLS some, STORES some

FARMERS OFTEN SELL THEIR HARVEST IMMEDIATELY AFTER HARVESTING, ONLY TO RECEIVE LOWER PRICES DUE TO MARKET OVERSUPPLY. ADOPTING A MARKETING STRATEGY, STORAGE PLANNING AND MANAGEMENT WILL PROVIDE A SUSTAINABLE AND PROFITABLE FARMING ENTERPRISE. CONNECTING WITH THE RIGHT BUYERS AND SECURING A GOOD PRICE CAN IMPROVE PROFITABILITY.

In today's agricultural landscape, marketing is as critical as production for success. Global grain markets remain volatile due to geopolitical instability and adverse weather. South African farmers face additional pressures from rising input costs, currency fluctuations and supply chain disruptions. Market access, cash flow, price volatility and infrastructure limitations compound these challenges. Effective marketing strategies are thus essential for farm viability.

Good storage practices are important to prevent after-harvest losses from pests, moisture and spoilage. Storage duration and capacity should be planned so that they link to the market demand period.

In South Africa, maize stocks are the lowest in the months leading to April due to its utilisation for human and livestock consumption. Farmers who store part of their crop until this period benefit from a higher price.

Effective grain storage is a key risk management strategy for farmers. Storing crops to sell during periods of peak demand allows farmers to enhance their revenue. Sound storage practices protect against quality degradation and post-harvest losses.

There are different storage options available:

- **On-farm storage:** Airtight bags, silos or bunker storage can protect grain from pests and moisture.
- **Community storage:** Multiple farmers combine resources and store grain collectively in cooperatives.
- **Commercial silos:** Farmers store their grain in a certified silo and can use it as collateral for loans or sell for cash.

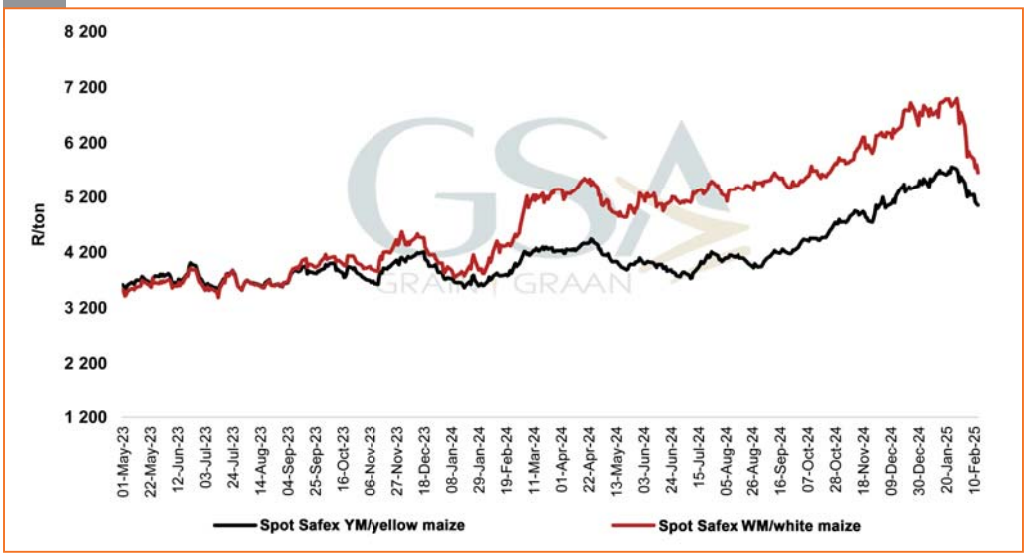
Here are some practical tips for effective storage:

- Maximise storage benefits through proper ventilation, which prevents mould, while regular pest inspections protect the grain quality.
- Monitoring the market demand cycles ensures sales at optimal prices.
- Farmers should also calculate the storage costs to ensure profitability and maintain structured recordkeeping to track the quality and quantity effectively.
- Successful storage management minimises losses.

1 ***The difference between formal and informal markets.***

Market type	Pros	Cons	Suitable for:
Informal markets	Easy access Immediate cashflow No strict quality requirements	Prices fluctuate Risk of middleman exploitation	Small-scale farmers Local trade
Formal markets	Stable demand Better prices Financing options	Strict quality and quantity requirements Transport costs	Developing commercial farmers

1 ***Spot price comparison of yellow and white maize Safex contracts.***

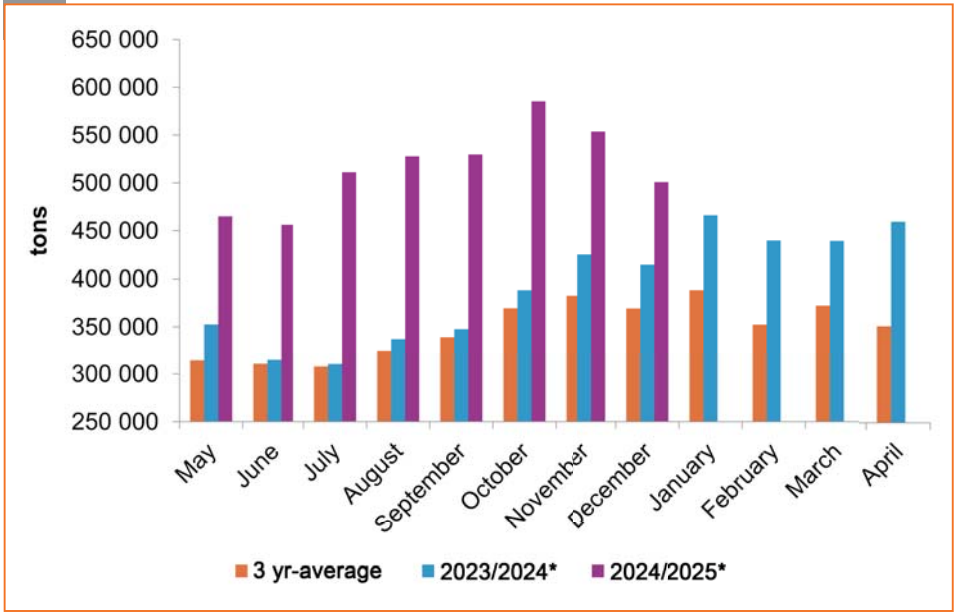


Source: Grain SA

FIND THE RIGHT MARKET: SELL AT THE BEST PRICE

While storage gives farmers control over timing, knowing where and how to sell is just as important. Smallholder farmers often face barriers to formal markets due to quality requirements, transport costs and buyer preferences.

2 ***Yellow maize used in animal feed.***



Maize can be used as animal feed instead of selling it at low market prices. The demand for feed remains stable, especially in drought years. Incorporating maize to provide feed for your herd throughout the year becomes a cost-effective option.

Farmers can improve their profitability by strategically storing grain and exploring alternative markets. Cooperatives and group marketing allow farmers to combine resources and access formal markets that provide a stable market.

To manage risks, farmers should sell some at harvest for cash and store some for later higher prices. A profitable farmer is not just a grower but also a smart seller.

By implementing sound storage practices, leveraging alternative markets and managing risks effectively, farmers can increase their income, strengthen market resilience and build sustainable agribusinesses.

MLIBO QOTOYI, AGRICULTURAL ECONOMIST INTERN, GRAIN SA

MAINTENANCE

DO NOT NEGLECT ROUTINE MAINTENANCE

On a farm, time is too valuable to have constant hold-ups that prevent you from getting tasks done timeously. Even when the farm is a bevy of activity during the mid-season, you should not neglect routine maintenance on your farm equipment to keep them operating problem-free.

This involves planning and performing regular farm equipment maintenance to reduce potential repair costs, to keep equipment performing as well as possible, to lengthen the equipment's lifespan and to prepare all the equipment for the different farming activities during the season.

Here are some of the most common types of equipment maintenance that need to be performed:

- Lubricate moving parts.
- Check and refill fluids.
- Calibrate equipment.

Before you put your machines into storage when the job is done, follow these helpful tips:

- Remove any dirt and soil by washing the equipment.
- Brush down all ploughs and discs with a light coat of old oil to prevent rusting.
- Grease bearings and cover hydraulic hose nozzles to protect them from the elements.
- Remove all remaining seeds in the planter bins.
- Clean out fertiliser hoppers on planters and spreaders to prevent rust. Take note that fertiliser is very corrosive.
- Check and oil all chains. They can also be removed and stored in the shed during the down season.
- Clean out chemical sprays with fresh water. Nozzles should also be cleaned, removed and stored away in the shed.

SOURCES:

https://safetyculture.com/topics/farm-maintenance/

https://www.grainsa.co.za/make-routine-maintenance-a-priority-this-year

COMPILED BY LOUISE KUNZ, ASSISTANT EDITOR, PULA

Continuous monitoring is critical to manage outbreaks of pests

AFRICAN ARMYWORM OUTBREAKS THAT STARTED IN BRONKHORSTSPRUIT IN GAUTENG, CAROLINA AND BADPLAAS IN MPUMALANGA, HAVE SINCE SPREAD TO NORTH WEST AND LIMPOPO. BECAUSE OF THEIR MIGRATORY NATURE, AFRICAN ARMYWORMS HAVE NOW BEEN SPOTTED IN THE FREE STATE AS WELL.

African armyworm (*Spodoptera exempta*) is a sporadic migratory pest that occasionally invades South Africa from central African countries. It typically arrives during January to April when wind patterns carry the flying moths into the region. Outbreaks have been currently flagged in Zimbabwe and Malawi.

While the African armyworm can cause significant damage to veld grasslands, kikuyu lawns, and maize crops, it is important to note that these insects do not typically breed in South Africa due to the colder climate, and that their populations die off before winter.

Maize farmers whose crops are beyond the tasselling stage, should not be overly concerned as the armyworm prefers younger, fresher maize plants provided the pasture food source is depleted. However, should the armyworm migrate to younger maize crops in other provinces, this could pose a larger threat. The larvae of the armyworm consume entire leaves, leaving only the veins, and can damage maize silks and ear tips if present.

Livestock farmers are encouraged to monitor their pasture lands closely to determine sudden changes caused by infestations of African armyworm. These could include reduced quality of available grazing and, potentially, toxicity to some varieties of kikuyu grass caused by a chemical response of the plants to the African armyworm.

In terms of maize production, farmers should remain vigilant for any signs of the pest. There are cases where this worm has been confused with bollworm.

- African armyworms have smooth, cylindrical bodies with distinct longitudinal stripes and a dark head capsule.

African armyworm
Photo: Prof Kenneth Wilson

- Bollworms have a more robust, slightly hairy body with variable colouration and a less distinct striping pattern.

To control African armyworm outbreaks on veld, grazing and various crops, CropLife SA suggests registered pyrethroid insecticides where pastures are severely affected. ■

If colonies are encountered, please report them to Grain SA (Dr Godfrey Kgatle at *godfrey@grainsa.co.za*) and the Department of Agriculture's Directorate of Disaster Management and Climate Change (John Tladi at *JohnTL@dalrrd.gov.za*).

DR GODFREY KGATLE, GRAIN SA RESEARCH COORDINATOR. FIRST PUBLISHED ON SAGRAINMAG.CO.ZA, 26 MARCH 2025

A rise in two significant FOLIAR DISEASES

GREY LEAF SPOT (GLS) AND NORTHERN CORN LEAF BLIGHT (NCLB) ARE TWO SIGNIFICANT FOLIAR DISEASES AFFECTING MAIZE IN SOUTH AFRICA. BOTH DISEASES GENERALLY DO NOT IMPACT YIELD SIGNIFICANTLY IF INFECTIONS OCCUR AFTER PHYSIOLOGICAL MATURITY (R5 TO R6).

GLS thrives in warm, humid conditions, causing grey lesions that reduce photosynthesis, while NCLB develops in cool, moist environments, producing cigar-shaped lesions that weaken plant defences. Both diseases are favoured by late-season rainfall and require integrated management practices, including the use of resistant hybrids, crop rotation, and fungicide applications to minimise potential yield losses.

Northern corn leaf blight (left) and grey leaf spot (right).
Photo's: Dr David Nsibo, University of Pretoria

A field in KwaZulu-Natal infested by northern corn leaf blight and grey leaf spot.
Photo: Dr David Nsibo, University of Pretoria

In South Africa, GLS and NCLB have been particularly concerning in KwaZulu-Natal (KZN), where the diseases have caused extensive damage. Recently, however, increased prevalence in the Piet Retief area has been noted and it now seems to be increasing in the Highveld.

The rise in disease occurrence can be attributed to several factors:

(i) Environmental conditions that are conducive to disease development.
(ii) Cultivar selection: If producers are aware of disease pressure in a particular region, they must consider using resistant cultivars alongside yield performance.
(iii) Inoculum build-up by growing maize in the same area for consecutive years can increase disease pressure.
(iv) Volunteer maize and weeds: Leftover maize and weeds like Johnson grass from previous harvests can contribute to inoculum buildup.
(v) Spray programmes: Producers in KZN often implement up to three spray programmes per season, while other regions may apply fungicides only once at the six-leaf stage.

High inoculum levels can lead to widespread infection. In such cases, if producers opt for a higher-yielding but less-resistant cultivar, a second spray application may be necessary, though this requires specialised equipment.

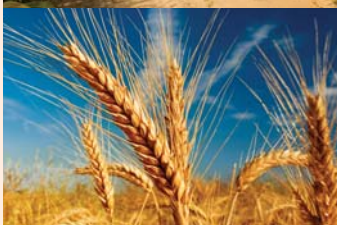
NCLB and GLS are well-understood and manageable diseases in South Africa, and their increased incidence in the Highveld is unlikely to significantly impact overall maize production. However, severe infections during the critical stages of tasselling (VT) to grain fill (R2 to R3) could affect individual producers, particularly in terms of reduced yield or quality. Extra spray programmes also add significantly to the production cost of producing maize in these areas. ■

DR GODFREY KGATLE, GRAIN SA RESEARCH COORDINATOR. FIRST PUBLISHED ON SAGRAINMAG.CO.ZA, 27 MARCH 2025

WORDS OF WISDOM

The master's eye is the best fertiliser.

~ PLINY THE ELDER
Roman author, naturalist and army commander of the early Roman Empire



Consider underused crops FOR NICHE MARKETS

RELYING ON JUST A FEW TYPES OF CROPS MAKES IT HARDER TO TACKLE THE PROBLEMS CAUSED BY CLIMATE CHANGE THAT THREATEN FOOD SECURITY. ONE WAY TO HELP IS TO USE MORE UNDERUSED CROPS (SUCH AS SORGHUM) TO DIVERSIFY FARMING METHODS AND FOOD CHOICES.

Sorghum is among the major traditional basic food crops in Southern Africa. It is processed into a variety of products, both traditional and modern. It can be malted (sprouted grains), decorticated into rice, or milled into coarse and fine meals and flours.

It is an important food source for many people in several African countries. Sorghum grows well in places where the environmental conditions are unfavourable for other crops, making it a key part of their diet and a major source of energy and nutrients for millions of people.

HEALTHY AND WHOLESOME

The interest in sorghum for human foods has recently increased due to its high nutritional potential. It is also considered safe for people with celiac disease, a chronic digestive and autoimmune disorder triggered by gluten, a protein found in wheat, barley and rye.

The trace element content is remarkable, especially magnesium and manganese. It also has a good balance of omega-6 and omega-3 fatty acids. Studies show that eating sorghum can lower blood sugar levels and reduce signs of oxidative stress in both animals and people.

As more people are looking for gluten-free foods and drinks, there have been many studies on sorghum for human consumption. In Western countries, new types of sorghum that are free of tannins have been introduced to create gluten-free options, and similar research has begun in South Africa.

Various products are made from sorghum, such as bread, pasta and biscuits. According to *healthline.com*, these are some popular sorghum products:

- Sorghum meal, also known as *mabel*.
- Sorghum rice or 'corn rice' – whole, decorticated sorghum.
- Sorghum flour, which can be used as a 1:1 substitute for wheat flour in most recipes.
- Flaked sorghum, which is eaten as a cereal, similar to oats, and can also be used in granola bars and other baked goods.
- Sorghum syrup, which can be used as a natural sweetener in processed foods.
- It is also used as a livestock feed and is an important component in poultry feed.

> Studies show that eating sorghum can lower blood sugar levels and reduce signs of oxidative stress in both animals and people.

Food-grade sorghum varieties are resilient against both drought and heat. They also have good processing qualities and are nutritious. Regarding its gross nutritional composition, sorghum is very similar to other cereal grains. The chemical composition and physical characteristics of grain samples of 25 sorghum genotypes are presented in **Table 1**.

1 ***The standard grain colours of sorghum.***

1 ***Variation in grain weight and chemical composition of different coloured sorghum varieties (% dry-matter basis) from the ARC.***

Parameters	Grain colour		
	Brown/red	White	Pale yellow
1 000-grain weight (g)	36,9	29,4	25,2
Protein (%)	9,9	9,4	10,1
Starch (%)	60,9	63,4	63,3
Fat (%)	3,3	2,8	3,4
Tannin (%)	0,4	0,2	0,2
Ash (%)	1,4	1,4	1,2
Fibre (%)	1,8	1,97	1,6
Calcium (mg/kg)	113,6	95,7	77,3
Iron (mg/kg)	51,8	47,6	43,0
Zinc (mg/kg)	26,2	22,3	22,7

Both genetic and environmental factors play a major part in determining the composition of the grain. Starch is the major storage form of carbohydrate in sorghum, and it is gluten-free. This makes sorghum a good substitute for wheat flour for individuals who cannot digest food made from wheat.

The protein in grains is closely linked to their weight and starch levels – when one goes up, the other tends to go down. In sorghum grains, especially the red ones, you'll find tannins, which have compounds called antioxidants. Antioxidants protect against cell damage, which is a major cause of diseases and aging. Sorghums with high levels of antioxidants are important sources of healthy foods. Non-tannin sorghums, however, generally offer better nutrient digestibility.

The protein and starch in grain sorghum are more slowly digested than those of other cereals, and slower digestibility rates are particularly beneficial for diabetics. Some chemical components (calcium, iron, zinc and fat) and 1 000-grain weight vary among different grain colours.

In summary, sorghum is a non-genetically modified organism (non-GMO) crop, gluten-free and contains a range of beneficial phytochemicals (plant-based bioactive compounds). It is considered an ancient grain that has become a viable option for high-value food niche markets in the developed and developing world.

THE CASE FOR THE REMOVAL OF VAT ON SORGHUM

Sorghum is a highly nutritious staple, yet its affordability is hindered by VAT, making it less accessible to lower-income consumers. The taxation places sorghum at a disadvantage against maize, discouraging consumption and production.

As a result, the industry is in decline, with the lower demand affecting farmers, processors and retailers. If the current trend continues, sorghum production in South Africa may cease altogether, leading to job losses and economic setbacks.

The National Development Plan (NDP) aims to expand agriculture and create one million jobs by 2030. Removing VAT on sorghum aligns with this goal by:

- Supporting small-scale farmers and commercial farmers.
- Enhancing food security through a diversified staple diet.
- Encouraging market growth and investment in sorghum value chains.
- Reducing financial strain on consumers, particularly in lower-income groups.
- Promoting entrepreneurship and rural economic development.

Removing VAT would directly benefit consumers while revitalising a struggling industry. The estimated R238 million in VAT collected annually on sorghum could instead be redirected to strengthen the sector, preserve jobs and ensure long-term sustainability. ■

Source: Grain SA Economics and Membership services

DR NEMERA SHARGIE, SENIOR RESEARCHER: PLANT BREEDING, ARC-GRAIN CROPS, POTCHEFSTROOM

Combat livestock theft WITH BRANDING

BRANDING LIVESTOCK HAS BEEN AN ESSENTIAL PRACTICE IN THE WORLD FOR OVER 6 000 YEARS, SERVING AS A MEANS OF IDENTIFYING AND TRACKING LIVESTOCK. IN SOUTH AFRICA, WHERE LIVESTOCK THEFT IS A PERSISTENT CHALLENGE, BRANDING REMAINS A KEY TOOL IN PROTECTING FARMERS FROM SIGNIFICANT FINANCIAL LOSSES.

Greg Talbot, chief executive officer of Tal-Tec, discusses the ethical implications of livestock branding in his latest article, *The ethics of branding: A critical tool for security, traceability and animal welfare*. This article addresses the balance between security, traceability and animal welfare concerns, particularly as new technologies such as radio frequency identification (RFID) tags are introduced. Talbot delves into the effectiveness of hot and freeze branding, evaluating both their impact on animals and their practical benefits for farmers.

THE IMPORTANCE OF BRANDING

Livestock theft in South Africa is a growing concern, costing farmers an estimated R1,4 billion annually. This criminal activity threatens farmers' livelihoods, particularly in the Eastern Cape, KwaZulu-Natal and North West.

In response, the South African government implemented the *Animal Identification Act* in 2002, requiring livestock owners to register animal identification marks. This process includes branding, freeze branding, tattooing and tagging. Livestock owners should also register their identification mark with the Department of Agriculture (DoA).

The National Stock Theft Prevention Forum acknowledges that investigating stock theft cases is difficult due to a lack of evidence and limited police capacity. The chairman, Louis Wessels, stresses that farmers who do not brand or tattoo their animals exacerbate the problem. Certain provinces are implementing additional measures such as district-specific branding marks and private security partnerships to combat the rising cases of livestock theft.

BRANDING

Hot iron versus freeze branding

Hot iron branding, the most commonly used method in South Africa, is a quick process that takes only four to five seconds. It is highly effective, providing a permanent mark that makes stolen livestock easy to identify. Despite concerns over animal welfare, studies indicate that cattle do not exhibit prolonged distress from branding. The most traumatic aspect for the animal is being restrained rather than the branding itself. Cattle have thick hides, unlike humans or pigs, and once branded, they typically move on without discomfort.

Freeze branding, on the other hand, uses extreme cold to kill the pigment-producing cells in the hair follicles, resulting in a white mark once the hair regrows. This method is particularly popular among stud and dairy farmers, as it is aesthetically pleasing against darker hides. While considered more humane, freeze branding requires shaving the animal's skin before application. It is generally more expensive and time-consuming than hot branding, especially when using liquid nitrogen instead of dry ice.

Alternative animal identification methods

Alternative identification methods, such as radio-frequency ear tags (RFID), are gaining global traction. These tags store critical data about the animal, including lineage, health records and farm of origin. South Africa's Livestock Identification and Traceability System (LITS-SA) was introduced in 2017 to enhance traceability and compliance with international trade standards. However, adoption by commercial farmers has been slow due to cost concerns and limited trust in government implementation.

A PRACTICAL AND ETHICAL APPROACH TO LIVESTOCK IDENTIFICATION

While branding remains a topic of debate, its role in livestock security cannot be ignored. In South Africa, where cattle rustlers can drive herds 10 km to 20 km overnight, a lack of identification makes stolen livestock almost impossible to recover.

Farmers rely on branding, databases and community watch initiatives to mitigate these risks. Additionally, law enforcement, though under-resourced, has a forensic unit dedicated to identifying and returning stolen livestock.

Tagging, particularly RFID, offers significant benefits in traceability. These tags help manage livestock and ensure food safety and quality control, especially for premium markets requiring organic certification. Ear tags provide detailed animal histories, from birth to slaughter, reinforcing the integrity of the supply chain.

CONCLUSION

Given the magnitude of livestock theft in South Africa, animal identification is essential. While technological advancements provide new solutions, branding remains a practical, effective and widely used method. As debates continue, finding a balance between security, traceability and animal welfare is crucial. When done correctly and responsibly, branding plays an indispensable role in ensuring the protection of farmers and their livelihoods. ■

TAL-TEC PRESS RELEASE

Corner Post

BY LOUISE KUNZ, ASSISTANT EDITOR

WHEN THE TIME CAME FOR NKOSINATHI DUNCAN HADEBE TO RETIRE FROM HIS CAREER AS A POLICEMAN, HE REALISED THAT HE DID NOT WANT TO SIT AT HOME DOING NOTHING. HE NEEDED A WAY TO STILL EARN AN INCOME. THE MEMORY OF HIS PARENTS PLANTING MAIZE, GAVE HIM THE IDEA FOR THIS NEXT CHAPTER IN HIS LIFE.

Duncan is now a dedicated farmer, who became the Grain SA/Land Bank Smallholder Farmer of the Year in 2023. This award showed the 61-year-old that hard work pays off and made him even more determined to grow as a farmer.

He is also a keen cattle farmer and a member of the Eastborn Stockowners Association. He rents 250 ha of commercial grazing land. This has proved to be a worthwhile investment for growing the weaner production side of his business.

When choosing a career, farming is usually not at the top of the list for the youth as it isn't seen as a glamorous office job. Duncan is trying to change this in the Newcastle area in KwaZulu-Natal, where he farms on communal land.

Farming has presented him with an opportunity to help not only his own son, but other young people as well. 'There are no jobs available in this area and I can teach them how to farm – how to plant maize and work with cattle. This way, they can earn an income.'

He currently has five young people under his wing and is showing them the farming ropes. In addition, three more will join him for the upcoming season. He believes that keeping young people busy and close to nature steers them away from negative influences. 'They are also the future of agriculture.'

Graeme Engelbrecht and Duncan Hadebe.

DUNCAN'S STORY

WHY DO YOU LOVE FARMING?

It's wonderful to be my own boss and to have a job where you can see results. I love producing maize, as I can see the results of my hard work. You see the growth and the same with the cattle – I can see the progress as the animals grow. The crime in our area is the only bad thing about farming. I have to pay people to protect my crop.

WHO HAS HELPED YOU BECOME SUCCESSFUL?

The PGP team's input has made a huge difference. When I joined Grain SA, I planted only 2 ha of maize. The meetings and training from the Farmer Development Programme have really helped me in terms of crop production. They have shown the process from the beginning – how to start planting maize and what to do once it's planted until marketing. This is why I want to help others.

WHAT MAKES YOU A GOOD FARMER?

Perseverance, passion and listening to advice.

A WINNER'S TOP TIPS FOR DEVELOPING FARMERS:

- Get a mentor to show you what to do and listen to his advice.
- Ask questions when you don't understand or don't know what to do.
- Stick to the guidelines and work hard.

FARM FACTS

Farm: Communal land adjacent to the Osizweni Township
Nearest town: Newcastle
Region: KwaZulu-Natal
Size: Planted 26 ha white maize, 4 ha yellow maize and 7 ha drybeans
Type of farming operation: Mixed – crops (maize and drybeans) and livestock (mixed breed of Brahman and Beefmaster cattle).

PGP'S CONTRIBUTION

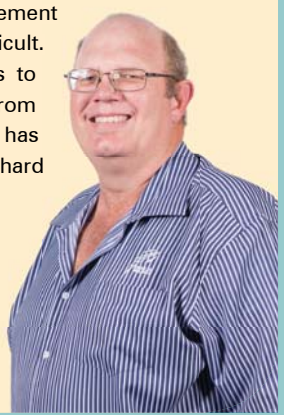
- Joined Grain SA in the 2018/2019 season
- KwaMhlaba Study Group

Training courses completed:

- Introduction to basic maize production
- Marketing of grain

A mentor's view:

Graeme Engelbrecht, regional development manager in the Dundee office, says what sets Duncan apart from some other farmers is his personal passion for farming. 'He is very determined and driven, even under difficult farming circumstances where his enterprises and different lands are spread out. This makes management and control very difficult. Much of what he has to work with is hired from others. His growth has been through his own hard work and desire.' ■



Graeme Engelbrecht

A programme that is changing lives

Teamwork empowers farmers to be the best

Jerry Mthombothi

Eric Wiggill

Graeme Engelbrecht

Du Toit van der Westhuizen

Jacques Roux

Phumzile Ngcobo

THE PHAHAMA GRAIN PHAKAMA (PGP) FARMER DEVELOPMENT TEAM FOCUSSES ON EMPOWERING INDIVIDUALS TO BECOME INDEPENDENT FARMERS. THEIR CORE VALUES ARE TEAMWORK, INTEGRITY, PASSION, ACCOUNTABILITY, EXCELLENCE, CARE, RELIABILITY AND DETERMINATION.

The regional development managers and mentors conduct regular farm visits to evaluate practices, identify issues and provide tailored advice. Those individuals meet the developing farmers in their current circumstances and build on the foundations that already exist to help empower them in the commercial grain industry.

Jerry Mthombothi from the Mbombela regional office has been involved in the programme since 2004 and even came back out of retirement to continue this vital work. He believes it is of the utmost importance to develop farmers with what they already have and to help them increase their yields by teaching them the correct agricultural practices.

The regional development manager (RDM) in the Eastern Cape, **Eric Wiggill**, has been involved in the programme for 15 years. He believes farmer development in Africa is the most crucial activity to ensure food security in an uncertain environment. Through farmer development, new technology in all fields of agriculture can also be taught.

Graeme Engelbrecht, RDM at PGP's Dundee office, has been involved in the Farmer Development Programme (FDP) since 2012. For Graeme, farmer development is about the commonality of striving to achieve the exact same thing. 'We are welded together by a shared cause and vision.'

Du Toit van der Westhuizen, RDM at the Lichtenburg office in North West, joined the programme in 2012. To him, farmer development contributes to food security. It is also important to develop farmers to create more jobs and income for unemployed people.

Jacques Roux, the Free State RDM, has been part of the programme since 2015. He is passionate about farmer development and believes that identifying the right farmer is crucial. Jacques believes the best farming soil and equipment mean nothing without a passionate, hard-working farmer.

Phumzile Ngcobo, assistant regional manager, joined the PGP team in 2023. She believes that farmer development helps to bridge the gap of access to relevant up-to-date information, allowing farmers to play a significant part in the agricultural sector and food security.

THIS KEEPS US GOING

Although there are many challenges, the positives – such as social interaction, the success stories of farmers and the impact this has in their communities – keep team members inspired. Graeme describes it as being part of the same (agri)-culture, where the same pressures, laws, joys, sorrows and frustrations are felt by all.

Eric enjoys meeting different people with their own unique views on life. One of his highlights is seeing farmers being the centre of their community, helping and teaching others to be self-sufficient.

Graeme agrees and says it is not only the upliftment of an individual and his family, but of the whole community, that makes the programme worthwhile. 'It is critical not only in South African agriculture, but also for the future of the country.'

The relationship between a farmer and the RDM/mentor is a two-way street. Farmers get advice, but in turn, inspire the mentors through their growth. Jerry loves seeing the impact that a successful season has on a farmer, his family and the community.

Phumzile agrees and says it always makes her smile when she sees farmers having a renewed sense of hope about their farming operations and the chances of success. 'Success restores hope.'

It is the 'rags to riches' stories that continue to flame Jacques' passion for farmer development. 'Seeing growth and development because a farmer follows advice, is wonderful, especially when so many people don't believe that it can be possible.'

It is truly satisfying when you see the difference your 'footprints' – your advice and support – have on someone's development – and how this growth can create a future for an individual and his family.

However, the committed RDMs think farmer development would benefit if the following could be eliminated:

- Political interference, such as new farming equipment deteriorating because of red tape and politics, funds being wasted on uninformed people, and people who are not farmers getting farms and equipment.
- Dishonest farmers who spend funds earmarked for their farming operations (like buying inputs) on other things and then cannot repay their loans.
- Individuals who do not follow advice and sound agricultural practices.
- People without the necessary experience who want to change things because they do not know why things are done a certain way.

Training improves skills

SKILLS development forms a very important part of the Farmer Development Programme. During the February/March period, 48 training courses took place thanks to the support of the Oil and Protein Development Trust (OPDT).

Trainer Fanie Pienaar presented a mechanisation management course in the Free State. According to a female farmer who attended it, the course was insightful and for her the highlight was testing each part's functionality on a real tractor.

An introduction to soybean production was presented in the Mbombela region by trainer Elias Dladla.

In Mthatha trainer Lunga Mhlonyane presented an introduction to sunflower production. The farmers were fascinated to learn that most of the home-based animal feeds they are buying (especially for chickens and pigs) requires sunflower.

BRINGING FARMERS TOGETHER FOR A DAY

TWO farmers' days were held during February and March – one in the Dundee region and one for farmers in Limpopo. Approximately 120 farmers attended the farmers' day at Uphuzane-Kwa Nkosi in the Dundee area. It was held in collaboration with Bayer and the local office of the KZN Department of Agriculture and Rural Development-eDumbe (KZNDARD). Presentations provided by Bayer focused on the different suitable types of varieties according to the area's prevailing weather conditions.

The KZNDARD's presentation highlighted the importance of collaboration and the importance of being an organised farmer. The PGP team discussed membership of Grain SA, the different projects available according to farmer classification as well as the study group approach PGP is using to mobilize farmers and promote participation.

Apart from the valuable information, farmers received a copy of* Pula Imvula *as well.

Jerry Mthombothi, regional development manager in Mbombela, was invited by the Department of Agriculture in Limpopo to do a presentation on soil preparation. Apart from grain production there were also presentations about broiler production, biosecurity and medicine and vaccination management at the Limpopo farmers' day.

The farmers' day in Limpopo was well attended. Many farmers who attended have shown interest in joining the PGP study groups.

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