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PULA IMVULA

GROWING FOOD • PEOPLE • PROSPERITY

GRAIN SA MAGAZINE FOR DEVELOPING FARMERS

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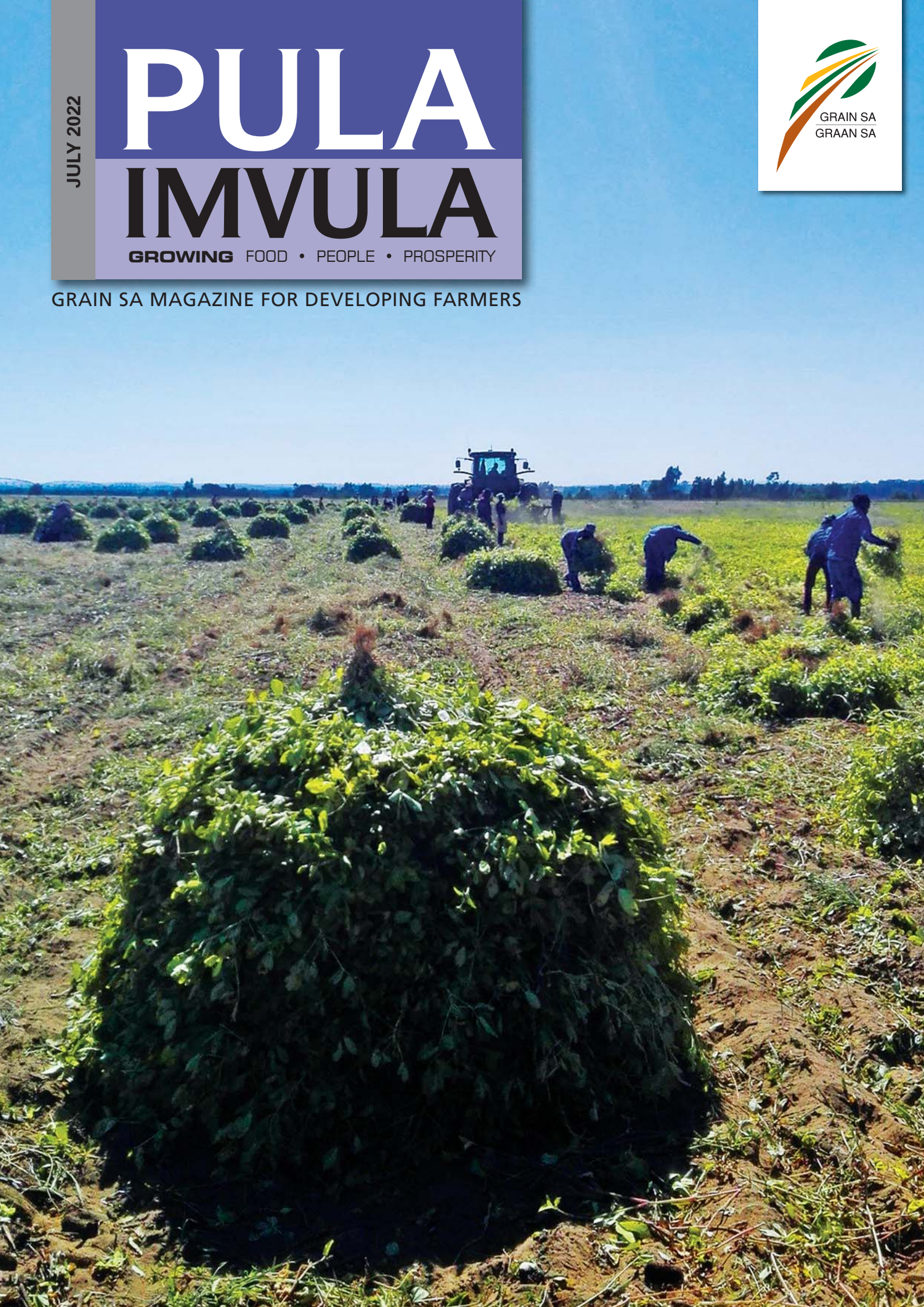

PULA IMVULA

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Groundnuts should be harvested when approximately 75% of the pods have reached maturity. In this picture the stacking method is used where plants are loosened to be removed from the soil by hand.

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A Word From...

Graeme Engelbrecht

IN THE UNITED STATES THE AVERAGE AGE OF A FARMER IS 57,5 YEARS, IN THE UNITED KINGDOM IT'S 59 YEARS AND IN KENYA IT'S 60 YEARS. THE QUESTION OF WHO WILL BE PRODUCING OUR FOOD IN THE FUTURE, IS BECOMING A CONCERN ALL OVER THE WORLD.

Succession planning is not just to give, but to ensure future success. Many of the farmers who are part of the Farmer Development Programme are not young anymore. I would venture to say that many of the commercial producers in the various industries follow a similar trend.

However, the concern that I feel needs discussing is closer to home – maybe more directly applicable, and will, in turn, also help alleviate the future dilemma of food production. This is the transfer of learnt skills, direct knowledge of each of our individual lands and the microclimates that each farmer deals with.

Knowledge and how to produce food can be learnt at schools, colleges, universities and through various courses, but the intimate experience that each farmer has gained is hard lessons learnt over time. This knowledge is extremely valuable. In a time of minimal profit margins, this knowledge can make or break new producers.

There has been so much hard, backbreaking work to get farms and lands to their current state. Surely it will be important that this cycle does not just start over with the next entrant into the agricultural world.

'Generational wealth' is a lively and misused term, regularly thrown around in the political sphere – often as an excuse, sometimes as a blame, but seldom as a goal, and it should be. This is not always a handover of financial wealth from one generation to another. It is more often the passing on of the advantageous knowledge for the next generation to succeed easier and improve and grow through what has already been achieved.

The age of farmers around the world, and in our own programme, would indicate that they are on the brink of being able to bring just that – generational wealth – to the next participants. It is the responsibility of each farmer to ensure that what has been gained, is not lost. This cannot be done for them and cannot be regulated, promulgated or forced. It must be a conscious choice to find or guide someone to continue with what has been begun – a succession to succeed. ■

FARMER OF THE YEAR – meet our finalists

THE MAIN GOAL OF THE GRAIN SA FARMER OF THE YEAR COMPETITION IS NOT ABOUT WINNING, BUT ABOUT CELEBRATING THE LEARNING, GROWTH, DEVELOPMENT AND HARD WORK OF THE THOUSANDS OF FARMERS WHO ARE PART OF THE FARMER DEVELOPMENT PROGRAMME.

After the judges looked at the farming enterprises of the nominees, the following farmers were selected as finalists for the 2022 competition:

NEW ERA COMMERCIAL FARMER
(MORE THAN 250 TONS)

Lucky Khumalo (71) and his twin sons farm with maize and soybeans on Liesbethdale, a 672-hectare farm in the Dannhauser region in KwaZulu-Natal. Although he became interested in agriculture at a very young age, he only launched his farming career in 1978, when he purchased a tractor to start farming for profit – and he has never looked back. He heard about the value Grain SA can add to your farming enterprise from the late Remember Mthethwa and joined the organisation in 2015. Through the Grain SA Farmer Development Programme this father-and-sons team has developed very good agricultural practices. They dream of expanding their farming enterprise and becoming commercial farmers.

When **Mapidinyana Phillip Manoto (46)** was still at school, his father taught him how to drive a tractor so that he could help him in the lands when they had to plough and plant. After completing his tertiary studies, he joined his father on the farm in 2001. Their farming operations were so successful on communal land that they purchased Lusthof farm in the Lichtenburg area in North West in 2005 with a loan from Land Bank. They are currently in possession of the title deed, as they have paid off the farm. This passionate farmer joined Grain SA in 2016 and wants to grow his farming business through diversification in the future.

Mzewakhe Clifford Mthimkulu (33) is a qualified paramedic and has also worked as a sales representative for alarm systems. In 2008 he joined his father on the farm, Astoria, in the Senekal district in the Free State and then became what he always wanted to be – a farmer. He accompanied his father to his first study group meeting in June 2014 and now attends training courses on a regular basis. For Clifford it is important that a country is self-sufficient. He believes that as a younger farmer he can play a role by producing food and proving that the younger generation is able to take over from their elders and be successful producers.

POTENTIAL NEW ERA FARMER
(51 HA TO 249 TONS)

Bheki Isaac Mabuza (49) started planting maize in 2007, but the crop was not a profitable harvest. He joined Grain SA's study groups in 2014 and since then his farming skills have developed, which had a positive outcome on his harvest. This kind-hearted farmer from the Lydenburg area in Mpumalanga helps community members who need food and maize meal. Bheki's biggest achievement thus far has been his third-place finish in the category for maize production in the eastern Highveld region in the 2021 Grain SA Grow for Gold National Yield Competition. He competed amongst the elite of South Africa's commercial maize producers.

Tamsanqa Raphael Masuku (74) started farming in 2001, when he bought Kwagga's Drift Farm near Dundee in KwaZulu-Natal. However, his interest in agriculture was piqued at an early stage, as his family was planting to put food on the table. Tamsanqa joined Grain SA in 2019 and has since then seen a vast improvement in his crops through the development of correct agricultural practices. He hopes to increase his maize and soya hectares and add more cows to his herd in the future. He dreams of being a big commercial farmer, who can buy bigger tractors than the ones he currently owns.

As a young girl **Mampho Adeline Thaele (44)** already dreamed of becoming a farmer. In 2014 her dream became a reality when the farm Perlot near Hennenman in the Free State was purchased by the Department of Rural Development and Land Reform (DRDLR) and the lease contract was given to the Thaele family. Her uncle, who was in charge of the farm, gave her the job of farm manager. She attended her first study group meeting on 30 July 2015 and through the Grain SA Farmer Development Programme she developed into a farmer. She hopes that the programme will go from strength to strength and keep on supporting new farmers.

SMALLHOLDER FARMER (11 HA TO 50 HA)

TD Hlatswayo (41) grew up helping his father on the farm. He worked at a firm making office furniture before joining African Cables, which replaces cables for mines all over South Africa. At the end of 2015, he bought goats at an auction in Ermelo and heard about Grain SA. He joined a study group at Daggakraal near Amersfoort in 2016 and is now the chairman of the Bethamoya study group in the area. TD farms on Mooipoort in the Amersfoort district in Mpumalanga and dreams of having a bigger piece of land to cultivate. He would love to see the youth of South Africa become more interested in agriculture.

Joseph Tuelo Mokaleng (54) grew up in a rural area, where they were dependent on agriculture to survive. His grandparents and parents were all involved in agriculture. He has never known another workplace than the fresh air of the farm. Through farm work this finalist from Morena Village near Delareyville in North West has developed a keen interest in agriculture. He became a farmer in 1983 and joined Grain SA in 2006 after completing his first training course. He would love to have his own farm. Although he has been troubled by theft and challenging weather conditions, he is determined to become a better farmer.

For nearly 20 years **Dinabantu Lawrence Nqubuka (68)** worked as a general worker in Johannesburg before answering his calling to farm full-time. To learn more about farming, he joined a few smaller societies before discovering Grain SA. It was only when he became a member of Grain SA in 2016 that he developed agricultural practices that could help improve his farming operation in the Estcourt region in KwaZulu-Natal. He hopes he lives long enough to expand his farming enterprise and plant more than 100 hectares.

SUBSISTENCE FARMER (1 HA TO 10 HA)

Lindiwe Maureen Kubheka (56) became interested in farming while still at primary school, as her family planted vegetables in their small backyard. After joining Grain SA in 2014 as a full-time member, she became so inspired at the Doornkop Study Group that she started farming for profit on her 1-hectare piece of land in the Dundee region in KwaZulu-Natal. She hopes to develop in the farming sector and get a bigger piece of land, so that she can plant more than she is currently doing. She would love to be able to create jobs for members of her community on her farm one day.

Khuphukile Vinah Mazibuko (62) works at the Department of Health as a community caregiver. She became aware of the importance of agriculture in 1984, seeing how families in the area where she lived, planted and grew food from seed. Since joining Grain SA in 2015, she is no longer planting to just put food on the table but farming for profit. Khuphukile, who is from the Estcourt region in KwaZulu-Natal, dreams of expanding her field of maize and farming on a bigger scale. She would also like to farm with chickens.

Hezekia Ndinda Mkhonza (66) farms on Hereford East in the Albert Luthuli district near Ermelo in Mpumalanga. After working in Swaziland for many years, he returned to South Africa in 2009 and started a small backyard garden at his home, where he planted some vegetables and maize. He became more serious about farming after joining Grain SA in 2016. With the help of the Farmer Development Programme, his yield has increased from five or six bags of maize per hectare to more than six tons per hectare. He wants to grow as a farmer and hopes to buy his own tractor and implements one day.

NOMINEES

Moniwa Badge Skosana from Witbank, Mpumalanga (New Era Commercial farmer).

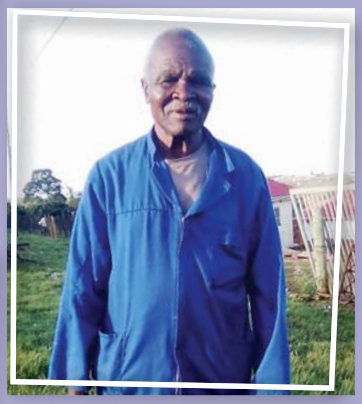
Go Serema from Lichtenburg, North West (Smallholder farmer).

These subsistence farmers were also nominated:

Winile Patience Hlongwane from Loskop, KwaZulu-Natal.

Abraham Mankge from Lydenburg, Mpumalanga.

Nontuthuzelo Mbele from Mount Ayliff, Eastern Cape.



Siyavuya Njeya from Bizana, Eastern Cape.

Zanele Nkosi from Newcastle, KwaZulu-Natal.

PULA IMVULA EDITORIAL TEAM

Know your pests:
FALL ARMYWORM

IT IS IMPERATIVE THAT FARMERS CAN IDENTIFY PESTS TO ENSURE EARLY MANAGEMENT WITH THE RIGHT SET OF TOOLS.

Fall armyworm (***Spodoptera frugiperda***) entered South Africa in 2016, with devastating results on their preferred host plants, maize and sweetcorn.

They are active during dusk and dawn, and mostly hide in plant whorls or between leaf sheets during the day. Eggs are laid in parcels that vary from 50 to 300 eggs and are covered with scales and hairs from the female moth's body. The first few parcels are fluffy and completely covered, compared to later parcels that might be naked or with only a few scales.

After two to three days, most of the eggs hatch almost simultaneously. Fall armyworm's lifecycle is temperature dependant and is completed in a shorter timespan at higher temperatures, which in South Africa varies between 24 to 40 days.

The initial infestation often goes unnoticed, as small larvae cause little plant damage, feeding mostly in the plant whorl and creating small 'windows'. As the larvae grow, typical identification characteristics develop such as four dark dots on the eighth segment, a broad pale band and dark spots forming a trapezoid on each segment, an upside-down creamed colour Y-shape between the eyes and netlike pattern eyes.

Large larvae consume 80% of their total food intake in the last few days of development. When they move into the cob, poor gemination follows and severe damage up to hard-seed stage can occur.

Stacked GMO seeds, seed treatment and various registered chemical control options are available to manage fall armyworm. Scouting for moths and monitoring with pheromone traps can determine early moth flights, indicating infestations and the size thereof.

Field inspections every three to four days are crucial to identify egg parcels, small larvae or 'window' damage. When these are identified, a producer should act fast because mature larvae are more difficult to control, especially once they have moved into the cob.

For more information, visit *www.croplife.co.za/KnowYourPest_FAW*.





Signs that indicate the presence of fall armyworm on maize.

ELRIZA THERON, MARKETING AND COMMUNICATIONS MANAGER, CROPLIFE

WORDS OF WISDOM

We are way more powerful when we turn to each other and not on each other, when we celebrate our diversity and together tear down the mighty walls of injustice.

~ CYNTHIA MCKINNEY
American politician


Effective control of winter weeds IS IMPORTANT

WINTER ANNUAL WEEDS ARE WEEDS THAT CAN GERMINATE DURING THE AUTUMN AND LIVE THROUGHOUT THE WINTER. THESE WEEDS CONTINUE TO MATURE, FLOWER AND SET SEED DURING THE SPRING AND THEN DIE DURING THE SUMMER.

Fleabane (*Conyza* spp) and ragwort (*Senecio consanquineus*) are common examples of winter annual broadleaf weeds. Winter weeds are well adapted to winter conditions and therefore could utilise large quantities of water during their lifespan. During the spring, the rainfall is limited. Winter weeds will then continue to dry the soil to such an extent that the germination of crop seeds is delayed.

In areas where the winter weed population is dense, a crop will emerge particularly slow or not at all. Winter annual weeds can also serve as hosts to various diseases such as *Sclerotinia sclerotiorum* (sclerotinia stalk rot of soybean), insects such as cutworm and nematodes that have a negative impact on the yield of the following summer crop.

WINTER WEED CONTROL

General aspects to remember with winter annual weed control are:

- Weed control, whether cultivation or chemical, must always be conducted timeously so that the weeds are not able to flower and shed seed.
- Problem weeds should be correctly identified before selecting a herbicide, because it is only able to control the weeds that are listed on its label.
- It is important to be aware of any possible residual effects (the time that the herbicide remains active in the soil) of a chosen herbicide to prevent damage to the follow-up crop, even when planted months after the herbicide was applied. A common example is the residual effect of triazine-based herbicides such as atrazine, which are generally used for the control of broadleaf weeds in maize. These types of herbicides remain active in the soil for months and will damage broadleaved follow-up crops such as soybean.
- Before applying herbicides, the knapsack or tractor boom sprayer must be calibrated to ensure an accurate application rate.
- Herbicides must preferably be applied on younger weeds (less than 10 cm high or as per label instruction), because they lose some of their effectiveness on older plants. Older weeds will require larger dosage rates and even then, the level of control will not always be effective.

Control of fleabane and ragwort

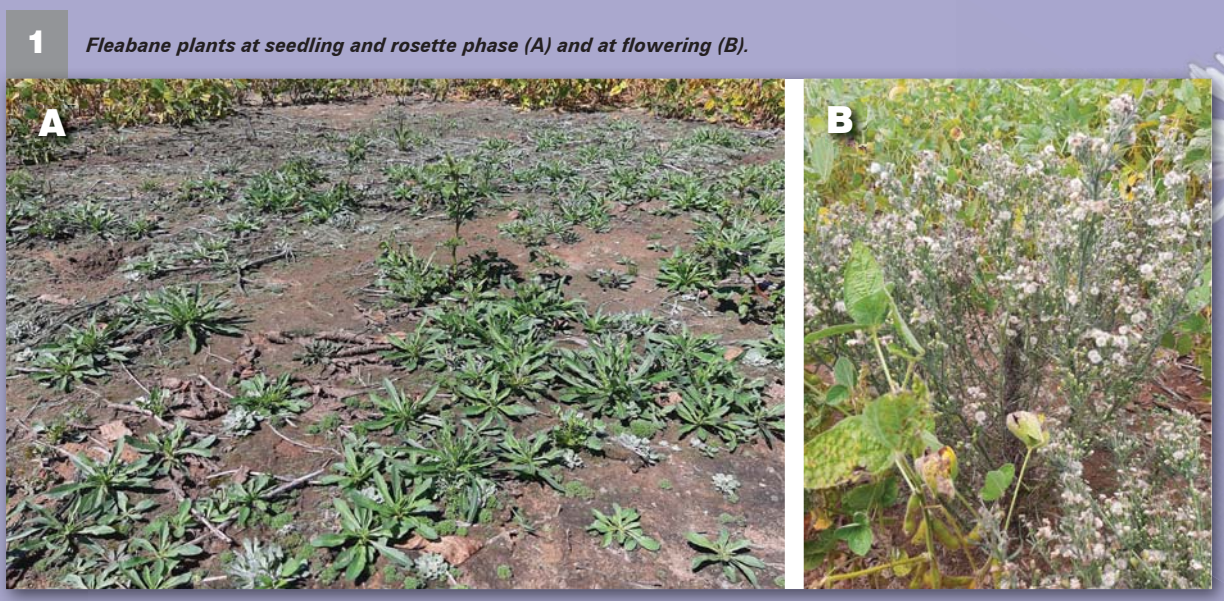
Effective control of both fleabane (**Figure 1**) and ragwort (**Figure 2**) can be achieved by shallow cultivation and herbicide application on younger, smaller plants during late March or early April. However, since the summer crops are still present in the fields when these weeds start to germinate, the use of a herbicide may be problematic.

The application of such herbicides between rows (directed) using knapsack sprayers in smaller areas or drop arms in larger areas is possible during this period. Producers with ordinary tractor sprayers will only be able to apply these herbicides post-harvesting, when they can enter the fields.

Ragwort can be sprayed post-harvest with a systemic herbicide such as glyphosate or a contact herbicide such as paraquat. In the presence of fleabane, the most effective control is generally achieved with a tank mixture of glyphosate combined with a second herbicide with another mode of action such as 2,4-D or atrazine, depending on the follow-up summer crop (residual effects).

Farmers are welcome to contact Dr Craven on 018 299 6346 for more information.

1 ***Fleabane plants at seedling and rosette phase (A) and at flowering (B).***



Safety first

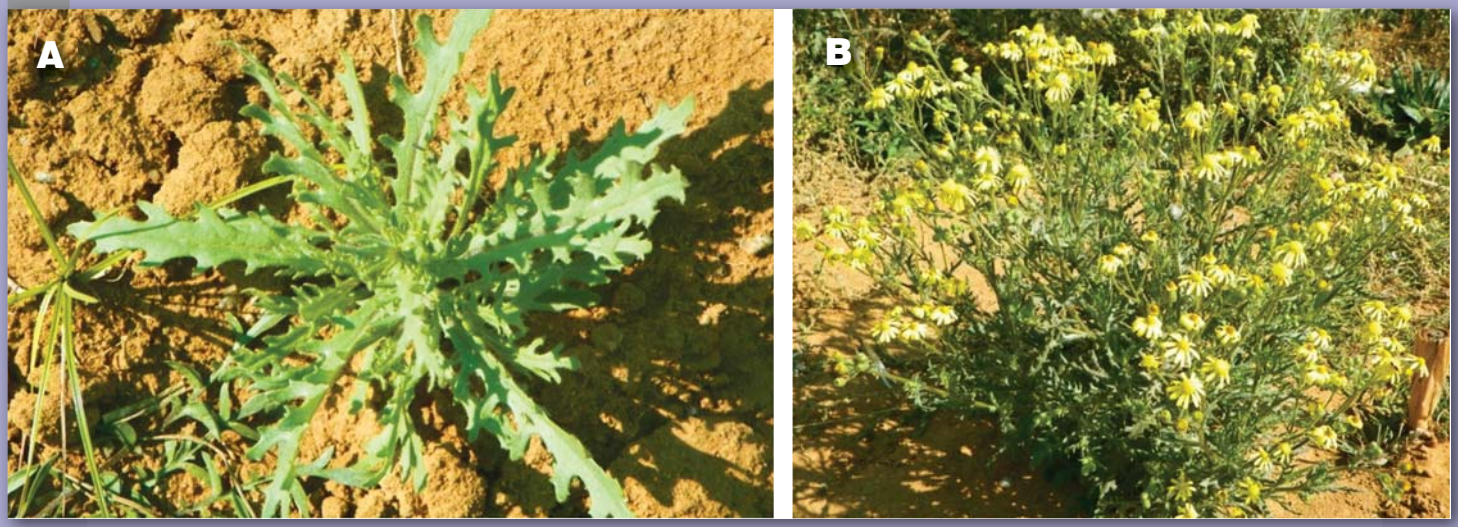
THE MAIN PURPOSE OF PROTECTIVE CLOTHING IS TO PROTECT EMPLOYEES WHILE THEY ARE PERFORMING THEIR TASKS. AN EMPLOYER MUST COMPILE A PROTECTED CLOTHING POLICY AND DISCUSS IT WITH THE EMPLOYEES.

- All protective clothing must be bought for a specific purpose. Employers must provide protective clothing to employees in accordance with the risk they are exposed to.
- Employees are entitled to get protective clothing. The employer can either provide the clothing free of charge or give employees a clothing allowance to enable them to buy their own protective clothing.
- If an employer provides the protective clothing, it remains his property. Should an employee terminate his/her service at the company, the protected clothing must be returned to the employer.
- Protected clothing is only for use at the workplace and may not be used for any other purposes. Employees must take care of their clothing. However, if protective clothing wears out and is no longer effective, the employer must replace it.
- Employees should check the filters of certain protected masks regularly. The effectiveness of these masks decreases when they exceed the expiration date.
- An employee who works with chemicals, must get additional protective clothing apart from the clothing he usually wears. Employers must also provide a facility where protective clothing (for chemicals) can be washed free of charge, as employees should not wash their protective clothing for working with chemicals at home.
- The employer must also provide facilities where employees can lock away their protected clothing and tools used in the workshop. ■

CHARL SAAYMAN, HEALTH AND SAFETY CONSULTANT AT MEGA HEALTH AND SAFETY

Effective control of...

2 *Young (A) and flowering ragwort plant (B).*



Important: It remains imperative that farmers adhere strictly to the recommendations on product labels in terms of the specific weeds that can be controlled, the crop(s) on which the herbicide is registered, the dosage rates to be used and any residual effects the herbicide might have. Farmers should contact a reliable chemical advisor to help them choose the most effective herbicide for their specific needs and to indicate which dosage rate to apply. ■

DR MARYKE CRAVEN, SENIOR RESEARCHER, ARC-GRAIN CROPS

An introduction to BASIC GROUNDNUT PRODUCTION

GROUNDNUTS ARE PRIMARILY UTILISED FOR HUMAN CONSUMPTION IN TERMS OF THE RAW SEED, PEANUT BUTTER, OIL AND OTHER BY-PRODUCTS. THE CORRECT CULTIVATION OF GROUNDNUTS CAN PRESENT FARMERS AND CONSUMERS WITH A VERY HIGH NUTRITIONAL CROP AND A HIGH-INCOME VALUE.

Locally, groundnuts are grown in the summer rainfall regions under irrigation and dryland conditions. Initially, smallholder farmers from mainly the northern and eastern parts of South Africa produced groundnuts for their own consumption; and it is still an important source of nutrition in the northern parts of KwaZulu-Natal and Mpumalanga.

Recently those farmers have entered the commercial market through incentives given by processors to boost South Africa's production numbers and to keep the groundnut industry viable. This has opened many new business opportunities for the developing farmer and the commercial producer, where both parties are enabled to form strong working relationships to ensure a sustainable groundnut industry.

A groundnut breeding programme was started at Potchefstroom (ARC-GC) in the 1960's, where Spanish-bunch type groundnut cultivars are currently still being produced (**Figure 1**).

BACKGROUND

Groundnuts (*Arachis hypogaea* L.) are divided into two groups, namely Virginia and Spanish-Valencia groups. The origin of groundnuts is from South America. It is safe to say that the groundnut legacy in South Africa was introduced by the Portuguese seafarers and slave traders in the form of the cultivar Natal-Common.

The importance of groundnuts for the South African market is emphasising its value nationally and as an export product, especially in terms of its potential to generate international revenue since 1967. Van der Merwe (1981) explained that the early Natal settlers conducted the first groundnut trials in 1853, when the locally available cultivar and the Virginia type favoured by the settlers were tested in South Africa.

This Spanish type is highly suitable for South African conditions because it is adapted to adverse environmental conditions, proved to be more disease resistant, supports a shorter growing cycle and shows an apparent lack of fresh seed dormancy, as suggested by Hammans in 1994.

STARTING YOUR OWN GROUNDNUT FARMING OPERATION

Soil

Soils normally selected for groundnut production should preferably be sandy. Groundnuts have a well-developed taproot system which, depending on the soil type, can reach a depth of 1,8 metres. Soils with a high potential to produce groundnuts are therefore typically deep (1 500 mm to 2 000 mm), well drained, red and/or yellow soils with a high fine sand fraction such as sandy loam to sandy texture in the topsoil. The pH (KCl) should range between 5,5 to 7.

The preparation of the seedbed is very important. The seedbed must be moist, even and firm to allow good contact between the soil particles and the seed for good germination and root development. Most important soils for groundnut cultivation are Avalon, Bainsvlei, Clovelly, Hutton and Glencoe. Physical limitations including shallow soil, hardpans or compaction layers must be avoided because it restricts taproot development.

Seed germination is rapid if the soil moisture and temperature are optimal (above 18°C). Shallow planted seeds (less than 50 mm deep) will be planted in relatively warmer soil. Seeds planted in too shallow soils will dry out quickly and germination will be low, which will result in poor stands.

Water

Areas under rainfed conditions in which groundnuts can be grown successfully, are limited because moisture is a critical factor for groundnut production. The Spanish type is recommended in these areas, as it is more water-use efficient (WUE) because of its upright growth habit and short growing season. Rainfall in the region of 500 mm to 700 mm per annum is optimum conditions for groundnut production.

Planting should not be done before at least 50 mm of rainfall in a short period of time was measured. The germination process of the seed can be speed up by planting them in moist, warm soils.

Temperature

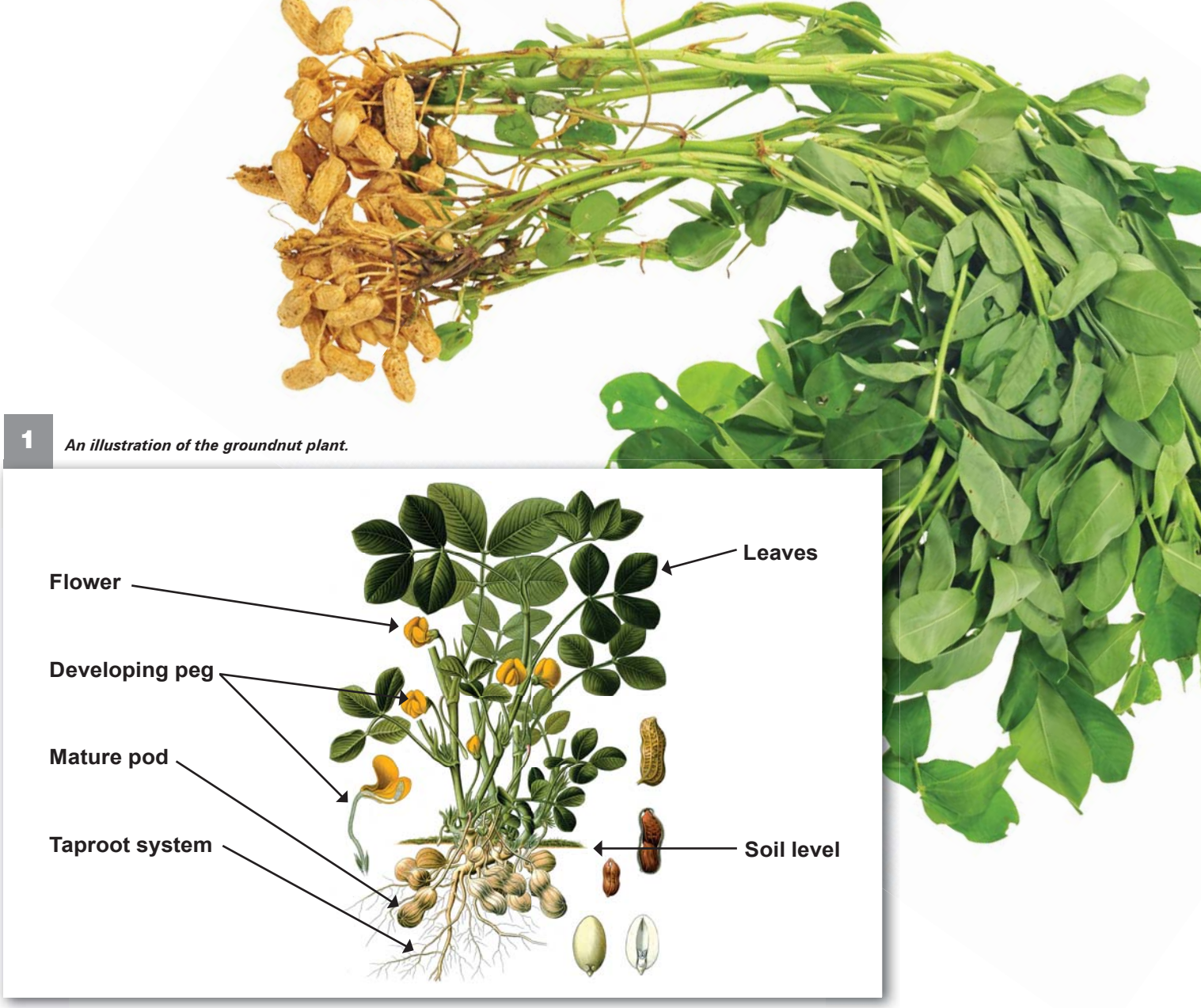
Groundnuts originate from the tropical areas in South America and therefore require a growth period of at least 160 frost-free days and high temperatures. Avoid planting in dry soil and irrigate during cold spells or planting in cold, wet soil. Planting in soils of 15°C at a 5 cm soil depth ensures fast germination and produces healthy seedlings.

A germination rate of 95% can be achieved between 18°C to 30°C. Suitable vegetative growth occurs best between 20°C to 35°C, while a day temperature of 27°C is most suitable for flower development. A warm day of 29°C and a cool night of 23°C are optimum temperatures for pod formation.

Fertiliser

Groundnuts are not highly dependent on nitrogen fertilisation because, as a legume, it can fix atmospheric nitrogen with the aid of root bacteria that converts atmospheric N_2 into NO^{-3} (nitrification). Active nitrogen nodules have a pinkish appearance and those not active are green when dissected. In rural fields, however, the level of phosphorous is usually low and it should be applied additionally.

Like other crops, groundnuts require adequate levels of potassium for normal growth and development. In the unlikely event where the potassium levels are low, it can be supplemented up to 10 kg ha^{-1}. Calcium, on the other hand, is an essential element in groundnut production and



1 *An illustration of the groundnut plant.*

crucial for seed development. An over-supply of potassium in the soil can induce a calcium deficiency. On calcium deficient soils, groundnuts will produce a lower yield with a low kernel quality.

Production practices

Planting starts when the soil moisture is adequate and after the seedbed has been properly prepared. To establish a good planting density, an amount of 50 kg seed is planted on a hectare.

On smaller pieces of land, the spacing of the seed in the row can be 8 cm apart and the spacing between the rows must be 90 cm. In high rainfall areas the spacing between the rows can be 75 cm.

The seed must be placed at a depth of 5 cm and a little pressure must be exerted on the planting row to maximise the contact between the soil and the seed. When implements are used for planting, the seed and fertiliser are deposited simultaneously. If hand planting is used, the fertiliser can be broadly and evenly spread by hand after planting.

The type of fertiliser is determined by the soil analysis. It is important to apply a pre-emergence herbicide, of which a mixture of Strongarm plus Alachlor can be recommended. Pest and insect control are usually not a major concern. However, when there is an infestation of 10% action should be taken. Usually aphids, rust and leaf spot are occurring more often than other problematic organisms.

To combat aphids, an insecticide with mercaptothion, pirimicarb or thiomefon as active ingredient can be applied. To control rust and leaf spot, the fungicides with active ingredients such as carbendazim or tebuconazole can be used. Maintenance of the groundnuts fields throughout the season is very important.

Harvesting takes place 150 days after planting. The whole plant gets lifted out of the ground and can be packed in a heap or placed in windrows to dry. After two weeks the leaves and stems can be removed, and the shelling can start. Care must be taken during the shelling process to prevent damage to the kernels. Split and damaged kernels will result in a lower income compared to whole (choice grade) kernels. The yield of groundnuts varies between 1,5 t ha^{-1} to 4 t ha^{-1}. ■

DR WIKUS SNIJMAN, PROJECT MANAGER: GROUNDNUT BREEDER SEED, ARC-GRAIN CROPS

Key steps to MAINTAIN SOIL HEALTH

SOIL SAMPLING IS THE BASIS OF ALL OPTIMAL FERTILISER AND LIME RECOMMENDATIONS TO MAXIMISE THE YIELD AND PROFIT. WHEN THE SOIL POTENTIAL, SOIL SAMPLING AND LABORATORY ANALYSES FOR NUTRIENT RESULTS ARE AVAILABLE, IT IS POSSIBLE TO DETERMINE THE OPTIMAL LIMING OR FERTILISER PROGRAMME.

METHODS

If soil sampling is not done correctly, the results will not reflect the status in the soil and as a result the optimal yield will not be reached. Due to the band placing of fertiliser and because cultivation practices usually do not mix the fertiliser effectively throughout the soil, plant nutrients are often not distributed evenly in the soil. It is thus vital to take care that soil samples are taken correctly.

Here are some important aspects to take into consideration:

- The reliability of a soil analysis depends on how representatively the soil samples were taken on a field.
- If a field consists of more than one soil form, a soil sample should be taken from each soil form because the yield potential may differ between the different soil forms.
- Topsoil and subsoil samples must be taken. Topsoil samples are taken from 0 mm to 150 mm, and subsoil samples from 150 mm to 600 mm.
- One representative sample for every 50 ha should be sufficient, but more samples are better.
- Each sample should consist of at least 20 subsamples taken randomly throughout the land unit or soil form.
- Subsamples should be properly mixed before a representative sample is taken.
- It is not necessary to take more than five subsamples per land unit when subsoils are sampled.
- In the case of precision farming, samples are taken in a predetermined grid – for homogeneous soils one sample per 5 ha will be sufficient, but usually one sample per one or two hectares is required.
- Smart sampling is a process where specific locations are identified to take soil samples for examining a certain problem. Satellite images, yield monitor data and physical inspections are used to identify the sites for sampling.

Different soil sampling methods are published in the Agricultural Research Council's (ARC's) *Maize Information Guide*. Try to get hold of this publication, as it contains very good information.

Consult your fertiliser representative before taking the samples and make sure about the method.

TAKING SOIL SAMPLES

Soil samples must be taken after harvesting and before the first tillage operation is done. Representative samples of a 300 mm wide band over crop rows are analysed separately from between-row samples, as illustrated for a row width of 900 mm in **Figure 1**.

In total, five samples are taken – three across the row and two within the row.

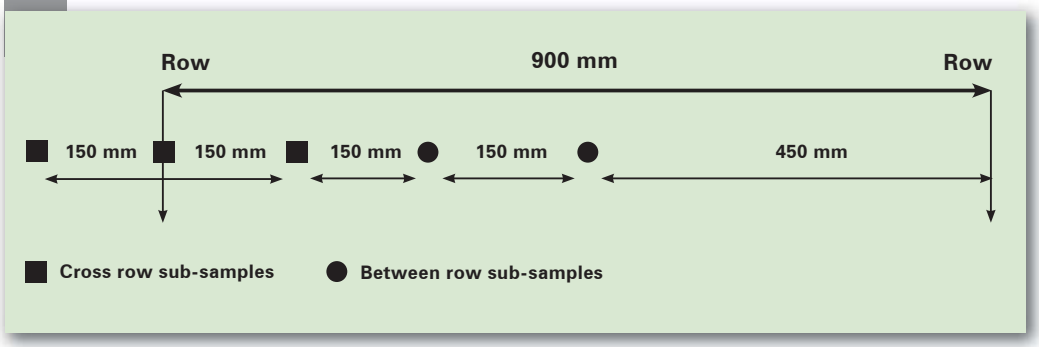
Cross-row subsamples (■): The three samples are taken across the row so that the fertiliser band can be sampled. The three samples represent a band of ±300 mm.

Between-row subsamples (●): Two samples are taken in this area. One soil sample is taken exactly in the middle of two rows (450 mm from the row for a row width of 900 mm). A second soil sample is taken exactly in the middle of the cross-row subsample (■) and the between-row subsample (●) (300 mm from the plant row for a row width of 900 mm).

- Make sure that the same tool is used to take the samples.
- Depth increments – namely 0 mm to 150 mm, 150 mm to 300 mm and 300 mm to 600 mm – must be sampled.
- The sampling procedure is repeated five times per 50 ha soil unit.
- The five 0 mm to 150 mm samples are mixed thoroughly and one subsample is taken from the mixture for analysis. The same procedure is followed for the 150 mm to 300 mm and the 300 mm to 600 mm samples.

Soil samples must be handled correctly. Samples should be air-dried or frozen if nitrogen (N) analysis is required and samples cannot be delivered to the laboratory within 24 hours. In all instances, samples should not be exposed to direct sunlight. A soil mass of between 500 g and 1 000 g is required for each sample for analysis.

1 ***A soil sampling method for conditions where residual nutrients and soil acidity are not homogeneously distributed.***



THE MANAGEMENT OF SOIL ACIDITY

Acidity is determined from the soil sample information and can also be seen in soil profile studies. Maize and oilseed production is limited by soil acidity only when the toxic levels of elements such as aluminium (Al) and manganese (Mn) are present and not necessarily a low pH.

Al toxicity is predominantly associated with soil acidity, while Mn toxicity is rarely associated with soil acidity – although both forms of toxicity can sometimes occur simultaneously.

The danger of Al toxicity in maize only exists when the pH (KCl) is below 4,5, or the pH (H2O) is below 5,5. Al toxicity is determined by the ratio of Al and hydrogen (H), to the total of potassium (K), calcium (Ca), magnesium (Mg), ions. This ratio, expressed as a percentage, is known as acid saturation.

Yield losses will increase as acid saturation increases above 20%, since the water and nutrient uptake are then impaired. No grain yield is expected at 80% acid saturation. Under conditions where both Al and Mn toxicity occur, Mn toxicity will be sufficiently neutralised if soils are managed below 20% acid saturation.

Lime is used to correct the pH and acid saturation levels. The lime requirement is aimed at reaching acid saturation levels of between 0 and 15%, to provide a buffer against re-acidification and Al toxicity.

However, the managing of acid saturation below 15% should be thoroughly considered. Lime application, more than what is necessary, to lower the acid saturation to 0%, for instance, is a costly process.

It is, however, important to determine up to what depth soil acidity prevails in the soil and to what depth it should be neutralised before the lime and gypsum rate is calculated.

TYPES OF LIME

Dolomitic and calcitic lime are available in the market. The Mg status of the soil will determine whether dolomitic or calcitic lime is needed.

Dolomitic lime is recommended in favour of calcitic lime when the Mg status of the soil is low (<40mg kg-1) or relatively low in comparison with the Ca status, unless the Mg requirement can be met through the use of Mg containing fertilisers. Compare the cost of the different lime sources. Ask the fertiliser representative to help you.

A well calibrated lime spreader is needed to apply the lime. Apart from quality, the lime reaction in the soil is highly dependent on mixing the lime thoroughly with the soil. This is achieved by first disking, then followed by ploughing or deep ripping. If it is possible, lime should be applied and worked in at least two months prior to planting to ensure that the lime reaction is complete when planting. ■

PIETMAN BOTHA, INDEPENDENT AGRICULTURAL CONSULTANT

BETTER RESULTS with LEGUMES in ROTATION with MAIZE

THE PRODUCTIVITY OF MAIZE IN SOUTH AFRICA IS INFLUENCED BY VARIOUS FACTORS, INCLUDING ABIOTIC AND BIOTIC STRESSES AND THEIR INTERACTIONS AS WELL AS MONOCROPPING. ABIOTIC FACTORS INCLUDE POOR SOIL FERTILITY, DROUGHT AND HEAT STRESSES.

Although soybean production has increased significantly since 2008, maize monocropping remains a widespread practice in many farming systems, resulting in a decline in soil fertility and nutrient imbalances – and ultimately lower yields. Several factors favoured continuous cropping of maize over crop rotation, including relatively high and stable net returns from maize compared to that of alternative crops and relative ease of production. Crop rotation of maize with grain legumes has, however, been reported to have a positive effect on soil nitrogen (N) and maize yields.

CROP ROTATION

Grain legumes are arable crops of the *Leguminosae* family, cultivated primarily for their grains and used either for human consumption or for animal feed. Legume crops have the ability to fix atmospheric nitrogen, which can increase the productivity of a cereal-based cropping system. Therefore, grain legumes like cowpea (**Photo 1**) and soybean (**Photo 2**) do not need any N fertilisation for their growth. There is a wide range of grain legume crops and varieties with different growth durations and other characteristics in South Africa. Different legume species in a crop rotation can affect nitrogen fixation and its residue in the soil differently. This implies that legumes have a potential position in a wide range of farming systems and can reduce high utilisation of inorganic N fertiliser.

Soil nutrient availability is one of the most important factors for crop growth. Inorganic fertilisers have been used for crop production worldwide for decades, which have been estimated to reach 200 million tons annually by 2050 in order to increase crop yields to meet global demands. However, their injudicious use can have an adverse impact on crops and the environment. Literature has shown that inorganic N in farming systems is usually applied at much higher rates than needed to achieve high maize crop yields, leading to negative environmental impacts. Soil acidification is one common hazard, especially in coarse-textured soils. Application of the right quantity of phosphorus (P) on legumes can improve N fixation. It is important to remember that the addition of P and potassium (K) is crucial on cowpea and soybean cropping systems since they are heavy feeders of those elements.

THE RESEARCH

A study was conducted at Lichtenburg from the 2016/2017 to 2018/2019 seasons to investigate the impact of cowpea-maize and soybean-maize on soil nutrition and maize grain yield as compared to continuous maize under two fertilisation levels referred to as high (H) and low (L). The high fertilisation level in maize was equal to NPK fertiliser to achieve 4 t/ha maize grain yield, with the low fertilisation level equalling half those amounts.

1

Cowpea in rotation with maize.

2

Soybean in rotation with maize.

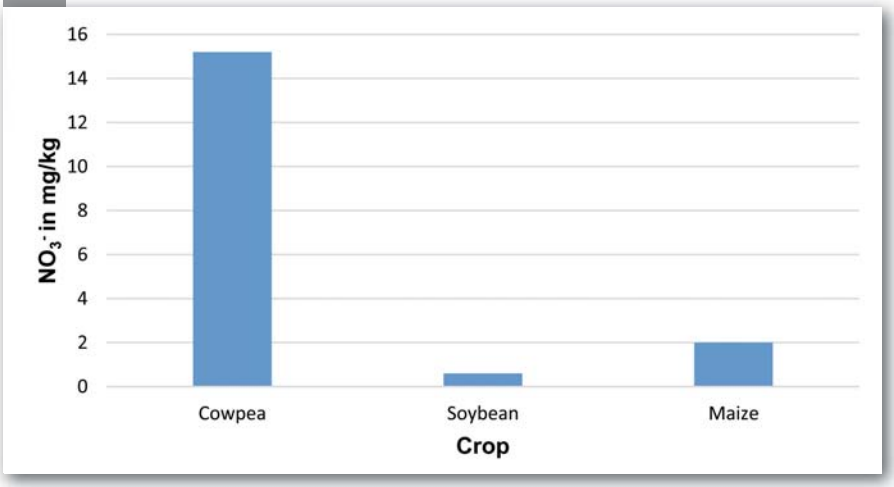
Low NPK continuous maize.

Cultivars used were: maize (BG 5685 R); cowpea (Bechuana white) and soybean (PHB 96T06 R). The trial site is characterised by an Avalon soil form with sandy loam texture and average annual rainfall of about 580 mm. Soil sampling and analysis were done using standard procedures to compare nutrients under legumes and maize plots. From season two, maize data were collected to determine the grain yield of maize following a legume and continuous maize.

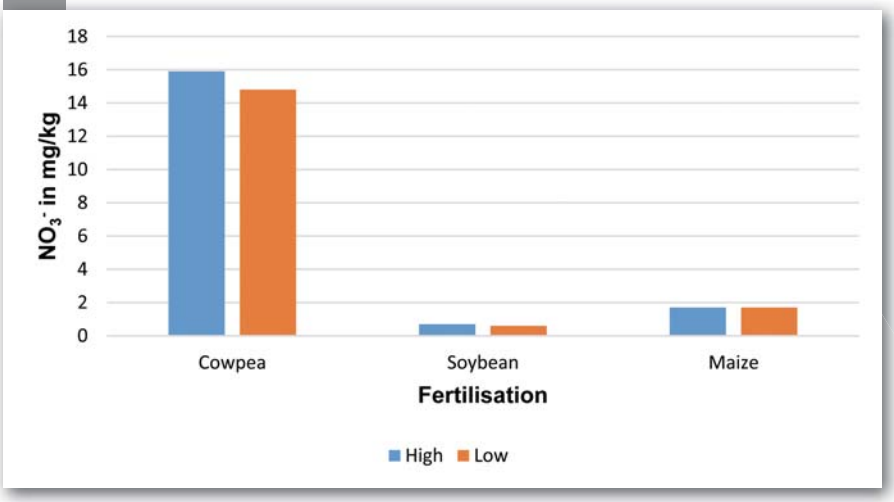
Results

Results given are part of a larger study of three seasons. In season one, rotation had a significant impact on nitrate (NO_3^-) (NO_3^- is immediately available to the crop) with cowpea plots giving higher nitrogen than either maize or soybean (**Graph 1**). No clear differences on NO_3^- between maize and soybean were observed, although soybean recorded the lowest. The crop x fertilisation interaction also had an impact on NO_3^- with cowpea plots at either high or low fertilisation giving higher NO_3^- than other treatments (**Graph 2**). No clear differences were observed between either high or low fertilisation maize or soybean, although soybean had the lowest NO_3^-.

1 ***Effect of crops on mineral NO_3^- at 0 cm to 15 cm depth in season one.***



2 ***Effect of crop x fertilisation level interaction on NO_3^- at 0 cm to 15 cm depth in season one.***



Low NPK maize following cowpea versus low NPK continuous maize.

Better results with...

Rotation had a significant impact on ammonium (NH_4^+) with cowpea plots giving higher nitrogen than either maize or soybean plots (**Graph 3**). Soybean plots had the lowest NH_4^+. In season two, crop rotation had a significant impact on grain yield with continuous maize giving lower yield as compared to maize following either cowpea or soybean (**Graph 4**). Fertilisation level had no significant impact on both N (NO_3^- and NH_4^+) and yield (data not given). Similarly, other nutrient elements like P and K were not significantly affected by either rotation or fertilisation level (data not given).

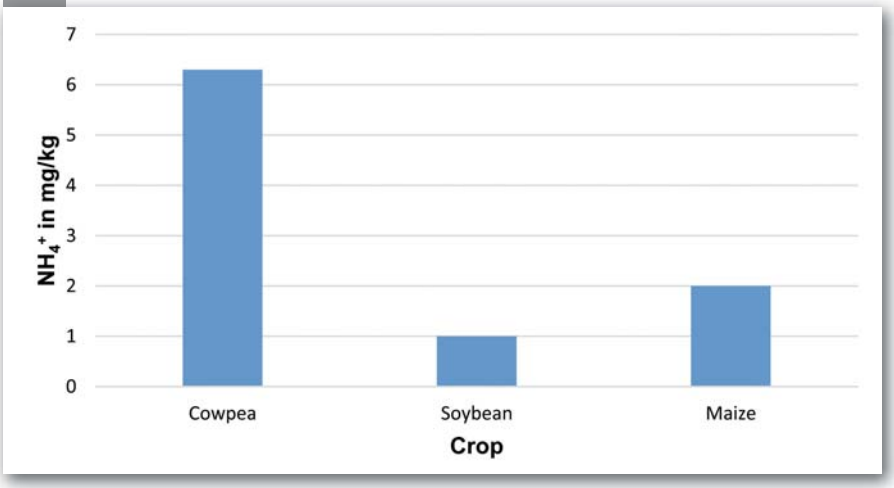
These preliminary results show that cowpea has the inherent ability to leave some of the N it fixes in the soil even better than soybean, benefitting a subsequent cereal crop like maize. Although soybean fixes substantial quantities of N (159 kg N/ha to 227 kg N/ha) as compared to that of cowpea (11 kg N/ha to 201 kg N/ha), low residual N observed on soybean plots could be because soybean is fairly N neutral. This means that roughly the same amount of N that is fixed by soybean is removed by the grain, also known as the nitrogen harvest index (NHI).

It is also important to note that soybean seed should be inoculated with rhizobium bacteria (*Bradyrhizobium japonicum*) for effective N fixation. Considering the amount of N fixed by both cowpea and soybean, the overall low soil residual quantities in this study suggest that the majority of N is removed when grains and plant residues (stover) are removed from the field after harvesting.

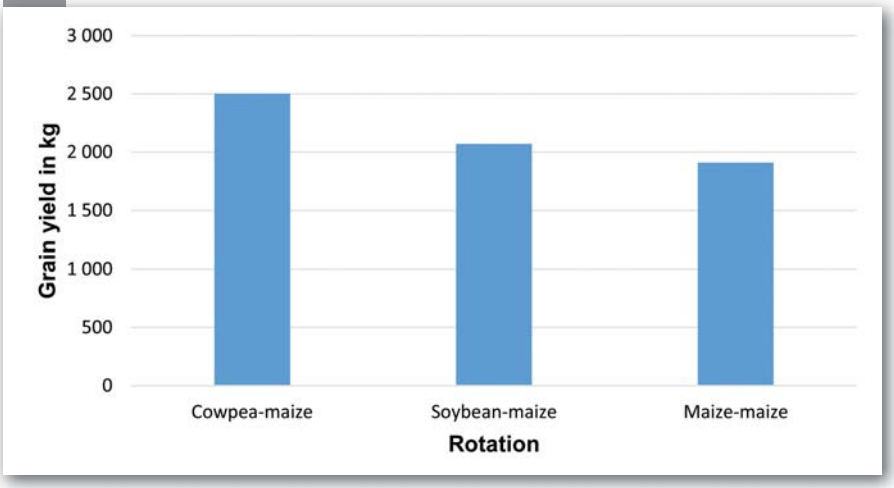
Higher yield of maize following either cowpea or soybean compared to maize irrespective of residual N, could suggest that the legumes' benefits to the subsequent crop in rotation may go beyond nitrogen credits. The non-N effects of legumes include improvement of the soil and environment of subsequent cereal crops resulting in healthy roots. This could be due to the quality and quantity of root exudates from different species released into the rhizosphere.

In conclusion, these results confirm that the full benefit of legumes in improving soil N can only be realised when plant residues are not removed from the field. However, the speed at which N in stover is available, will always depend on the rate of mineralisation by responsible soil microbial and enzyme activities. Legumes in rotation with maize do not only provide N, but can also reduce maize root pathogens, thus improving root health. ■

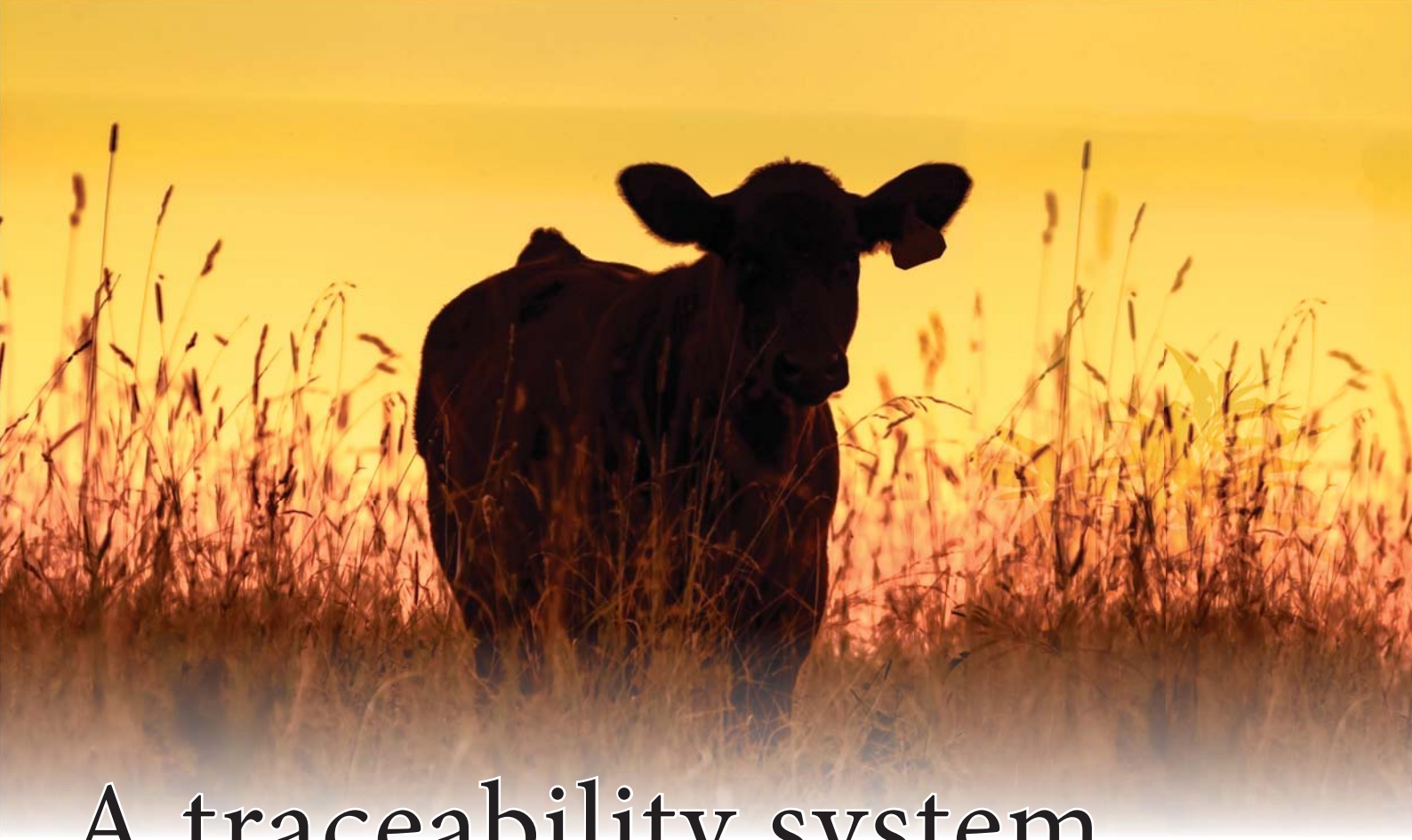
3 *Effect of crop on NH_4^+ at 0 cm to 15 cm depth in season one.*



4 *Effect of crop rotation on maize grain yield in season two.*



EDZISANI NEMADODZI, ARC-GRAIN CROPS, POTCHEFSTROOM. FIRST PUBLISHED IN SA GRAAN/GRAIN JULY 2021



A traceability system
for livestock industry is vital

INTERNATIONAL TRADE PARTNERS AND CONSUMERS INCREASINGLY INSIST ON A TRACEABILITY SYSTEM IN THE LIVESTOCK INDUSTRIES AND IT HAS ALSO BECOME NECESSARY IN TERMS OF MARKET ACCESS, WHETHER LOCALLY OR INTERNATIONALLY.

According to James Faber, chairman of the National Red Meat Producer's Organisation (RPO), the need for traceability systems has become imperative because of the outbreak of Foot and Mouth Disease (FMD).

STEPS TAKEN TO FIGHT FMD

The Department of Agriculture, Land Reform and Rural Development (DALRRD) in cooperation with the livestock industries have already made significant progress with the development of a LITS system (Livestock Identification and Traceability system). The Council for Scientific and Industrial Research (CSIR) developed the system and the testing phase is currently taking place in the FMD endemic areas.

Although work is continuously being done in terms of the LITS system with the involvement of the industries, it will take a long time to implement it comprehensively. 'The need to kickstart with a practical voluntary system has become of critical importance,' says Faber.

On the initiative of the RPO, representatives of the livestock industries and private service providers recently convened with the aim of starting with a practical voluntary system. The initiative will initially focus on individual animal identification with unique ear tag numbers and will be urgently implemented in the cattle and small stock industries. The numbers will also be linked with the detail of the owner and the farm. Producers will make use of private service providers who are already delivering services and will also pay for the services themselves.

The plan is that commercial producers will participate on a voluntary basis and the state will take responsibility for the implementation of a system in the developing sector.

> *The need to kickstart with a practical voluntary system has become of critical importance.*

Livestock industries will, in collaboration with the private service providers, establish criteria which must be adhered to in order to render the system functional. The information systems of the private service providers will have to be integrable with the LITS system. However, producers must ensure that service providers also comply with the International Centre of Animal Registration (ICAR).

Criteria which service providers will have to fulfil will soon be finalised and announced. 'The implementing of the systems will pave the way for the establishment of a complete traceability system in collaboration with the state in the future. Producers participating in the system, should insist on a premium,' says Faber.

The implementing of the system enjoys the full support of the state and will most likely lead to a private/public partnership (PPP). The initiative will be driven by the primary red meat cluster consisting of the RPO, the National Emergent Red Meat Producers' Organisation (NERPO), the SA Feedlot Association and the Red Meat Abattoir Association. ■

PRESS RELEASE BY THE RED MEAT AND LIVESTOCK PRIMARY CLUSTER

Combine harvesters and mud are not friends

COMBINE HARVESTERS ARE NOT DESIGNED TO WORK IN MUD AND THEREFORE TEND TO GET STUCK. WHEN A COMBINE HARVESTER IS NOT RECOVERED FROM MUD PROPERLY, DAMAGE IS INEVITABLE.

Recovering a harvester from mud commences with operator training. Ideally, the harvester should not get stuck in the first place. If the wheels start to spin and the harvester is in trouble, the operator should know they should rather stop and get help. It is not advisable to try and spin the harvester out of the mud. Driving forwards and backwards will not help at all – it just allows the heavy machine to sink in deeper. If the wheels only spin, it is a lot easier to recover the harvester than when it is covered up to the chassis in mud.

It does not matter if the harvester is stuck properly or just slightly – the recovery is a process that should be handled correctly. Firstly, emotions should be under control – swearing, verbal abuse and accusations do not help. No matter how frustrating it may be, the options should be considered calmly. Every harvester's instruction manual has a part about how it should be recovered and where to attach the chains. It is important to attach and pull the combine harvester in the right places and safety should always be a priority.

The *modus operandi* depends mainly on how and to what extent the harvester is stuck. If it is stuck badly and sunk up to the chassis, then the connection points on the chassis should be used. Otherwise the combine harvester can be connected to its normal tow points.

EQUIPMENT

Cables or chains that break can badly injure someone standing too close. Therefore, be vigilant about safety and know what the breaking point of the cable or chain is. Preferably buy a chain or cable capable of recovering the combine harvester. The tractors and combine harvesters from twenty years ago were not as heavy as the equipment today. Chains that worked then might not be sufficient anymore.

TECHNIQUE

How the combine harvester is towed is crucial and a mistake here can cost money. The tractor pulling the combine harvester out should be strong enough and should initially start pulling gradually. Pulling and tugging will lead to something breaking. If a very big and strong tractor is not available, then more than one tractor should be used.

If more than one tractor is used to pull, they should preferably be connected next to each other and start pulling at the same time. It is best to pull the harvester out at an angle, but not too big an angle.

The harvester should be in the right gear to help with the recovery process. If it is pulled backwards, it should be in reverse. Although this sounds obvious, it does happen that combine harvesters are pulled out in the wrong gear and this causes subsequent damage. It is vital that the tractor or tractors and the harvester start pulling at the same time and therefore it is important for this process to be coordinated. This can be done by using radios or an extra person to make sure that everything happens at the same time. Discuss beforehand what should happen once the combine harvester has been towed out – be careful that the harvester does not crash against the tractors.

Keep an eye on the harvester table. The harvester table can dislocate, which can cause further damage. Rather remove it and recover it later.

FOLLOW-UP

After the combine harvester has been recovered, it should be checked carefully. Check that the mud did not damage working parts or is keeping moving parts stuck. Check the parts at the bottom of the harvester in particular. Bent parts should be fixed first, otherwise it can lead to more damage.

It is important to emphasise again that the operator must stop when there are problems – simply continuing just causes more problems.

If the combine harvester is not stuck too badly, hook the combine harvester to this tow point.

The tow point below the chassis of the combine harvester.

Preferably buy a chain or cable capable of recovering the combine harvester.

If the combine harvester is badly stuck, hook it to all the tow points.

Scan the QR code for a short video that shows an implement being towed.

JAN LABUSCHAGNE, PRODUCER, EASTERN FREE STATE AND PIETMAN BOTHA, INDEPENDENT AGRICULTURAL CONSULTANT. FIRST PUBLISHED IN SA GRAAN/GRAIN AUGUST 2021

Meet the partners of the Farmer Development Programme

THE AMERICAN ENTREPRENEUR, INVENTOR AND BUSINESS MAGNATE STEVE JOBS SAID THAT GREAT THINGS IN BUSINESS ARE NEVER DONE BY ONE PERSON, BUT BY A TEAM OF PEOPLE. WITH SEVERAL GREAT PARTNERSHIPS MAKING UP THE TEAM IT IS NOT SURPRISING THAT THE FARMER DEVELOPMENT PROGRAMME (FDP) OF GRAIN SA HAS BEEN SO SUCCESSFUL.

Dr Sandile Ngcamphalala, Farmer Development lead, says the management team, regional development managers, mentors and study group leaders collaborate to ensure that developing farmers are reaching new heights. However, without the support of programme sponsors and funding partners – such as the Sasol Agriculture Trust – none of this would be possible. The trust has been involved in the FDP since 2013 and became involved in the programme as they supported Grain SA's transformation initiatives and goals.

The Sasol Agriculture Trust aims to improve the competitiveness and sustainability of the South African agricultural industry and provides support for enterprise development projects and emerging farmers. The trust also supports initiatives aimed at enhancing education and training programmes for farmers and the agricultural industry at large. In consideration of grain's large contribution to food security in South Africa, it has a particular focus on the sustainability of grain production in the country.

> *The Sasol Agriculture Trust aims to improve the competitiveness and sustainability of the South African agricultural industry.*

A TRUST FOUNDED TEN YEARS AGO

The Sasol Agriculture Trust was founded in March 2012 by Sasol Chemicals Industries Limited. Sasol made a R30 million donation to the trust, which was paid in three equal amounts over a three-year period. The trust is administered by independent trustees for the benefit of the South African agricultural community.

The mission of the trust is encapsulated in its main objectives namely, to improve competitiveness and sustainability of the agricultural industry and the funding of:

- market and production-related research;
- market information;
- market access;
- enterprise development, education and training programmes; and
- scholarships, bursaries and awards for agricultural studies.

sasol
reaching new frontiers

The administrative services of the trust are contracted out to an independent entity, L&L Agricultural Services, who also has other clients such as the Maize Trust; the Sorghum Trust; the Maize, Wheat and Sorghum Forums; the SA Winter Grain Industry Trust (SAWCIT); the SA Cultivar and Technology Agency NPC (SACTA) and the Bureau for Food and Agriculture Policy NPC (BFAP).

OPPORTUNITY, INDUSTRY AND MARKET

The trust identified several areas where it could play a role in achieving its objectives within its available resources. These are, *inter alia*:

- Funding of agricultural research activities and programmes that are generic in nature or that spans across different commodities.
- Provision of bursaries, scholarships and training opportunities in fields not currently addressed by the agricultural industry.
- Funding of surveys and projects that are deemed necessary to improve the market for role-players and the supply of inputs to producers.
- Funding of projects to improve the provision of market information and transformation initiatives.

Other agricultural trusts are commodity-specific and can therefore not fund projects or initiatives that are not directly linked to the commodities concerned. The Sasol Agriculture Trust does not have this limitation and can address the gaps that exist.

For this reason, it plays a complementary role to the actions and projects funded by the commodity trusts, without entering the domain of these trusts and without creating rivalry or duplication. Good co-operation exists between the trust and the commodity trusts regarding the granting of bursaries and scholarships. ■

PULA IMVULA EDITORIAL TEAM

THE CORNER POST

VIEWPOINT

LUVUYO MBUTHO

We grow when we face challenges

ALTHOUGH LUVUYO MBUTHO (59) HAD TO ENDURE MANY CHALLENGES SINCE BECOMING A FARMER, HE HAS PERSEVERED THANKS TO THE SUPPORT OF HIS NEIGHBOURING FARMERS. HE HAS ALSO BENEFITTED GREATLY FROM THE INPUT FROM GRAIN SA'S MENTORSHIP PROGRAMME.

TEAMWORK MAKES THE DREAM WORK

Luvuyo is passionate about farming. At an early age, he already worked with his father in the fields. He started farming on his own on 4 hectares of arable land in a small village, but soon realised that he had to get his own land if he wanted to expand his farming enterprise.

'I had a passion to produce superior quality beef and mutton, and I also wanted to produce more maize. The other land in the village was used by the community, and the people were not sharing my vision. To produce what I had in mind, I had to break away,' he says.

In 2008, Luvuyo and his family obtained their 951-hectare farm, Altona Farm in the Swartberg area in KwaZulu-Natal, through the Land Redistribution for Agricultural Development (LRAD) Programme of the Department of Agriculture, Land Reform and Rural Development (DALRRD). Here they produce maize and also keep beef cattle, sheep and pigs.

He sees himself as a successful farmer, as he can provide adequately for his family through his farming operation. 'I make my own money from the farm because I can sell my livestock and the maize I grow to provide for my family.'

Luvuyo has been a member of Grain SA for two years and since then has seen a vast improvement in his maize production. He sings the praises of his mentor, Eric Wiggill, and the regional development coordinator at the Kokstad office, Luke Collier, who have invested their time and knowledge into his farming operation. 'I planted 126 hectares of maize this season – it is the most I have planted in the twelve years that I have been farming.'

Last season Luvuyo averaged 7 t/ha and the previous season, which was a drier season, his average was 6 t/ha. Silage is grown on 15 hectares and the other land is used as grazing for the cattle. The maize he produces, is distributed in his area through local shops and farmers who produce feed for their livestock.

SHARING KNOWLEDGE AND MORE

The biggest lesson Luvuyo has learned as a farmer is the value of working together. Good relationships with neighbouring farmers have made a stark difference in his enterprise. As a farmer, he has also learned that sharing is important – whether it is sharing knowledge or equipment. 'I have learned to share not just what I own, but also what I know,' he says. 'Sharing your knowledge with others does not take anything away from you. It helps you to grow.'

He believes there is always room for improvement, and this is why sharing is important. 'I may not know that I need to improve unless I meet someone who knows more. This is why it is important to get together and learn from each other as often as possible.'

Luvuyo has invested in his farming operation by attending courses offered by Grain SA. He is a regular attendee at the Ongeluksnek Study Group and when meetings do not take place, the study group members stay in regular contact to help each other stay on track. 'As farmers we are all also farm workers, so in the busy season there is not much time to be away from the farm. Then cellphones are useful.'

The study group topics that have really helped Luvuyo on the farm, is about soil preparation and the correct use of equipment. 'Everything was explained so simply. Luke explains things so well that it feels as if the discussion is taking place on the farm. I immediately recognised all the mistakes I was making.'

With the session on soil sampling, Luvuyo realised what a substantial difference it can make if you determine the status of your soil before planting. 'The type of soil and what your soil needs can help increase the yield. I am glad I became a member of Grain SA – I am very, very glad.'

Learning the importance of storing equipment correctly will ensure that the Mbutho's implements last longer. 'I also learned that I must keep a record of the diesel usage on the farm. This will help me plan the budget.'

AGRICULTURE OFFERS A BRIGHT FUTURE

'We need to expand,' says Luvuyo about his dreams for the future. He would like to produce good quality maize and increase his yield to 10 t/ha. On the livestock side, he wants to work towards selling cattle twice a year to have capital available for growth.

Luvo (27), his younger son, spent two years in New Zealand and 18 months in Australia working on farms to gain experience. 'He is very interested in dairy farming and wanted to gain knowledge about it.' Although Luvuyo does not have dairy farming in mind for his own operation, Luvo gathered valuable information about the production of livestock feed which has come in useful at Altona Farm. Luvuyo does not yet have a succession plan in place, but Siviwe (30), who also lives on the farm, has shown a keen interest in farming and is learning from his father.

It is said that we don't grow when things are easy; we grow when we face challenges. Luvuyo has experienced this first-hand. Some of the challenges he is facing are the lack of equipment, which makes sticking to planting dates difficult; an unstable workforce with labourers leaving to look for better opportunities and then returning seeking employment again; and running fires.

He believes that agriculture offers a solution to many problems in South Africa. 'If the youth can learn to grow food, they can help their families and the community. It will also help to diminish crime, as people will be kept busy. Idle hands commit crime. If someone is kept busy, he will work and then need rest. If you are not busy, you start thinking about bad things to do.' ■

LOUISE KUNZ,
PULA IMVULA CONTRIBUTOR

A programme that is changing lives

TEAMWORK leads to success

THE FARMING COMMUNITY HAS BEEN FAILED BY DISASTROUS INFRASTRUCTURE AND NETWORK CHALLENGES. FROM ROAD BUILDING TOGETHER TO STORIES OF FARMERS HELPING OTHER FARMERS TO FINISH PLANTING THEIR CROPS IN THE EARLY SEASON AND EXPERIENCED FARMERS MENTORING NEW FARMERS, THE VALUE OF A COMMUNITY THAT WORKS TOGETHER HAS BEEN EVIDENT THROUGHOUT THIS SEASON.

When we travelled through the central Free State, we encountered teams of farmers with their tractors and farm workers trying to patch the dismal road surfaces, making it possible for them to attempt delivering their loads to the local silos.

HARD WORK AND SUPPORTIVE TEAMWORK = SUCCESS

Grain SA's team visited **71 farms** and held **45 study group meetings** during the month of April. Their support is tailor-made for the farmers they are working with. It is also region specific. The regional development managers present appropriate training and ensure the information is relevant, reliable and applicable. Grain SA wants farmers to feel empowered and upskilled by their interactions with them.

Another **five training courses** were held for **79 course attendees**. These included:

- A planter and boom sprayer calibration course on Mr Tshepe's farm, Bonacord near Matatiele, sponsored by the Maize Trust.
- Two 'Introduction to maize production' courses in Oliviershoek, KwaZulu-Natal, and Dlamini, Limpopo, sponsored by Bayer.
- A Maize Trust sponsored course on tractor and farm implement maintenance in Lichtenburg, North West.
- Dry bean and nutrition course in Groblersdal, Limpopo, sponsored by DSI.

More than ever this wet season has highlighted the importance of mentors being made available to new and developing farmers. How many new farmers are familiar with the issues that can arise in wet conditions?

Grain SA's farmer development experts have the knowledge and insights, and they are ready to use their extensive network to alert farmers about what to look out for and how to be proactive.

New farmers need to be made aware of issues such as Alternaria leaf blight and Sclerotinia in sunflowers, Diplodia stalk and ear rot in maize, or rust issues in beans, among other things.

Some issues are more manageable than others, as there are spray programmes that are registered treatments, while others require more long-term management and can be controlled through crop rotations and soil preparation methods. It is only when new farmers have a trust relationship with a mentor that they have the advantage of being forewarned and forearmed. It must also be said that even then there are still top commercial farmers who experience unusually high incidences of Sclerotinia this season.

BUILDING NETWORKS

Grain SA has been training new farmers for more than 20 years. There have been wonderful results, where new landowners and young farmers have been exposed to Grain SA's field services, and they have listened and learned from their experts about best practice farming methods.

There are many astonishing testimonies of perseverance and success from men and women who have had their hearts set on farming as a career and who, despite many difficulties, have made the most of Grain SA's study groups, training courses and field services, and gone back to their fields to put what they have learned into practice.

It is clear that Grain SA does not believe in being a lone ranger on the development stage – instead they hold that the more they collaborate, the more surely and steadily they develop, for the benefit of all farmers.

AT GRASS ROOTS

Chris de Jager paid Godfrey Mbhele from Dundee a visit and reported that the maize crop is amazing.

Jurie Mentz visited the farm of Sipho Vilikazi in the Louwsburg area to inspect his maize crop.

The soya crop of Jonas Mavundla is healthy, even though the lands are very wet.

Mentor Chris de Jager also visited Lucky Khumalo to do a crop progress inspection.

Perlot Thaele's sunflower crop is looking good. Mentor Jacques Roux uses his hand to show just how big the flowers are.

Sharing knowledge and building networks

FARMERS' days help build networks. Two key incentives for holding farmers' days are 1) the transfer of knowledge and 2) extending the farmers' support networks. Grain SA facilitates these events to build the web of connectedness around farmers for additional support.

Farmers' days are a time of coming together for farmers to hear, see and learn from one another and from experts. It also offers the opportunity to see the good, the bad and the ugly in demonstration or trial plots. The pandemic had put a stop to such gatherings but recently it has been possible to facilitate more such events towards building and empowering the developing farming community.

April saw **six farmers' day events** being rolled out with over 400 farmers attending. They were held at the following locations:

- Louwsburg (13 and 26 April)
- Mbombela (13 and 22 April)
- Kokstad (20 April)
- Dundee (21 April)

Sunny skies at a farmers' day held at Louwsburg.

Regional development manager Luke Collier was in charge of the farmers' day at Colana in the Mount Frere district.

Mbombela's farmers' days enriched the farmers with interesting information.

The farmers' day held at Zyverfontein in Limpopo for six of Grain SA's study groups was well attended.

Good and bad of RAINY DAYS

THE 2021/2022 summer grain growing season has been a roller coaster ride of highs and lows. What a relief it has been to not have to scan the horizon anxiously looking for rainclouds. Instead farmers have had to deal with roads that have become rivers of water or suctioning slushy mud, and potholes that have become dangerous sink holes.

Solomon Masango, one of the mentor farmers in the Louwsburg region, visited farmer Ntombizethu Shongwe and reported: 'All the fields are very wet after the rain. We checked some fields but others are too wet to reach. We are facing a problem because plants are starting to bud, it looks like spring. Farmers can't do anything because of the wet conditions. We don't know how we are going to harvest our products. I as a mentor am also without advice. We can only pray to God.'

Free State mentor Johan Roux visited one of our Grain SA Executive members, Maseli Lethuka, who farms in the Qwa Qwa district. This is what he reported: 'The farm had ±90 mm rain and hail. The farmer reported the hail damage and is awaiting assessment. The maize is getting ripe and weather permitting it will be harvested during late June.' Johan also visited farmer Tshepo Mofokeng who reported 95 mm rain. 'The lands are very wet and muddy but the maize is starting to dry off nicely.'

Farmer Tshepo Mofokeng faced many challenges with the high rainfall this year.

The roads to Paulos Tshabalala's farm in the Free State were still very wet and slippery in April, which made it difficult to reach the farm.

Water everywhere! Dundee farmer John Ngwenyai's fields are still very wet and harvesting is going to be a challenge.

Graan SA/Grain SA NAMPO OESDAG HARVEST DAY 2022

We experienced it!

The 2022 NAMPO Harvest Day was an experience enjoyed by all. Here are some of the visitors who attended the largest agricultural show in the Southern Hemisphere. In the August issue we will share more news about the week's activities.

Grain SA's Farmer Development Team takes a break to share their thoughts on the Harvest Day.

Ms Thoko Didiza, minister of Agriculture, Land Reform and Rural Development, attended the NAMPO Harvest Day. With her are Derek Mathews, chairperson of Grain SA and Jeremia Mathebula, vice-chairperson.