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# PULA IMVULA

**GROWING** FOOD • PEOPLE • PROSPERITY

GRAIN SA MAGAZINE FOR DEVELOPING FARMERS





## Editorial team

### GRAIN SA: PRETORIA

PO Box 74087  
Lynnwood Ridge  
0040  
■ 08600 47246  
■ www.grainsa.co.za

### MANAGING EDITOR

**Sandile Ngcamphalala**  
■ 082 862 1991 ■ Office: 012 943 8296  
■ sandile@grainsa.co.za

### EDITOR AND DISTRIBUTION

**Liana Stroebe**  
■ 084 264 1422 ■ Office: 012 943 8285  
■ liana@grainsa.co.za

### PUBLISHING PARTNER

**INFOWORKS MEDIA PUBLISHING**  
**Assistant editor – Louise Kunz**  
■ louise@infoworks.biz

### Team leader – Johan Smit

■ 082 553 7806 ■ Office: 018 468 2716  
■ johan@infoworks.biz

**Publishing – Elizma Myburgh, Joritha Hechter**



## Grain SA Farmer Development Programme

### DEVELOPMENT CO-ORDINATORS

**Johan Kriel**  
Free State (Ladybrand)  
■ 079 497 4294 ■ johank@grainsa.co.za

**Jerry Mthombothi**  
Mpumalanga (Nelspruit)  
■ 084 604 0549 ■ jerry@grainsa.co.za  
■ Office: 012 943 8289 ■ Smangaliso Zimbili

**Jurie Mentz**  
Mpumalanga/KwaZulu-Natal (Louwsburg)  
■ 082 354 5749 ■ jurie@grainsa.co.za  
■ Office: 012 943 8218

**Graeme Engelbrecht**  
KwaZulu-Natal (Dundee)  
■ 082 650 9315 ■ graeme@grainsa.co.za  
■ Office: 012 943 8287 ■ Nkosinathi Mazibuko

**Luke Collier**  
Eastern Cape (Kokstad)  
■ 083 730 9408 ■ luke@grainsa.co.za  
■ Office: 012 943 8280 ■ Luthando Diko

**Liana Stroebe**  
Western Cape (Paarl)  
■ 084 264 1422 ■ liana@grainsa.co.za  
■ Office: 012 943 8285 ■ Hailey Ehrenreich

**Du Toit van der Westhuizen**  
North West (Lichtenburg)  
■ 082 877 6749 ■ dutoit@grainsa.co.za  
■ Office: 012 943 8290 ■ Lebo Mogatlanyane

**Cwayita Mpotyi**  
Mthatha  
■ 078 187 2752 ■ umthata@grainsa.co.za  
■ Office: 012 943 8277

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Cover photo: Tersia Drotsky



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## A WORD FROM... *Dr Dirk Strydom*

IN AGRICULTURE, AND SPECIFICALLY IN NEW AND UPCOMING PRODUCERS, THE FOCUS CAN EASILY BE ON THE WRONG PARAMETERS. OUR ATTENTION IS ON MACHINERY AND EQUIPMENT, BECAUSE WE THINK IT SHOWS THAT WE ARE A SUCCESSFUL FARMER, BUT IS THIS REALLY THE CASE?

One of my mentors gave me a book, *The goal*, which helped me throughout my career to really grasp the concept of setting goals and managing them. The author, Eliyahu Goldratt, was a manager of a factory which was on the brink of closure.

All his norms and benchmarks on efficiencies of the factory were on par and looking good. The factory also had all the latest technology and robots within the manufacturing process but still did not deliver to clients in time and was not making money.

One of his mentors then asked Mr Goldratt the question: 'What is your plant's goal?' He explained all his norms and benchmarks and after a lot of discussion, he was asked the same question again: 'What is your plant's goal?' Mr Goldratt realised that it was not about all the norms and measurement. The goal should be to make money, a profit.

Sometimes we focus so much on specifics that we do not realise we are missing the real goal. In Mr Goldratt's case they did not realise that the new high efficiencies were actually creating bottlenecks and in the end costing them time and money.

Obtain the right resources to get to the real goal. Make sure you have the right goal set out for your farm. Ensure that everything you do, work towards that goal at the end of the day. If something prevents you from reaching the goal, search for the bottleneck that is causing this. Check whether the bottleneck you identified is really related to your goal.

I see a lot of producers that have a dream but because they do not manage their goals, they struggle to achieve their dream. Use the advice of Mr Goldratt: Identify the right goal and work towards it. Test your action regularly against it and make sure you satisfy your goal.

Mr Goldratt turned around his plant with old machinery and showed profits within a month. They became the best plant within three months and after six months he was appointed as the new division manager. You can achieve similar dreams in your farming operation when you identify and manage your goals and eliminate the bottlenecks. ■



# Protect your crop from plagues and pests

**B**ETWEEN 26% AND 40% OF THE WORLD'S POTENTIAL CROP PRODUCTION IS LOST ANNUALLY BECAUSE OF WEEDS, PESTS AND DISEASES. MANY FARMERS USE CHEMICALS TO KEEP WEEDS AND PESTS FROM DESTROYING THEIR CROPS – THIS IS CALLED CROP PROTECTION.

Crop protection is the science and practice of managing plant diseases, weeds and other pests that damage agricultural crops. This covers all practical aspects of pest, disease and weed control.

## PESTICIDES

Currently about 925 million people around the world are going hungry. To reduce hunger, we need to increase food productivity. The informed use of suitable chemicals help farmers do that. There are different kinds of commonly used chemicals which are all used to kill different pests that threaten growing crops.

- **Insecticides** are strong chemicals that will kill the insects that will harm the crop without killing the actual crop.
- To get rid of weeds without killing the crop many farmers spray their fields with **herbicides**.

Pesticides help farmers grow more food on less land. For example, rice – which feeds almost half the people on our planet – has more than doubled in production and the amount of wheat produced has increased by nearly 160% through the use of pesticides in an integrated crop management programme.

It is said that food crops must compete with 30 000 species of weeds, 3 000 species of worms and 10 000 species of plant-eating insects. As grain farmers well know, threats don't stop once crops leave fields – bugs, moulds and rodents can all cause damage in storage.

## Advantages of using pesticides

- It prolongs the life of crops and prevent post-harvest losses.
- Farmers can produce safe, quality foods at affordable prices.
- It helps farmers to provide an abundance of nutritious, all-year-round foods.
- Fruits and vegetables, that provide essential nutrients, are potentially more abundant and affordable.
- Grains, milk and proteins, vital to childhood development, are more widely available because of lower costs to produce food and animal feed.

According to the ARC Small Grains Institute numerous insects are associated with wheat. 'Some utilise the plant for food and damage it to such an extent that it cannot produce a good quality yield. Others simply co-exist, using the plant for food but not causing economic damage. Not all insects found in wheat are detrimental; many natural enemies of pest species are attracted to wheat fields by the presence of pest insects which they utilise as food and hosts.' (ARC online)

It is clearly important for farmers to familiarise themselves with pests commonly found in their region so they can identify the prob-

lem accurately and decide on appropriate actions timeously.

## FUNGICIDES

Crop quantity and quality rely on crop protection. A study in America estimated that without fungicides, yields of most fruit and vegetables would fall by 50% to 90%. Fungicides decrease exposure to food contaminated with harmful micro-organisms and naturally occurring toxins, preventing food-related illnesses. Mycotoxins are a serious problem in maize crop management, especially during storage.

Diseases are caused primarily due to adverse climatic conditions such as too much rainfall, heat and humidity. Too much moisture is not always a good thing; it can lead to fungal and bacterial outbreaks on the leaves and stems of the plant that will consequently lead to decreased production. Fortunately there are products on the markets that can improve the plants resilience and protect it from diseases. Thus it is essential to be on the lookout for early signs in order to take action.

Fungal diseases and bacterial diseases are common but can be controlled if treated correctly. **Fungicides** are pesticides that kill or prevent the growth of fungi and their spores. They can be used to control fungi that damage plants, including rusts, mildews and blights. They might also be used to control mould and mildew in other settings.

## HERBICIDES

A weed is any plant that grows in an undesirable place – even volunteer maize plants growing in a new sunflower field need to be controlled.

'Plants that become weeds are usually vigorous growers, making them compete against the crop for water, light, space and nutrients. Some weeds may interfere with the harvesting process and when they occur during the off-season they withdraw moisture from the soil and, when mature, set seed which grows and causes problems in the next crop.' (ARC online)

It can be a very daunting task when it comes to selecting the right chemicals to use in order to control weeds in the lands effectively. There are so many products available today, all of which have different effects and impacts on our soils and the surrounding environment.

It is very important to be well-informed about the herbicide that you are applying. Ask your chemical agent as many questions as possible before you go ahead and spray the chemical. Find out the rate of







*Oujan Masiu from Driekoppen in the Senekal district made sure his crop is healthy.*

application and the best time for application. Enquire about possible side effects and about the drying time to get the best effectiveness.

The case history of a farmer in KwaZulu-Natal is worth a mention. He planted normal maize as well as Roundup Ready maize in the same field and then made the fatal mistake of applying a Roundup herbicide onto the entire field. Unsurprisingly, his normal, non Roundup Ready crop was wiped out. His land was dotted with the odd green plant, the rest were all dead. Beware not to make the same costly mistake! Follow these suggestions:

- Apply herbicides on a calm day when wind won't interfere with your spraying.
- Many herbicides are more effective when applied on a sunny day to ensure enough time to be absorbed.
- Caution! Chemicals may be hazardous. Handle with care – always wear protective gloves and a respiratory mask when handling chemicals. ■

If you would like to know more about suitable spray programmes for your crops or about how and what to spray to protect your crops, speak to the Grain SA team members who will assist with accurate advice.



**JENNY MATHEWS,  
MANAGEMENT AND DEVELOPMENT  
SPECIALIST AND EDUCATOR**



# Can the farm **AFFORD** you?

**W**HY DO YOU FARM? MOST FARMERS WOULD INSTINCTIVELY ANSWER 'I LOVE FARMING' OR 'I ENJOY BEING CLOSE TO NATURE' OR SOMETHING SIMILAR. WOULD YOU STILL ENJOY FARMING IF YOUR FARM CANNOT PAY YOU A SALARY?

To earn a salary you can either work for yourself or you can work for somebody else and earn a salary. In the process of earning a salary you trade your skills, training, qualification, experience for income. When you work for someone else and earn a fixed monthly salary.

If you are your own boss, this same principle applies, except you determine your own salary. The answer to the question, 'What can my salary be?' is that you can only earn a salary if your farming business generates a profit. The amount of the salary is determined by the amount of profit made.

You must live according to the salary you receive and should not spend more than you earn. Spending more than your income will force you to borrow money and borrowed money needs to be paid back at

some time. When you cannot pay back what you borrowed, you can end up losing everything you have – and become insolvent or bankrupt.

## **FINANCIAL MANAGEMENT IS CRUCIAL**

Can your farm afford you? Most will say, 'Yes my farm can afford me'. But is this the case? To be able to earn a salary your farm must be able to pay all farming expenses plus your salary. To establish the profit a business generates is important and can only be done accurately when applying proper financial management.

The correct way to manage the finances of your farm is first of all to compile a plan for every year ahead. Express this plan in rands and cents which will then be the budget for the new year. You can then allocate yourself a 'salary' to be paid every month based on the budgeted profit. Then live by that salary.

The best way to manage your own salary is also to compile a monthly budget for yourself and spend your income according to your plan/budget as if you were working for somebody else earning a fixed salary.

At the end of the year you can compile the necessary financial statements and determine the actual profit your farming operation has made. Should the profit (after the inclusion of the salary you have already drawn) be more than you have planned, you can decide what to do with the extra profit. It is highly advisable to use this to build a reserve fund to expand/improve your business. Following this route puts you in control of your business.

Use separate bank accounts for the purpose of managing the finances of your business and your own personal finances. If you prefer not to use two bank accounts, it becomes more challenging to keep accurate records of the expenses of your farm and your own income.

Unfortunately, instead of paying themselves a salary and living according to the salary, many farmers use products of the farm – milk, eggs, meat and vegetables – for own consumption instead of treating it as an income for the farm and an expense for themselves. Or when selling products on farm they use cash generated on farm, for their own expenses instead of recording these transactions properly. Cash for personal expenses is then drawn from the business bank account whenever needed. All this is done without proper record-keeping as long as there is money in the bank. This is a dangerous route to follow because money in the bank is no indication of whether a farm is really making a profit and can afford your salary.

The moral of the story is that the finances of your farming operation needs to be managed properly in order to answer the question: 'Can my farm afford me?' Remember finances are the oil that keeps a business running smoothly. ■



**MARIUS GREYLING,**  
INDEPENDENT AGRICULTURAL  
MANAGEMENT CONSULTANT

# Get the most out of sprayers

**N**O MATTER WHAT PIECE OF EQUIPMENT YOU BUY, IT COMES WITH A MANUAL OR USER'S GUIDE WHICH SHOULD BE READ BEFORE USING THE EQUIPMENT. UNDERSTANDING HOW YOUR SPRAYER WORKS AND BRUSHING UP ON THE ELECTRONICS IS IMPORTANT, SO REVIEW THE MANUAL ANNUALLY.

## BEFORE HOOKING UP THE SPRAYER

- Inspect the power take-off (PTO) shaft (**Photo 1**).
- Examine the sprayer pressure pump and look for oil leaks. Inspect the oil level of the pump. You also have to look at the colour of the oil. If it is white or milky it means that there is a water leak in the pump which needs to be repaired.
- If the pump is a diaphragm pump and air is used in the pump, make sure that it is on pressure. If not, pump up to the required pressure and recheck it an hour later. If there is any change, replace the diaphragm of the pump.
- Inspect the spray beams, frame and the tank of the sprayer for cracks and rust and repair if necessary (**Photo 2**).



**1**  
*Replace the universal bearings of the PTO shaft if necessary.*



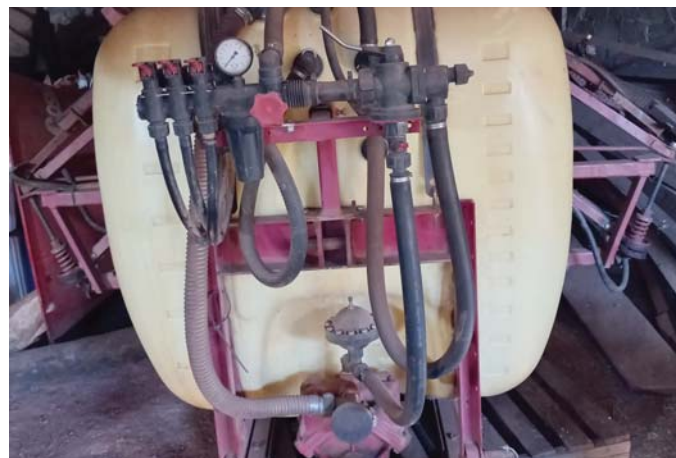
**2**  
*Lubricate all lubrication points especially the hinges of the spray beams.*



**4**  
*Looking for leaks on the pipes and fittings when the sprayer is working and when the valves are closed is important.*



**5**  
*Replace or repair the control valve if it is not working properly.*



*Refresh your memory every year on how to set up your sprayer.*

## AFTER HOOK-UP

- Fill the sprayer with clean water and rinse. Clean all the filters and nozzles as well as the nozzles in the tank. Run water through the system and flush out all hoses and nozzles. Make sure that the spray pattern is the same for all nozzles. If not reclean or replace the nozzle (**Photo 3**).
- Clean the outside of the sprayer.
- Check the pump pressure, control valves and spray pattern (**Photo 4**). Refill the tank with clean water and engage the sprayer pump. Open the booms and control valves (**Photo 5**). Examine the pressure delivered by the pump. Set the pressure 20% higher than working pressure and check the pressure again. If the pump pressure is too low the pump needs to be repaired.
- Lastly, calibrate the sprayer according to the herbicide or pesticide used. ■



**3**  
*After flushing out the nozzles, reclean all filters and nozzles.*



**PIETMAN BOTHA,**  
INDEPENDENT AGRICULTURAL CONSULTANT





# Input availability and prices

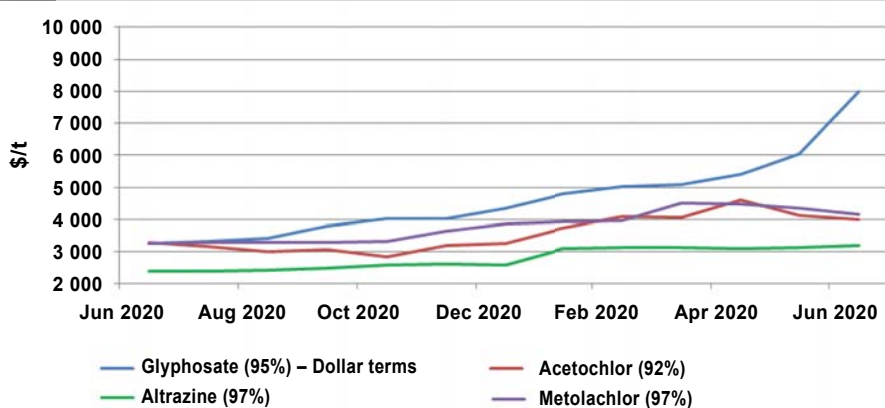
**S**OUTH AFRICA (SA) RELIES ON IMPORTS TO MEET THE LOCAL INPUT NEEDS, WHICH PLACES THE LOCAL AGRICULTURAL INDUSTRY AT RISK REGARDING AVAILABILITY AND PRICES FROM THE SOURCE COUNTRIES. SA'S INPUT INDUSTRIES HAVE ALWAYS MANAGED TO AVOID CRITICAL INPUT SHORTAGES FAILING WHICH COULD HAVE CAUSED FOOD SECURITY PROBLEMS IN THE COUNTRY.

Since March 2020 when COVID-19 restrictions were implemented, input availability has been disrupted, which also has implications on the price. The gap between fertiliser demand and supply internationally has put pressure on production while driving prices up.

Transportation costs, which are discounted in dollar terms, have doubled compared to last year. Oil prices have increased significantly. COVID restrictions disrupted raw material production in China earlier in 2020 while floods aggravated things in August and glyphosate manufacturing came to a halt during the repair work on two different plants that manufacture 65% of China's glyphosate production.

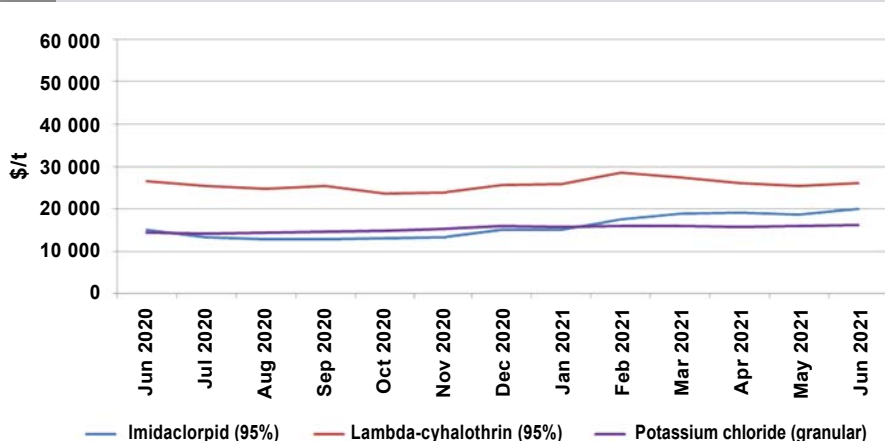
In February 2021, there was the so-called 'big freeze' in Texas USA, which negatively affected the availability of raw materials and additives. Interruptions in logistics greatly influence the flow of agricultural chemicals and fertiliser, for instance, the Suez Canal and especially the transport of shipping containers. Oxygen is required in the production of glyphosate; however, at this point, it is prioritised for the COVID-19 patients.

**1** International herbicide prices in dollar terms.



Source: Grain SA

**2** International insecticide prices in dollar terms.



Source: Grain SA

## PRICES OF INTERNATIONAL AGROCHEMICALS

**Graph 1** indicates international herbicide prices per active ingredient over a year. All herbicides have increased in dollar terms – glyphosate and Atrazine took the lead at 145% and 33,8% respectively followed by metolachlor 27%, acetochlor 22% and trifluralin with 8%. Prices in rand terms followed a similar upward trend except for Acetochlor and trifluralin that decreased moderately. However, in rand terms, the ingredients did not increase in equal or greater proportions as can be expected due to the support of a stronger rand.

**Graph 2** shows international insecticide prices per active ingredient over a year. Prices of all insecticides have increased except for Lambda-cyhalothrin, which decreased by 1,8% in a year. However, due to the strong rand, most active ingredients decreased, except for Imidacloprid that showed a moderate increase of 7% over a year.

## PRICES OF FERTILISER

International fertiliser prices in dollar terms in the past year show a significant upward trend. Ammonia prices increased by 188%, followed by

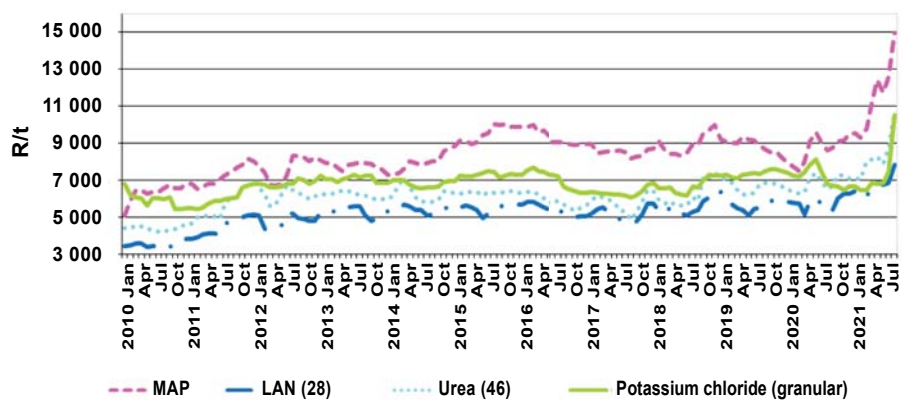




### 3 Local fertiliser prices.

DAP 110% and urea 102%, while KCL increased moderately by 43,8%.

In rand terms ammonia, increased up to 135%, followed by DAP 71% and urea 64,7%, and KCL 17%. The moderate increases in rand are an indication of the counter-effect of a stronger rand. **Graph 3** depicts average domestic fertiliser prices over time since 2010. Between July 2020 and July 2021. These are in line with international prices, showing an increasing trend for MAP 73,6%, LAN 46% and urea 64,8%, while KCL has decreased by 54,6%.



Source: Grain SA

### CONCLUSION

Agrochemical and fertiliser prices remained high over the past few months due to demand for the planting season in the Northern Hemisphere, fuelled by increasing commodity prices. Increases in the Brent Crude oil prices also drove up production and transport costs. All these developments have critical implications for the availability of agricultural chemicals and on the producer's planning for the new summer grain season. ■

**IKAGENG MALULEKE,**  
AGRICULTURAL  
ECONOMIST AT GRAIN SA



Life on a farm is a school of patience; you can't hurry the crops or make an ox in two days.

~ HENRI ALAIN LIOGIER  
(French botanist)

WORDS OF  
WISDOM







# Good record-keeping is essential

**T**HE BASIS FOR STARTING AND DEVELOPING ANY SUCCESSFUL BUSINESS, INCLUDING FARMING, IS A WELL ORGANISED SET OF RECORDS AND ACCOUNTS. RELYING ON MEMORY ALONE CAN LEAD TO MISLEADING ASSUMPTIONS IN FUTURE PLANNING.

Most farmers remember the good years and not the actual recorded average yields realised. This was noted in key performance area analysis where farmers gave much higher perceived crop yields as an average at the start of the exercise. Many were surprised to go back over actual past production records to discover the reality of lower averages and incomes per hectare.

If you know the actual yields realised you will have a benchmark for your farming methods within the potential of your farm's unique resources. Accurate records provide a tool for improvement and sound business management.

## HOW TO KEEP RECORDS

The basis of farm records can be broadly sourced from records that you are officially required to keep for tax submissions. These include VAT and diesel usage claims and other data relevant to grain or animal production. On small farming enterprises these can be kept manually or electronically with commercially accounting software packages or spreadsheet programmes.

If you don't have the necessary skills you can learn about the technology or pay a bookkeeper or an accounting firm to do it. It is better to do it yourself to have the relevant facts and data at your finger-tips. This requires much discipline over many years.

You can link the accounting information with the physical production data needed to produce gross margins and net profit calculations both systems work hand in hand.

Some farmers carry a daily journal with them at all times in which they record every aspect of a farming day including the bags or kilograms of direct inputs used per land. These can later be included in the main records kept in your office or computer.

You are required to keep detailed records of diesel usage. Keep a detailed log of which vehicles, equipment and machinery have drawn diesel each day. The use of fuel by various operations on cropping lands or pastures can also be noted. The usage can then be calculated per hectare per operation to give a known maximum use per hectare for the farm. This will help you to control any theft occurring and to make sure that you have enough diesel in stock to run your equipment.

Make sure that you control the use of resources with their input expenses for all those pertinent to crop production and for other enterprises in your farming operation. Problem areas such as insufficient crop yields or too high input costs can then be identified and corrected. It is best to update all data on a monthly basis while the information is still fresh. Regular monthly management meetings should be scheduled to discuss the records and production results.

## The main records to keep

- **Accounting:** Asset and liabilities, receipts and expenses, capital account, credit accounts and stock on hand. The capital account will include farmland and the mechanisation component including depreciation and current to replacement valuations.
- **Production and statistical records** related to the production of crop and livestock enterprises.
- The **overall farm business analysis** combines the above to probe for strong and weak areas within the business and to calculate efficiency measures. This analysis should be done for each enterprise as well. ■



**RICHARD MCPHERSON,  
AGRIBUSINESS AND PROJECT  
MANAGEMENT CONSULTANT**



# Inoculation can **ENHANCE** groundnut production

**G**ROUNDNUTS IS A HIGH VALUE CROP WHERE THE YIELD AND QUALITY OF THE YIELD MUST BE PROTECTED AT ALL COSTS. IT IS ALSO A CROP THAT CAN PRODUCE ITS OWN NITROGEN IF THE SEED IS INOCULATED WITH THE CORRECT INOCULANT.

Weed and pests will lead to lower yields and will use moisture and nutrients in the soil that will cost producers money. Good groundnut yields start with correct soil preparation and a good seedbed. This means the soil is cultivated to combat weeds and to incorporate crop residues and chemicals to create a favourable seedbed for the seeds to germinate. Make sure that the cultivation applied will break up soil constraints like subsoil compaction and plough pans.

The seedbed must be without weeds. It must also be level so that the planter can plant the seeds at the desired depth. It must not contain clots as this will have a negative effect on the plant popula-

tion and plant spacing. Make sure that plants are spaced properly and don't choke each other as they grow and develop. All other production mistakes can in a certain way be corrected but if there is a problem with the plant population it cannot be corrected without replanting the crop.

The cultivar that producers can plant, is determined by the buyers of the product. Each groundnut producer has a cultivar that is specified for his final product. Producers must negotiate with the buyers of the groundnuts for the best cultivar and the best price. Normally there will be a before season contract between the producer and buyer.

## GROUNDNUT SEED TREATMENT

Before planting, the seed needs to be treated with a bacterial legume inoculant for the effective nitrogen fixation like MBFI Rizo-liq groundnut seed treatment. It is important to mix the inoculant according to the recommendations of the suppliers but more important is to keep the mixed seed out of direct sunlight. Do not store the mixed seed too long before planting. Read and study the labels and follow these recommendations.

This seed also needs to be treated to prevent damping-off. A product like Celest can be used. It is important to contact a herbicide representative to help with the products needed and application rates. Form a partnership with the chemical representative to help manage this high value crop.

## GET THE MOST OUT OF YOUR CROP

The control of **grasses** in groundnuts is very important. Use a product with a S-metolachlor active ingredient like Metagan Gold with plant.

**Broadleaf weeds** can also be controlled with herbicide. Products like Broadstrike or Strongarm can be used. These herbicides may be sprayed with the grass control herbicide just after planting before the weeds emerge.

The control of **cutworm** is also very important. Use a product with Lamda-cyhalothrin ingredient like Karate EC for control.

Groundnuts must grow for at least 130 days. If it is possible to extend the growth period to 150 days or longer it will have a major impact on the yield. To extend the growth of the groundnuts it is important to control any **fungal diseases** like leaf spot and rust. There are various pesticides available to contain these fungal diseases. Contact your chemical representative to help identify the fungal disease and to recommend the best control mechanism.

Producers must also be on the look out for **bollworms** as these worms destroy the plant's factory and have a major impact on the yield.

In order to expand the yield, apply **foliar nutrition** according to the leaf analysis. ■



PIETMAN BOTHA,  
INDEPENDENT AGRI-  
CULTURAL CONSULTANT



# Budget; plan ahead and ensure success

**A**NOTHER SEASON IS UPON US AND FINALISATION OF THE PLANNING FOR THE PLANTING OF THE COMING CROPS AND BUDGETS FOR THE 2021/2022 SUNFLOWER AND SOYBEAN PRODUCTION SEASON SHOULD BE COMPLETED THIS MONTH.

The recently harvested crops would have been assessed for success or failure and any lessons learned to improve yields or quality can be used for current planning. In this article we look at some production considerations for each crop, each input cost and estimated budgets.

## WHICH CROPS TO PLANT?

Future prices in March 2022 for soybeans are at R7 837/t and for sunflowers R9 050/t. Using the Safex differential a transport at R300/t this gives a net sunflower price of R8 750.

The newer cultivars of sunflowers are yielding well with many farmers achieving a 2 t/ha average giving a gross income of R17 500/ha. An average of 2,23 t/ha of soybeans would have to be harvested to be equal to the sunflower income. This level of income compared to the current input costs looks attractive for either crop. Calculate your probable income from last season's results and long-term records.

To spread the planting period both crops can be incorporated into a maize, soybean, sunflower, other crops or pastures rotation system. Soybean yields were disappointing in some areas due to the high rainfall and heavy cloud cover experienced.

Sunflowers are an easier crop to manage for beginner farmers and less susceptible to yield loss due to extreme weather patterns. If you are unsure about producing soybeans rather plant sunflower instead.

Soybean production requires experience or good advice and the emphasis on proper land preparation, planting your crop on time and especially the right application methods of the nitrogen fixing rhizobia microbes to the seed. Spraying on the seed at planting from a planter mounted tank and pump system is highly recommended. Otherwise inoculate your seed per bag in the shade just prior to planting. Buy your inoculant from a reliable and well-known source. Effective nodulation is the key to higher yields. Farmers using their own seed from the previous crop are at a high risk of realising lower yields than those properly graded and cleaned by a commercial supplier.

Soybeans with early, medium and late maturity must be planted before the recommended dates. Make sure that you have extra sunflower seed in stock that can still be planted with good results during December should circumstances prevent planting soybeans on time.

## GUIDELINES AND CONSIDERATIONS FOR DIRECT INPUT BUDGETS

Always get professional advice and quotes from suppliers for the specific inputs required for the conditions found on your farm and the targeted yields to be realised.

### Sunflower

**Seed:** Plant 40 000 plants per hectare, trace element and anti-fungicide treated seeds, from a proper commercial source, for a final plant population of around 35 000 plants per hectare (R650/ha).

**Fertiliser:** Plant with a 4:1:1 (30) plus zinc or similar mixture or per fertiliser recommendation. Do not be short on nitrogen. Allow about 25 kg of nitrogen content per ton of targeted yield per hectare (R1 800/ha).

#### Chemicals:

- Weed control for your specific problem weeds (R1 200/ha).
- Diesel: 70 litres/ha (R1 250/ha).
- Crop insurance: 3,5% of income (R620/ha).
- Harvesting: Combining contractor or own machine (R750/ha).
- Marketing and transport: (R400/ha).
- Other costs: R1 000/ha.

Total cost per hectare for the above will be R7 670 giving a margin of R9 830/ha which will be available to cover your fixed overheads.

### Soybeans

**Seed:** Plan for a plant population of 300 000 plants per hectare. You should have a minimum of 250 000 plants per hectare after emergence. Buy treated seed with the required trace elements such as molybdenum and others (R1 700/ha).

**Seed inoculants:** Rhizobium and root growth enhancers (R400/ha).

**Fertiliser:** Plant with a 2:3:4 (30) + zinc and sulphur or similar mixture as soybeans need more potassium (R1 500/ha).

#### Chemicals:

- R1 000 diesel: R1,250/ha.
- Crop insurance 7% of income: R1 240/ha.
- Harvesting: R1 200/ha.
- Marketing and transport: R500/ha.
- Other costs: R1 000/ha.

Total cost estimate for the above will be R9 790/ha, giving a margin of R7 710/ha which will be available to cover your fixed overheads.

## CONCLUSION

Undertake a detailed study including profile holes, soil testing and fertiliser recommendations based on your farms conservative production potential in order to refine the exact resources and inputs to be used. Each aspect of production has become a science and the products on the market constantly change. Always use qualified people in each field for advice.

Please note that the delivery of the base products for fertiliser manufacture have been disrupted (see article on page 8). It is therefore advised that you source and purchase your inputs for your cropping programme as soon as practically possible. ■



**RICHARD MCPHERSON,**  
AGRIBUSINESS AND PROJECT  
MANAGEMENT CONSULTANT





# Control weeds early to maximise **SUNFLOWER YIELDS**

**W**ITH THE INCREASE IN SUNFLOWER YIELDS, THE SUNFLOWER PRICE INCREASE AND THE NEED TO APPLY CROP ROTATION IN ESPECIALLY MAIZE MONOCULTURE, SUNFLOWER CULTIVATION HAS BECOME MORE APPEALING. IT IS ALSO A GOOD METHOD TO IMPROVE SOIL HEALTH.

A problem with the cultivation of the sunflower crop has always been broadleaf weed control, especially if the producer does not want to cultivate too much as to retain soil moisture.

## **BROADLEAF WEED CONTROL**

The first step in the fight against broadleaf weeds was the registration of Alachlor, which is a pre-emergence grass herbicide capable to control a reasonable broadleaf spectrum weeds. The herbicide could however not control the more serious and difficult to control broadleaf weeds. Alachlor herbicide control also decreased towards the end of the season, so the producer had to cultivate once or twice to keep the fields clean.

The next step for broadleaf weed control in sunflowers was the registration of flurochloridone (Racer CS/Radical 250 EC/Rapid 250 EC and Sun-Down 250 CS). These herbicides must be applied directly after planting before the sunflowers emerge.

The planting depth of the sunflower seed is also important. If planted too shallow, the sunflower seedlings will be harmed by the herbicide. There are several alachlor formulation on the market that

are registered along with the various flurochloridone formulations, for example Alachlor 480 CS, or Alanex 384 EC or Alanex 480 CS. Flurochloridone residues in the soil can also harm certain succession crops.

The next breakthrough in broadleaf weed control in sunflowers is the Clearfield® programme. In the beginning Clearfield® sunflower varieties were treated with Euro-Lightning® herbicide, but it caused yellowing and stunting of the Clearfield® sunflower varieties from time to time. This led to development of Clearfield® Plus sunflower varieties which are more resistant to the active ingredients of Euro-Lightning®. Euro-Lightning® Plus was then released which contains softer adjuvants and solvents.

If the Clearfield® Plus herbicide is applied to weeds between the two and six leaf stage within 32 days after planting, incredible weed control is acquired. This herbicide mainly controls broadleaf weeds, but under optimal (warm moist) conditions grasses will also be controlled – especially if the grasses are very small during application.

Several herbicides similar to the regular Euro-Lightning® have since been registered, namely Captora/Mistic and Imimox. Technically these herbicides can be used on Clearfield® Plus cultivars because these cultivars are more resistant to the active ingredients in the herbicides, but they are not registered as such.

## **SUMMARY**

In summary, the following applies to weed control in sunflowers:

- Always consult the relevant product labels for recommendations.
- High density of sedges and clay percentage > 16%: Apply Eradicate Plus (for example) ten days before planting, incorporated

# Opportunities for future growth despite FMD and climate concerns

**T**HE BEEF INDUSTRY, THE SECOND LARGEST INDUSTRY IN THE ANIMAL PRODUCT SUBSECTOR, WAS TRADITIONALLY A NET IMPORTER. FOLLOWING THE ACCEPTANCE OF SOUTH AFRICA'S FOOT AND MOUTH DISEASE (FMD) FREE ZONE IN 2014 BY THE WORLD ORGANISATION OF ANIMAL HEALTH (OIE), IT HAS MOVED SUCCESSFULLY TO A NET EXPORTING POSITION.

This industry was the subject of one of the case studies conducted by the Bureau for Food and Agricultural Policy (BFAP) in its report, 'Trade-led competitiveness development research: Towards a targeted growth strategy and roadmap for the sector'. This research report was commissioned by the Department of Agriculture, Land Reform and Rural Development (DALRRD).

## EXPORT DEMAND

As a result of firm export demand, beef prices were supported through the 2016 drought, when an estimated 15% of the breeding herd was liquidated due to the weather conditions. Additional supply might previously have depressed prices substantially. The extent to which the beef industry has utilised exports of very specific cuts to unlock additional value from the carcass, represents a true success story in South African agriculture in recent years.

At the same time, South Africa still does not comply with the required standards to export to high-value markets such as the European Union (EU) and could arguably have done even better if it was able to do so. Despite the role of exports in driving growth and investment over recent years, it remains a small share of the total market. The risk of disease, evidenced from the impact of the FMD outbreak in January 2019, is ever present – limiting the extent to which exporters are willing to incur additional investment in export driven growth.

## GROWTH GOING FORWARD

The dualistic nature of South Africa's beef industry holds one of the single largest opportunities for inclusive growth going forward. The size of the informal herd remains largely unquantified, yet improvements in these producers' productivity will enable them to supply multitudes of weaner calves to intensive finishing systems geared towards exports.

Amongst the most significant constraints to exports are regulatory concerns related to animal health and food safety, along with standard requirements on traceability which are not yet established in South Africa. From the producer's perspective, a complete focus on exports is risky in light of South Africa's disease risks. Some strategies have focussed on compartmentalisation, with good success. However, this is not accepted in all export destinations and its high burden on management and operating capital makes it inaccessible to small producers.

Constrained capacity and limitations on veterinary services to obtain access to sophisticated markets have led to an initial focus from industry on obtaining protocols for markets that are easier to access. Many such markets are in the Middle East, where South Africa's halal capabilities make it competitive in high-value products. Tariffs faced by South African producers in these Middle Eastern regions are also fairly low, suggesting that they will be able to compete well.

## SUPPLY

Following a period of rapid production growth, the impact of herd liquidation that occurred through the 2016 drought is clear in supply constraints from 2017 to 2019. As weather conditions improved in parts of South Africa's summer rainfall region, herd rebuilding started, but progressed slowly with grazing conditions in a number of regions still struggling to recover. Cattle slaughter volumes declined by 7% year on year in 2017, a further 3% in 2018 and another 1% in 2019.





Despite the constrained supply, beef prices declined by 5% year on year in 2019. A number of factors contributed to the decline.

An FMD outbreak in the FMD free zone halted exports to several markets. In the first quarter of 2019, beef exports declined to merely 60% of the comparable period in 2018, despite some success in bilateral negotiations to open certain markets for safe products. Secondly, products that would typically have been earmarked as exports were diverted into the domestic market, where consumer spending power had been under severe pressure. Consequently, beef prices plummeted, all while the dry early summer raised concern as to the size of the maize harvest, which pushed feed prices higher. This combination brought feedlot margins under significant pressure, thereby also reducing the demand and subsequent prices of weaner calves.

From 2020 onwards, additional supply is expected to enter the market, due to a combination of herd rebuilding over the past three years and the decline of feed grain prices on the expectation of an above average summer crop. Over the course of the next ten years, beef production is projected to increase by an annual average of 2,1%. After the sharp decline in 2019, the beef-to-maize price ratio is projected to reach an equilibrium well above the levels of the recent past, but below the peaks of 2017. The higher and marginally upward trending beef-to-maize price ratio is also projected to enable an increase in weaner calf prices over time in order to support production growth. The beef-to-calf price ratio should reach an equilibrium below the levels of 2012 to 2016. In the short term, weaner calf prices

will remain under pressure due to high feed prices, low beef prices and substantial weaner calf imports from neighbouring countries.

In the medium term, beef production growth is sufficient for exports to continue increasing by 5,5% per year. In the short term, however, exports will remain constrained by the current FMD outbreak. After the initial ban, successful negotiation of bilateral agreements has allowed exports to resume to selected destinations and under specified conditions. There is, however, not yet an end in sight for the current outbreak and it is expected to take some time for South Africa to regain its FMD free zone. Consequently, exports should rebuild over the next three years to a level similar to 2016, from which it will grow further, but slower post 2022.

## OPPORTUNITIES

From a regional and trade partner perspective, the highest share of the additional market potential is attributed to North America (41,64%), particularly the USA. The second largest opportunity is identified in Eastern Asia (31,62%), led by China, Hong Kong, Japan, North Korea, South Korea and the Maldives. ■

GERHARD SCHUTTE, CHIEF EXECUTIVE OFFICER, RED MEAT PRODUCERS ORGANISATION (RPO).  
FIRST PUBLISHED IN SA GRAAN/  
GRAIN NAMPO EDITION JULY 2021

**SA**Graan  
Grain

## Control weeds early...

into the soil. Seal the soil surface to keep the EPTC gas in the soil as long as possible.

- For a high density of grasses: Apply Alachlor, metolachlor 960 or S-metolachlor 960 directly after planting. Use on all clay percentage soils but apply according to the clay percentage. It mainly controls grasses but some broadleaf weeds are also controlled. Yellow nutsedge can be excellently controlled to variable controlled depending on the environmental conditions.
- High density of broadleaf weeds: Flurochloridone to be applied strictly pre-emergence. Apply according to clay percentage from 11% clay.
- High density of broadleaf and grass weeds in conventional sunflower varieties: Flurochloridone plus alachlor from 5% clay may be applied. Strictly pre-emergence application.

- High density of broadleaf and grass weeds in Clearfield® Plus sunflower cultivars: Metolachlor to be applied on all clay percentages – applied according to clay percentages with plant, followed by Euro-Lightning® Plus at 2 litres/ha on the two to six leaf stage of the weeds as well as sunflowers. Application must be done before 32 days after planting. ■

ANTHONIE BOTES,  
TECHNICAL ADVISOR: AECI PLANT HEALTH



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# Artificial meat

**I**N HER NEW BOOK, *THE WAY WE EAT NOW: STRATEGIES FOR EATING IN A WORLD OF CHANGE*, WHICH APPEARED IN MARCH THIS YEAR, THE AMERICAN FOOD EXPERT BEE WILSON ASKS WHETHER WE CAN REALLY SAY THAT ARTIFICIAL MEAT PRODUCTS ARE MORE HEALTHY THAN MEAT.

She writes: 'I started to question the healthiness of some of the new generation of vegan burgers after I ate a Beyond Burger, as served at the Honest Burger chain. While eating the burger – which came with guacamole and “pulled” barbecued jackfruit – I was stunned by how close it felt to meat in my mouth, with its rosy pink hue and fragile flesh-like texture. But it felt nothing like meat to my digestive system.'

The reality of her meatless 'burger' hit her about half an hour after lunch with an unappetising fast-food aftertaste and intense stomach ache. 'When I looked up the ingredients, it occurred to me that had they not been marketed as quasi-meat I would never have chosen to lunch on “pea protein isolate, expeller-pressed canola oil, refined coconut oil, water, yeast extract, maltodextrin (and) natural flavours”.'

Prof Hettie Schönfeldt from ARUA CaBFoodS-Africa says she has never conducted research on this before. However, she refers to the work by Dr Alison van Eenennaam at the Zoology Department of the University of California in the United States. She distinguishes between vegetarian meat replacements, 'in vitro' or 'cultivated' meat or 'muscle-cell-produced' imitations.

Soybeans, lentils and pea pods, as well as nutrients equivalent to the proteins in meat are used for vegetarian versions, together with fats, binders, flavouring and beetroot as natural colourant.

Laboratory-cultured 'meat' is formed by cells obtained from animals in tissue biopsies – no animals are therefore slaughtered or bred for this. According to [www.culturedbeef.org](http://www.culturedbeef.org), 20 000 small pieces of cell tissue are required for one normal burger patty.

## TIME WILL TELL

Gerhard Schutte of the Red Meat Producers Organisation (RPO) says that although vegetable and laboratory-cultured meat imitations are a reality, the industry is still in its infancy in South Africa. According to him, it is aimed at the high-income market, and while the true impact still has to develop, it is at present not significant. However, this may change.

Izaak Breitenbach from the South African Poultry Association (SAPA) says: 'I don't think any synthetic poultry meat is being sold. Something like this will probably be incredibly expensive and not appetising.'

Marieta Human, consumer scientist with the South African Pork Producers' Association (SAPPO), believes that the taste and texture profiles and economic considerations will determine the impact of imitation pork burger patties and pork sausages at an international level. 'Because of the unique role of red meat in our culture, we do not foresee a significant threat to the local commercial pork industry soon.'

Gerhard agrees. 'Statistics South Africa agrees that 1,2 million South African households own livestock – sheep, cattle, pigs or goats. As a developing country we have very strong ethnic customs linked to red meat.'



Dr Dirk Strydom, Manager: Grain Economy and Marketing of Grain SA, predicts that imitation meat can over time definitely play a role in the demand for grain for feed. 'Over the past few years grain has become a very important part of the demand for grain. We should remember, however, that these products are made from crops like soybeans, lupins and so on, which causes a new demand.'

It is essential to monitor this trend. 'The question is whether there will be a large appetite for imitations here, given our culture and eating habits. We must take note of cost comparisons with real meat and determine where our – largely price sensitive – consumer spending will be.'

He says that although it is difficult to confirm this in isolation, a large-scale decrease in the demand for meat will have disadvantages for the grain industry.



# – fact or fiction?



Dr Koos Coetzee, an agricultural economist and industrial journalist, says the possibilities of a meatless future are progressing faster internationally than we realise. 'In the United Kingdom the Vegetarian Association wants to establish a lifestyle that wants to eliminate all possible cruelty to animals from the market.'

## THE EXPECTATION

According to the 2019 Kearney Report (<https://www.kearney.com/consumer-retail/article>), 'novel vegan meat replacements and cultured meat' have the potential to disrupt the meat industry. It predicts that by 2040, only 40% of meat consumption will come from traditional sources of meat.

With astronomical investments by, among others, Bill Gates, Richard Branson, Li Ka-shing, Leonardo DiCaprio, Sergey Brin and



Henry Soesanto, vegetable food companies like Rebellious Foods, Impossible Foods, Plantible Foods and The Livekindly Co are flourishing. In the first quarter of 2020 they received a further \$741 million, in addition to the \$747 million in 2019.

Alexandratos and Bruinsma's estimate in 2012 was that by 2050 the world would use about 1 751 million tons of animal protein per year through milk, fish, poultry, pork, beef and eggs. In contrast, cultured meat is expected to replace 35% of meat needs by 2040 already, and vegetarian replacements will replace 25% of these needs.

Dr Van Eenennaam says this implies that 402 million tons of animal proteins (excluding fish) might be replaced by 'alternative' burger patties within the next 19 years. That is approximately 886,2 billion vegetable burgers and more than 1,2 trillion laboratory-cultivated burger patties.

## THE CAUSES

Dr Coetzee says industries are under increasing pressure to materially reduce their carbon footprint.

- In a report in December 2006 by the United Nations Food and Agriculture Organization (FAO), *Livestock's long shadow: Environmental issues and options*, ruminants are blamed for 18% of all greenhouse gases – more than that of the transport industry. When the FAO later admitted that their calculations had been wrong and drastically reduced this estimate, the damage was already enormous.
- Although South Africans are meat eaters, according to Dr Coetzee, 14 000 persons – particularly from Cape Town and Johannesburg – signed a petition to promote exclusively animal-free products during the Veganuary 2020 campaign (held in January every year). 'The growing world population must be fed and the role of stock will remain large. Remember, animals convert roughage to proteins. They also utilise land that is not friendly to field husbandry. Accusing animals of being the scapegoats diverts the attention from the true culprits,' he adds.

As a co-author of international climate-change reports, Dr Michael Man, American climatologist and geophysicist, confirms that fossil fuel is the sinner.

## CONSUMERS MUST STAY INFORMED

According to Gerhard, meat imitations that occur on a relatively small scale at the moment are currently limited to burger patties and sausage fillings. 'I understand that laboratory technology exists to imitate steaks and burger patties, but have not yet seen this. Debates will still follow about product names, because words like "sausage" and "burger meat" have been unique to true red meat through the ages.'



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## Artificial meat...

Imitations that look, feel or taste like red meat require consumer education. 'However, they are not a threat,' he says. 'Our focus is on the naturally high nutrient density, natural protein, amino acid, vitamin and mineral composition of red meat that reinforces the immune system.'

'The consumer remains the king and queen. It is legally compulsory to indicate the accredited nutritional values of all products on labels. We do this with great confidence for red meat. The consumer will decide.'

'Today, health is our only wealth,' says Marieta. 'Over time moderate meat, moderate vegetables, moderate starch and moderate fruit through balance and portion control are the road to health.'

### THE DEMAND FOR REAL MEAT IS GROWING

Gerhard is excited about the Chinese market, a growth in red meat exports, the growing demand for live South African small stock in

the Middle East, as well as beef exports that can increase from 5% to 20%.

'Despite animal protection and environmental awareness actions worldwide, meat imitations still have to compete with the real thing. A constant appearance, texture and taste keep our products competitive internationally. Projections point to a considerable increase in the demand over the next 10 years.'

### EXCESSIVE

Gerhard further believes that the prices of 'non-beef' patties that are now appearing in grill restaurants and high-income chain stores are excessive. He feels that technology might align the cost of so-called health, environmental or animal benefits with reality.

On an online menu for Spur, Dr Coetzee noted that a beef burger is offered at R79,90, while the price of the Beyond Burger – which is described as the world's first vegetable burger that looks, grills and tastes like beef – is R129,90. That is a full 63% higher.

'Social media sometimes carry photographs of mushroom-like protein concoctions as beef replacements,' he says. 'However, mushrooms are low in protein and if the protein comes from other sources, it is concerning.'

### MONEY IS THE MOTIVE

Marieta and Dr Coetzee do not understand why those people who promote animal-free food still want to eat or sell something that looks, feels or tastes like meat. 'Food processors sometimes shift their focus behind the scenes – and sometimes openly – to so-called future food,' says Dr Coetzee.

'They believe they can make more money from artificial products that taste like meat or dairy. The industry for fresh products should not be misled. Consumers are already looking for health products on other shelves than those for meat, vegetables and dairy. New technology like 3D printing possibilities will increasingly produce food imitations.'

### WE WILL HAVE TO WAIT AND SEE

Sara Roversi, founder of The Future Food Network, says food is life, energy and nutrition. 'Eating is essential to people, but it requires conscience-aware decisions. The great challenge is to protect our planet by eating healthily and looking after the eco system that houses us.'

Who knows? Perhaps Bee Wilson's book is correct after all when she says: 'Defenders of meat will say – with good reason – that an unprocessed home-cooked grass-fed leg of lamb is a far more "natural" and nourishing thing than a Quorn burger. But the question is what to do if you lack the cash for grass-fed lamb?' ■

### SOURCE

- Alexandratos, N & Bruinsma, J. 2012. *World agriculture towards 2030/2050: the 2012 revision*, ESA Working Papers 288998, Food and Agriculture Organization of the United Nations, Agricultural Development Economics Division (ESA).



**SA Graan**  
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JAN GREYLING, SA GRAAN/GRAIN  
CONTRIBUTOR. FIRST PUBLISHED IN  
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# They want to eat plant proteins

**A**CCORDING TO CURRENT PROJECTIONS FROM THE WORLD HEALTH ORGANISATION (WHO), A POPULATION GROWTH OF APPROXIMATELY ONE BILLION PEOPLE IS EXPECTED BY 2025, WHICH WILL BRING THE TOTAL WORLD POPULATION TO EIGHT BILLION PEOPLE. THIS GROWTH PLACES INCREASING PRESSURE ON PRODUCERS AND FOOD PROCESSORS TO PRODUCE FOOD SUSTAINABLY AND AFFORDABLY.

For sustainable food security a safe balance between profitable cultivation, processing and affordability for consumers is necessary. Food consumers need nutrient value in a balanced diet and therefore greater pressure is placed on the input chain to provide the right combination of proteins, carbohydrates, fats, vitamins and minerals.

As pressure increases to produce food sustainably with the available natural resources, the need increases for innovation and technology to provide for the nutrient needs of the world through substitute food products.

Soybeans can be used to supply one of these primary nutrients, namely protein. According to the American Department of Agriculture (USDA) the international soybean production was 337 million tons in 2019, and it is seen as one of the world's largest protein crop production sources. The main consumer of soybeans remains the animal feed industry. However, with the growing search for a sustainable and healthier lifestyle, a strong trend is developing among consumers to use protein alternatives derived directly from plants. Here it is about more than the need for nutritional value, but also about the consumer's demand for alternatives to animal protein. The market segment focus is therefore not only on vegetarian consumers, but there is also a substantially growing market segment interested in flexible meals and that wants to maintain a balance between animal and plant proteins as nutritional source.

## WHY SOYBEANS AS SOURCE OF HUMAN NUTRITION?

Due to future population growth, the increasing demand for proteins, as well as the restraints in the production of animal proteins, soybeans are regarded as an important substitute to meet this need. It contributes to a good balance between animal and plant proteins. Texturised vegetable protein, also known as TVP, or TSP (Texturised Soya Protein), is basically directly processed raw material, of which a large part is made up of soybean products.

Why soy protein (TSP) specifically?

- Soy is an excellent source of protein.
- It has a high consumer acceptability due to the texture and characteristics resembling meat.
- Soy is a healthy alternative to meat and covers a large nutrient spectrum.
- The technological development of processing increases the consumer acceptability of TSP as a part of diets.
- It has a long shelf life, depending on fat content and storing conditions.
- Cheaper handling and logistical advantages.
- Plant protein as human food has approximately 50% less of an environmental impact than alternatives.



*Common products from wet TSP are nuggets, mincemeat, burgers, chunks, schnitzels, strips of meat like pulled pork, meat cubes and fish.*



## They want to eat...



*Granules, mincemeat, flakes, chips and schnitzels are common products from dry TSP.*

### ALTERNATIVE SOYBEAN PRODUCTS

There are four classes of soybean products, specifically produced for human consumption. They are: wet TSP and dry TSP (approximately 50% protein), soy protein concentrate (>60% protein) and soy protein isolate (>90% protein).

Wet TSP is usually used in meat substitutes, mostly for nuggets, schnitzels and patties, and can be prepared as deboned, processed food. Wet TSP is fibrous, with a dense texture, and should be kept in a cold food chain, which increases costs.

Dry TSP is used particularly as meat supplements and as fully flavoured mincemeat. With progress in technology the quality to the different market segments increases drastically. Dry TSP also has a fibrous, spongy texture and does not need a cold food chain. The shelf life is substantially longer, and a rehydration process with water prepares the product for consumption and palatability.

The majority of consumers in the South African market context have a negative feeling towards soy as alternative to animal protein. This sentiment mainly exists due to the use of soy protein in feeding schemes, preparation as well as the quality, which is not always up to standard. Although South African consumers admit that soy protein has a healthy nutrient value and is used daily in some form anyway, the negative sentiment still prevents many consumers from using soy protein as chosen protein source in conjunction with animal protein. Note that this argument is not focused on vegetarians, but includes the majority of the local population who have to prepare a balanced meal for their families at affordable prices.

In the local market, dry packaged soy mince with flavouring still constitutes the biggest part of the soy market segment and is readily available in supermarkets. The second biggest use of soy protein can be seen in the processed meat industry, where it is included as protein concentrates in polony, red viennas and hamburger patties as supplement to meet requirements for digestible proteins. It can also be seen on all

supermarket shelves in the chilled section. Thirdly, there is a growing use among smaller meat processors (local butcheries), which include soy as meat supplement in mincemeat and sausage specifically, with the aim of giving consumers a more affordable protein source with a palatable flavour and texture.

The local food processing chain is currently experiencing a lot of pressure to supply consumers with balanced, nutrient-rich food at affordable prices. It not only has to comply with better health requirements, but should also taste better and comply with food safety guidelines. Significant growth is expected in the soy alternatives market segment as protein supplement – especially over the next two years. According to product registration databases in the USA and Europe, product offers have already shown growth of more than 80% over the past two years. With the local pressure on food suppliers and processors, growth of more than 25% is expected in this market segment in South Africa over the next two years. It will mostly develop from soybeans as raw material and serve as supplement to animal protein in diets.

With the influence of the COVID-19 pandemic on the financial situation of consumers, food processors are increasingly forced to pay attention to the protein needs of diets. Where wet soy protein alternatives of higher quality have been mostly focused on the vegetarian market up till now, the product offering growth will largely take place in the need of the balanced consumer for sufficient protein supplements at affordable prices. It will be developed as supplement to animal protein, rather than as competition. ■

JANNIE MYBURGH, AGRICULTURAL ECONOMIST, VKB. FIRST PUBLISHED IN SA GRAAN/ GRAIN SEPTEMBER 2020





# THE CORNER POST

FANELWA BANGANI SIPHOKO

*Where there's a will, there's a way*



**L**IKE SO MANY SOUTH AFRICANS, FANELWA BANGANI SIPHOKO (43) FROM JOHANNESBURG FOUND THE INITIAL THREE-WEEK LOCKDOWN PERIOD IN 2020 OVERWHELMING, BUT IT WAS DURING THIS TIME THAT HER PASSION FOR AGRICULTURE WAS IGNITED.

## LOCKDOWN FRUSTRATION PRODUCES A FARMER

Fanelwa, who is an accountant at Transnet, says she has always had a fear of the unknown. During the lockdown, she wondered if she would be one of the many South Africans who would lose their jobs as a result of the pandemic. 'We weren't allowed to move around freely and were cooped up indoors, so I ended up worrying all the time as I watched the news. I started feeling depressed and realised I must do something to keep busy.'

Across the road, an idle piece of land was calling for her attention. Armed with her garden fork, spade, hoe and the right attitude she started cultivating the soil. 'I worked the soil in the village way – working with my hands and keeping my mind busy.' Even though people in her neighbourhood were laughing at her, she kept going. She planted vegetables and later supplied home-grown vegetables to those in need in her area.

'I love being outside, working in the soil and really am more comfortable when I am in my gumboots than in office attire. Sometimes I think I was supposed to be a man,' Fanelwa laughs. When she realised that it is the most content she has felt in years, her mind was made up: She was going to become a farmer. She found a 3,4 hectare piece of land in the Bronkhorstspuit area to rent. The land had been lying fallow for many years and she wanted to plant maize there.

'I love the internet and Google everything,' she says. 'While Googling how to grow maize, Grain SA popped up on my screen. I saw Jurie Mentz's name and contact details, so I phoned him and started bugging him every day. Jurie laughed when I told him I was going to knock until the door is opened. He was extremely welcoming and helpful.'

## ON HER WAY WITH PASSION AND DETERMINATION

Jurie put her in touch with Shadrack Mabuza, a mentor of Grain SA's Farmer Development Programme in Mpumalanga. Jurie and Shadrack advised her to begin small by planting 1 hectare only. She also had to pay a fee to be supplied with the necessary advice and inputs. 'At one stage I thought this could be a scam, but I desperately wanted to farm, so I took a chance.'

Lockdown made training a novice farmer quite challenging, and to make matters worse, Fanelwa was without electricity for three months due to service problems in the area. These stumbling blocks were nothing compared to Fanelwa's determination to succeed. 'Jurie explained the whole process of maize production telephonically. He was always available to offer guidance whenever I needed it. I still

haven't met him in person and hope it will be possible one day to shake his hand and say thank you.'

Fanelwa was so determined to succeed that she also knocked on her neighbour, Phillip du Plessis's, door. The guidance of these three knowledgeable mentors helped her to produce 1 ton of maize last season. 'My mind is made up: I am going to be a successful farmer.'

Unfortunately, after a season's hard work the owner of the land has decided to take it back and Fanelwa had to wave goodbye to her hard work. 'He wanted to move me to another piece of land which he owns, but I refused. I invested a lot of money in the first piece of land, but without a contract the owner can now just take over my success.'

This has, however, in no way deterred her or shattered her dream. She has already found a 30-hectare plot in the Bronkhorstspuit area to lease and will do so with a contract in place this time around. 'I am starting on a clean slate, but this time I know the challenges I will be facing.'

Fanelwa realises that a beginner farmer has to be patient, but with a focused mind, passion and determination – and the assistance of Grain SA's Farmer Development Programme – she knows she will be successful.



*A beginner farmer has to be patient, but with a focused mind, passion and determination.*



She is planning to plant maize again and to learn more about the production process. 'I will continue doing it until I fully grasp what maize production is all about. Then I will move on to sunflower planting.'

She also intends to attend study group meetings and do the necessary courses to improve her agricultural knowledge. 'I am willing to do more, work harder and expand my knowledge – lockdown forced me into my calling. I am fortunate to have the support of my husband, Mvano Siphoko, who is going to keep his livestock on the new piece of land as well, so we will share the costs.' Their dream is to own their own land one day and be able to support themselves through their combined farming endeavours.

According to Robert Kiyosaki, an American businessman and author, the size of your success is measured by the strength of your desire, the size of your dream and how you handle disappointment along the way. With a strong desire, a big dream and the way she has already handled disappointment, Fanelwa Bangani has proven that she is destined to succeed. ■



LOUISE KUNZ,  
PULA IMVULA CONTRIBUTOR

# A programme that is changing lives



## Telling OUR OWN STORY first-hand

**THE** MAN RECOGNISED AS THE 'FATHER OF INDIA'S GREEN REVOLUTION', MANKOMBU SAMBASIVAN SWAMINATHAN, SAID IF AGRICULTURE GOES WRONG, NOTHING ELSE WILL GO RIGHT. FARMERS' WELL-BEING MUST BE AT THE CENTRE OF ALL PROGRAMMES AND POLICIES.

Grain SA strives to contribute to the successful development of all farmers participating in the grain industry and to ensure that as much support is afforded farmers as is possible. There is an extensive network of development coordinators, mentors, trainers and administrative support personnel that specifically service developing farmers and are constantly seeking new partners to participate in the development initiatives towards transforming the sector.

During the month of July the team conducted **82 study group visits** and **74 farm visits**. Farm visits are important mentoring encounters with individual farmers. The topics of discussion include season planning, budgeting, discussions about mechanisation requirements, advice on practical aspects of the farming process and potential income streams off the farm.

Farmers are encouraged to view their farming as fully fledged business enterprises so they must learn about different aspects of business management such as financial management, building a business plan to present to financial institutions, understanding obligations to SARS and managing farm workers fairly. These topics are addressed timeously throughout the year. The mentors also visit the farmers' fields to check on progress and monitor each critical farming operation to ensure success as far as possible.



*During a farm visit in the Amersfoort area, Grain SA team members shared in the excitement when two brand-new John Deere tractors were delivered to the Nkosis.*

These outreach opportunities exist because of our partnerships with various role-players in the industry. The collaboration between the Maize Trust and the Grain SA Farmer Development Programme is one such example that has enabled the building of a solid network able to fast-track information and offer valuable support services to developing grain farmers.

We wish to acknowledge the Maize Trust for its continued support of this initiative and would like to thank the trustees for making this work possible. It is making a difference to the lives of many farmers and contributing towards positive change in our country.

## AT GRASS ROOTS



*Boy Zakew Nzimande (left), chairperson of Nzimande Farming Projects, with his farm workers signing their payslips.*



*Farmer Bheki Isaac Mabuza knows that his hard work has paid off when he harvests his maize.*



*Mbolofithi Albert Nkosi of Mbolo Trading with his son getting ready for a day's work on their farm at Palmietfontein.*



*Hlalele Joseph Khahleli from Zandfontein in the Free State is proud of what he has achieved the past season.*





## Face-to-face mentoring

**THE** deeper meaning of the Zulu greeting 'Sawubona' (We see you) is an invitation to a deep witnessing and presence. This greeting forms an agreement to affirm and investigate the mutual potential and obligation that is present in a given moment. At its deepest level this 'seeing' is essential to human freedom.

Not only do developing farmers face significant barriers or constraints in agriculture but they also struggle to access expertise or extension services. The future of successful farmer development requires that their needs are seen and ways to bridge the gap between farmers in rural South Africa and modern technology, information and best practices are found. The Grain SA Farmer Development programme has a number of knowledge transfer and support systems in its tool box. One such tool is **individual support to farmers**.

Team members offer support to farmers who have been identified as progressive and who have the potential to grow their farming enterprises further. The intention is to equip these farmers over a period of time with knowledge and surround them with a supportive network which they become familiar with during the 'face-to-face' process. These encounters can take place both at the farm throughout the season and at selected meetings where the farmer is introduced to other farmers and role-players. This type of mentoring strengthens farmers showing good potential and contributes to household and national food security.



*Garth Winde from PepsiCo joined a Grain SA team member for a face-to-face visit when field inspection was done on the farm of Jeremiah Mathebula, who is also an executive member of Grain SA.*



*Sifiso Michael Mnisi had a meeting with Jurie Mentz earlier this year to measure fields and plan for the new season.*



*Johan Kriel, development co-ordinator, and mentor Jacques Roux (on the left), paid a visit to farmer Tom Jacobs in the Free State to monitor the soya harvesting.*

## A visit to the Louwsburg area

**JURIE** Mentz is the Grain SA development co-ordinator at the Louwsburg office. Agriculture is an important economic activity in this area and impacts the livelihoods and household food security of millions of rural dwellers. Agricultural potential is high and the region is well suited to the cultivation of maize, soybeans and dry beans, but in general the yields achieved are well below the regional potential.

The office manages study groups, training and mentorship to farmers distributed from Louwsburg and Vryheid in KwaZulu-Natal to as far north as Bronkhorstspuit and Middelburg in Mpumalanga. Study group meetings cover every aspect of planning, purchasing, production and business management through to harvesting.

The farmers know they are only a phone call away from a word of advice or a helping hand whether it is to address a concern about an unhealthy leaf or how to go about storing or marketing product.



*The Dlamini brothers from the Piet Retief area, want to plant maize for the first time so they called the Louwsburg office and asked Jurie for advice on how to get started.* ■





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27 Wrench Road, Isando, 1601.

PO Box 143, Isando, 1600. Tel: +27 11 921 5002

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