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GRAIN SA MAGAZINE FOR DEVELOPING FARMERS

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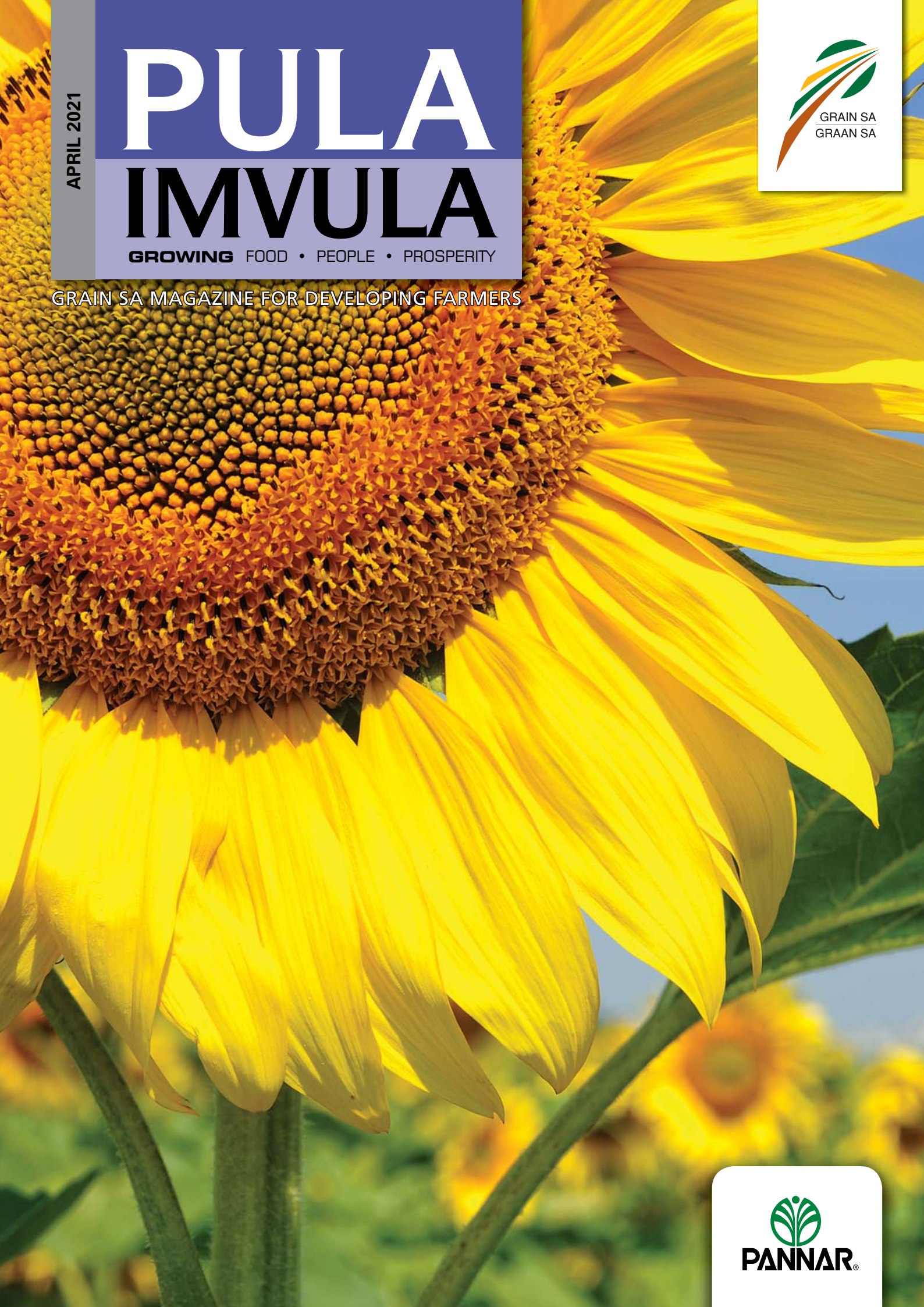

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PULA IMVULA

Editorial team

GRAIN SA: PRETORIA
PO Box 74087
Lynnwood Ridge
0040
■ 08600 47246
■ www.grainsa.co.za

EDITOR AND DISTRIBUTION
Liana Stroebel
■ 084 264 1422 ■ Office: 012 943 8285
■ liana@grainsa.co.za

PUBLISHING PARTNER
INFOWORKS
Johan Smit* ■ *Louise Kunz* ■ *Elizma Myburgh* ■ *Joritha Hechter
■ 018 468 2716 ■ johan@infoworks.biz

infoworks
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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 Stroebel
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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A Word From...

Johan Kriel

ON 26 MARCH 2020 AN ENORMOUS CHANGE TOOK PLACE IN THE LIVES OF ALL SOUTH AFRICANS WHEN WE WERE HIT BY COVID-19. WE WERE SUDDENLY IN LOCKDOWN – NO FREE MOVEMENT, SOCIALISING OR WORKING IN OFFICES. SCHOOLS WERE CLOSED AND STUDENTS WERE NO LONGER SEEN ON CAMPUSES.

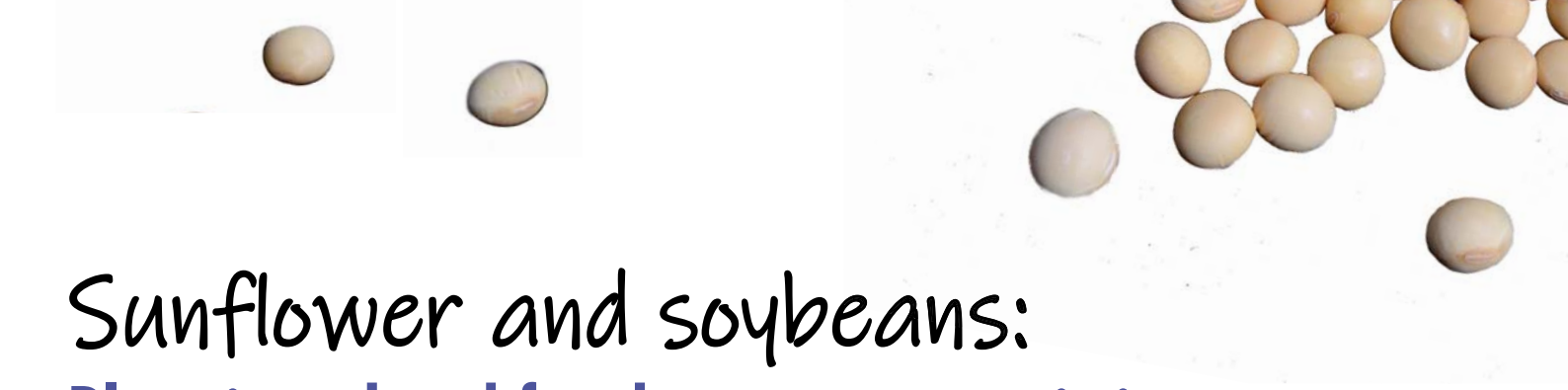
We had to learn to wear masks, and wash and sanitise our hands regularly. Flights were cancelled and families were cut off from one another. People even looked askance if you dared to go to the store for essential groceries. If you sneezed or cleared your throat, people gave you a wide berth.

In this time, farmers also struggled. Farmwork had to go on, because the work never stops. Fortunately, agriculture was recognised to be an essential service, because farming is one of the most important businesses in a country. Without it, we would be faced by the following: Store shelves without food – no fresh fruit and vegetables. Nobody would be able to buy mutton, pork or poultry. The breakfast menu would have to be served without bacon and eggs or *krummelpap*. And naturally a cup of tea or coffee with milk would not be on the tray either.

Without food you cannot live, and hungry people are angry people. Agriculture is extremely important to a country's survival. In South Africa, the food providers are in the front line. As if drought and varying weather patterns are not enough, producers are threatened and murdered on the farms (the food factories) every day. Stock theft forces many farmers on their knees. Land reform has become a political plaything – without any thought to what could happen if it is not carefully planned and carried out.

Remind the people around you where the food on their plates and on the shelves in the stores comes from. Pray together as a family for all farmers and farmworkers who – despite all the challenges – keep on making sure there is food on the table.

In order to ensure food security in South Africa, famers must take hands and together pull everyone through. ■



Sunflower and soybeans:

Planning ahead for the next season is important

IT IS NEVER TOO EARLY TO START PLANNING THE NEXT SEASON'S CROP. IT IS IMPORTANT TO CALCULATE HOW MUCH MONEY IS NEEDED AND WHEN THE MONEY WILL BE NEEDED. THE SUNFLOWER OR SOYA PRODUCTION SYSTEM FOLLOWED WILL DETERMINE WHAT AND HOW MUCH INPUTS IS NEEDED.

Pietman Botha, Pula Imvula contributor. Send an email to pietmanbotha@gmail.com

Planning the next season must start with the potential of the different fields including this current year production practises that worked and did not work well. Each field needs to be planned according to the crop and the potential as well as what was planted on the field. Include herbicide restrictions into the planning. Remember to incorporate crop rotation effects for example higher maize yields following soybeans.

Production funds for the next production year must be available during July this year. There should be funds available for soil sampling, soil correction, winter weed control and then all other inputs needed. It is important to understand that soil correction will have an effect on the next crop's production. Make sure that when lime is applied, it will not have a negative effect on the upcoming crop.

THE COST OF INPUTS

There are norms to calculate the cost of the inputs needed.

Seed: The seed costs for sunflower and soybeans is easy to determine. Sunflower can be planted with a plant population between 30 000 and 45 000 plants per hectare, but consult with your seed representative. With their help the cultivar planted, plant population per hectare and cost can be determined. In the case of soya, aim at a plant population of 250 000 to 500 000 plants per hectare with a yield optimum at around 400 000 for high potential rain-fed plantings.

Fertiliser: The fertiliser cost is more difficult to calculate but possible. The Fertiliser Association of Southern Africa publish on a regular basis the fertiliser withdrawal figures per crop. See **Table 1** for the nutrient removal of various crops. The plant nutrients requirements (kg/ha) for sunflower on a sandy loam soil type with a 15% to 20% clay percentage is shown in **Table 2**. With this information consult your fertiliser representative and calculate the fertiliser needed as well as the costs. The latest soil sample data will also help a lot and fairly accurate calculation can be done.

Herbicide and pesticide: Your herbicide and pesticide programme will differ according to the type of sunflower or soybeans planted. If a Clearfield Plus cultivar is planted the programme will differ from a standard cultivar. Once the cultivar to plant is selected, let your herbicide representative visit your field and with his knowledge decide on the herbicide and pesticide programme. With their assistance you will be able to have a good indication of what the programme will cost. Whatever the crop, the herbicide programme must prevent the germination of weed as weeds will have a negative impact on your yield.

Diesel and repair work: The diesel and repair work can also be fairly accurately calculated. As a rule of thumb for conventional production practises 75 litres of diesel will be used. Use the current fuel price and you will be close to the actual cost. There is always a connection between diesel cost and repair and maintenance cost. If you add an extra 10% to your fuel cost it should be close to their repairs and maintenance costs needed. Other costs like hedging and contract work insurance must also be included.

The difference between income and the direct allocatable costs is the crop gross margin. **Table 3** shows the expected gross margin for the sunflower and maize crop budgets at different yields for the western and eastern production regions. It gives a summary of the most direct allocatable costs. Famers can use this as an example to calculate their maize, soybeans and sunflower cost and gross margin for the crops. Remember if the gross margin is negative, the possibility that the crop will be profitable, is most unlikely. Review the costs and make some adjustments.

1 ***Plant nutrients withdrawal figures of maize, sunflower and soybeans.***

Crop	Nutrient removal per ton of yield (kg)					
	Grain			Whole plant (hay/silage)		
	N	P	K	N	P	K
Maize	15	3	4	27	4,5	20
Sunflower	25,8	1,9	8,5	67	7,1	96,1
Soybeans	60	7	19	90	8	25

2 ***Plant nutrients requirements (kg/ha) for a sandy loam soil type with a 15% to 20% clay percentage to produce sunflower at different yield for planning.***

Plant nutrients	Per 1 t	Per 1,5 t	Per 2,5 t
Nitrogen (N)	10 kg	20 kg	60 kg
Phosphorus (P) 15 mg/kg - 20 mg/kg (Bray)	7 kg - 9 kg	10 kg - 12 kg	16 kg - 21 kg
Potassium (K) 60 mg/kg	7 kg	10 kg	18 kg

3 *Detailed gross margin planning for sunflower and maize crops for the 2021/2022 production season.*

	Western region					
Producer price framework for dry land	**Bt Maize**			**Sunflower**		
Average Safex price (R/t), July 2021 (maize)/March 2021 (sunflower)	**R3 200**			**R8 000**		
Current farm gate prices for the best grade (R/t), Safex marketing cost	**R2 946**			**R7 746**		
Estimated yields (t/ha)	**3,0**	**4,0**	**4,5**	**1,25**	**1,50**	**1,75**
Gross production value (R/ha)	**R8 838,06**	**R11 784,08**	**R13 257,09**	**R9 682,53**	**R11 619,03**	**R13 555,54**
Direct allocated variable cost (R/ha)						
Seed	R980,44	R980,44	R1 089,38	R502,71	R502,71	R502,71
Fertiliser	R1 586,60	R2 115,47	R2 379,91	R987,00	R1 153,11	R1 243,58
Lime	R176,49	R176,49	R176,49	R176,49	R176,49	R176,49
Fuel	R1 066,65	R1 106,42	R1 126,31	R892,36	R906,06	R919,75
Reparation	R727,83	R735,71	R739,64	R625,82	R627,79	R629,76
Herbicide	R935,51	R935,51	R935,51	R197,60	R197,60	R197,60
Pest control	R405,47	R405,47	R405,47	R48,83	R48,83	R48,83
Input insurance	R346,30	R461,74	R519,45	R142,75	R171,30	R199,85
Grain hedging	R634,11	R706,06	R753,18	R229,45	R244,17	R254,28
Contract harvesting	R570,00	R570,00	R570,00	R470,00	R470,00	R470,00
Crop insurance	R79,93	R106,58	R119,90	R145,03	R174,04	R203,04
Aerial crop spraying	-	-	-	-	-	-
Casual labour	-	-	-	-	-	-
Interest on production (R/ha)	R369,09	R410,97	R438,40	R209,90	R223,37	R232,62
Total direct allocated variable cost (R/ha)	**R7 878,42**	**R8 710,85**	**R9 253,63**	**R4 627,94**	**R4 895,47**	**R5 078,51**
MARGINS/ha before marketing and overhead cost (R/ha)	**R959,64**	**R3 073,23**	**R4 003,46**	**R5 054,59**	**R6 723,56**	**R8 477,02**

	Eastern region					
Producer price framework for dry land	**Bt Maize**			**Soybeans**		
Average Safex price (R/t), July 2021 (maize)/March 2021 (sunflower)	**R3 200**			**R7 800**		
Current farm gate prices for the best grade (R/t), Safex marketing cost	**R2 904**			**R7 740**		
Estimated yields (t/ha)	**4,5**	**6,0**	**7,0**	**1,75**	**2,00**	**2,50**
Gross production value (R/ha)	**R13 068,90**	**R17 425,20**	**R20 329,40**	**R13 544,69**	**R15 479,64**	**R19 349,55**
Direct allocated variable cost (R/ha)						
Seed	R1 828,57	R2 351,01	R2 873,46	R1 155,96	R1 155,96	R1 155,96
Fertiliser	R2 550,03	R3 361,89	R3 903,13	R2 100,98	R2 364,21	R2 364,21
Lime	R233,50	R233,50	R233,50	-	-	-
Fuel	R935,69	R995,35	R1 027,62	R836,60	R850,30	R870,18
Reparation	R743,37	R755,77	R764,03	R559,50	R561,57	R565,70
Herbicide	R1 457,49	R1 457,49	R1 457,49	R1 323,87	R1 323,87	R1 323,87
Pest control	R889,64	R889,64	R889,64	R372,72	R372,72	R372,72
Input insurance	R227,42	R303,23	R353,77	R223,94	R255,94	R319,92
Grain hedging	R741,94	R872,03	R972,27	R275,36	R289,99	R298,47
Contract harvesting	R570,00	R570,00	R570,00	R680,00	R680,00	R680,00
Crop insurance	R438,01	R584,02	R681,35	R432,29	R494,04	R617,55
Aerial crop spraying	-	-	-	-	-	-
Casual labour	-	-	-	-	-	-
Interest on production (R/ha)	R534,76	R628,52	R700,78	R386,64	R407,18	R419,10
Total direct allocated variable cost (R/ha)	**R11 150,42**	**R13 002,44**	**R14 427,04**	**R8 347,86**	**R8 755,77**	**R8 987,68**
MARGINS/ha before marketing and overhead cost (R/ha)	**R1 918,48**	**R4 422,76**	**R5 902,36**	**R5 196,82**	**R6 723,87**	**R10 361,87**

Compiled in January 2021

Your business needs GOOD DECISIONS

DECISIONS ARE PART OF OUR DAILY LIFE. FARMERS ARE CONTINUOUSLY CONFRONTED BY MATTERS THAT NEED A DECISION TO BE TAKEN. DECISION-MAKING REFERS TO MAKING CHOICES BETWEEN ALTERNATIVE COURSES OF ACTION, WHICH MAY EVEN INCLUDE INACTION.

Marius Greyling, Pula Imvula contributor. Send an email to mariusg@mcgacc.co.za

From a business point of view decision-making is one of the management tasks which enforces the management functions of planning, organising, implementing and control. Everyone wants to make a sustainable profit and our actions have an influence on the success of our business. Therefore, all decisions will ultimately have an influence on the profit of our business.

STEP BY STEP

Using a step-by-step approach can assist you with your decision-making process. This approach can be applied to the simplest or most comprehensive decisions. It increases the chances that you will make the most constructive decision.

1. **Identify the problem/challenge/opportunity** and formulate or describe it properly. A problem clearly stated, is a problem half solved. Get all the facts related to the issue to be resolved correctly. It is important to distinguish between 'small' and 'big' problems. Many times, too much time and energy is spent on trying to solve minor problems that do not really have a great influence on the goals of the farming business.
2. **Gather information**. Collect as much relevant data, information, opinions and observations as possible to be able to resolve the problem. The more information you have, the better you are equipped to make the right decision.
3. **Develop alternative solutions**. Use the relevant information to develop various alternative solutions to the problem. Be open-minded and do not limit yourself to certain standard practices. Give free reign to your imagination even if it seems as though an idea is impractical, or even unacceptable to you. Do not discard an idea without thorough investigation. Many managers have come up with brilliant solutions to problems because they have not been stopped by what seemed impossible at the time. Another important point is to discuss alternative actions with other people to obtain their opinions. A practical tip: Always attempt to develop at least three alternative solutions.
4. **Weigh the alternatives**. Consider the pros and cons of every alternative carefully – and always keep your budget in mind.
5. **Make the decision.** This is a deliberate choice between the alternatives. In most cases this is the most difficult step in the decision-making process because the choice of the best action to be taken is not always easily seen. Furthermore, most decisions have an impact on the future, thereby implying that it carries risks.
6. **Implement or act on the decision**. The choice of the best alternative will not have the desired result if the choice is not implemented by mobilizing the required human and other physical resources. You have used time and energy to decide, why not do it?
7. **Evaluate the implementation.** Was it successful? Could it have been done differently? The implementation must be analysed both during its implementation phase and after the action has been completed. Managers often pay insufficient attention to this important final step. Do it and evaluate the implementation of your decision – the only way to gain experience. Evaluate your action to know whether you have made a good decision or a bad one. If this is not done, valuable opportunities are lost to make timely adjustments or to learn from the success and errors of the past.

The difference between good and bad decisions during the production process can be seen clearly in this example.

Good decisions lead to a good harvest.

Decision-making is influenced by your experience, your skills, your qualification/training, your attitude towards risks, your finances and your budget, time to address a problem, available resources, and availability and reliability of data. These factors can and will force you to use your imagination to come up with a decision.

These steps are applicable to any decision-making regardless of the scope or magnitude of the problem/challenge and even the urgency there-of. Be assured that each and every decision you make, regardless of its size will have an influence on your business, especially on your finances.

Remember: A successful business requires good decisions to be taken as many times as possible. ■

LOOK BACK to plan correctly for the future

APRIL IS A GOOD TIME TO ASSESS THE SUCCESS OR SHORTFALLS IN MANAGEMENT OR PRODUCTION FACTORS ASSOCIATED WITH YOUR 2020/2021 MAIZE PLANTINGS. YOUR CROPS MAY ALREADY HAVE BEEN HARVESTED OR BE ON THE POINT OF BEING HARVESTED, SO A SIMILAR ANALYSIS FOR IMPROVING YOUR PRE-PLANTING, PLANTING, GROWTH PHASES, SEED SETTING AND HARVESTING PHASES CAN ALSO BE COMPLETED.

Richard McPherson, Pula Imvula contributor. Send an email to richard@agrimetrix.co.za

HERE ARE SOME IMPORTANT FACTORS TO BE CONSIDERED

Potential income from yield and price

Maize futures for July 2021 on Safex are trading around R3 400 at ton. Less an average transport differential the 'spot price' or 'in pocket price' offered by your local co-op would be in the region of R2 900/t to R3 000/t. This will be a very good price.

You should do a comprehensive yield assessment. A detailed method is described in the September 2020 issue of *Pula Imvula*. Find out from the purchaser of your maize what price might be offered. Using your yield estimate and the price the probable income to be generated can be used to plan your inputs and costs for the 2021/2022 production year.

Production planning – getting back to basics

Evaluate your efficiency in preparing your lands, whether done in a conventional or minimum tillage system. Ask yourself if you planted on time with the right cultivar and achieved the planned plant population. The right population for each cultivar is critical so that a minimum target of one good and one medium cob per plant can be harvested. As a benchmark, a population of 20 000 plants per hectare with cobs of 180 g and 120 g per plant can yield 6 t/ha. How does your crop compare?

Fertilisation

In doing your crop estimate in April or later evaluate the crop for depth of greenness and any possible signs of too little nitrogen, sulphur, potassium or phosphates. Decide whether your fertiliser programme can be improved. A minimum of 15 kg to 20 kg of nitrogen (N), 3 kg to 5 kg of phosphate (P) per ton of the maize should have been applied. With the rainfall pattern, some farmers were not able to apply the extra side-dressed nitrogen required. See if you over or under fertilised for the crop produced.

Weed and pest control

Assess the effectiveness of your mechanical or chemical control programme.

- Did the products work well to reduce or eliminate weeds?
- Is my spray rig capacity large enough to cope with my crop in a wet year?
- Were the pests that decimate young plants and others that infect cobs controlled in time?

CONCLUSION

In addition to the above production factors look at all the other items in your production and financial gross margin planning such as crop insurance, harvesting, marketing, repairs and maintenance and own or hired equipment with a critical eye. This will help you to improve the planning objectives and management for the next crop. Please refer to previous *Pula Imvula* articles for more detailed information, provided by many contributors, on any critical aspects of production if needed. ■

WORDS OF WISDOM

You cannot have a happy, healthy and peaceful continent without food.

~ JOHN MUHAISE-BIKALEMESA

Management is important FOR A PROFITABLE FEEDLOT

THE OBJECTIVE FOR FEEDING CATTLE IS TO MAKE SUSTAINABLE PROFIT AND MONEY. SELF-PRODUCED CALVES OR BOUGHT IN CALVES CAN BE FATTENED IN A FEEDLOT. SMALL SCALE AND EMERGING FARMERS CAN FATTEN CATTLE IN PENS OR LARGER CAMPS USING COMMERCIALLY BOUGHT FEED OR HOME-GROWN FEEDS LIKE MAIZE, SOYBEANS AND HAY.

Dr Linde du Toit, senior lecturer: Department of Animal and Wildlife Science at the University of Pretoria and Pietman Botha, agricultural economist. Send an email to pietmanbotha@gmail.com

Four distinct factors that will influence the profitability of a feedlot are the:

- buying price of weaner calves or store cattle;
- cost of the feed;
- selling price of the finished cattle; and
- the performance of the cattle as influenced by management.

Table 1 shows the industry's cost structure. Feedlot management influences profitability and cattle performance through its effect on feed intake, weight gain and overall health, General feedlot production targets which will influence the profitability of a feedlot is presented in **Table 2**.

1 ***Feedlot cost structure.***

Factor influencing feedlot costs	Percentage of total cost
Cost of cattle	61%
Feed cost	28,6%
Overheads	8,9%
Transport	0,7%
Mortalities	0,8%

Source: SAFA, 2019

2 ***General feedlot benchmarking ranges.***

Factor	Range
Initial weight	220 - 240 kg
Average daily feed intake	10 - 12 kg/day
Average daily gain (ADG, kg/day)	1,5 - 2 kg/day
*Feed conversion ratio	5:1 to 6:1
Days in feedlot	90 - 150 days
Target end weight	460 kg
**Dressing percentage (lean)	49%
**Dressing percentage (finished)	56% - 60% (average: 58%)
Mortality	<1%

**Feed conversion ratio is the amount of feed (kg) it takes to produce 1 kg of live weight*

***The dressing percentage refers to the weight of the carcass after the animal has been slaughtered*

BASIC FEEDLOT ECONOMICS

The profitability calculation of a feedlot operation is based on the price margin, the feed margin and other expenses. Price margin includes the difference between purchase price and selling price of cattle influenced by beef price fluctuations, and improvement in carcass quality due to feeding. The feed margin is defined as the profit or loss made by a feedlot as a result of live mass gain in relation to the cost of feed consumed. The best quality feed at the best price, good management, and the use of growth stimulants can improve the feed margin by achieving optimal growth rates. Other expenses will include abattoir costs and losses, transport, interest on capital, labour and operational costs, processing costs, healthcare and mortalities.

Producers with maize and weaner calves must make the decision whether to sell the weaner and maize or to feed the maize to the calves. Normally the feed needed for a feedlot calf will consist of 73% maize, 12% roughage, and 15% beef fattening concentrate, for example Beef fat 33 from Molatek or SB 100 from Voermol. Normally a 230 kg calf growing up to 460 kg will eat 1 380 kg feed in 150 days.

PRICING CALCULATION EXAMPLE

A producer with a weaner calf of 230 kg at a price of R38/kg. If a dressing percentage of 58% is assumed, it would mean that the producer actually could sell the carcass for R65,52/kg whilst the market price for an A2/A3 carcass is R50,50/kg. This will result in a negative price margin.

Feed margin is calculated as the income from the added carcass weight above the costs to produce the added carcass weight. With a finalised weight of 451kg, the added carcass weight during the 130 days in the feedlot will be 128,20 kg. Using the A2/A3 carcass price of R50,50 the income from the carcass will be R6 474,10.

The feed cost to produce the added carcass weight is calculated by using the weight added during the growth period, feed conversion ratio and the cost of the feed. In this scenario the feed cost will be calculated as 221 kg (added weight) x 6 (FCR of 6:1) x R3,80 (feed cost/kg) = R5 038,80. This will result in a feed margin of R1435,30.

The total gross margin can then be calculated using the following equation: (price margin + feed margin) x the loss factor less other costs like dipping and dosing of about R100 per calf. The loss factor is calculated from the mortality percentage (if the mortality is 1% the loss factors will be 0,99).

In the above scenario, the total gross margin will be a loss of R562,72 per calf. To calculate the net margin, the other expenses including the income from the fifth quarter (skin and tripe) must be

3 *Feedlot profitability comparison.*

	SCENARIO A Baseline	SCENARIO B Price of weaner calves too high	SCENARIO C The impact of feed cost on gross margin	SCENARIO D The impact of feed cost on gross margin
Start weight (kg)	230	230	230	230
Daily gain (kg)	1,7	1,7	1,7	1,7
Days on feed	135	135	135	135
Dressing %	58	58	58	58
Feed conversion ratio (FCR)	6:1	6:1	6:1	6:1
Feed used (kg)	1 380	1 380	1 380	1 380
Feed price (R/t)	R3 800	R3 800	R5 000	R3 800
Mortalities (%)	1	1	1	1
End weight (kg)	460	460	460	460
Carcass weight (kg)	267	267	267	267
A2/A3 carcass price	**R48**	**R48**	**R48**	**R55**
Weaner calf price	**R25**	**R38**	**R25**	**R25**
Processing cost (R/calf)	R95	R95	R95	R95
Weaner calf cost	R5 750	R8 740	R5 750	R5 750
Feed cost (R/calf)	R5 244	R5 244	R6 900	R5 244
Income (R/calf), less 1% mortalities	R12 678,84	R12 678,84	R12 678,84	R14 538,15
Gross margin	**R1 598,84**	**-R1 391,16**	**-R57,16**	**R3 449,15**

included in the calculation. **Table 3** gives four examples with varying weaner prices, feed cost and carcass prices.

These scenarios illustrate the sensitivity of a feedlot's profit. According to information in Table 3 the gross margin for different scenarios may fluctuate. It is important not to pay too much for weaner calves. Producers should make sure that the price of the feed is not too high. Producers must focus on the consumers in order to get a better price. This will have a big impact on the gross margin.

They can do this according to the book, but if the calf feed doesn't have the potential to grow, the profit will be under pressure. The quality of a calf is important and plays a major role in the profitability of the feedlot – faster, more efficient growing cattle will require less feed and will spend fewer days in the feedlot to achieve the required final weight.

Other rules of thumb

- The weaner price must be less than 65% of the carcass price, with a calf price: beef price ratio of <0,55.
- To profitably finish a calf in a feedlot, 1 kg of carcass must be at least the value of 14 kg of maize. Maize: beef ration of 14:1 and higher is advantages.
- The feed margin must be positive.
- A positive price margin is ideal but it rarely happens in industry.
- Mortalities must be kept at a minimum. <0,8%. ■

OILSEED PRICES *continue to soar*

GLOBAL 2020/2021 OILSEED PRODUCTION IS FORECAST TO BE LOWER THAN EXPECTED, ESPECIALLY FOR SOYBEAN AND GROUNDNUT PRODUCTION. SOYBEAN PRODUCTION EXPECTATIONS HAVE BEEN REDUCED FOR THE UNITED STATES (US), ARGENTINA AND URUGUAY, OFFSET BY A SIMILAR GAIN IN CHINA'S SOYBEAN CROP.

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

GLOBAL OILSEED PERSPECTIVE

Groundnut production expectations were cut by 430 000 ton on reduced US production, while Russia's sunflower seed production is expected to increase.

Global oilseed exports are expected to be about at 193 million tons, after being raised by nearly 1 million tons on increased US soybean and Russia sunflower seed exports. Oilseed crush is also expected to be higher with small increases in soybean and sunflower seed crush. Global oilseed ending stocks are down, due to lower soybean stocks in the US and Argentina.

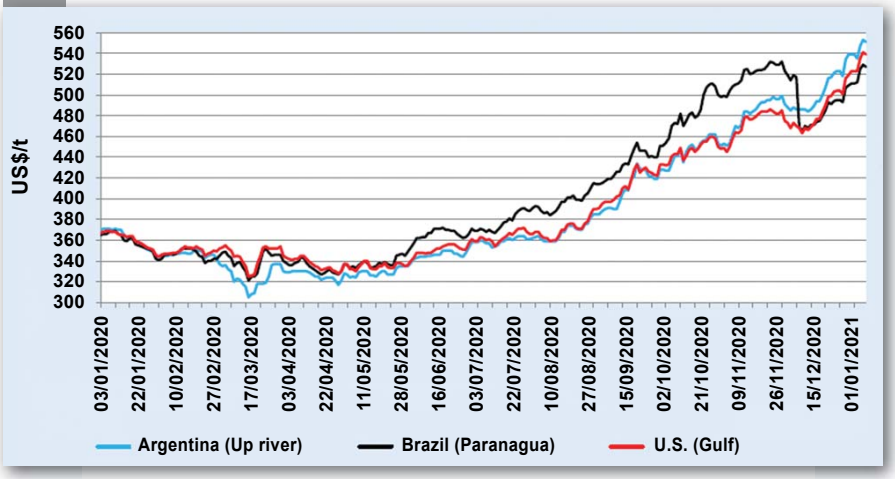
Soybean export prices for the US and Argentina strengthened for the seventh consecutive month in January, reaching the highest levels since July 2014. Brazilian soybean prices also followed suit since November 2020. Prices have been on the rise due to high demand, lower carryover stock from 2019/2020, and dry weather in South America.

Soymeal prices also continued to strengthen further throughout December 2020 reflecting fluctuations in soybean prices. Rising oil prices persisted in December due to sustained demand for oils despite lockdowns and lower soybean crush in South America. Argentine soy oil prices outpaced both the US and Brazil, largely due to prolonged strikes, leading to the largest US soy oil price discount against Argentina since June 2015.

LOCAL OILSEED PERSPECTIVE

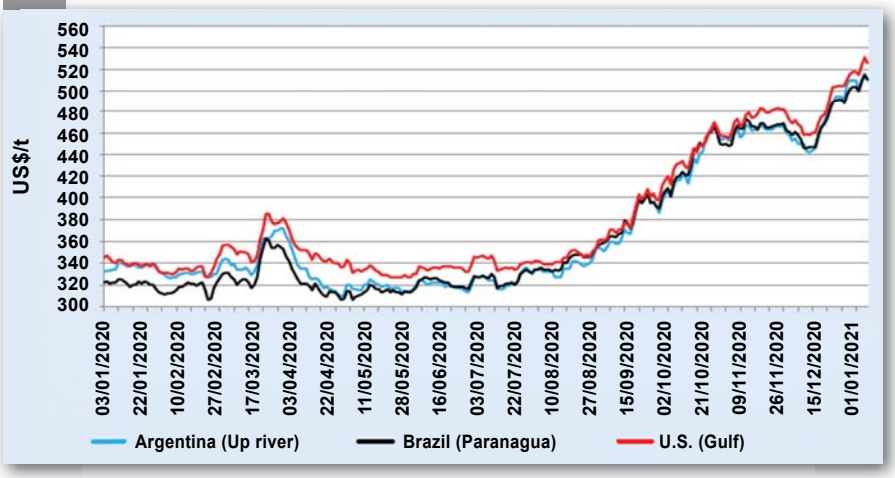
Against the backdrop of rising global oilseed prices over the past few months, South African oilseeds have also found support, with prices at an all-time high since 2016. This is despite a favourable supply situation for both sunflower and soybeans. Between January 2020 and January 2021, sunflower prices have increased by 62% and soybean prices by 53%. According to the Crop Estimates Committee (CEC), the preliminary area estimate for sunflower seed for 2021 is 473 300 ha, which is 5,4% less than the 500 300 ha planted the previous season, this can help to support prices further. It is estimated that 806 000 ha have been planted to soybeans, which represents an increase of 14,33% compared to the 705 000 ha planted last season. This makes it the highest area planted to soybeans in South African history. Essentially, this could lead to a dip in prices, however it is expected that international prices will be supportive in the short to medium term, given the global supply situation.

1 ***International soybean export prices.***



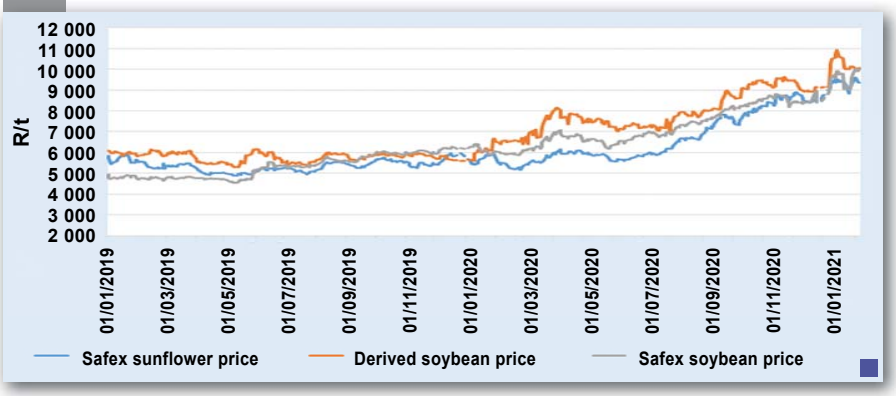
Source: USDA

2 ***International soybean meal prices.***



Source: USDA

3 ***Historical Safex oilseed prices.***



Growing broilers
can add value to your enterprise

Part 1

A FARMER GROWING MAINLY CASH CROPS INCLUDING MAIZE, SOYBEANS, SUNFLOWERS, SORGHUM, GROUNDNUTS AND WHEAT, MIGHT CONSIDER DIVERSIFYING INTO OTHER ENTERPRISES. ONE OF THESE IS THE GROWING OF BROILERS FROM DAY OLD CHICKS TO START A NEW ENTERPRISE, PROVIDE CHICKEN MEAT OR TO ADD VALUE TO HIS MAIZE AND OTHER GRAINS GROWN.

Richard McPherson, Pula Imvula contributor. Send an email to richard@agrimetrix.co.za

Although a broiler enterprise will add value to your maize it must be milled or cracked. Soybean or groundnut oil cake meal and all the right calcium, phosphates and vitamins have to be added to makeup correct broiler rations. It is easier to buy commercially well-balanced feed or arrange to deliver your maize to a poultry feed manufacturer so as to offset the cost of the mixed rations.

BREEDS TO CONSIDER

The main commercial breeds available in South Africa that have been genetically selected for fast growth and good feed conversion are Ross, Cob and Arbor Acres.

If you have access to the internet the detailed production manuals and production standards for these breeds can be downloaded and printed for reference. They are aimed at the larger producer with modern housing and equipment but the principles of production remain the same even for a small batch of 100 day old chicks.

SUPPLIERS

Find out from your chosen day old chick supplier which breed they are supplying so that you know what their standards are for growth rates and feed conversion. Detailed records of your production must be kept so that you can compare your results to the standards to be able to assess if growing batches of broilers is payable for your circumstances.

Some beginners have made the mistake of buying day old chicks for egg producing or 'layer' chickens and then wondering why the chicks weren't growing as fast as required with the feed supplied.

Do an internet search for suppliers that can deliver your chicks near your farm using a regular planned circuit at a reasonable rate per chick for transport. Producers can deliver from 100 day old chicks in a box or batches up or over 10 000 with the price being cheaper the more you buy.

The quoted prices are usually per standard box carrying 100 chicks, which would cost R8,45 (VAT included) per chick plus transport and delivery of R75 (VAT included) per 100 chicks for a total cost of R920. Average landed cost per chick is thus R9,20. A batch of 500 would be at R900 per 100 chicks for a total R4 500 for a landed cost of R9 per chick.

Have a look at *www.alfachicks.co.za* for their information and price lists, but do research on other suppliers in your area before making the decision. It is very important to start off with the best quality. Alfa Chicks also show a variety of equipment that is suitable for small and larger producers.

HOUSING

Housing depends on the scale and scope for your planned operation. The needs of a few 100 chick batches differ widely from an operation placing 1 000 to 5 000 chicks at a time.

FEED

The broiler chicks are bred to have good feed use which results in a feed conversion ratio of 1,85 kg of mixed feed to 1 kg of live bird produced. Feeds used will include a starter mix, then a grower and finally finisher ration.

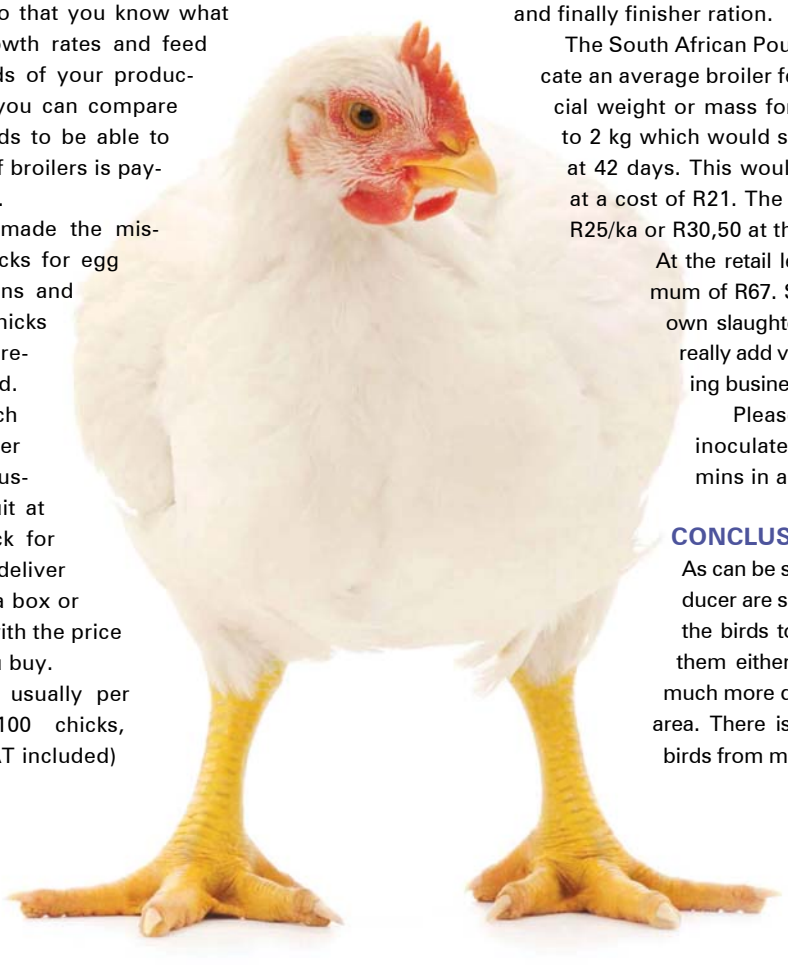
The South African Poultry Association (SAPA) reports indicate an average broiler feed price of about R6/kg. A commercial weight or mass for a live bird could be about 1,90 kg to 2 kg which would slaughter out to a 1,22 kg whole bird at 42 days. This would use about 3,5 kg of feed per bird at a cost of R21. The value of the bird is about 1,22 kg at R25/ka or R30,50 at the producer level.

At the retail level of R55/kg a bird is worth a minimum of R67. Selling live birds at about R65 or your own slaughtered birds is the way to go. This will really add value to your maize or to creating a paying business.

Please remember that chicks must be inoculated for several diseases and fed vitamins in a strict cycle.

CONCLUSION

As can be seen the margins for a commercial producer are small. It is advisable to consider feeding the birds to about 2,5 kg live weight and selling them either live or a larger slaughtered bird for much more depending on the target market in your area. There is increasing preference for the larger birds from many households. ■



Part 2 How the MAIZE MARKET functions

THIS ARTICLE IS THE SECOND OF A FOUR-PART SERIES THAT ATTEMPTS TO EXPLORE THE FUNDAMENTAL FACTORS THAT HAVE AN IMPACT ON THE MAIZE MARKET. WE WILL LOOK AT CHANGES IN PRICES DUE TO CHANGES IN FUNDAMENTAL FACTORS SUCH AS EXCHANGE RATE AND INTERNATIONAL PRICES.

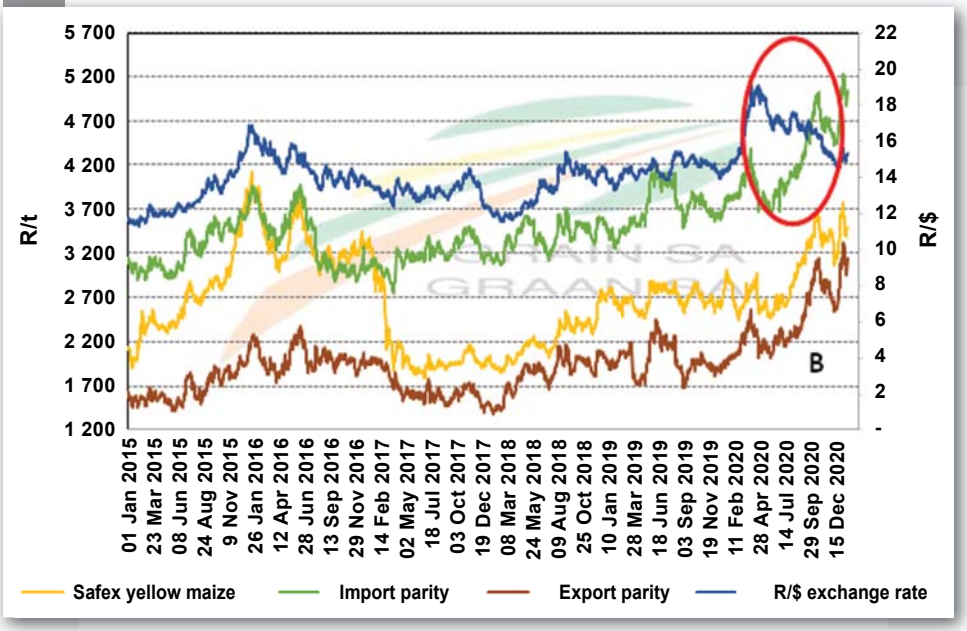
Ikageng Maluleke, Agricultural Economist, Grain SA. Send an email to Ikageng@grainsa.co.za

Maize price in South Africa is normally influenced by the world price of maize, the exchange rate, stock levels and the relative size of domestic maize crop. Due to the difference in the value of maize located in the United States compared to our local maize, the price difference needs to be adjusted to account for differences in things like the exchange rate and transport costs. Therefore allowing a comparison of prices. The adjusted price is called a reference price and it is calculated with respect to a reference point, which is Randfontein when trading on Safex.

Grain prices fluctuate between two "extreme" points, import and export parity levels. Illustrated in **Graph 1** is the import parity price, which is considered as the ceiling price. This is when the cost of importing maize is cheaper than locally produced maize, that is millers can buy maize cheaper outside of South Africa. Export parity price, which is considered as the floor price, is when the cost of maize locally can compete internationally. In other words, producers can sell maize outside of South Africa at a higher price than what millers are prepared to pay locally.

If international supply and demand conditions and/or the rand depreciates against the dollar, then import parity prices will move higher as indicated by point A. The actual level of the domestic Safex price between the floor and ceiling price levels will depend on local supply and demand that is relatively stable in the short to medium term. If there are high stock levels locally, then the local price will trend towards the floor price (point B). The net result of an increase in world prices will be an increase in the export parity price. This can result in higher domestic prices of maize if the current and/or anticipated stock levels are low. ■

1 ***Prices of USA yellow maize delivered in Randfontein.***



Source: Grain SA

Soil acidity is no longer INVISIBLE

IN A SERIES OF TWELVE ARTICLES PUBLISHED IN *SA GRAAN/GRAIN* IN 2020, FERTASA, IN COLLABORATION WITH GRAIN SA, LOOKED AT THE CAUSES, PITFALLS AND INFLUENCE OF AND SOLUTIONS FOR SOIL ACIDITY. THIS IS THE THIRD ARTICLE IN THAT SERIES AND DR PIETER HAUMANN, CHIEF EXECUTIVE OFFICER OF FERTASA, EXPLAINS METHODS TO DETERMINE LIME NEEDS.

Dr Pieter Haumann, chief executive officer, Fertasa, in collaboration with Fertasa's soil acidity working group.
The article was first published in SA Graan/Grain, September 2020.

There are several methods to determine the lime need of soils. Some of the methods, like the Natal method, the Eksteen method developed in the Western Cape, and the pH-% clay tables, are given in Fertasa's fertiliser manual.

The incubation method is commonly regarded as probably the most accurate one, particularly if the specific lime to be applied is used in the incubation. However, it is slower to execute1. It is also important for the method used to determine the liming needs to produce repeatable values and specify what soil depth applies.

However, quite a number of studies, and precision sampling in particular, have proven that these methods often do not succeed in indicating the exact amount of lime for achieving the desired soil acidity level with the first attempt in practice. This is in spite of the fact that provision is made for lime reaction efficacy, as is suggested in Fertasa's fertiliser manual.

It is important to establish what the reason for this is. Possible reasons include the following:

1. It might simply be that the correct amount of lime was not applied. It is the responsibility of the spreader to make sure that the application equipment is calibrated correctly and that the spreading pattern is followed correctly to apply the right amount of lime.
2. The right amount if lime was applied, but the depth of incorporation is not the same as that at which the lime need was calculated. The lime is then 'diluted' with more soil.
3. It is possible that the amount of lime to be applied was calculated incorrectly by making a faulty assumption regarding the gross density of the lime and the soil.
4. The lime need was determined according to soil samples that are not representative of the targeted soil profile.
5. Another reason could be that the lime that was used had a lower neutralising value than was indicated by the seller or representative.

Whatever the reason, the consequence is that the soil acidity level is not correct. This can lead to crop losses as a result of under-liming. If this is not checked, soil can acidify without the producer being aware of it. Over-liming can naturally also be a problem.

It is clear that under-liming occurred on the sandy soils of the Free State and North West5. The exact reason for this can be a combination of the above factors.

ACTIONS TO AVOID THIS POTENTIAL SITUATION CAN INVOLVE THE FOLLOWING:

1 Effective soil sampling is the starting point.

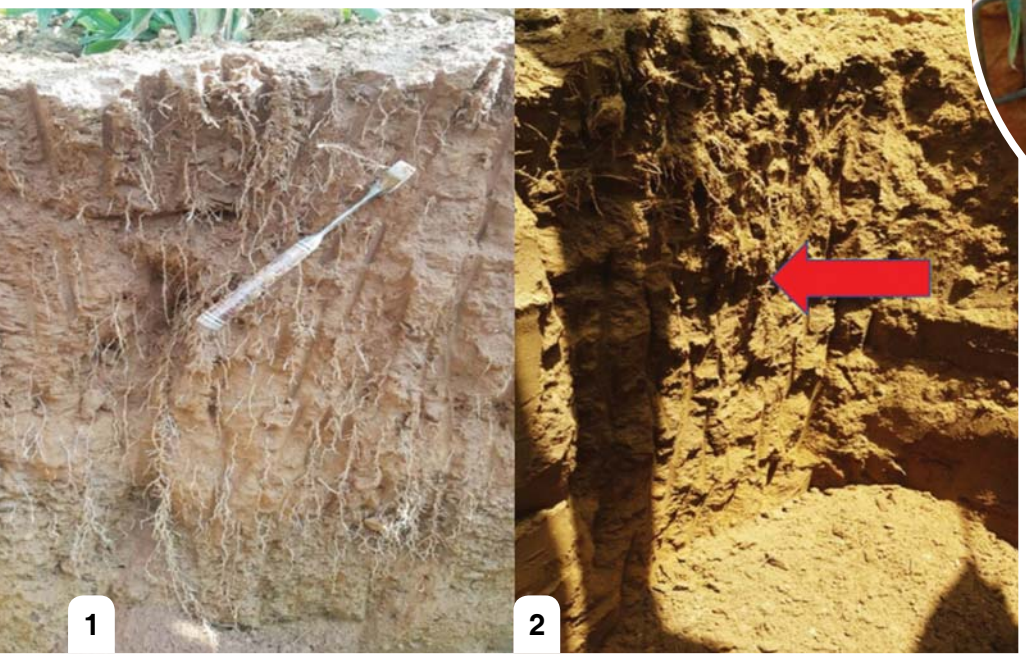
2 This must be followed up by a further investigation by digging profile holes to establish whether root growth has been harmed or hampered in any way. The entire soil profile should be inspected, sampled and analysed (**Photo 1** and **Photo 2**).

3 Some researchers use a steel plate of approximately 60 cm x 10 cm with six square slots of 10 cm x 10 cm x 10 cm, for example. The plate with the containers is then hammered into the side of a profile hole or pressed into the soil with a hydraulic press. In this way, six samples can be taken at a time (**Photo 3** and **Photo 4**).

4 An analysis of these samples provides a lot of insight into the distribution not only of nutrients, but also of the soil acidity, as indicated in **Figure 1**. The acidified zone that is circled is the result of lime fertiliser that was placed deeply beforehand, and lies at an uncomfortable depth (approximately 40 cm). Although this method provides a clear picture of the distribution of soil acidity, the soil samples first have to be analysed for this to be done. They cannot be seen in the veld.

5 Probably the most visually effective method of illustrating the pH level on the farm in the different zones in the soil is used in Australia, namely to spray universal pH indicator liquid directly on the soil (**Photo 5**). The topsoil has a greenish colour, which indicates that the pH would be favourable. However, directly below this layer there is a relatively thick layer that looks yellowish to orange, and that indicates that the pH there would be unfavourable and limit root growth. This cannot be identified if only the topsoil is sampled. Lower down the indication is again that the pH would be favourable. Scan the QR code at the bottom of the article to view the method. Details on the particular universal indicator that is used can be provided on request.

6 The actual pH will naturally have to be verified through an analysis. This practical method can also very clearly reflect the effectiveness of working lime deeply into the soil, as is indicated below (**Photo 6** and **Photo 7**). However, this method cannot be used where the soil has a strong colour.



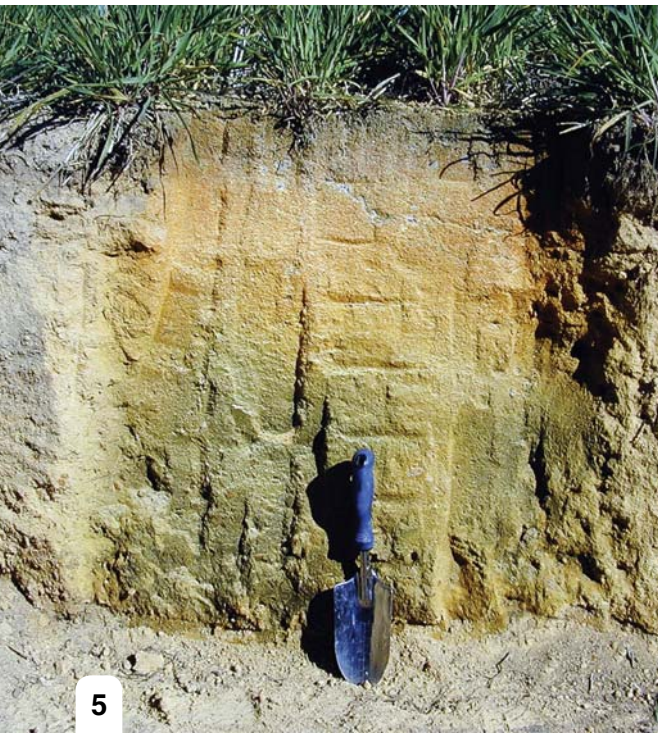
A soil profile investigation to determine root distribution.
Photo: Kobus van Zyl, Omnia

A steel plate that can be used to take soil samples.
Photo: Jan du Toit, Omnia

Scan the QR code to watch the submission made by Kobus van Zyl at Fertasa's 'Soil Acidity, Liming and Ca and Mg Nutrition Workshop' held on 22 May 2019.

4

Grid-pattern soil samples.
Photo: Jan du Toit, Omnia



5

Soil colour that indicates pH after treatment with a universal indicator.
Photo: Chris Gazey, State of Western Australia (Department of Primary Industries and Regional Development, WA)

7

Purple discolouration as a result of liming that was deeply incorporated. This points to mixing with more acid soil, which can be restrictive.
Photo: Chris Gazey, State of Western Australia (Department of Primary Industries and Regional Development, WA)

1 ***The pH(KCl) of soil samples taken in a grid pattern.***

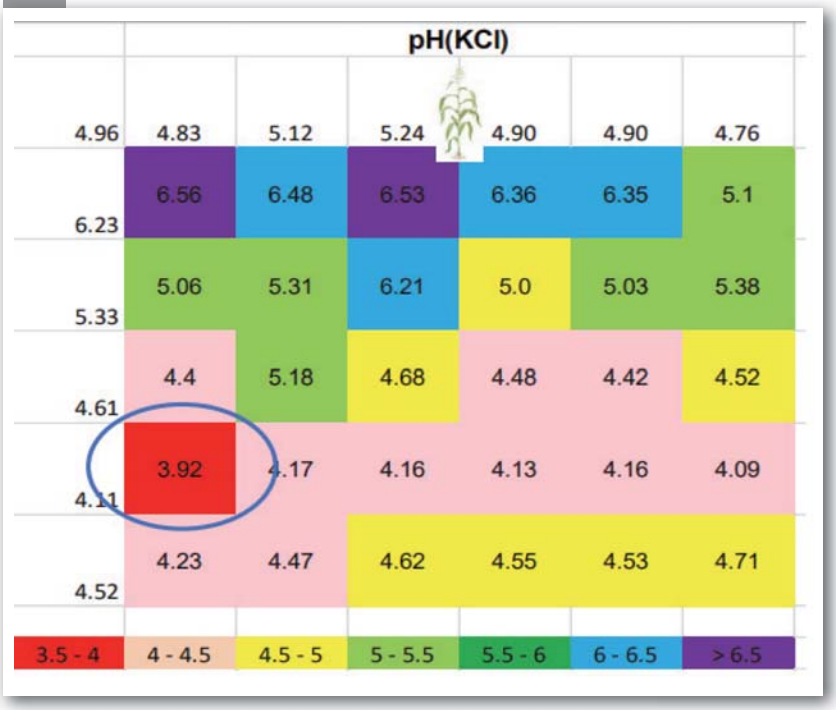


Illustration: Jan du Toit, Omnia

6

The efficacy of deeply surface-applied lime that has been worked into the soil deeply. The purple colour points to lime that has not reacted fully and zones where lime was worked in after application on the surface.
Photo: Chris Gazey, State of Western Australia (Department of Primary Industries and Regional Development, WA)

CONCLUSION

Effective liming of soil can be done only if the soil profile has been thoroughly inspected and specific layers of the soil have been analysed. The inspection methods discussed in this article can definitely contribute to placing the producer in control of liming practices on the farm. ■

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POULTRY MASTER PLAN
set to grow sector

THE POULTRY SECTOR MASTER PLAN HAS BEEN DEVELOPED IN CLOSE PARTNERSHIP BETWEEN GOVERNMENT AND A NUMBER OF STAKEHOLDERS IN THE INDUSTRY, INCLUDING POULTRY PRODUCERS, PROCESSORS, EXPORTERS, IMPORTERS AND ORGANISED LABOUR. IT PROVIDES A FRAMEWORK FOR A DETERMINED EFFORT TO GROW THE OUTPUT (AND JOBS) IN THE INDUSTRY THROUGH DIFFERENT MEASURES THAT WILL BE IMPLEMENTED OVER A NUMBER OF YEARS.

Ikageng Maluleke, Agricultural economist, Grain SA. Send an email to Ikageng@grainsa.co.za. First published in SA Graan/Grain June 2020.

Significantly, it sets out a new, joint vision across the value chain, identifies five pillars that underpin the vision and creates a Poultry Sector Master Plan Council to monitor and drive the implementation of the pillars.

OVERVIEW AND BACKGROUND ANALYSIS

The poultry sector plays a key role in South Africa, providing an important affordable source of protein for millions of households. It adds value to the maize and soybean crops, serving as a key customer for the farming sector. This industry has low barriers to entry and is an important sector for food processing, value adding and job creation throughout the country.

Consumption of chicken meat in South Africa has grown substantially, although more slowly after 2008. Production has stagnated as imports have risen, with imports having increased fourfold over 20 years. This has happened because imported poultry has come into the economy in large quantities, displacing South African meat. Tariffs were increased substantially in 2013, but this has not halted the growth in imports.

Market conditions and trade agreements have brought significant quantities of low-priced chicken products into the local market. These have put pressure on local prices and reduced the market share of South African producers. While consumers have benefitted, there has been an inability to drive growth in the industry, with South African exports marginal at 2% of production, despite excellent access to a variety of markets.

If this trend is not reversed, the South African industry can be expected to stagnate and slowly decline, affecting jobs and livelihoods across the value chain from maize and soybean farming to food processing. It would also threaten food security in the longer term.

Consumption of chicken meat in South Africa has grown substantially, although more slowly after 2008.

URGENT CHALLENGES FACING THE SECTOR

Cost of feed: The cost of feed makes up a large portion of the cost of chicken production. Maize and soybean prices are determined internationally, but tend to rise for South African producers in drought years. Many countries subsidise their primary farming sector, allowing cheaper inputs to their poultry sectors.

Scale of production: The relatively small scale of production in South Africa makes the country vulnerable to exporting countries which exploit economies of scale.

Segmenting production: In recent years, several large poultry-exporting countries have targeted South Africa's market for brown meat.

Inability to export: Despite having tariff-free access to Europe, South Africa has not been able to export poultry to that market, largely because it has not met the sanitary and phytosanitary requirements of the European Union (EU).

Transformation: Although there has been some progress, transformation is not sufficient with regard to black ownership throughout the value chain.

STRATEGIC OBJECTIVES

Poultry farming offers important opportunities for economic development in South Africa including the following:

- Potential expansion of both maize and soybean production.
- Growing small scale poultry farming and local production networks.
- Commercial scale contract farming supplying large integrated producers.
- Growth in industrial-scale food processing, leading to increased employment and exports.
- The supply of affordable protein to South African households.

In line with these opportunities, South Africa needs to grow the poultry sector and protect it against potential loss of capacity. Indeed, there is substantial potential to expand the poultry industry across the value chain, especially if substantial export markets can be developed.

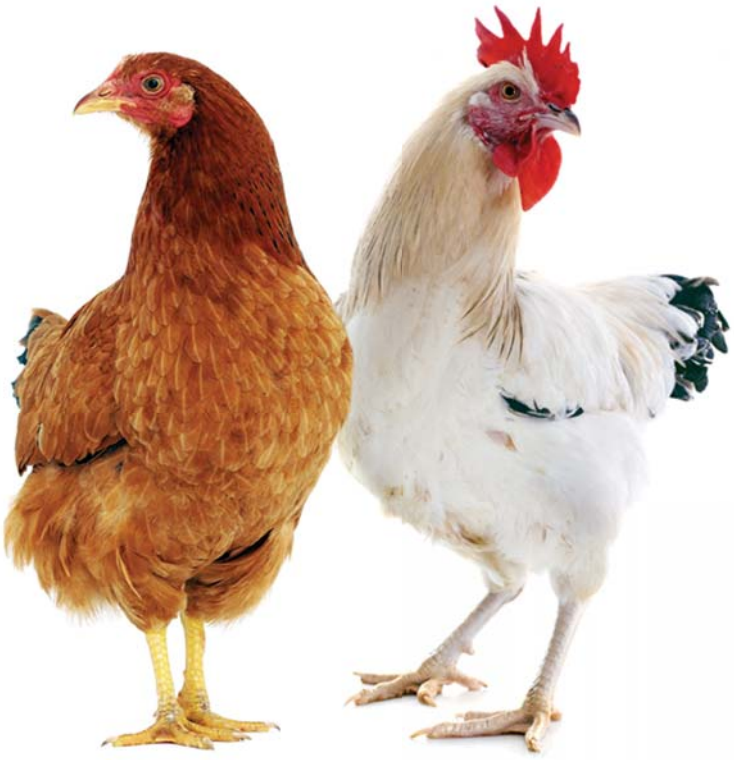
STRATEGIC OUTLOOK ON TRADE

With poultry increasingly traded globally, South Africa forms part of a large group of countries that produces at the scale of the domestic market, while a small number of countries produce at greater scale and maximise exports. Given the fact that South Africa has a large market for poultry and an open economy, it is likely to continue to receive attention from exporters.

Imports have an important role to play in balancing the poultry sector:

- Imports can help to keep local prices in check.
- There are certain poultry products that do not get produced in South Africa (such as mechanically deboned meat) that need to be imported.

Poultry master plan...



- There are certain cuts that are produced locally, but where demand outstrips local supply – especially at certain times of the year.

At the same time, South Africa needs to expand its poultry sector and avoid losing local capacity. The aim is therefore to contain imports. In addition, there should be decisive action against unfair forms of trade and any attempts to dump poultry products in the market.

The strategic objectives aim to do the following:

- Continue to increase the consumption of chicken meat (as opposed to processed chicken products) in absolute terms, and on a per capita basis.
- Ensure that locally produced products make up an increasingly larger proportion of consumption over time.
- Export cooked and raw products to the SADC (Southern African Development Community) and other ACFTA (African Continental Free Trade Area) countries, the EU and the Middle East. The aim is to export at least 3% to 5% of production by 2023, 7% to 10% by 2028 and a growing proportion thereafter.
- Expand the industry by increasing capacity at all stages of the value chain – production of feed, farming of chickens and processing of poultry products – thereby increasing fixed investment, employment and the value of output. The output of poultry products should increase by around 10% within three years.
- Increase the level of black participation and particularly ownership across the value chain and increase employment and worker share ownership in the sector.

It involves a strategic partnership between the South African Poultry Association (SAPA) and Grain SA.

REQUIRED ACTIONS

- It will be critical to monitor the progress of this plan. This will be done through the Poultry Sector Master Plan Council, which will be led by the Ministers of Trade, Industry and Competition as well as Agriculture, Land Reform and Rural Development.
- Develop a concrete action plan to underpin each pillar and commitment in the master plan.
- Monitor implementation of the key actions agreed on and identify additional measures required to realise the agreed vision.
- Ensure expeditious implementation of the necessary sanitary and phytosanitary (SPS) measures required to expand into export markets.
- Analyse the trade in poultry, both imports and exports, to determine the impact of the master plan and to advise on measures to realise the vision and commitments in the plan.
- Identify and set out targets for advancement of ownership by black South Africans and workers across the poultry value chain, as well as inhibitors to achieve these.
- Consider practices and standards in the industry and their impact on development of smaller and/or black-owned poultry enterprises, with a view to addressing unnecessary inhibitors.
- Set up a forum of engagement with the finance sector.

THE GRAIN INDUSTRY

Out of the five pillars identified in the master plan, pillar one relates to the grain sector and how grain producers can be involved in uplifting the poultry industry. This relates to the expansion of production in maize and soybeans. It involves a strategic partnership between the South African Poultry Association (SAPA) and Grain SA to increase the supply of maize and soybeans to the poultry sector and to reduce prices.

Requirements: Expand the consumption of poultry feed by 300 000 tons per annum. Explore mechanisms to use this higher level of demand to negotiate better prices.

Target commitments: Additional 300 000 ton consumption of soybeans/maize, supporting approximately 300 new jobs.

Oversight/responsibility: The Industrial Development Corporation (IDC) is to partner with Grain SA and SAPA to explore possible arrangements to increase supply in targeted areas, and to reduce costs. The council should identify additional steps to achieve this goal. ■

Please note that this article was published in June 2020. A follow-up article about the implementation of this plan will be published in the May 2021 issue of *Pula Imvula*.

TELA to control stem borers in SA

BT MAIZE IS GENETICALLY MODIFIED TO EXPRESS INSECTICIDAL PROTEINS AND HAVE BEEN PLANTED IN SOUTH AFRICA SINCE 1998. IN THE 2017/2018 SEASON, 1,62 MILLION HECTARES OF BT MAIZE WERE PLANTED LOCALLY, WHICH IS 71% OF THE TOTAL MAIZE AREA.

Elrine Strydom, ARC-Grain Crops, Potchefstroom and Dr Annemie Erasmus, ARC-Grain Crops, Potchefstroom. First published in SA Graan/Grain September 2020.

In South Africa the main economically important maize stem borers include *Busseola fusca* (Africa maize stem borer) (**Photo 1** and **2**), *Chilo partellus* (Chilo borer) and *Sesamia calamistis* (pink stem borer). An average annual yield loss of 10% is caused by these stem borers. In extremely severe cases, 100% yield losses were recorded in individual farming systems in spite of chemical control measures. All three of these maize stem borers are successfully controlled by Bt maize. Bt transgenic maize can therefore alleviate the stem borer infestation problems to a large extent. However, research indicates that the Africa maize stem borer (*B. fusca*) is difficult to control, since this species has evolved resistance to the first generation Bt maize planted in South Africa. Resistance development in this stem borer species is a huge concern and continuous monitoring is necessary.

During the 2004/2005 season, Bt hybrids were severely damaged in some irrigation areas. In 2007, the first confirmed case of field resistance was reported in the first generation single-gene Bt event. The next step was gene stacking, to create a Bt event that express more than one gene to control the resistant Africa maize stem borer. The development of the stacked-gene Bt maize was highly successful in controlling the Africa maize stem borer, including those resistant to the single-gene Bt event.

In 2016, *Spodoptera frugiperda* (fall armyworm) was reported in Africa for the first time. The following year, a positive identification was made in South Africa. This invasive species has a host range of more than 80 plant species and can cause significant yield losses when not managed timeously. Fall armyworm produces several generations per year that are able to reinvade cropping systems and cause extensive damage. The identification of this pest in Southern Africa prompted urgent research to determine whether *S. frugiperda* was susceptible to Bt maize commercialised in South Africa. Although research is still being conducted, preliminary observations indicate that Bt maize show potential to control fall armyworm under field conditions.

TELA CULTIVARS

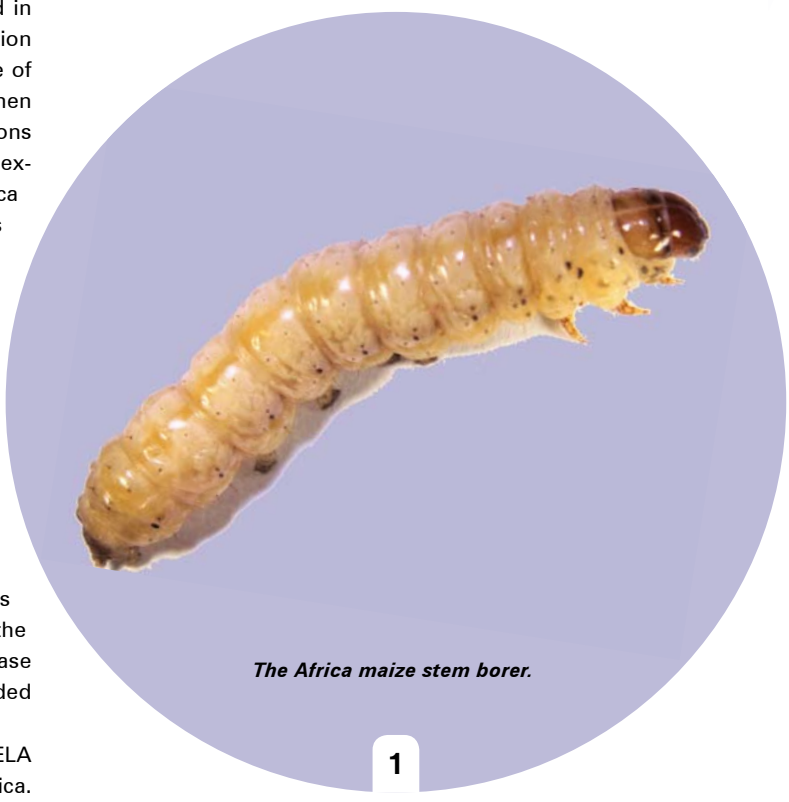
Water Efficient Maize for Africa (WEMA) is a project that aims to produce drought-tolerant (DT) and insect-protected maize varieties for small-scale farmers in sub-Saharan Africa. WEMA field trials were approved and launched with hybrids containing the single Bt gene in all WEMA countries except for South Africa. In South Africa, WEMA implements the stacked Bt event, since this Bt event can control *B. fusca* larvae that developed resistance to the single-gene Bt event. In February 2017, WEMA launched the release of these stacked Bt maize varieties in South Africa under the branded name TELA.

Research was consequently conducted to determine whether TELA will be successful in the control of *B. fusca* on maize in South Africa. During the 2017/2018 and 2018/2019 growing season, populations of the Africa maize stem borer were sampled from maize fields across the maize production area of South Africa.

Larval development was evaluated under laboratory conditions on TELA cultivars. Three TELA cultivars that contained the stacked Bt gene (WE6206B, WE6208B and WE6210B) and a near isohybrid (WE3128) (non-Bt) were used for the plant-feeding bioassays. This study indicated that Africa maize stem borer larvae were not able to survive on any of the TELA cultivars after 14 days, while on the non-Bt isohybrid, larval survival ranged from 30% to 80% (**Graph 1a** - **c**). During the 2019/2020 season, stem borer larvae were screened on the single-gene Bt event and the near isohybrid to compare larval survival to that on the stacked Bt event (Graph 1a). The latter research confirmed that the Africa maize stem borer is still highly resistant to the single-gene Bt event, since no significant differences in larval survival between the non-Bt isohybrid and the single-gene Bt event treatment existed.

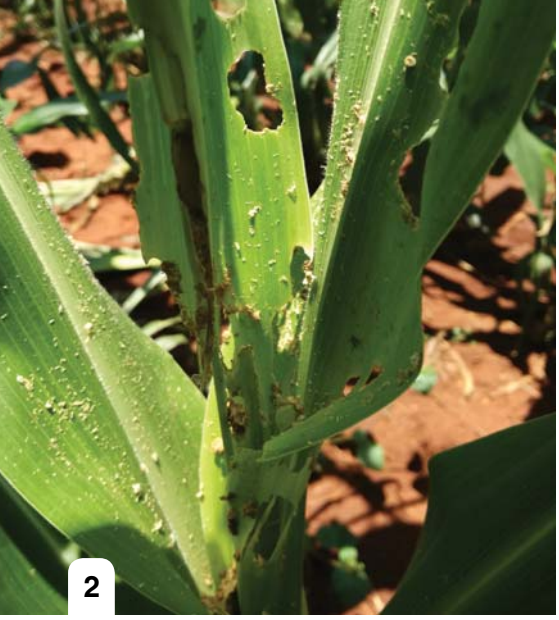
Our research indicated that the TELA cultivars that contain the stacked Bt event show potential to successfully control the Africa maize stem borer.

It is still important, however, to implement the high-dose/refuge strategy to ensure delayed resistance development to prolong the



The Africa maize stem borer.

1



2

The extensive damage caused by this species. 'Dead heart' damage occurs when larvae feed on the growing point into the stem.

3

A field monitoring and scouting exercise during a WEMA training session.

TELA to control stem borers...

benefits of this technology. The high-dose/refuge strategy is based on a combination of Bt maize producing high doses of toxin within the presence of a nearby non-Bt maize refuge. The purpose of the high-dose Bt maize is to kill off as many stem borer larvae as possible, while that of the refuge is to produce stem borer individuals that survive on the non-Bt maize. The ultimate goal of this strategy is to ensure that the rare, resistant stem borer (RR) that does survive on the Bt maize is not able to produce completely resistant offspring by mating with another resistant stem borer. Susceptible stem borers (SS) from the non-Bt refuge are expected to mate with resistant individuals that survive on Bt maize to produce offspring that are expected to have low to moderate levels of resistance that are unable to survive on maize with high Bt expression.

ARC TRAINING

TELA insect resistance management (IRM) training for producers and extension officers is essential to ensure the sustainable use of this Bt technology. The ARC-Grain Crops have had three successful training sessions over the past three years. The training focussed on the international IRM concept used to delay development of resistance to Bt maize. During this training, the importance of scouting and monitoring maize fields (**Photo 3**), identification of main maize insect pests, Bt technology concepts and IRM are highlighted. ■

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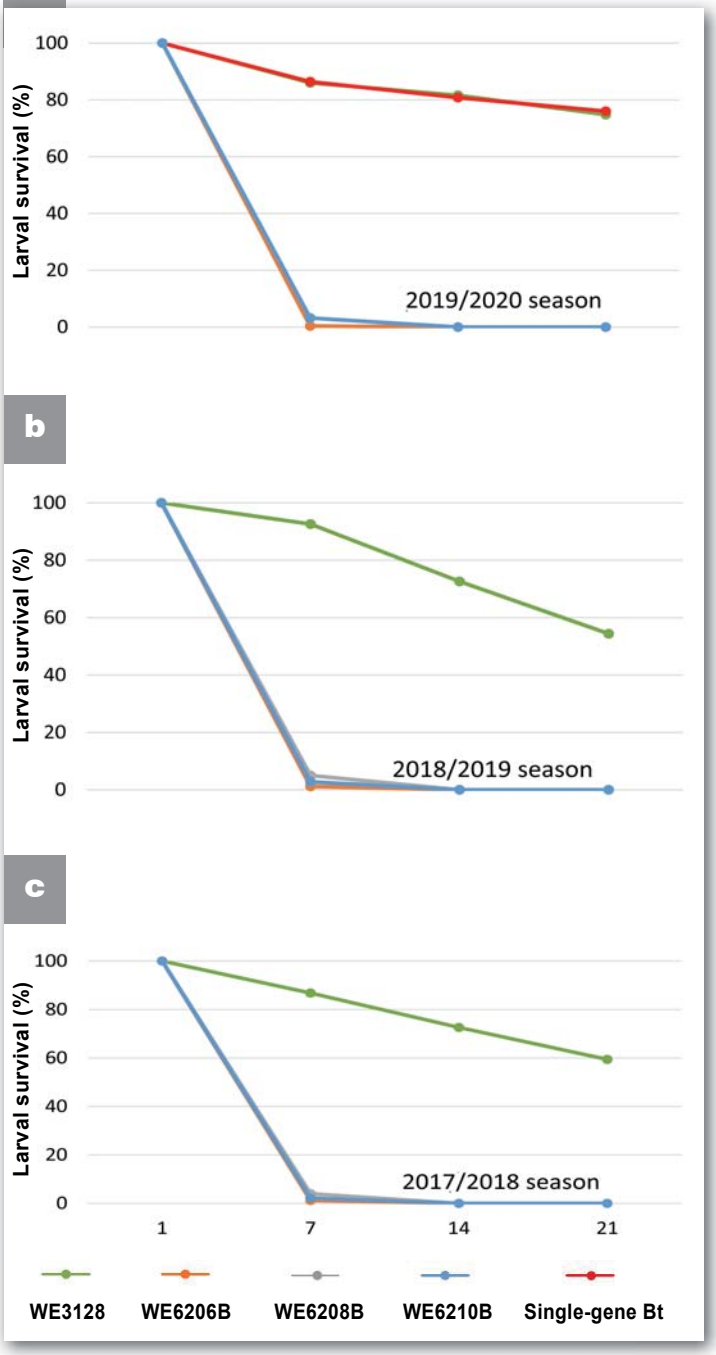
Larval survival of* B. fusca *larvae feeding on the different TELA cultivars compared to the isohybrid WE3128 (non-Bt) and the single-gene Bt event.



THE CORNER POST

NTSIENI WILSON MUFAMADI

'God will notice hard work'

WORK HARD, BECAUSE WHEN YOU WORK HARD, GOD WILL NOTICE IT AND HE WILL TAKE CARE OF THE REST.' THIS IS THE FIRM BELIEF OF NTSIENI WILSON MUFAMADI FROM THE THOHOYANDOU REGION.

Karina Muller,
Pula Imvula contributor.

Tshifango Mufamadi (49) spoke to *Pula Imvula* on behalf of Wilson, who is his father. Tshifango, his older brother, Iafheli (54), and twin brothers, Azwidowi and Ndivhuwo (45), all assist in this family farming enterprise. All the sons, except Iafheli, are working in professional capacities and tend to the farming only on a part-time basis.

A GROW-FOR-GOLD ACHIEVER

Wilson ended in third place in the Small Scale Maize Farmer Category of Grain SA's new Grow for Gold National Yield Competition. In the 2019/2020 harvest year, he yielded a gratifying 5 t/ha with Bayer DKC 78-45 BR.

The Grain SA Grow for Gold Competition was spawned into life last year and provides producers with the opportunity to learn from one another about what exactly can be achieved. The format of this competition allows individual growers to enter and furthermore offers seed companies the option to enter three of their best yields in each category. A standard protocol ensures that all participating producers are assessed at the same level and criteria.

The prize-giving ceremony was held in October last year in Mulderdrift. Wilson was entered into the competition by his Bayer representative, Rodney Maanda Ndou.

> *My father just loves the community and he gets others involved in projects where the community is encouraged to use their communal buying power*

ALWAYS KEEN TO FARM

Wilson has always been extremely enthusiastic towards farming, but it was only after going on pension that farming truly became a business for him.

As a child, Tshifango recalls them constantly having some subsistence crops in their backyard. During the times when Wilson's work in the construction industry took him to Johannesburg, his four sons had to keep the crops going. 'This is just the way my father raised us,' Tshifango says.

The 72-year-old Wilson, a widower, is strong, fit and healthy and has a zest for life that many younger people would envy.

The great Nelson Mandela once said: 'You are responsible for your own future, and with hard work you can accomplish anything and make your dreams come true.' Wilson has never given up on his dream to farm and even having to wait until his retirement, he pursued this dream.

After retiring from his last position at a transport company, where he arranged bus trips from Gauteng to Limpopo, Wilson acquired a 4,5 ha piece of land, situated between Thohoyandou and Makhado (Louis Trichardt) in the Vhembe District of Limpopo. He invested a great portion of his pension money to have the land excavated and rocky patches removed.

On this piece of land, Wilson and his sons farm mainly with maize. They also plant fast crops, such as cabbage or tomatoes, during the off-season to remain sustainable.

The Mufamadi family has been using Bayer's seeds for the past three to five years, and has always been satisfied with the yields. 'We currently have Bayer DKC 78-45 BR in the soil. With the good rains we have received during the planting season, the 2020/2021 harvest year will even be better,' beams Tshifango. 'I am not sure if we will be allowed to enter the competition again…'

SHARING KNOWLEDGE

Wilson has been involved in various study groups and information sessions established by the Department of Agriculture, Land Reform and Rural Development. He never hesitates to share his well-earned knowledge with upcoming farmers.

'My father just loves the community and he gets others involved in projects where the community is encouraged to use their communal buying power to acquire fertiliser.'

AUTOMATION NEEDED

At this stage most of the work on the Mufamadi farm is done manually. Harvesting is done by casual labourers. They own an old tractor – that constantly needs repairing – and some implements, but they truly need some capital to go forward, automate and in the process decrease unit costs.

'Despite capital constraints and the harsh weather conditions of the area, my father still wants to grow the enterprise and he will persevere.

'He wants to be happy forever, keep abreast with new technology, be a leader in his area of expertise and pass his knowledge on to the future generations of farmers to keep the flames burning.' ■

A programme that is changing lives

Telling OUR OWN STORY firsthand

WHEN KEYNOTE SPEAKER, CHIEF JUSTICE MOGOENG MOGOENG, ADDRESSED THE GRAIN SA CONGRESS OF 2020, HE SAID HE'D LONG BEEN AWARE OF GRAIN SA'S FARMER DEVELOPMENT PROGRAMME AND THE CRITICAL ROLE IT PLAYS. HE RESPECTFULLY RECOGNISED GRAIN SA'S WILLINGNESS TO REACH OUT A HAND OF MENTORSHIP TO FARMERS AND THE GOOD WORK THAT IS BEING DONE.

He did however give this warning: 'Don't let other, less representative, less informed voices speak up on your behalf!' and also said: 'Until we have an avenue of communication there will always be fake news out there!'.

The Chief Justice encouraged aggressive communication that reaches mainstream media with news of the good work being done. He said it is only when people know who you are and what you do, that they will listen more sympathetically.

We believe we have a good story to tell. Furthermore, Vision 2030 of the National Development Plan calls for an inclusive rural economy in which rural communities should have greater opportunities to participate fully in the economic, social and political life of the country. It holds that rural economies will be supported by agriculture and there will be better integration of rural areas through land reform, job creation and poverty alleviation. Clearly transformation in the grain sector remains at the centre of national government policy therefore a multi-pronged approach towards ensuring the commercial viability and sustainability of emerging commercial farmers is a priority for all stakeholders in the agricultural sector. Grain SA's proactive participation in the transformation of rural communities through contributing to knowledge and skills transfer demonstrates our commitment to farmer development with a track record that spans over more than 20 years now.

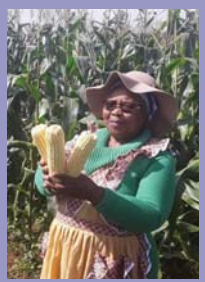
Chief Justice Mogoeng Mogoeng.

> *Our daily deeds as ordinary South Africans must produce an actual South African reality that will reinforce humanity's belief in justice, strengthen its confidence in the nobility of the human soul, and sustain all our hopes for a glorious life for all.*
>
> ~ NELSON MANDELA

Together we are growing food, growing people and growing prosperity. Ever since the establishment of Grain SA in June 1999, there have been numerous collaborations with other stakeholders in the sector. It was widely perceived that the Grain SA Farmer Development Programme was making a mark and effectively getting a very important job done in terms of farmer development. The different grain trusts together with a number of agri-businesses, have played a meaningful role in this process, by channelling energy and funding to the development of farmers through our flagship Farmer Development programme. These partnerships have made a significant contribution towards the fast-track of knowledge transfer and skills development in the agricultural sector.

AT GRASS ROOTS

Mrs Mkathu from Mnceba.



Mrs Siswana from Mhluzini.

Mr Magidela from Khnayayo.

Mirriam, the chairperson of Zaaiplaas study group.

Mr Magagula from Malelane.

Mr Moyo, who was the Subsistence Farmer of the Year in 2015 and is still the maize king of Ngqayi.

Let's take a look at activities in the Lichtenburg (North West) region

Mr R. Pholo is a long standing member of Grain SA and a farmer representative on Grain SA's board. He farms near Mooifontein in North West and is mentored by the Lichtenburg based Grain SA team member, Du Toit van der Westhuizen. Here they are busy calibrating the planter in readiness for planting.

This field is a good example of well prepared soils. The maize has already been planted in Mr Pholo's lands.

Organ Serema from is chairperson of the the Itsoseng Study Group. Here he is busy occulating soya seed.

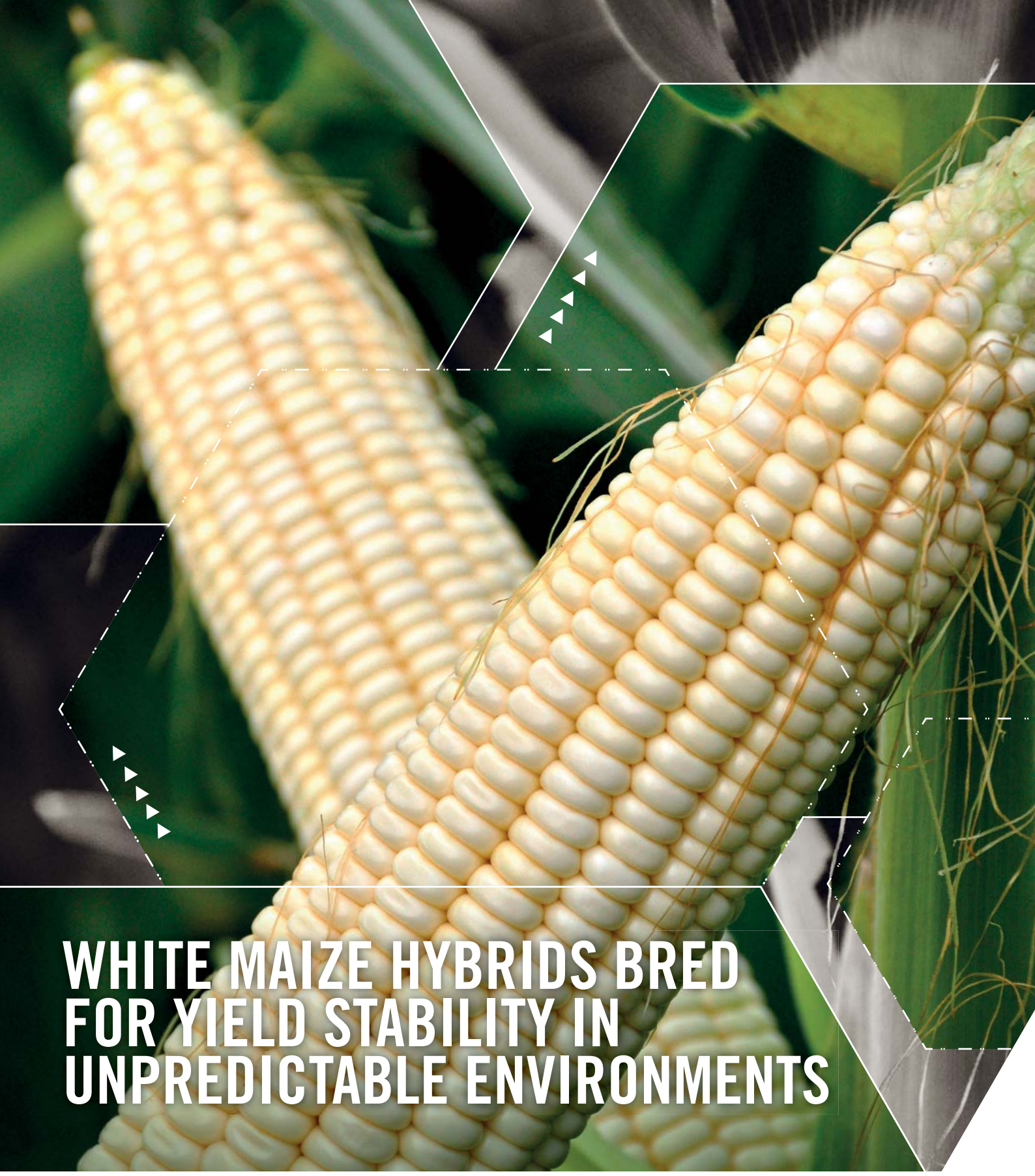
It is the first time that Organ has planted soya with the help of SACTA and it looks as if the results are going to be good!

The IMPORTANCE of collaboration

THE seed company, Pioneer, has long been committed to farmer development and over the years has collaborated with Grain SA in a number of diverse projects. One of the ways they have offered support to farmers in the 2020/ 2021 season has been through donating sunflower seed to developing farmers. This is sincerely appreciated by all the recipients.

Farmer Salphanius Motswenyane is a long time member of the Grain SA Farmer Development programme and a member of the Putfontein Study Group. His farming operations fall into the Potential Commercial Farmer category. Salphanius was the recipient of ten bags of sunflower seed from Pioneer.

Another Putfontein Study Group member, farmer Mothibedi Monkwe, received a grant of Pioneer sunflower seed.



WHITE MAIZE HYBRIDS BRED FOR YIELD STABILITY IN UNPREDICTABLE ENVIRONMENTS

Pannar's white maize package of leading, stable performers demonstrates strong seedling vigour and early plant establishment. These hybrids are widely adapted, agronomically strong and renowned for grain and milling quality. The solid performance of our white hybrids will go a long way towards reducing variability in productivity and profitability, for effective risk management. Add to this the professional advice provided by our sales and agronomy teams and you can plant with confidence, knowing that you will reap the maximum return on every bag.

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