PULA IMVULA

GRAIN SA
GRAAN SA

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>> GROWING FOOD >> GROWING PEOPLE >> GROWING PROSPERITY >>

PANNAR®

IMVULA

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NKGONO JANE SAYS...

IN THIS ISSUE...

Harvesting will be completed this month and I believe that many of you will be happy about the yields that you have achieved. We are sad for those who worked hard and have not managed to get a crop this year due to the drought. We hope that you will be able to plant again in this coming season.

Not all people in our country have access to the same amount of land – some people have access to 1 hectare or 2 hectares and others have access to hundreds of hectares. That is the reality of our country and other countries too. However, it is possible for each of use to make good use of the land that we have available – it does not matter how much land you have, what matters is how you are using it.

This year, through our subsistence farmer programme which we implemented with the help of the ARC, Monsanto and Omnia, we were able to assist 855 farmers each to plant their 1 hectare using the most modern practices and inputs. Every farmer in the project achieved more than double the previous yields. It may not be a lot to say that the farmer produced 4 tons of maize. In terms of the national production figures, it is not a lot. But if that farmer has only ever had 2 tons in the past and now has 4 tons, this is a huge improvement. This means that the farmer has household food security, can feed his/her livestock, and can also supply the neighbours or the local market. This is progress and this is also commercial farming.

I would like to appeal to every Pula Imvula reader – use the land that you have available this year to be best of your ability – take your soil samples, fertilise correctly, use the best seed that you can afford and remember to control the weeds as they are your enemy. If we all do the best that we can with what we have, our entire nation will benefit.

Thumbs up for NAMPO 2015

A delegation of New Era farmers from the Western Cape. From left: Jane McPherson (Grain SA), Jannie Jonas (Robertson), Roderic Duminy (Genadendal), Augustin Maarman (Goedverwacht), Ulrich Engelbrecht (Goedverwacht), Ewan Mathews (Saaron), Whernit Dirks (Piketberg), Samantha Smiles (Elim), Henry March (Hopefield), Belinda Collins (Goedverwaght), Urban Simons (Bredasdorp), Liana Stroebel (Grain SA), Byno Huffel (Ceres) and Willie Job (Robertson).

A combination of the most recent farming technology, product variety, innovation, discussions, networking opportunities, farming hospitality and ideal weather conditions ensured that NAMPO 2015, which took place near Bothaville in the Free State last week, upheld its reputation as South Africa's agricultural showcase.

Grain SA, organiser of the NAMPO Harvest Day, is satisfied with the outcome of this 49th Harvest Day, and the feedback received from exhibitors point to good interest from this year's 69 584 visitors.

New additions like the seed plots, tent hotel and the tractor-and-trailer transport system were effective and made a positive contribution. In spite of the teething problems, the electronic entry ticket system worked well. This year the NAMPO app was introduced to exhibitors and visitors and it will now be developed and marketed further. Grain SA was also active on the social media networks during the Harvest Day week and this medium was utilised to publish real-time photos and information and to answer general enquiries.

"You would expect the current drought to determine the mood of the farmers, yet we received more dire questions on land reform than on the drought," said Jannie de Villiers, Chief Executive Officer of Grain SA.

The minister of Agriculture, Forestry and Fisheries, Senzeni Zokwana, attended NAMPO 2015 to participate in a Nation in Conversation dialogue on labour relations. Land reform, financing models, the availability of natural resources and the value of technological integration were the other Nation in Conversation topics in which opinion formers participated to shape the image of agriculture that they could take home.

Jannie de Villiers, CEO:Grain SA and Senzeni Zokwana, minister of Agriculture, Forestry and Fisheries share a NAMPO 2015 moment.

Approximately 69 584 people attended NAMPO this year.

Happy visitors at the Grain SA exhibition area.

Thumbs up for NAMPO 2015

"Minister Zokwana's presence was a compliment to Grain SA and to agriculture at large. The grain industry appreciates his ongoing efforts to make contact with commercial agriculture. He is probably the first minister of agriculture since 1994 to visit the Harvest Day. This emphasises that the NAMPO Harvest Day is an authoritative platform for dialogue, discussion and networking," De Villiers added.

Grain SA also held discussions with the heads of commercial banks, the Land Bank and insurers on the rescheduling of grain producers' production debts, as well as input financing for new-era commercial producers.

The organisation treats its members to show its appreciation for their sustained support. The members' hall – which was upgraded last year – as well as free entry and special parking, was once again utilised effectively by members of Grain SA.

"The infrastructure at NAMPO Park was established and developed over the years to accommodate a large number of visitors with ease and to offer exhibition facilities of a high standard to exhibitors. Even the landing strip could handle a total of 365 airplanes and helicopters over the four days of NAMPO with ease. Grain SA is geared to proudly present the 50th NAMPO Harvest Day next year," said Cobus van Coller, chairman of the NAMPO Harvest Day.

This agricultural trade show always takes place in the 20th week of the year, which means that it will be presented between 17 and 20 May 2016.

Press release issued by Grain SA. For more information, send an email to johan@grainsa.co.za.

Visitors taking some time out to page through the Pula Imvula.

We were also proud to receive the Prime Minister of Lesotho, Pakalitha Mosisili.

New Era farmers enquiring about a harvester.

These young farmers show interest in one of the tractors used for training in our Farmer Development Programme.

Application of lime – food for thought

The application of **lime** is often the most neglected soil maintenance practice in farming. We tend to overlook this crucial aspect of maximising the yield potential of our soil. But, it is not only about short term yields and profit. **Soil is the only consistent, natural resource available to a farmer and it must be preserved.** It can never be replaced. When abused, it can be very costly to repair. In severe cases, it may be too late and could lead to irreversible conditions – soil erosion and desertification.

A conventional lime spreader – remember to always take good care of your equipment.

The purpose of this article is to provide food for thought, in lay-man's terms. The finer technical details and scientific formulas can be identified in consultation with the experts – soil analysis and fertiliser recommendations. Consult with them!

The level of acidity/alkalinity in the soil is reflected by the scientific term ph. We often hear the word when we discuss soil samples etc. A high ph has less acid than a low ph (the higher the better). A ph of 5,5 or higher for topsoil, and 4,8 for the subsoil, is desirable for most crops. (Soil with a ph of 4 has 100 times more acid than soil with a ph of 6).

At some stage in our lives, we have all suffered from heart-burn or indigestion. This is usually as a result of excessive stomach acids, created by the type, or combination of food that we have eaten. When this happens, we feel uncomfortable. We lose our appetite and our energy. We are unable to function effectively. So what do we do? We drink an antacid or suck a Rennie, to neutralise the acid. Only when the discomfort subsides, are we able to function at our best again.

Soil is almost like our stomachs – it uses water to break down (digest), all the organic and other fertiliser material available. This enables the plant to absorb the nutrients. If there is too much acid in the soil the plant is unable or unwilling, to extract the nutrients (phosphates).

Over time, the application of chemical fertilisers, together with the extraction of various soil nutrients by the plant, causes the acidity to rise. Technical example: Nitrogen is converted to nitrates and hydrogen ions in the soil. When the plant roots are unable to extract the nitrates as a result of acidity, to keep it in the root zone, the nitrates eventually leach away. This leaves only the hydrogen ions – further increasing acidity.

Tillage practices also play a role in ph levels. When the soil is turned, as in ploughing, the natural processes of the organic elements in the soil are disturbed. This affects natural decomposition, which in turn can have an effect on the acidity. Other factors that could have an effect on ph are: high rainfall, high yields, soil types, insufficient/excessive or incorrect fertiliser, and the type of crop planted.

So, just like our stomachs, when necessary, we need to remedy the situation and apply an antacid to the soil – lime.

There are two different types of lime – **agricultural lime**, which is more generally used, and **dolomitic lime** applied to soil with a magnesium deficiency. The experts doing the soil analysis will be able to advise you of what and how much to use on each land. This can vary from 500 kg/ha to 2,5 tons/ha or more.

Lime reacts much slower than fertiliser and should be applied before tillage – worked into the ground. Lime can be applied any time of the year but preferably it should happen long before planting where the lime can be given a chance to react in the soil. However, the optimum benefits are long term and usually only seen in the following seasons.

The price of lime, in itself is not that expensive, however transport costs from the mines to the farm are very high. Transport costs vary depending on the farm's proximity to the mines. Many farmers do not have their own spreaders and have to resort to contractors. Many farmers are inclined to see these expenses, and the additional work, as unnecessary and problematic.

However, the correct soil ph, MUST be the point of departure for any farming operation – it is the FOUNDATION on which we build crops. **A weak foundation is a recipe for long term disaster.** Without a solid foundation we are throwing our money away – most, if not all of the fertiliser applied, becomes ineffective and wasted.

Without water a plant can't survive, but nothing survives on water alone – with an acidic foundation the plant is unable to absorb the nutrients, no matter how much water!

The only way to determine the acidity and the remedy required is with soil analysis. If the lime requirement is excessive for a single application, it may be necessary to apply lime over a two year period. Once the required ph is achieved it is essential to ensure that optimum levels are maintained, allowing the farmer to test the soil every alternate year, or after an unusual yield or rainfall season.

Remember, the application of lime is not a quick fix. The benefits are only evident over a long term, provided that the ph levels are maintained at an optimum level each season.

In closing – here is some food for thought – treat the soil with the same respect as you would your own stomach. Be careful that you put the correct food into it, and please, make sure it NEVER suffers from heartburn!

Article submitted by Raymond Boardman, Farmer, Consultant and Mentor from Ventersdorp, North West Province. For more information, send an email to rhboardman@gmail.com.

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Apply knowledge to produce high quality products

The business of farming is to produce products that people need at a profit by combining and converting the four production factors, namely land, capital, labour and management into useful products such as food and/or fibre.

Remember throughout our series of articles on management one of the principles we have emphasised is that everything and everybody involved with the farming, be it the owner/manager or employees, does or do not do when necessary, affects the profit/loss of the business.

Quality is defined as the degree of excellence of something as measured against other similar things. In terms of agricultural products quality refers basically to the external appearance of a product – does it look nice, good, fresh, healthy and attractive? Internally, is it healthy, have a good nutritional value and does it taste good? At the moment products are mainly judged on their appearance – outside. However, due to the developing of modern technology it is becoming more and more possible to also measure the internal qualities of products such as sweetness, tenderness, sugar contents, and so forth.

Quality of products are affected by a number factors such as climate, the soil, method of production, harvesting, packing and transport. The effects of climate is the most difficult to manage. However, the production process is manageable. For example: How effective is your weed control? Control of pests and diseases? Harvesting process? Marketing process? In other words is everything that needs to be done carried out timeously and correctly to produce and deliver a quality product?

Naturally the question will be asked – "How do I produce quality products?" The answer begins with knowledge.

First of all you must know your farm and resources. What types of soils are there on my farm? What is the nutritional status of the soils? How much and what water is available? Is the water suitable for crop production? Or is my farm basically a dry land farm? What is the rainfall and distribution of the rainfall on average over the long term? The physical resources are a major determinant of the product/s to be produced on a farm and also of the quality thereof.

Secondly, you must acquire as much as possible knowledge regarding the product/s you produce – from preparing the seedbed up to harvesting, marketing and value-adding possibilities. Visit farmer's days, attend courses, get help from a mentor, and so forth. Please remember this is a lifelong process. We are in an ever-changing, progressing and vibrant industry and you must keep abreast of the latest developments – **a farmer is a student for life.**

> *"Quality is defined as the degree of excellence of something as measured against other similar things.*

You also need to acquire the necessary skills to produce the product/s. Skills to prepare the seedbed properly, set the planter, to use and adjust equipment, to harvest the product, to pack and transport and deliver the product.

You will also need proper equipment which can be a major problem because of the capital that might be involved. But remember: ***"'n Boer maak 'n plan."***

With that said, everything however adds up to the fact that you, as a farmer, must do what you must do at the right time and in the right way. If you neglect any aspect it will affect the quality of the product/s you produce and therefore the profit/loss of your business.

There are a couple of ways to market your product/s – farm-gate sales, local area sales, factory contracts, fresh produce markets, direct sales (such as delivering to a supermarket), value-adding and export. The market requires quality products and **higher quality products achieve better prices.**

The market is a tough guy. He does not ask where the products come from. He wants quality products to supply to his clients/consumers. If you supply him with quality products he will respond with better prices. Keep in mind that this market guy is getting tougher by the day because of pressure from consumers regarding environmentally friendly and healthier production processes. As a result, traceability is a reality – where does the product come from and how is it produced – is it full of chemicals? Already some products can be traced back to the farmer and delivering poor products will be penalised.

A last thought, it is of the utmost importance to visit the market place regularly to take note of what is happening (do they handle your product with care?), observe what other farmers are doing, learn from the market and go back to apply these lessons. There is no better place to learn about transport, market access, grading, packaging, sizing, presentation and above all quality.

In conclusion, there is no better inspector of quality than the buyer in the marketplace. **To be successful you have to produce quality products.**

Article submitted by Marius Greyling, Pula Imvula contributor. For more information, send an email to mariusg@mcgacc.co.za.

CANOLA
– factors to consider from June - September

20% of plants could be infected by cabbage aphid.

Diamond Back Moth damage to pods.

Canola is a very important crop and there are a lot of management factors to be taken into account to make a success of canola.

There are some pests and diseases that are important and it must be controlled, because these diseases and pests have a big influence on the yield of canola.

Diseases

Blackleg (Leptosphaeria spp. /Phoma lingam)

This disease is very important, because it has a big influence on yield. The right management practices must be applied to minimise the negative effect of this disease.

There are currently two fungicides registered on canola for the control of Blackleg. These fungicides must be sprayed between the 4 - 6 leaf stages of the plant.

Stem rot (Sclerotinia sclerotiorum)

This disease becomes more important because the hectares under canola are much more than a couple of years ago.

Sclerotinia has a very wide range of hosts and attacks lupines, soybean and sunflower among others. The symptoms appear during flowering or thereafter.

The following conditions must be present for a Sclerotinia outbreak. Wet conditions for at least 10 days at the soil surface in mid to late winter, with temperatures between 10°C - 15°C for the Sclerotinia to germinate and trigger spore release. Warm moist conditions with temperatures between 20°C - 25°C for stem lesion development.

The most characteristic symptoms of the disease occur at the bottom of the stems of plants. Light bleached spots with slightly grey middle portions can be seen on the stems, usually at the point of attachment of the leaves or lateral branches.

The fungus does not form spores on the affected plants, but a dense bundle of white hyphae, where the Sclerotinia can be seen in the stem. The Sclerotinia can survive for up to seven years in the soil. It is very important to practice crop rotation with non- host crops such as barley, wheat and oats to minimise the incidence of Sclerotinia stem rot.

Insects

Cabbage aphid (Brevicoryne brassicae)

The cabbage aphid is currently the primary species that feeds on canola. Canola is extremely sensitive to aphid infestation during the early growth stages. Heavy infestation during the flowering and pod forming stages may prevent flower formation and may seriously impair the setting and filling of pods. This has a big influence on yield. If moisture stress occurs it is important to protect canola from aphids. Threshold values: 20 % of plants are infected.

Diamond Back Moth (Plutella xylostella)

This is an insect that is generally underestimated and the damage that is done is more than we think.

Depending on the ambient temperature, the adult insect (the moth) is usually noticed during the stem elongation phase. The light green larva eats holes into the leaves. Pods are also attacked, but the damage is usually superficial and pods are seldom penetrated, however, damaged pods tend to shatter more easily. There is more than one generation per season.

Threshold values: Middle to late flowering: 17 to 23 larvae per 10 plants. Pod filling: 43 to 57 larvae per 10 plants.

Sampling is very important to detect this insect early and to control it. When the temperature is high the Diamond Back Moth tends to multiply very quickly. Consistent and regular inspections are very important to control these insects to minimise the effect on yield.

Article submitted by Jannie Bruwer, Bayer Crop Sciences Area Manager, Southern Cape. For more information, send an email to jannie.bruwer@bayer.com.

Include ***sunflowers*** in crop rotation for stability

Due to the deep root system of a sunflower, you will find that in tough dry years like the one we have just experienced they would have performed better than any other crop on your farm. They are very drought tolerant and can be hugely beneficial in assisting to cover the inputs of a failed cropping year.

However, due to the deep rootedness of the sunflower you need to take into account the moisture which has been tapped out of the soil. Crop rotation management should be implemented accordingly.

Sunflowers grow much quicker than maize and can therefore be planted later than maize. This past growing season we noticed many more farmers planting sunflowers due to the late rains. Much of the maize crop could not be planted due to time shortage. This dilemma may have been a blessing in disguise to many farmers as a huge percentage of maize that was planted this year barely produced anything. Sunflowers on the other hand would still have produced a crop. It may not have been a bumper crop, but at least it would have been worth it to put the combine through the land. Us as farmers can learn a lot in a year like this.

- We can learn how to manage moisture.
- We can learn how to plan for future droughts.
- We can learn the value of crop diversification.
- We can learn the value of fallow land.
- We can learn the value of financial management, especially managing our finances to be able to deal with times like these.

Although most farmers, especially in the western regions of the country would have taken a big knock this year, there is a lot we can take away from a drought. If you are fortunate enough to carry on doing business next season, then what you have learnt through the past months, you now need to implement in to your future business plan.

By adding sunflowers to your crop rotation you will be adding stability and a bit of security. Obviously I am not saying plant everything to sunflowers in the coming season, no. But what I am suggesting is to plant a percentage of your lands to sunflowers. I also suggest leaving a percentage of your lands fallow. Keep them nice and clean through the summer months and the next production season you will notice a huge difference in the yields you achieve on those lands due to conserved moisture. This is especially applicable in sandy soils.

Photo 1: Good plant population.

Photo 2: Healthy sunflower plants emerging, vulnerable but tough.

Photo 3: The results of doing things correct.

So what should I be doing now?

By now your sunflower crop should be harvested and marketed. If you have the ability to store your sunflower crop, it may be a good idea to hold onto it until December when the prices will most likely be at their peak. But obviously in a year like this it is tough to do so when we all need whatever capital we can get.

Spend the quiet months getting your lands ready for the next planting season. After the cattle have eaten all there is to eat on the harvested sunflower lands it is usually a good idea to roll it with a chopper. This will cut up the remaining stalks so that you can achieve a smoother seed bed for the next crop.

Your ability to plan for tough years to come in the future may determine the success of your farming business. If you can keep in mind the lessons that you have learnt this past year then you may be prepared enough to survive the next drought year that comes along. Who knows, next season may also be dryer than normal. Let's hope not.

Article submitted by Gavin Mathews, Bachelor in Environmental Management. For more information, send an email to gavmat@gmail.com.

Early and proper preparation of your land is crucial to ensure optimal seed germination, plant growth and yields.

Sunflowers or soybeans... TO PLANT OR NOT TO PLANT

The 2014/2015 production season was extremely trying for farmers with wet and dry periods alternating out of normal patterns. The conditions in the early planting period in some areas were good with wet soils enabling good germination and good stands of soybeans.

In many areas, after germination, hot and cool days occurred together with very cold nights during early and mid-November. Nodulation was delayed and the crop did not have enough constant heat units in the critical first three to five weeks after planting. Together with the mid-season droughts soybean lands had a stop and start growth pattern. Under these circumstances yields were mixed, to say the least, with very light kernels being harvested in the later plantings. Kernels were weighed at an average of 0,7 grams. Even in previous bad years kernel weights above 0,11 gram were realised. Some lands realised only 0,35 tons/ha under these conditions.

In particular production areas the plants held back during the mid-summer drought and then all flowered during early March together. Some cultivars flowered 21 days later than would be expected by the cultivar heat units or growth days expected.

Market conditions and estimated production

Using the information provided by Sagis and the crop estimates committee it can be seen that the area planted to soybeans in the 2014/2015 season increased by 184 000 hectares to 687 300 hectares with a crop forecast of 942 850 tons at an estimated average yield of 1,37 tons/ha. The contribution of the increase by province of the area planted was 104 000 hectares in the Free State, Mpumalanga 42 000, North West 16 000, Gauteng 10 000 and KwaZulu-Natal 7 000 hectares with the others remaining constant.

On examination of the Commodity Derivatives Market of Safex it can be seen that soybean future prices range from R4 835 for May 2015 to R5 113 for December 2015. The increase is more a reflection of storage and handling costs than demand and supply forces. Use these future prices in your current gross margin comparisons.

In many districts the increase was contributed by farmers planting soybeans for the first time. As in all of man's endeavours the first attempt at something does not usually work out as planned. The management and planting of soybeans in particular within a certain optimum planting requires careful planning.

Lessons that can be learnt from this season that can be applied to the 2015/2016 production season

The yields realised from each land should have been recorded as well as the result for the various cultivars planted. Many new entrants to soybean production, being well advised, planted several commercial varieties as well as seed bought from their friends and neighbours. Some farmers, in what seemed to be a mad rush to plant soybeans, only completed planting between 20 and 24 December. One wonders if any of these plantings achieved yield of more than a half a ton a hectare.

It is absolutely critical to choose the correct cultivar for the soil potential and climate prevailing in your area. It can be argued that planting after the 15th of November for even medium and short season cultivars in the Free State is highly risky. The plant just does not have enough time to create enough growth

Pula Imvula's Quote of the Month

"Occasionally ask: "What is the connection between what I want most in life and anything I plan to do today?"

~ Robert Brault

Soybean pods.

and height in the plant factory to turn sun energy into a commercially viable seed yield.

For interest take some of the later planted seed and have it tested for oil and protein content. It will be found that the results show very low oil percentages less than 18% and low protein counts. These factors must also be considered when mixing rations with seed from these soybeans that have been extruded or processed for oil and soybean oil cake.

Conclusion

It is important to do a detailed gross margin analysis for all the summer crops taking into account your actual production for soybeans and sunflowers as an alternative. Sunflowers planted after the 15th of November have yielded 1,5 tons/ha, are giving a gross income of R7 250 compared to R1 680 for a 0,35 ton/ha soybean crop.

Buy enough seed for both crops so that you can change to planting sunflowers should the optimum planting period for your planned soybean crops be not achievable. Be adaptable to the uncertain and changing rainfall patterns of each season.

Article submitted by a retired farmer.

A young soybean crop in a very well managed land.

BEEF AND PORK MEASLES

as well as tapeworms and cysticercosis in humans

Humans are the final host of the two species of tapeworms that cause measles or bladderworms in cattle and pigs respectively. The parasite must pass through a suitable vertebrate intermediate host, namely cattle or pigs respectively, to complete its lifecycle.

Tapeworms in humans occur most often in less-developed socio-economic communities and also where poor hygiene and social situations prevail. However, anyone who likes to eat raw or partly cooked meat is in danger of contracting a tapeworm.

Other names

Tapeworm infection is also known as taeniasis. Humans can be infected with the beef tapeworm (*Taenia saginata*) or the pork tapeworm (*Tania solium*). However, the latter can also cause cysticercosis in humans.

Disease

Beef or pork tapeworms affect the small intestine of humans and cause a non-fatal illness. However, it can cause wasting, weight loss and digestive problems.

Raenia saginata and *Taenia solium* cysticercosis, also known as measles, found respectively in the muscle and other tissues of cattle and pigs, is the contamination with the larval or bladderworm stage of the two tapeworms.

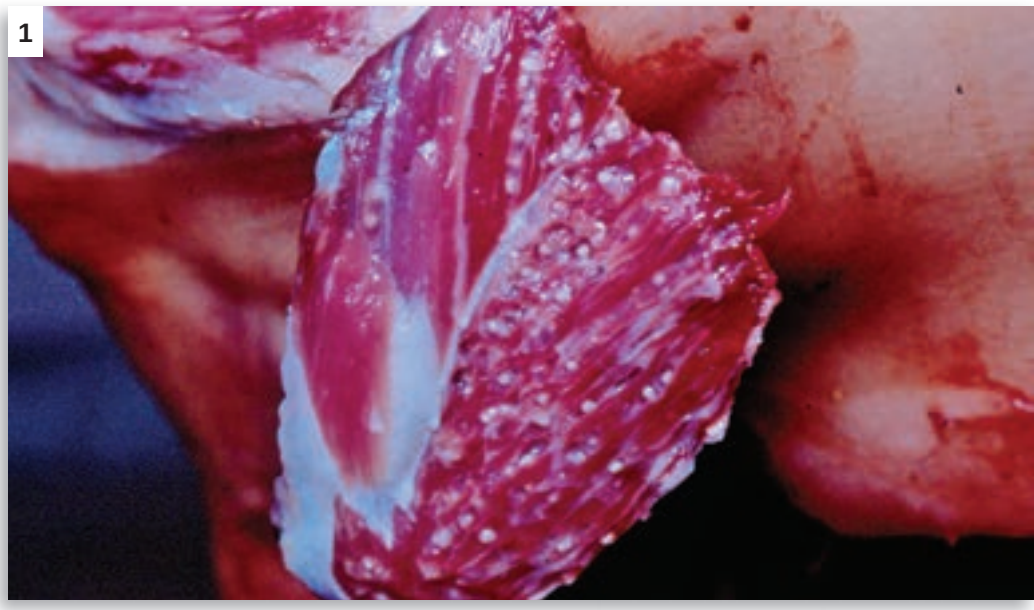
This type of measles is seldom seen in a living animal and is determined only when the animal is slaughtered of examined after it has died.

Under certain circumstances the cysts or bladderworms of *T. solium* can occur in human tissue too. Such cysts cause serious problems in the eyes and brain.

Such cases of cysticercosis mainly occur in people carrying the tapeworm as well. The presence of both stages of the parasites in one person is an indication of self-infection with the tapeworm eggs.

Spreading

Tapeworms in humans and measles in cattle and pigs occur across the world, particularly in under-developed countries. The incidence of infection varies depending on the geographic spread of man and animal, the level of development, and the standard of control over hygiene. Both forms of infection (beef and pork tapeworms) occur in South Africa.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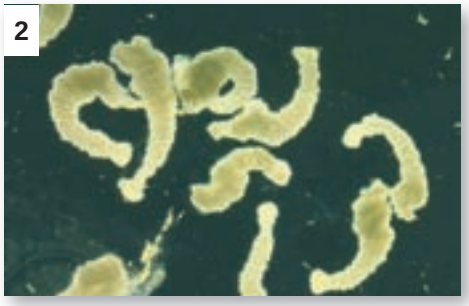
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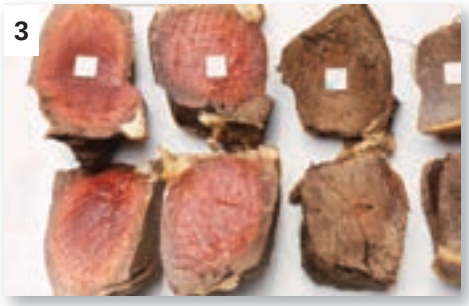
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Type of zoonosis

Tapeworm infection is a cyclozoonosis because two different types of vertebrate hosts (humans and cattle/pigs) are involved in the lifecycle of the parasite. Humans are the final host and animals the intermediate host of the two types of tapeworms.

Details of the tapeworms

The adult beef tapeworm (*Taenia saginata*) produces between six and nine ripe and egg-laden segments per day (± 1,5 million eggs) and vary from 4 m to 8 m in length. It can live in the human small intestine for up to 25 years.

The adult pork tapeworm *(Taenia solium)*, which produces roughly five segments (± 250 000 eggs) a day, varies from 3 m to 5 m in length, and the worm can also survive for years in humans. It is possible for a person to house one or more tapeworms at the same time.

Lifecycle

The tapeworm occurs in a person's small intestine and its mature and egg-filled segments are excreted in the person's faeces (excrement). In the case of beef tapeworms the worm segments are mobile and can therefore leave a person's body spontaneously. In the case of the pork tapeworm the mature segments leave the body only in excrement.

The eggs or egg-filled segments are ingested through the mouth of the cattle or pigs. Larvae hatch from the eggs and end up in the muscles, but also in other organs of the intermediate host (cattle or pigs), where they develop into bladder worms, which are also known as measles (cysticercosis).

If humans eat the raw or half-cooked meat of the intermediate host (beef or pork), the

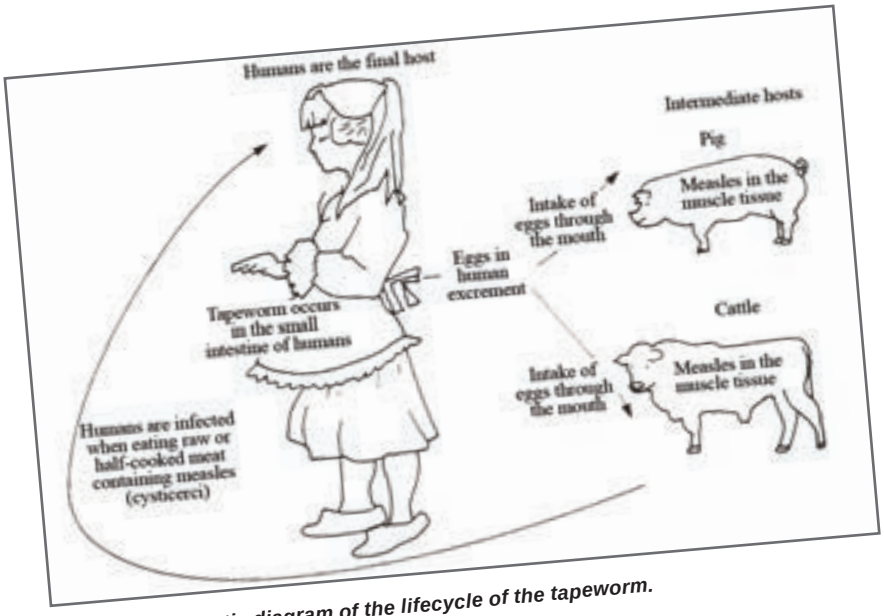


Figure 1: Schematic diagram of the lifecycle of the tapeworm.

Photo 1: Pork with measles. People who eat such pork raw or half cooked get tapeworms.

Photo 2: Tapeworm cysts after evagination of the neck and head in the human digestive tract after measles-infested meat was eaten.

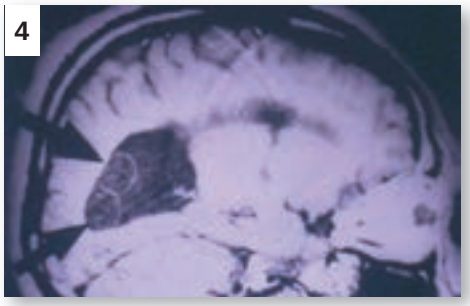
Photo 3: Meat cuts that were cooked for different periods. In the middle (red part) of the meat cuts tapeworm cysts will not be killed. Where the meat is brown, cysts would be dead.

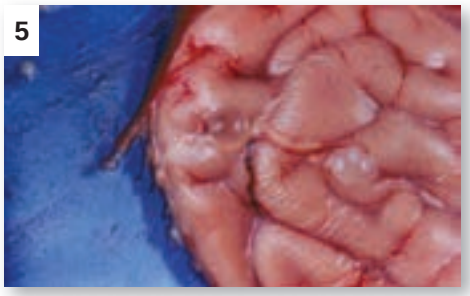
Photo 4: A magnetic resonance photograph of the brain of a person with parasitic lesions (cysticerci or measles) in the brain (arrows).

Photo 5: A pig brain with measles.

Photo 6: Expert meat inspection is essential to ensure that only uninfected meat reaches the consumer.

Photo 7: Persons working in cattle feedlots must be regularly dewormed for tapeworms.





measles cysts develop into tapeworms again in the humans and this once again completes the lifecycle in the final host.

How humans become infected

- Human are infected with tapeworms by eating measles-infected beef or pork, as well as beef and pork sausages and beef and pork mince raw or half cooked (**Photo 1**).
- Humans can develop bladderworm infection or cysticercosis when they host a pork tapeworm and infect themselves with its eggs or ingest pork tapeworm eggs from other sources.

The effect of tapeworm infection in humans

- Tapeworm infection is not fatal to humans. However, the tapeworms compete with their host (human) for food and therefore parasitise humans. Such people can develop weight loss, vitamin deficiencies and also other signs of disease.
- Persons who develop measles or cysticercosis can display various signs of disease, depending on where the cysts are located. If the cysts develop in the brain, epilepsy, meningitis and paralysis can follow. Cysts in the eyes can cause serious sight problems.

Prevention and control

- Regular deworming of persons with tapeworms so that they cannot excrete eggs and thus infect cattle or pigs, is essential. This could also apply to farmworkers working with pigs or cattle, particularly feedlot workers.
- People should be careful not to eat measles-infected pork or beef.
- During meat inspection carcasses infected with measles are rejected and are not allowed to be sold.
- Meat that is only lightly infected with measles can be rendered safe for consumption by cooking it (100°C for 2,5 hours), freezing it (-10°C for 10 days) or pickling it (21 days at 10°C).
- Good personal hygiene helps to prevent people from ingesting worm eggs by mouth.
- Consult your veterinarian for more extensive information on the prevention of tapeworm infection, or your doctor regarding deworming of people who are infected with tapeworms.

Article submitted by Dr Jan Du Preez, Managing Director: Institute for Dairy Technology, for SA Graan/Grain June 2014. For more information, send an email to jan.dupreez@mpo.co.za.

In order to produce soybeans of a good quality, extra potassium fertiliser added to soil that was adequately analysed will be to the benefit of every farmer.

A few ideas about the FERTILISATION OF SOYBEANS

The growing interest in the maximum production of soybeans countrywide justifies the new view of the fertilisation of this crop. There are many conflicting statements about the fertilisation of soybeans.

In many instances fertilisation is alleged not to have a positive influence on the yield of soybeans. This can be seen in the band placement of fertiliser in particular. Here are the most probable reasons for a poor reaction to fertilisation:

- The phosphate and potassium content of the soil is higher than the critical needs level.
- A drought period in the growing season had a greater influence on production than fertilisation.
- Planting conditions (soil temperature and moisture) were ideal.
- The fertilisation was insufficient or imbalanced.

This article focuses on the most recent information regarding the fertilisation of soybeans and provides information on the nutrients that will provide the most probable improvement in the yield. However, it does not guarantee that the yield will improve. In a good growing season like the past one, it will probably contribute to an improvement in the yield.

Soybeans have a greater need for phosphate and potassium than maize. One ton of soybeans extracts up to 9 kg of P and 40 kg of K per hectare. If these needs are not addressed, the yield can be affected negatively. The yield of the follow-up crops can also be harmed and in the long term it could have a disastrous effect. To rectify these problems afterwards can become very expensive.

Soybeans use a lot of nitrogen. Every ton of soybeans that is harvested extracts 50 kg to 60 kg of nitrogen per hectare from the system. All the nitrogen must be extracted from the soil by the roots. By using nitrogen-fixing Rhizobia bacteria this constant need can be met very cheaply.

This beneficial association that soybeans have with Rhizobia bacteria must be managed correctly. If nitrogen is available in the soil, soybean roots will rather extract that and will not allow the Rhizobia bacteria to form nodules on the roots. This can lead to the dying off of the Rhizobia bacteria, or to the late forming of nodules, which could lead to insufficient nitrogen fixation.

If it were suspected that the grafting process was faulty and soybeans are yellow and poorly developed in December or January, poor noduling must be suspected of being the culprit. The best way to identify this problem is to dig up the affected plants very carefully and rinse them with water. Count the healthy nodules on the roots. Healthy nodules are larger than 2 mm in diameter and are pink to red when cut. If fewer than seven healthy nodules per plant are found, a nitrogen deficiency can be expected.

Supplementary administration of 60 kg to 70 kg of nitrogen per hectare will address the deficiencies when it is administered timeously. The ideal time for administration is when the first blossoms are seen on 50% of the plant (R1), and not later than when the top node of the plant starts flowering on 50% of the plants (R2).

The ideal will be to apply the nitrogen on the soil, but this is very difficult as the leaf canopy

would already have covered the rows. Broadcast application of granular fertiliser can be done successfully if the plants are dry and the granules can roll down the leaves.

Before any fertiliser can be applied, the pH of the soil must be corrected. A soil pH (KCl) of between 5 and 6 is ideal. Most chemical and biological processes function optimally at this pH. Together with an optimal pH, calcium is vital to keep the soil healthy. Not only the nitrogen-binding bacteria will benefit, but all the other organisms in the soil as well.

The application of lime to maintain the levels must be done with the aid of analyses and expert advice. If acid soil that had maize as the previous crop is limed, the effect of herbicides that were settled and could become dislocated must be kept in mind. In most cases band placement of nutrients in soil with more than 15% clay has no yield benefit. Broadcast application of phosphate and potassium before the making of a seedbed produces a better reaction.

The greatest need of soybeans for nutrients is in the second half of the growing season. The broadcast application of nutrients is better utilised by the widely spread fine roots in the top 20 cm of the soil. However, in sandy soil with a low clay content, soybeans will react well to band placement of fertiliser. The fertiliser must be placed 5 cm from and below the seeds to restrict the risk of burning the seedling as well as the Rhizobia bacteria. The roots of the small soybean seedling are very sensitive and are easily burnt by the high concentrations of salts in fertiliser when it is placed too near the seeds.

Table 1: Guideline for P fertilisation of soybeans.

Soil P	P recommendation for yield potential (ton/ha)				
(Bray 1)	1	2	3	4	>4
dpm	kg/ha				
5	20	40	60	80	100
10	17	31	45	59	73
15	15	25	35	45	55
20	13	21	31	40	49
25	11	19	28	36	45
30	10	18	26	34	42

Fertilisation manual, FSSA 1998

Table 2: Guideline for K fertilisation of soybeans.

Soil K	Application of K for yield potential (ton/ha)				
	1	2	3	4	>4
dpm	kg/ha				
20	20	40	60	80	100
40	16	31	47	60	75
60	13	25	39	52	65
80	11	22	34	44	54
100	10	20	31	40	51
120	9	19	30	40	51
> 120	5	15	30	40	51

Fertilisation manual, FSSA 1998

The amount of fertiliser must be determined according to a soil analysis and the yield target for each field **(Table 1 and Table 2)**. Phosphate and potassium must be addressed to get this to sufficient levels.

Phosphate is essential for early root development and for transferring energy in the plant, while potassium is essential for forming nitrogen-fixing nodules together with Rhizobia bacteria. Potassium is also essential to the nitrogen-binding process, as well as for the transport of nutrients and proteins through the plant.

Soybean plants that have sufficient potassium available can handle dry periods better than those that have some deficiencies. Small amounts of nitrogen (10 kg - 25 kg N/ha) can be beneficial for early growth to ensure stronger plants, but in most cases this will not increase the yield. These low nitrogen levels will not harm the development of nitrogen-fixing Rhizobia bacteria. One often reads that South African soybean crops have a lower protein content than those of other countries. The regular periods of drought that we experience in the second half of the growing season are the main reason for this. A lot of research also shows that minor potassium deficiencies have a greater influence on the protein content of the soybeans than the yield.

A lot of South Africa's soil has a relatively poor potassium content, or it may not always be available to the plant. In order to produce soybeans of a good quality, extra potassium fertiliser added to soil that was sufficiently analysed will be to the benefit of every farmer.

Soybeans have a great need for sulphur. In soil known to be deficient in sulphur, or to have a low clay content, sulphur can be used for fertiliser. Up to 15 kg of S/ha can be administered with safety. Magnesium deficiency is another element that has a great influence on yield. In soil with a high pH showing deficiencies, up to 2,5 kg of Mg/ha can be added to fertilisers.

Molybdenum is essential for the fixation of nitrogen by nodule bacteria and the transportation of proteins in the plant. In soil with a pH lower than 5, molybdenum is not available for uptake and must be added. Low quantities of molybdenum (80 g/ha to 150 g/ha) as seed treatment or added to the plant furrow will address the problem.

As was mentioned at the beginning of the article, in many instances soybeans do not react to added fertiliser. That is not enough reason not to fertilise soybeans. The large quantities of nutrients that soybeans remove must be addressed in a sustainable farming system. This can easily be done during seedbed preparation, or with the whole fertilisation programme of the previous or follow-up crop. In fields with a relatively low nutritional status it is better to fertilise annually compared to fields with a good nutritional status that could be fertilised every two years with crop rotation.

If you keep the soil healthy, the soil will care for your soybeans and produce a good yield.

Article submitted by Nico Barnard, Agriculturist, Pannar Seed for SA Graan/Grain July 2014. For more information, send an email to nico.barnard@pannar.co.za.

Integrated crop and pasture-based livestock production systems

This article highlights a specific pasture crop species that can play an imperative role in conservation agriculture (CA) based crop-pasture-rotations.

Besides improving the physical, chemical, hydrological and biological properties of the soil, such species, including annual or perennial cover crops, can successfully be used as animal feed.

Livestock production systems are in many ways dependant on the utilisation of pasture species, in this case as a pasture ley crop, and can therefore become an integral component of CA-based crop-pasture-rotations. It is imperative however to identify a pasture species fulfilling the requirements of a dual purpose crop, i.e. for livestock fodder and soil restoration.


1

Panicum maximum/Guinea or white buffalo grass/*witbuffelsgras*

Guinea grass is a weak perennial grass (two to five years) that is indigenous to Africa. The growth form of this grass differs immensely, as certain ecotypes hardly grow taller than 1 m, whereas other ecotypes grow as tall as 2,5 m. Many ecotypes are strongly tufted and others have a more creeping nature.

As a result of the latter classification, this species is divided into two main groups:

- The medium to tall growing types, which include cultivars such as Hamil, Vencedor and Coloniao.
- The tall growing types, also known as *P. maximum var. trichoglume*. This group includes cultivars such as green panic (Petri), Gatton and Sabi which originally come from Zimbabwe and is more commonly described as a drought resistant species.

This species is also known to be a very palatable grazing species. It produces a very good foggage and can in some instances remain green in winter, especially in frost-free areas. Hay can be made from this species under the correct management, but it could easily produce a better quality silage.

Agro-ecological distribution

White buffalo grass is also known as a good grass species to grow under trees, but can occur in open grassland areas too. Due to the large variation in ecotypes, it is accepted that this species is well adapted to many areas.

It is noted that this species can grow in as wide an area as from the Limpopo province to the Eastern Cape. To date, a large percentage of *Panicum maximum* is imported into South Africa, and many questions regarding the adaptability of imported cultivars remain unanswered.

The following observations can be confirmed to a large extent: Gatton, currently the most available cultivar in South Africa, has been doing well in areas such as Potchefstroom, and is therefore cold-resistant and requires an average rainfall of approximately 550 mm - 600 mm per annum. This species particularly thrives in slightly more humid climates, such as the Lowveld regions of the Limpopo province.

Management and utilisation

A fine to firm seedbed is required and the establishment is recommended to be done during October/November or additionally the month of February. Good quality seed is a major requirement. If this species is to be planted in rows, seeding rates of between 2 kg to 4 kg seed/ha can be planted.

If planted using a broadcasting method, the seeding rate should increase to 6 kg - 8 kg seed/ha. If this grass is to be planted under irrigation practices, then seeding rates can be increased to 10 kg/ha.

White buffalo grass is known to be planted well in mixtures with other palatable grasses, such as Smutsfinger grass, Rhodes grass and bottle brush grass. It can also be planted together with leguminous species such as lucerne, which will ensure a higher quality grazing and hay production.

White buffalo grass requires an average to high nitrogen (N) fertilisation. It is therefore recommended that Guinea grass grown under dryland conditions (500 mm - 600 mm rain per annum) can require 75 kg - 100 kg N/ha.

In higher rainfall areas and even under irrigation, levels of up to 150 kg N/ha can be required. The phosphorus (P) status of these soils planted to this species should be in the order of 15 mg/kg - 20 mg/kg soil, and if potassium (K) shortages of less than 80 mg/kg soil are noted, potassium chloride (KCl) should be used to increase these soil K-levels.

Very little is known about the potential value of existing cultivars and ecotypes of this species, especially under different environmental conditions. A tremendous amount of research is required to be done regarding the best management and utilisation practices for this species.

There is evidence that white buffalo grass reacts best to mild defoliation, and that frequent defoliation below 10 cm height can negatively affect the regrowth potential of this species. Correct rotational grazing with the emphasis on

grazing height and frequency of defoliation in addition to the maintenance of good soil fertility, will ensure a high quality pasture with high yields over many years.

Yields of up to 20 tons/ha under irrigation have been obtained. Dry matter yields of between 6 tons/ha - 14 tons/ha, however, are more realistic. This depends on many factors, such as rainfall, climate and soil quality.

Management challenges

In order to ensure good production of this species, it is important to have the correct amount of rainfall or irrigation. It is however sensitive to water-logged soils, and if irrigated, it should be on soils that are well drained. If planted in dry areas it is important to plant the species in 1 m to 2 m wide rows.

Medium to high annual fertiliser applications are essential to ensure high production as well as the survival of a stand of white buffalo grass, especially in sandy soil. Red soils (Hutton types), have proven to produce good stands of Guinea grass, heavy soils however, not as good, and sandy soils should more likely be avoided. Regular overgrazing (below 10 cm height) can reduce the lifespan of this grass significantly.

It is difficult to make hay from this species, as it produces high volumes of material which dries out slowly and preferably requires a mower with a crimper and significant windrowing to prepare it for baling. When hay is made from this species, it offers high quality.

Photo 1: Panicle of Panicum maximum.
Photo 2: A tuft of P. maximum showing the leafiness of the plant.
Photo 3: White buffalo grass needs fertile soil.

This species can contain an anti-quality factor such as oxalic acid; it can occur under stressful growing conditions and horses for instance are sensitive to high values.

Soil conservation and health benefits

Research has shown that white buffalo grass has the ability to grow on saline soils. As with Rhodes grass, it is important that soils that are often planted to grain crops and especially under irrigation, can be cropped in rotation with white buffalo grass.

This practice will help reduce the impacts of high salinity caused by excessive irrigation. Not only will this grass grow on these saline soils, the species will assimilate some of the salts, which will contribute to the inherent palatability of the species. The excess levels of remaining salts will be leached from the root zone while the perennial pasture is being irrigated over time.

Animal production aspects

This species is known to have a relatively good grazing capacity of one to two livestock units (LSU) per hectare. An additional advantage of this grass is the good nutritional value during winter, which confirms its foggage value.

During winter, this species can have a digestibility value of approximately 45% with a crude protein content of at least 6%. One of the main reasons for this species to retain its quality in winter is due to the fact that the carbohydrates and other important nutrients are stored in the aboveground plant components and not the roots like many other species do.

Integrated crop and pasture-based livestock production systems

In the summer it can be expected to achieve digestibility values of anything between 53% - 62% with a crude protein value of a minimum of 6% - 11%, whereas some studies have noted crude protein values of up to 20% - 23%, under intensive fertilisation and irrigation practices.

Grain crop production

After establishing a typical ley crop system using white buffalo grass for a period of around five years, the soil should be sufficiently restored to cultivate annual grain crops under a CA-system. Herbicides kill the pasture quickly and the pasture residues remain on the soil surface providing cover that limits erosion, enhance water infiltration and reduces their rate of mineralisation.

Once a decision is made to terminate the ley, all pasture components should be considered as "weeds" that need to be removed. They should no longer be regarded as a source of fodder for livestock.

Depending on the pasture species and situation (e.g. dry or wet area/season), the pasture could be killed a season before planting grain crops to allow the soil profile to be replenished with water. In certain situations/areas, an annual legume could be planted directly after termination of the ley crop, such as grazing vetch *(Vicia villosa)* as a winter crop or soybeans *(Glycine max)* in the following summer, followed by maize *(Zea mays)* in the crop rotation.

The water requirement of the first crop planned after pasture will influence the timing of removal of the pasture, especially in the dryer, western grain production regions of South Africa. Reliable and timely seasonal rainfall forecasts may assist in this planning.

Following the pasture phase, grain crop yield in dryer regions will be restricted unless the soil water profile is replenished. After removing the pasture, weeds in the fallow must be controlled to conserve soil water to maximise the benefit of the ley. A suitable no-till planter should be used to plant the grain crops directly into the residues of the pasture crop, without any other cultivation practice disturbing the soil.

Normal integrated fertiliser (based on soil fertility levels and yield targets), weed and pest control practices should be followed. During the transformation phase, after newly established CA grain fields (e.g. during the first five years after termination of a ley crop), a 30% increase in N fertilisers is recommended on maize, due to the immobilisation of N in the soil.

Conclusion

White buffalo grass is definitely a sub-tropical grass species that shows tremendous potential in South African integrated crop and livestock production systems. Not only does it produce high yields and quality grazing, it has the potential to produce good quality foggage and silage, and is essential in any fodder flow programme, unless the climate and rainfall restricts its use.

This species also has the ability to be grown on saline soils and provides the opportunity to rest and help restore cropping lands under irrigation systems. Although it should always be kept in mind that proper nitrogen fertilisation should be done and the phosphorus and potassium status of the soil has to be as suggested earlier.

Article submitted by Wayne Truter, University of Pretoria, Chris Dannhauser, Grass SA, Hendrik Smith, Grain SA and Gerrie Trytsman, ARC-Animal Production Institute, for SA Graan/Grain July 2014. For more information, send an email to Wayne.Truter@up.ac.za, admin@GrassSA.co.za, hendrik.smith@grainsa.co.za or GTrytsman@arc.agric.za.

TOP PERFORMERS in every category

At PANNAR we consider risk management and sustainable farming to be of cardinal importance. For that reason all our products are subjected to a rigorous evaluation programme before any cultivar is marketed. Aspects such as good yield performance, stability over seasons and area adaptability are given a great deal of attention. The fruits of this programme are proven by the results of the PANNAR crop package in the ARC national trials. We are very proud to have achieved first place in all crop categories.

1. Ultra early hybrids under irrigation:
1. Warm areas; 8 out of top 10 (top three hybrids).
2. Cool/temperate areas; 9 out of top 10 (top nine hybrids).

2. Dryland eastern production region:
1. Yellow hybrids; 4 out of top 10 (top two hybrids).
2. White hybrids; 5 out of top 10 (top hybrid).

3. Dryland western production region:
1. Yellow hybrids; 5 out of top 10 (first place).
2. White hybrids; 4 out of top 10 (top two hybrids).

4. Sunflower:
6 out of top 10 (top four hybrids).

5. Soybeans:
First place for four years.

6. Dry beans:
1. Red speckled beans; 5 out of top 10 (first place).
2. Small white canning beans; top performer.

PANNAR has been working in Africa for 56 years, helping farmers significantly increase agricultural productivity and food production through improved crop yields. Our commitment to farmers in South Africa and into the continent goes beyond selling seed. We have always sought a personal relationship with our customer and believe that Together We Farm for the Future.

Article submitted by Reggie Mchunu, Pannar Agronomist. For more information, send an email to reggie.mchunu@pannar.co.za.

What do we know about **BORON NUTRIENT DEFICIENCY** in sunflowers?

Boron is one of the micronutrients of plants. Micronutrients are absorbed in extremely small quantities compared to the macronutrients like nitrogen and calcium.

Sunflower that produces a yield of 1 ton/ha, for example, absorbs roughly 18 kg of calcium per hectare, compared to only 65 g of boron per hectare.

Of all the agronomic crops, sunflower is the most sensitive to boron deficiencies and it is absorbed continuously throughout the lifespan of the plant. Boron is absorbed in the cell walls, among other places, and in this way plays a role in the strength of the plant tissue.

In contrast to a macronutrient like nitrogen, once boron is fixed in an organ it is not mobilised again and translocated to a different part of the plant. If nitrogen deficiencies occur, the nitrogen is translocated from older to younger tissue. The yellowing of the older leaves of maize with a nitrogen deficiency is a very characteristic symptom.

Boron deficiency symptoms are usually not noticed in the early stages of development, but develop as soon as the flower bud appears above the leaves. Deficiency symptoms can be seen most clearly during the blossom and early seed stages of development. Such deficiency symptoms vary according to the intensity of the deficiency, the occurrence of drought, the cultivar and according to the planting time. It can even occur in different degrees in one field.

Deficiencies also occur more regularly in parts with a higher rainfall and soils with higher leaching properties, like those in the eastern Free State, compared to parts with a lower rainfall. The incidence of deficiencies is therefore difficult to predict, except that a period of drought during the late vegetative and early blossom development stages often gives rise to deficiencies because of inadequate absorption by the soil.

Boron is usually associated with the organic matter in the soil that is mainly concentrated in the top 200 mm of the soil profile. During a period of drought, moisture is mainly absorbed from the deeper soil layers and the plant easily develops a boron deficiency because of inadequate absorption from the top layer of soil.

If a plant cannot absorb sufficient boron from the soil, for example during a period of drought, a deficiency develops in the portion of the plant that is developing at that specific stage. The leaves that develop remain small and have a light green colour.

The stem is weak where the deficiency occurs and breaks easily, which leads to the very characteristic broken-neck symptom. The stem usually appears to have been cut with a sharp object. If this is observed, the problem can no longer be rectified.

The identification and rectification of a boron deficiency before the critical blossom stage is therefore important and fields should be visited regularly. A boron deficiency can be confirmed with a leaf analysis. The very top mature leaves without petioles are sampled and analysed.

Leaves (without the petiole) that are sampled at the beginning of the blossom stage must contain at least 40 mg of boron per kilogram of dry material. Leaves that are sampled a month after plant must contain at least 60 mg of boron per kilogram of dry material. Soil can also be analysed to establish the boron content. A concentration of 1 mg/kg - 4 mg/kg is usually sufficient.

Various substances containing boron are available and can be administered preventatively or correctively. The recommendation for soil containing 15% or less clay is 1 kg boron per hectare; for 16% - 30% clay it is 2 kg boron per hectare, and for 31+% of clay it is 3 kg boron per hectare.

Avoid exceeding the recommendation and unnecessary applications, as boron can become toxic very quickly and can suppress yields. The application of boron to a specific sunflower field can harm the yields of sensitive follow-up crops.

That is why boron fertilisation should be handled with great care. The recommendation in Australia is that if a specific field has been fertilised with boron, it need not receive boron again for several years afterwards.

Article submitted by André Nel, ARC-Grain Crops Institute, Potchefstroom, for SA Graan/Grain June 2014. For more information, send an email to nela@arc.agric.za.

The characteristic broken-neck symptom of sunflower due to a boron deficiency.

Grain SA interviews...
Henry March

Meet Henry March. Henry is a developing farmer who farms with grain and livestock on Theewatersvlei farm, Hopefield in the Western Cape. This passionate farmer believes if you grow up on a farm your heart will always be on the farm.

> *"Your whole heart must be in farming because it requires hard work, good planning and a lot of patience.*

Where and on how many hectares are you farming? What do you farm with?

The farm Theewatervlei is 1 176 hectares and was bought with a loan from Land Bank in 1994. Theewatersvlei is run by a group of four members representing four families. There are two main enterprises on the farm which are grain production (wheat, barley, lupines and oats) and livestock production (sheep and cattle).

What motivates/inspires you?

If you grew up on a farm, your heart will always be on a farm. To create job opportunities for the community of Hopefield motivates me. I also want to optimally utilise the land and other natural resources available. I am also motivated to farm on commercial level.

Describe your strengths and weaknesses

My strengths entail mechanical, fitting and electrical interests and I try to be a good manager. I feel that a weakness of our business is that we do not yet have all the equipment needed to produce grain as well as we know we can, but we are growing slowly but surely and will be able to start acquiring some of our own equipment soon.

> *"In five years time I would like to farm independently, to increase production of cash crops and to optimise the animal production unit.*

What was your crop yield when you started farming? What are your respective yields now?

My yields when I started farming were very poor, approximately 0,5 tons/ha. Now my average yields are 2,2 tons/ha.

What do you think was the main contributor to your progress and success?

I can attribute my progress and success to hard work and learning from my mistakes. We also recently started working with a very good mentor and are very excited about the road ahead.

What training have you received to date and what training would you still like to do?

To date I have received a lot of pig, cattle, and sheep training. I would still like to learn more about wheat planting and how to prepare the soil. Training has been scheduled for record-keeping and grain production (wheat).

Where do you see yourself in five years time? What would you like to achieve?

In five years time I would like to farm independently, to increase production of cash crops and to optimise the animal production unit.

What advice do you have for young aspiring farmers?

First of all, your whole heart must be in farming because it requires hard work, good planning and a lot of patience. Secondly, it is important to remember that you will not get rich in a month!

Article submitted by Liana Stroebel, Provincial Co-ordinator, (Western Cape) of the Grain SA Farmer Development Programme. For more information, send an email to liana@grainsa.co.za.

The Corner Post

If there's a problem, I want a solution – Unati Speirs

Albert Einstein once said: "We cannot solve our problems with the same level of thinking that created them." This may well be why Unati Speirs, the chief director: Agro-processing at the Department of Trade and Industry (DTI) has been so successful in her career. To her a problem poses an opportunity.

The future of agriculture in South Africa

When asked if she believes that agriculture in South Africa has a future, she answers: "Yes, definitely, but we do need a food identity, dishes that are true to our heritage."

She explains that South Africa needs to include food as part of tourism because at the base of it is agriculture. "A food map will attract more international visitors to South Africa."

Products which in the past have been considered to be part of South Africa's food heritage have been "hijacked" by the global markets and as a result have created trade barriers, for example port, champagne and salami.

With the DTI's involvement, a food register is being created so that South African food sources, like rooibos tea, can be protected.

She sees agriculture as one of the most secure enterprises into which a person can venture, as people have to eat. "It is a shame that there are so many negative connotations to agriculture which detracts from it," she expands on the topic.

As a result of being considered a high risk, she views financial support as one of the biggest challenges agriculture in our country faces. She also feels strongly that agriculture should be promoted at school level especially those areas of business that are linked to agriculture, that supports the industry, but are outside the farm, like biotechnology. This will help align the youth's view on where final products come from, to where they originate. "A lot of children think milk and meat come from the supermarket," she adds with a smile.

The DTI supports farming activities that are linked to manufacturing. Unati says: "Our incentive scheme has been growing yearly and we are not solely supporting big projects, but growing our incentive scheme so that small enterprise can also benefit from it. To me, subsidies are a non-progressive way of giving money, whereas incentives motivate people." If management skills are developed, smaller enterprises will prosper. She would also love to see more women involved in the farming industry.

Agro-processing

Innovation is a big part of the DTI's functionality. Part of Unati's job entails her involvement in the new product development environment. An example of this is the recent addition of a prepared, ready to eat chick pea and a potato canned product that has been introduced in the market. Being a practical mother, she has also been involved in creating baby food in a tube. This innovative product will save time and prevent the contamination of the food in a jar.

Furthermore she is also involved in international trade support and does a lot of regulatory work. Currently she is rewriting the sugar act, legislation that has not been changed since 1978 although amended twice in the eighties. Reviewing legislation to assist trade on the international and domestic markets is on her task list. "We have also started with training sessions in the informal sectors so that it can be run to higher standards," she mentions.

She further explains the role of the DTI as follows: It is there to promote economic growth in South Africa with its key focus being the broadening of participation across all industries to the benefit of the economy and the country as a whole. "Our sector has the potential to uplift our economy. Our role is to strengthen production and to ensure that there is capacity to process or to add value," she explains.

Agricultural issues

To Unati, issues like job creation, food security and land reform are tied together in access to land. She firmly believes that if well-managed, these issues could be resolved in a peaceful manner. "The relationship between the farmer and the farm worker should be one of participation in a community conversation. It is not necessary for outside sources to dictate what should take place. We should learn from Zimbabwe how things should not be done. The government should facilitate this dialogue. It is time for us to leave the past behind and move on."

Contrary to popular belief, the urbanisation of rural populations often leads to poverty as opposed to the expectation of prosperity and better lives. "We have to enhance our rural economy so that urbanisation is limited," she states, and continuous: "If child has an option of ownership where he was raised, it will bring security." She also feels strongly that attempts should be made to skill people in their surroundings and not to allow skills like sheep shearing and vine pruning to become non-progressive because of money issues.

She views commodity organisations such as Grain SA as agriculture's support system and the voice of the farmer. They are involved in giving policy direction to the DTI and government and the services they offer are very important in aligning the industry as a whole. "Their role is fundamental in the growth and enhancement of the agricultural industry," she supports her statements.

Personal history

Unati Speirs was born in East London, where she also matriculated before moving on to further studies. She completed a BSc at the University of Fort Hare and obtained a law certificate at the University of Cape Town as well as a diploma in Project Management through Damelin College. She is currently studying MSc(Agric) through Unisa.

Women matter

Her wish for women is that women will come to the forefront and get involved. "I believe that women will help bring about change if they start participating at any level," she says. "Join the neighbourhood watch if necessary and help prevent crime," she continues.

How does this energetic lady balance her career and family life?

"I always laugh when I get asked that question, as it not a question men ever get asked!" she adds. She explains that she tries to maintain a balance by prioritising. Her mother is her role-model because of her perseverance. "She has been running a school for 33 years – a school that she had to build up when they were abandoned on the roadside in the South Africa. She never gave up and has been an inspiration to me and her community."

How should people remember Unati Speirs when she is no longer around? "As an honest, practical real woman: If there's a problem, I want a solution," she concludes.

This month's edition of The Corner Post was authored by Louise Kunz, for SA Graan/Grain August 2014.

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