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PANNAR.



Editorial team

GRAIN SA: BLOEMFONTEIN Suite 3, Private Bag X11, Brandhof, 9324 7 Collins Street, Arboretum Bloemfontein ▶ 08600 47246 ◀ ▶ Fax: 051 430 7574 ◀ www.grainsa.co.za

EDITOR IN CHIEF Jane McPherson ▶ 082 854 7171 ◀ jane@grainsa.co.za

EDITOR AND DISTRIBUTION Liana Stroebel ▶ 084 264 1422 ◀ liana@grainsa.co.za

DESIGN, LAYOUT AND PRINTING Infoworks 018 468 2716 < www.infoworks.biz</p>



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Grain SA Farmer **Development Programme**

DEVELOPMENT CO-ORDINATORS Danie van den Berg Free State (Bloemfontein) ▶ 071 675 5497 ◀ danie@grainsa.co.za

Johan Kriel Free State (Ladybrand)
079 497 4294 < johank@grainsa.co.za
Office: 051 924 1099 < Dimakatso Nyambose

Jerry Mthombothi Mpumalanga (Nelspruit)

084 604 0549 < jerry@grainsa.co.za
 Office: 013 755 4575 < Nonhlanhla Sithole

Jurie Mentz

Mpumalanga/KwaZulu-Natal (Louwsburg) > 082 354 5749 < jurie@grainsa.co.za > Office: 034 907 5040 < Sydwell Nkosi

Graeme Engelbrecht KwaZulu-Natal (Louwsburg) > 084 582 1697 < graeme@grainsa.co.za > Office: 034 907 5040 < Sydwell Nkosi

Ian Househam

Eastern Cape (Kokstad) ▶ 078 791 1004 ◄ ian@grainsa.co.za
 ▶ Office: 039 727 5749 ◀ Luthando Diko

Liana Stroebel Western Cape (Paarl) ▶ 084 264 1422 ◀ liana@grainsa.co.za

Office: 012 816 8057 < Hailey Ehrenreich</p>

Du Toit van der Westhuizen

North West (Lichtenburg) ▶ 082 877 6749 ◀ dutoit@grainsa.co.za

▶ Office: 012 816 8038 ◀ Lebo Mogatlanyane

Julius Motsoeneng

North West (Taung) ▶ 072 182 7889 ◀ julius@grainsa.co.za

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here are so many allegations of corruption in the news these days. We know that if you are involved in corruption then you are not a good South African law abiding citizen. You are not contributing to building our beautiful country and creating a home for future generations.

This brought me to think about 'Am I a lawabiding citizen?' – so often we think that other people are breaking the law when in fact we also break the law. Let us consider the use of the roads – do you stop at a stop sign? Do you keep below the speed limit on all roads? Do you overtake where there is a solid white line? If you answered 'yes' to any of these questions, then you too are not abiding by

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the law and you are not a good citizen of South Africa.

Have you ever taken anything that was not yours? Have you ever sold anything that was not yours? Are your employees registered for UIF and are you making the required monthly contributions? Are you registered for income tax and are you declaring all your income for tax purposes? If you are registered for VAT, have you ever claimed VAT on items that were not for your business? If you answered 'yes' to any of these then you too are not abiding by the law and you are not a good citizen of South Africa.

If you are in the service of the government - have you ever taken a bribe from someone? Have you ever benefited a relative of yours? Have you ever given a job to someone who was in any way connected to you in spite of them not having the skills and education for the position? Have you taken 'a cut' on any deal that you were facilitating? Have you ever used government property for personal use? Have you ever used the GG car for personal use? If you answered 'yes' to any of these questions, then you too are not abiding by the law and you are not a good citizen of South Africa.

My plea for this month is – 'let us stand together and unite against crime and corruption'. Let us become good law abiding citizens and live by our wonderful constitution. This is our country and we need to build it so that our children and their children have a safe and prosperous home.



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HARVEST TIME – failing to plan, is planning to fail

very pip counts. Take time this season to consider this. We have experienced a terrible drought this year and as a result the maize price is set to remain high. As farmers we need to do everything in our power to maximise our yields in order to recoup losses caused by the drought. To do this we need to make sure that our harvesting operations are as clinical as possible as ever pip really does count.

We need to be as meticulous as possible in every aspect of the harvesting operation from machinery upkeep to the marketing of your grain.

Before you start harvesting, take time to develop an effective operation strategy. This should include a machinery maintenance programme, an order of work and a marketing plan.

Machinery maintenance programme

Here you should look at every piece of equipment that will be working during the harvesting season from the combine to the trailers. Everything needs to be checked through with one main goal which is to reduce wastage as much as possible. In the average year we often overlook small leaks in our equipment with excuses like 'it's not that much' or 'the cattle will eat that grain'. But the fact of the matter is that every year we incur huge losses due to machinery which is not properly maintained.

On your combine make sure that your sieves are properly fitted and that they are the correct size for the kernels which you will be harvesting. Check for holes and dents. Go over all the joins and seems on your combine to check that there are no gaps where seeds can leak out. Make sure that your de-bulking auger is working well and that there are no As farmers we are 'price takers' which means we have to accept the price which is determined by the market.

leaks in the hopper and on the auger pipe. On the combing header be sure that you set everything correctly according to your row spacing.

On the trailers and trucks you should check that all gaps and cracks are also sealed and that the grain doors close tightly and securely. Train your staff that will be operating the machinery to check and double check these before they set off to deliver the grain to your point of delivery. Also train your combine operator to always make sure that he turns off the auger when he is finished de-bulking and returns it to the stow away position. I have



Check all your harvesting machinery, keeping in mind that your main goal is to reduce wastage as much as possible.



As farmers we need to do everything in our power to maximise our yields.

heard on many occasions of drivers leaving the auger running and wasting tons and tons of maize while combining. This year we cannot afford any mishaps like this.

Order of work

Here you should plan your movements and the order in which you will combine your lands. A lot of this will be determined by the moisture content of the grain but you should, as best as possible try to calculate the most efficient order of operations so that you can cut as much cost as possible.

Everything runs on diesel and diesel is one of the biggest expenses of the harvesting operation. If you plan effectively in a manner which reduces distances travelled from point of harvest to point of delivery then you can make a big saving on fuel. For example; if I have a land 5 km away from my shed and another 6 km away, it will make the most sense to do those two lands at the same time. This will save me from having to return all the machinery there on another occasion.

Marketing plan

As farmers we are 'price takers' which means we have to accept the price which is determined by the market. Unfortunately there is not much we can do about that. There is however different strategies which you can implement to make sure you receive the best possible price for your grain.

- Shop around not all institutions pay the same rate, therefore make sure that you find who is paying the most.
- Contract if you keep a close watch on what the market is doing you can hedge the price which you will receive for your crop at any point. Be sure to consult with a broker before attempting this strategy as there is risk involved. I have heard of farmers this year hedging the price at R3 500/ton of maize and subsequently it rose to R5 000/ton, therefore they will essentially lose out on R1 500/ton of maize.
- Storage as farmers we may not be able to set the price but we can decide not to sell.
 Many farmers do this in years when prices are lower and wait for an increase in price

We need to be as meticulous as possible in every aspect of the harvesting operation from machinery upkeep to the marketing of your grain.

before deciding to sell. I can't see that being the case this year.

Farming is all about margins. We need to do all that is in our power to increase the margins of potential profit and decrease the margins of possible loss. Our grain that we produce is cash; we therefore need to make sure that the machinery and equipment which is handling our cash is not leaking rands and cents along the way.

Article submitted by Gavin Mathews, Bachelor in Environmental Management. For more information, send an email to gavmat@gmail.com. MADE POSSIBLE BY THE MAIZE TRUST

The how's and why's of yield estimation

he current production year has been one of the most difficult in over thirty years with only some provinces and districts receiving rain critical to establishing a maize crop at the planned optimum planting window.

Early plantings in some provinces suffered enormous heat stress from the intermittent heat waves only to use up all the available moisture reserves. The possible final yield of the final crop estimate will only become clearer during March and April 2016 due to the mixed planting dates and loss of the mainly white maize production in the Free State.

It will be extremely useful to be able to assess you own maize crop so as to estimate final yield and possible income which extend from May to August 2016.

Reasons for making a yield determination

Predicting possible yields will enable you to define the harvesting plan, transport and storage capacity required. Certainty of yield will help in making the relevant decisions such as Safex marketing positions, your future financial position and being able to communicate with financial institutions or co-ops as to possible crop income to be expected. Pricing will be dependent on Safex futures and the Rand/Dollar exchange rate. Please consult Safex to see the current and future prices to be able to work out your possible crop income after a yield assessment has been completed.

White maize futures are trading at about R4 850/ton with yellow maize futures being derived from import costs or parity at R3 450 per ton. For some farmers a yield of 2 t/ha to 2,5 t/ha might be at breakeven or profitable levels.

Farmers who do manage to produce a crop of over 2,5 t/ha of white or yellow maize this season will do very well financially. In some

> The best policy is to critically examine the crop before and make an accurate estimation as possible depending on its actual stage of development.



cases the crop will be best turned into silage or grazed off if the estimated yield is deemed to be at a level that is not worth harvesting.

Production parameters

Many factors that influence production and critical plant growth stages, for the many cultivars available, will influence a yield estimation. This will be especially important in a dry hot year with very varying conditions of drought and then intermittent thunder showers that provided crop saving moisture and further development of the plants.

Variable climatic conditions can change the published benchmarks regarding days to physiological maturity or harvesting date for specific cultivars. The best policy is to critically examine the crop before and make an accurate estimation as possible depending on its actual stage of development.

Maize cultivars are available in South Africa that take from 105 to 145 days to physiological maturity and 155 to 180 days from planting to harvest. You should note when these benchmarks occur for the maize cultivars planted on your farm. Conservation tillage practices will extend these estimates by several days. Normal planting populations used for the new cultivars in dry land production vary from 15 to 20,000 plants per hectare for lower potential soils to 18 to 36,000 plants per hectare in higher potential soils.

Cobs

During the later growth stage V12, which occurs about 42 days - 46 days after emergence



the number of kernel rows, number of potential kernels, and the size of ear is determined. Moisture and heat stress at this stage will result in curtailed ear development and final yield. After this stage the development of the ear proceeds rapidly. At the first reproductive stage known as R1 the first silks are visible outside the husks and the actual kernel number and kernel size is determined. Moisture deficiencies at this stage can result in the loss of 7% of the potential yield per day. Kernel weight is determined at reproductive stage R6.

Assessing yield by measuring cob size

The main factors to be measured in determining yield are the number of ears per unit area, the kernels per ear and the average mass of the kernels. As can be noted above, keep in mind whether or not the crop was stressed at the critical points described. Cobs can best be examined at the earliest, at the soft dough stage to enable the number of rows and portion of rows that have been successfully pollinated and developed. Remember to cut cobs in half or carefully count the number of rows which can vary from between 8 and 20. The usual number would probably be between 12 and 16. Commercial maize with good cobs would average about 600 kernels.

If the crop is at physiological maturity a more accurate determination can be made.

Calculation steps

Count the number of cobs per 10 metres in many representative areas of the land under consideration, count the potential kernels that Predicting possible yields
will enable you to define the
harvesting plan, transport and storage capacity required.

will harden to form harvestable grain in the small, medium and large cobs, using a mass of 0,28 grams per kernel work out the mass of the small, medium and large cobs. As a general guideline small cobs have a mass of about 120 grams, medium about 150 grams and large cobs about 180 grams. If you can preferably work out an accurate mass from the number of kernels per cob or alternatively estimate the average size of the cobs counted in the 10 metres or row.

Most maize would be planted in 0,92 or 0,75 metre rows or tram lines. There are 108 by 100 metre rows or 10 800 metres of plants in a hectare planted at 0,92 widths and 133 by 100 metre rows in 0,75 row widths.

Thus for every 10 metres of points counted to determine number of cobs the multiplication factor for our calculation will be 1 080. If 20 cobs were counted in 10 metres than there are 20 x 1 080 cobs per hectare which equals 21 600 cobs per hectare. At a medium cob mass of 150 grams there are thus 21 600 x 150 divided by 1 000 to show kilograms (kg's) per ha (1 000 g/kg) divided by 1 000 (1 000 kg/ton) to show the tons per hectare of yield expected. The answer will be 3,24 t/ha. One can be conservative and take off 10% for over estimation and harvesting losses to arrive at a final yield rounded off estimation of 2,9 t/ha. As can be calculated 180 gram cobs would give a yield of about 3,5 t/ha.

Conclusion

Keep in mind any very dry or hot conditions experienced at critical growth stages that your maize crop experienced when making a considered and conservative estimate of potential yield prior to the actual harvesting of your crop.

Article submitted by a retired farmer.

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S clerotinia stem rot (*Sclerotinia sclerotiorum*) is one of the world's biggest threats when it comes to canola production and the obtainment of high yields.

Up until 2013 the effect of the disease on the South African canola industry was regarded as negligible small. Since 2014 however, the management of the disease has become more difficult and the failure of doing so resulted in below average yields.

Symptoms and ideal conditions

The symptoms are a greyish, bleached lesion on the stem of the canola plant. A white fungal growth will, under the ideal conditions, cover the lesion. It is usually found on the lower part of the main stem, but it can occur on the whole plant. Where the infection occurs, the plant will usually lodge and wilt which will result in early maturing.

This early maturing (dying-off of plants) will cause seed loss and yield reductions. Advanced infection can be observed as black irregular shaped round bodies in the stem. The sclerotia (round shaped bodies) are the survival structure of the fungus.





The life cycle of Sclerotinia.

Life cycle

The life cycle of sclerotinia can be seen in Figure 1.

The sclerotia will only germinate under ideal conditions that can be summarised as follows:

Figure 1: Sclerotinia life cycle.





Canola at 20% flower – 15 open flowers and pods on main stem.

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Table 1: Identification of the flowering stages of canola.

Flowering stage	Open flowers on main stem (including pods)	
10%	10	
20%	14 to 16	
30%	20	

- · Prolonged wet soil conditions.
- Temperatures between 11°C to 14°C for a period of up to ten days during early flower.
- Wet plant conditions (mist and dew) for a long period of time during flowering.

The following factors can contribute to the Sclerotinia risk of your field:

- Thick and dense canopy.
- Canola or lupins on the field in recent history (sclerotia can survive up to six years in the soil).
- Disease incidence in the last affected crop.
- · Distance from the last affected crop.
- · Rain and wet conditions during flowering.

Management of sclerotinia

During the last couple of years extensive testing of different fungicides have been conducted and the results were promising in most of the trials. Currently two products are registered for use against sclerotinia on canola, namely, Amistar and Prosaro.

The timing of application is the most crucial part of your application since the window for the correct stage is very small. The objective of the fungicide application is to cover as many petals as possible while ensuring that the chemical also penetrates into the canopy to help protect potential infection sites (such as leaf axils and bases). The chemical is only active on petals present at the time of spraying. The chemical will not protect petals that emerge after spraying, but some chemical coverage within the canopy may help to restrict infection. The fungicides cannot cure infections that have already penetrated into plant stems, hence the need to apply the fungicide prior to significant petal drop when conditions are conducive to sclerotinia infection. It is important to spray the fungicide on as much of the yellow petals before petal drop occurs, which is usually at 20% to 50% flowering. Table 1 can be used as a guide to determine the optimum timing of fungicide application.



Canola at 30% flower – 20 open flower and pods on main stem.

Conclusion

The timing of the fungicide application is the most important factor to consider when you decide to spray against the disease (based on the factors mentioned earlier). Monitor your crop thoroughly and continuously for correct timing. It is important to remember that different cultivars have different growth periods as well as different flower rates. Be sure to scout all your fields before spraying for the ideal timing for that particular field.

When following a pro-active integrated management system involving crop rotation, cultivar selection, fertilisation programme and fungicides, sclerotinia stem rot should not be a problem in your canola crop.

Article submitted by Franco le Roux, Agricultural Resource Manager: SOILL. For more information, send an email to franco@soill.co.za.



Do your soybeans a favour with moisture conservation

Plan your cultivation system so that it will enhance soil moisture build up and preservation.

Solution of the factors to keep in mind when implementing a moisture conservation programme in dry land soybean production.

Available water capacity by soil texture

Before we look at protection of the surface of the soil it is important to understand something of the soil's physical properties. Soil texture and structure greatly influence water infiltration, permeability and water-holding capacity. Soil texture refers to the composition of soil and the proportion of small, medium and large particles of clay, silt and sand.

Soil structure encompasses the arrangement of the above noted soil particles into stable units called aggregates which give soil its structure. Aggregates can be loose and friable or they can form distinct uniform patterns. Your tillage methods, crop rotations and management practices will largely determine whether or not you are building aggregates or breaking down aggregates over the long term.

Soil porosity is determined by the space between soil particles and consists of air and

water. Soil at field capacity will have about 50% air and 50% water in the profile. This is the ideal state to aim for in irrigation or dry land production. Other factors that are important when examining and building your soils are water infiltration rates or movement of water from the soil surface into the soil profile and permeability which defines the ability of the soil to allow movement of air and water through the soil profile into the root zone so that the a balance can be achieved to stimulate maximum uptake of the plant of moisture and nutrients.

How much moisture can be stored in the soil at field capacity?

The main classes of soil are shown in **Table 1** with the moisture holding capacity of each type in mm's for every 10 cm of soil depth. Remember that each soil type, with enough depth to be economically viable, kept in production in dry land agriculture will have bands from top soil, subsoil and clay layers each with a different capacity to retain moisture.

Ideal soils for dry land production will have a surface mulch good structure in the top soil, subsoil over a clay layer that when filled with moisture can help retain moisture in the whole soil profile. For example in a Westleigh soil with an effective soil depth of 120 cm with 90 cm topsoil and subsoil made up of a sandy loam over silty clay, the amount of moisture that can be stored would be 90 cm divided by 10 cm x the water holding capacity shown above which is 11 mm per 10 cm plus 13 mm per 10 cm x the balance of 30 cm making up the whole soil profile. The answer is that the whole soil profile can store 174 mm or 30% of the annual rainfall in an area where the annual rainfall averages 600 mm.

If you could store this amount of moisture prior to the planting season it would put you in the most ideal position to be able to plant on time and for the germinated crop to be able to grow well for six weeks to two months before supplementary rain was required.

Enhancing moisture conservation

Your cultivation system, whether or not being conventional or conservation tillage, should be implemented to enhance moisture conservation. Together with the crops grown in a rotational cycle the system should maximise keeping as much plant residue between crops on the soil surface to promote infiltration of rainfall and keeping the top and lower soil profile loose with the correct use of rippers or suitable tyne implements so that any rainfall will percolate into the whole profile. Effective control of weeds, to keep evapo-transpiration to a minimum, must be implemented either by mechanical or chemical control through the crop rotations.

Table 1: Available water capacity by soil texture.

	Available water capacity (mm per 10 cm's of soil depth)			
Textural class	Lower range	Higher range	Average (rounded off)	
Coarse sand	2,08	6,25	4	
Fine sand	6,25	8,33	7	
Loamy sand	9,17	10,00	10	
Sandy loam	10,42	11,67	11	
Fine loamy sand	12,50	16,67	15	
Silt loam	16,67	20,83	19	
Silty clay loam	15,00	16,67	16	
Silty clay	12,50	14,17	13	
Clav	10,00	12,50	11	

Conclusion

Keeping all the important soil factors in mind plan a cultivation system that will enhance soil moisture build up and preservation in order to give your dry land soybeans the best possible chance of surviving drought periods in the growing season.

Article submitted by a retired farmer.

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Here's your SUNFL WER tick list for April

Planting and harvesting can be a very rewarding venture if you make the effort to do things correctly. You need to take time to plan your operations carefully and be sure not to cut any corners.

As sunflowers are a hardy crop and can be very tolerant of drought conditions, there will undoubtedly be many farmers who have planted sunflowers this year rather than maize. Make sure that you look after your crop in order to get the most out of it.

By now most of your basic jobs would have been done, such as planting and spraying. The sunflowers should be either flowering or drying off. There are many important factors to consider at this stage:

- Weed control;
- Folio feeds;
- Pest control;
- Harvesting preparation; and
- Marketing.

Weed control

Sunflower harvesting can be an intricate operation as the seeds are relatively small. This means that many of the common weed seeds may also enter the combine and be mixed in



with the sunflower seed due to the size. This is why it is crucial to try and keep your sunflower lands as clean as possible.

Weed seeds mixed in your grain can have a negative impact on your grade and therefore the price that you receive for your crop. Take special care of eradicating all Datura weeds (*Olieboom*) as these can cause many headaches at harvest time. If you have a large percentage of Datura in your grain some institutions will not accept it which will cause you to have an extra expense of getting your sunflower seeds cleaned. Rather take the time before harvesting to go through your lands and chop out all unwanted weeds. It may save you big expenses in the future.

Folio feeds

If your crop looks as though it has good potential then it may be a good option to consider giving it supplementary nutrient applications. This is usually done by spray at the point of budding just before the sunflower head opens. Many farmers apply folio feeds or Boron chemical spray which can boost the yield of your crop if the conditions are favourable.

Pest control

Once a sunflower head has made seed it is a huge attraction to many pests especially birds such as pigeons and quelea finches. This is why it is important to try and get the crop off the land as quickly as possible. Make sure that everything is ready to operate as soon as the sunflower is dry enough to reap. Many farmers take preventative measure in order to try and curb the damages caused by birds.

These measures may include scarecrows, shooting and loud gas cannons which let of big bangs to scare the birds away. These measures may be effective for a short period, but birds quickly learn that there is no real threat and continue to eat their way through your crop.

Harvesting preparation

As I mentioned before, timing is everything and you should have all your equipment ready to operate as soon as the crop is dry enough to harvest. Go through all your machinery carefully to make sure that you will have no problems once operations begin. Take special care when working through your combine to make sure that there will be as little wasted seed as possible. This means that your header must be in good working order and the sieves should all be installed and operating perfectly.

Make sure to check the blowers and set them correctly so that they do not blow too strong which will also waste seed. Finally, go through all the trailers and trucks which will be carting the grain to check that there are no gaps and spaces where grain will leak out.

Marketing

Have a good plan as to where you are going to sell your product. Make sure that you try to get the best possible price for your grain as profit margins are always slim especially in a drought year such as the one we have just experienced. Keep an eye on the market so that you know the exact value of your product.

Always remember to try and get as much as possible out of your crop. This is the only way to make money in agriculture today. Everything comes down to your management and your attention to detail.

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

A healthy sunflower head indeed.



Diversification of your enterprise will have a great effect on countering the effects of risks.

When risk appears, valuable lessons can be learned

n a previous article we have defined risks as the possibility that unforeseen, unplanned, unnatural, out of the ordinary, unexpected events may occur and could cause a loss of some nature.

Remember as a farmer when you commence with the production of an agricultural product you face possible risks. In broad terms you face production risks, marketing risks and financial risks.

During the production process numerous events can occur such as uncertain climatic conditions (droughts, flooding, hail, severe frost) and the occurrence of disasters such as veld fires and the outbreak of plant and livestock diseases.

During the marketing process events may occur that could disrupt the marketing process and/ or affect prices adversely. The loss can be physical - you cannot market your products (bridges are damaged during a flood). Or the price of your products may drop due to some or other reason beyond your control.

Financial risks could be a lower income and/or problems with maintaining a positive cash-flow position, thus affecting the financial success of the business. It should be noted that production, marketing and financial risks are closely interrelated.

By far the majority of our farmers have experienced the drought (a prolonged risk) which has emphasised that a farming business is by all means the most difficult business to manage and it is not for the faint hearted. Unfortunately this will not be the last drought. South Africa being one of the drier countries in the world is prone to droughts on a regular basis, thus we must farm with this in mind.

Acknowledging the fact that the drought has caused major problems, all with negative financials results, one must attempt to remain positive. Therefore what can we learn from experiencing the drought? Is there something to learn? It is absolute necessary to consider the effects of the drought and what can be done to reduce the effects of a drought in the future. You will have to improve your management if you want to survive as a farmer. The drought will pass and when continuing your farming business, consider the following.

As far as the production process is concerned, we are of the opinion that the drought has emphasised that, if it is at all possible, you must do your utmost best to diversify your farming business into more than one enterprise. Diversification entails a combination of farming enterprises that are not subject to the same risks. Diversify into crops that have different growth periods and are not equally susceptible to drought. The addition of a livestock enterprise will have a great effect on countering the effects of risks. The more diverse enterprises are, the more risks are countered.

The drought has also accentuated 'Do the basics right'. In practice, farm with whatever you are farming, as correctly as possible. Prepare your lands correctly, plant at the correct depth, do proper weed and pest control. If a dry period occurs and your maize plants have to compete with weeds for moisture the adverse affect will be more severe.

The application of conservation farming practices have also been highlighted. Conservation farming can be described as a sustainable profitable farming system that reduces soil disturbance through minimum tillage and rotating of crops with the purpose of leaving as much as possible plant material (mulch) on the lands to increase water infiltration.

As far as livestock is concerned, do what you need to do with your livestock. It is of the utmost importance to apply a proper grazing management system and never, never overgraze. Apply the accepted norm of grazing capacity for your area at all times. It is also important to build up a feed bank (make hay and/or silage) as a reserve should you experience a drought situation. If at all possible build up a feed bank that will be able to maintain your basic herd for at least a year.

As far as marketing management is concerned diversify the marketing of your products and consider the aspect of value-adding to your products. If you think you are too small a farmer to add value to your products, what about forming a group?

With regards to financial management the use of a proper budget has also been highlighted. This means to plan your business properly, beginning with detailed management production programmes for every enterprise and from that a budget for the financial year in advance. Then farm according to your plan.

To summarise consider to diversify your business and apply conservation farming, do the basics right and farm strictly according to your plan and budget.

The key to soften the effects of adverse events is management - plan, organise, implement and control as correctly as humanly possible. In the event then of a very severe event, such as a prolonged drought, you can thenbe at peace - you have done what you can. 🔳

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

MADE POSSIBLE BY PANNAR



Downy mildew of sunflower: Uncommon, but can cause localised damage

owny mildew is caused by the soilborne fungal pathogen *Plasmopara halstedii*, which occurs in the major sunflower production areas of South Africa.

Previously, minor downy mildew epidemics have been recorded in the Rustenburg, Brits and Potchefstroom areas of the North West Province of South Africa in commercial fields and research plots.

Epidemics are reliant on infection by primary inoculum from infected seed or soil. Yield losses can be low to moderate, depending on the percentage of infected plants and their distribution within the field.

Epidemiology of the disease

The causal pathogen, P. *halstedii*, can survive for up to ten years in contaminated soil as oospores. These oospores germinate when soils are cool, accompanied by the presence of saturated water. These oospores form zoosporangia, which will give rise to mobile zoospores, which move through the soil.

Initial infections occur when these zoospores infect sunflower seedlings. Infected plants usually die during the early growth stages, but if plants do survive, it still grows and generally produces white zoosporangia on the underside of the leaves prompting secondary infection.

This is not always the case as dwarfed plants showing normal symptoms of downy mildew have been observed to not have the typical leaf lesions and spore production on the underside of the leaf.

Symptoms of the disease

Early infected plants usually die, causing reduction in plant stand and thus resulting in bare patches in the field. This has often been the case where epidemics in South Africa have been recorded. Systemically infected sunflower plants are usually dwarfed or stunted (**Photo 1**) with shortened internodes and the sunflower head pointing straight upward.

Surviving stunted, infected plants show a thickening and yellowing of the leaves, which usually borders the veins of the leaves, but can also be present on the whole leaf. White fungal mycelium and spores appear on the underside of these leaves (**Photo 2**).



Disease control

Planting of resistant hybrids is recommended in areas where downy mildew is a problem. Resistance is often race-related, and to determine adequate resistance, a survey of sunflower downy mildew infected plants is necessary.

This will enable us to determine which P. *halstedii* races occur in South Africa and which resistance genes need to be included into local cultivars.

Volunteer sunflowers serve as alternate hosts of the downy mildew causal pathogen; therefore, proper weed control in crop rotation sequences can help reduce the disease. Crop rotation is important because it prevents disease build-up in the field by interfering with the life cycle of the disease. However, crop rotation will have a minimal impact for downy mildew as the disease can survive in the soil for more than ten years. Crop rotation programmes to reduce downy mildew need to be carefully planned.

The pathogen is seed- and soil-borne, therefore, fungicide seed treatments can help minimise the disease. In the USA, metalaxyl resistance is common and known to reduce seed treatment efficacy. Metalaxyl resistant races of White fungal mycelium appearing on the underside of downy mildew infected leaves.

the pathogen have yet to be recorded in South Africa so we assume at this point that metalaxyl is effective for controlling infections. Alternate seed treatment fungicides are used in the USA to counter this resistance. Foliar fungicide applications are neither effective nor economical.

The authors request that should any producer observe the abovementioned symptoms, to please contact them. They require isolates for race determination studies to fully understand which resistance genes are effective to control this disease in local breeding programmes.

Article submitted by Moses Ramusi and Bradley Flett, ARC-Grain Crops Institute, for SA Graan/Grain SA April 2015. For more information, send an email to ramusim@arc.agric.za or FlettB@arc.agric.za.



Guidelines for utilising shrivelled grain crops and crop residue



Koos Snyman from Aliwal North shows how sheep utilise grazing maize. All the grain is eventually utilised.

The extent of the 2015/2016 drought in the summer sowing areas is such that there is virtually no area that has not been affected by the drought. The extent of the damage varies between areas and even on the same farm, there are some blocks of grain with more damage and others with less damage as a result of uneven rainfall.

It is true that grain formation and therefore crop yield in certain regions have been seriously affected, but a reasonable amount of vegetative growth did occur in some regions. In other regions the crops were damaged very early and there is therefore little material in the fields. In spite of the drought, there is a reasonable amount of plant material on which animals can be wintered, and this is a major benefit. Without crop residue or shrivelled plant material it would have been more or less impossible for stock to be wintered in the summer sowing areas. Different methods of utilising the plant material have cost implications, and producers should therefore think carefully before just cutting down maize.

Firstly, decide on the utilisation possibilities of the drought-damaged crops. For example, are you concerned about maximising profits, providing feed to stock because there is nothing else to eat, about possible value adding to the drought-damaged crops, or about the best and cheapest over wintering method for stock? To help you decide:

- First determine how much and what type of feed (roughage and/or concentrated feed) is actually required for the stock.
- Determine how many tons of grain per hectare can be harvested.

- Determine, on the basis of the amount of grain, whether the grain income per hectare will exceed the harvesting costs.
- Determine the amount of material and grain available per hectare. That will enable you to determine the carrying capacity of the crop.
- Also determine for how long the crop and material will be available.
- Make a decision on which alternative will limit the production loss.

Grazing of the crop field

The cheapest method is to leave the crop on the field and graze it when necessary. Sheep utilise the grain very well and there is virtually no wastage.

The biggest risk is that sheep will over eat themselves on grain and major losses can occur as a result of acidosis.



Voermol Landelek (V15414) is an example of such a lick. Make sure that the lick contains medication and buffers to limit acidosis. In the 14-day adaptation period, the maize should initially be fed at 200 g/sheep/day for two days, and then increased gradually by 100 g every second day.

Fresh Landelek should be given at water troughs daily to ensure a daily intake of at least 200 g per 45 kg or 50 kg sheep. Landelek also contains 26% protein and the right minerals and trace minerals to supplement deficiencies in maize, grain sorghum and sunflower. Maize plants can already be grazed in the green stage, but green, wilted grain sorghum plants have a high prussic acid content and should preferably be grazed when the plants are completely dead. Hypo at 1 kg per 200 litres of drinking water will help to limit prussic acid poisoning.

Bean crops such as soybeans that have shrivelled can be utilised very well by sheep. Sheep should also be adapted gradually over at least 14 days to soybeans to prevent digestive disorders.

Wool break in wool-producing breeds is common if the change in feed is not done gradually. The right supplement for bean crops and bean residue is Voermol Molovite (V7266), and a daily intake of approximately 200 g per 45 kg to 50 kg sheep is adequate. Molovite contains 10% good quality natural protein and the necessary medications, minerals and trace minerals to supplement deficiencies in beans and bean residue.

Cattle utilise shrivelled plant material in the field very well, but if there is a reasonable amount of grain (more than 0,5 t/ha), wastage occurs. Kernels that fall on the ground are lost, and better utilisation is possible where sheep graze in combination with cattle.

It makes sense to put in the stock when the grain is still moist to prevent further deterioration and loss of plant material.

An unplanned fire can totally destroy this feed and firebreaks should therefore be made where there is a fire risk.

Making of silage

Think carefully about the cost and utilisation of silage. Cutting maize with a single-row cutter and trucking it out will cost about R1 300/ha. Diesel consumption can be between 13 litres/ ha and 28 litres/ha.

The higher the yield, the lower the making costs per ton will be, and there are quite a number of factors that determine the total cost. Be careful of cutting too early, because although the leaves appear dry, the stems can still be very moist.

The ideal moisture percentage for cutting silage is between 60% and 70%. Cut the material very finely (10 mm - 20 mm) and compact



Voermol Landelek contains the necessary buffers, good quality protein and trace minerals to utilise shrivelled maize and residues optimally.

well to get good fermentation. The nitrogen content of drought stricken maize is normally higher than that of maize that has grown well. The sugars in shrivelled maize are usually high enough for normal fermentation.

A dairy cow is the most effective animal for converting silage to money. Rations with the maximum inclusion of silage are available on request. Shrivelled maize silage can also be used successfully in feedlot rations or for limited supplementary feed to wintered beef cattle.

The energy value of maize silage and particularly drought silage is too low to finish cattle with and energy therefore has to be added to a feedlot ration. Molasses meal is a cheap source of energy and it can replace up to 12% of the maize meal in a feedlot ration.

Sheep can also utilise silage, but because of selective eating habits the intake is sometimes inadequate. As soon as the silage dries out a bit in the manger, the sheep refuse to eat it. Sheep should be given fresh silage at least two to three times a day to ensure a good intake.

Stacked maize

The quality of stacked maize is good, but high labour and milling costs mean that it is not done often in practice.

Cutting, raking and baling

Because of high costs, this is surely the last utilisation method to be considered. Many factors determine costs, but a guideline for cutting, raking and baling with a round baler is approximately R771/ha, with approximately 22 litres of diesel per hectare required.

The quality of baled maize residue is for no more than sustaining the animal, and to obtain

better utilisation it should be milled and treated with a product like Voermol LS 33 (V2678). Mix LS 33 in equal parts with water and mix 1 litre of the mixture with 10 kg of roughage. LS 33 increases the tastiness and quality of any poor quality roughage.

A final remark is that the power of recovery of maize is underestimated in many cases. Younger maize in particular can recover surprisingly well, provided that more rain falls. The high maize price makes it worthwhile to harvest even at a low yield.

If you remove just the grain, you are still left with a lot of plant residue for overwintering stock. The energy value of maize residue grazing is high, but the protein value is marginal to low for producing animals like ewes with lamb, cows with calves, and young growing animals.

Lick supplementing is important and a lick like Voermol's Landelek was developed specially to supplement nutritional deficiencies in crop residue grazing for these types of animals. Just make sure that the risk of burning is limited to a minimum.

With this information please contact an animal science specialist to help determine what to do and to calculate the supplementations needed.

Article submitted by Pietman Botha, SA Graan/Grain contributor and Hendrik van Pletzen, Voermol Voere. For more information, send an email to pietmanbotha@gmail.com or hendrikvp@mweb.co.za.

Integrated crop and pasture-based livestock production systems

his article highlights a specific pasture crop species that can play an imperative role in CA-based crop-pasture rotations. Besides improving the physical, chemical, hydrological and biological properties of the soil, the species under discussion can also 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/or soil restoration.

This article focuses on an annual legume pasture crop commonly used in the winter season as a green manure crop to improve soil conditions and to provide cover in the winter months of a summer rainfall region. This annual legume crop could possibly succeed a perennial grass pasture prior to planting a grain crop the next season.

With the rising cost of fertilisers and the objective of sustained soil fertility and soil health improvement, this green manuring option can provide an opportunity.

Ornithopus species (Seradella)

Seradella is a winter growing, annual legume that has a semi-erect to erect growth nature, but can also form stolons/creepers. This species has a deep root system and can form creepers as long as 1 m. It is indigenous to north Western Europe and the Mediterranean. It has the ability to grow on soils that are poor and not suitable for other forage crops.

There are two common cultivars of Seradella, i.e. the French or pink flowered Ornithopus sativus and the yellow flowered Ornithopus compressus.

Agro-ecological distribution

Seradella's growing season stretches from autumn to spring, and it can grow at altitudes as high as 1 500 m above sea level with a rainfall of between 300 mm to 700 mm rain per annum. Pink Seradella is not frost tolerant and is moderately drought-tolerant. As mentioned, dry conditions are overcome by deep root systems that are able to access deeper sources of soil water. It is known that yellow Seradella can tolerate deep, sandy, acidic soils. This species is also very susceptible to waterlogged



A field of French (pink) Seradella.

conditions and not suited to alkaline soils. This illustrates the potential of this species, especially the earlier flowering varieties, to grow in lower winter rainfall areas, as low as 350 mm per annum. Supplemental irrigation can play an important role in increased production. The hard seeded and deep root system characteristics of the species, facilitates the establishment and persistence of this species in soils with low fertility.

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 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.

Soft seeded pink Seradella shows very similar growth properties as a fodder plant on more infertile sandy soils. Pink Seradella is often used a nurse crop for yellow Seradella, improving its establishment. These species tend to do best on well-drained and fertile soils.

Management and utilisation

Good soil preparation is imperative for the successful establishment of Seradella. It is recommended that the seedbed be as fine, firm and weed free as possible to avoid unnecessary plant competition.

Seradella can be planted with a nurse crop, such as oats, for either hay or silage purposes. It is then advisable to use 10 kg/ha - 20 kg/ha of seed (depending on climatic and soil conditions) in mixture with the oats seed. It is important that the seed be inoculated with the correct strain of *Rhizobium* bacteria.

Seradella has a small seed and it is important that the seed is planted shallow (10 mm - 15 mm) and rolled firmly to facilitate good establishment. It is advised that seed rather be drilled into the soil rather than broadcast, as this will ensure the best seed soil contact required for optimal germination.

The seed is known to have a very low germination potential, however, dehulled seed seems to have a much better germination percentage. The peak growth period is generally in spring, followed by a drying off of plants in summer.

Soil nutrient requirements for legumes are normally high levels of potassium, calcium and particularly higher levels of phosphate as well as micro nutrients such as copper, zinc and molybdenum. It is advisable to raise the soil nutrient statuses to 30 mg/kg P and 120 mg/kg K.

These soil nutrient levels are often not economically justifiable if soils have low levels occur, which justifies the use of Seradella as it is adapted to low fertility. It is not common to find insect pests, root or foliar diseases on Seradella plants; however, international reports have recorded mites and worms occasionally feeding on the plant. Since Seradella is a legume, its purpose can be either to provide a protein rich fodder or rather to be incorporated into the soil as a green manure. If grazed, the recommendation is to do it infrequently and with a moderate grazing pressure. Very good hay can be made from Seradella as long as it is not dried out too much, resulting in significant leaf loss.

The use of Seradella as a living mulch was investigated in small scale farming systems in the Eastern Cape and KwaZulu-Natal. With frequent rainy events in autumn, good yield culminated after interseeding Seradella and Seradella/oats mixtures into maize during late February. The living roots in the soil had a positive impact on soil health, supplying food to micro-organisms.

The efficiency of this system needs to be calculated over two or even three years of practice. The suppression of weeds and insect pest's pressure may favour such interventions.

Soil conservation and health benefits

Considering the green manuring benefits of Seradella, it is advisable that this crop be planted on soil prior to winter, and not necessarily fertilised for maximum production, since this can potentially have an impact on the soil moisture content build-up over the rainy season.

This species can be planted to additionally provide a soil cover to limit soil moisture evaporation and wind erosion. Finally, once the crop has grown to maturity and fixed nitrogen, it can be incorporated into the soil prior to the following summer's grain crop.

Management challenges

The most significant management challenge with Seradella is to ensure that the seed is well inoculated and not planted too deep. This is sufficient motivation for a nurse crop to be planted along with Seradella. Another management challenge is the grazing management of the species to sustain a good dense stand. If the plant is overgrazed the stand will become sparse and unproductive resulting in a higher incidence of unwanted species (weeds).

The most effective method of utilisation is hay or silage making. With regards to hay making, leaf loss can become a management challenge if the harvested plant material is dried for too long.

Animal production aspects

As a hay and silage crop, dry matter yields are important and can vary from anything between 4 t/ha - 10 t/ha, all depending on the inherent soil fertility, moisture and type, in conjunction with climatic conditions.



French (pink) Seradella flower.

Good soil preparation is imperative for the successful establishment of Seradella.

Seradella can have a crude protein content as high as 20% - 25% with a very high digestibility, which declines as the plant matures in addition to a lower leaf:stem ratio. This very palatable species can even provide a metabolisable energy (ME) value of 10 - 11,5 MJ/kg.

Conclusion

Seradella is not a well-known legume crop in South Africa, however it has many benefits that can support and play an integral role in conservation agriculture. If managed correctly, it can be a persistent and vigorous grower with good palatability and nutritive value.

It also has a good tolerance for poor soils, but should rather be seen for its potential as an interim crop (green manure) between a longterm pasture ley crop and the next annual grain crop. Its drought-tolerance and adaptation to poor growing conditions makes it a suitable candidate as a green manure crop.

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 SA April 2015. 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.



Phoma black stem of sunflowers Potentially devastating in certain production fields

Phoma black stem is caused by the soilborne fungal pathogen *Phoma macdonaldii*, which occurs in some of the major sunflower production areas of South Africa. Severe infections on susceptible hybrids can cause up to 100% yield losses in one particular field.

Disease survey results from the 2012/2013 and 2013/2014 seasons conducted by the ARC-Grain Crops Institute revealed that Phoma-like infected sunflower symptoms were observed in some parts of Limpopo (Naboomspruit) and the North West Province (Carletonville).

Epidemiology of the disease

The pathogen survives as pycnidia/perithecia on plant debris in the soil and can also be seedborne. The fungus is disseminated through water (rainfall/irrigation) and by insects such as *Apion occidentale* and *Cylindrocopturus adspersus* stem weevils, which feed on sunflower. Infection can occur anytime during the growing season when conditions are favourable (wet, humid and high temperatures).

During the infection process, perithecia release ascospores, which infect the leaves. Adult sunflower stem weevils feeding on the leaves cause lesions whereas contaminated larvae spread the fungus as they tunnel throughout the stem. Infected leaves die while the pathogen spreads to the petiole and stem, forming irregular shaped symptoms at the



Phoma infected plants showing black, irregular shaped lesions centred at the node.

node. Infection can also occur through mycelia at the basal part of the plant.

Symptoms of the disease

The disease is characterised by light to dark brown/black irregular shaped lesions centred at the node (**Photo 1**).

The lesions originate from the leaf infections that progress down the petiole to the stalk. Under favourable conditions, the leaf wilts, petiole turns uniformly black and the stem lesions expand to form a large, shiny, black patch with well-defined borders.

Small, circular fruiting bodies of the fungus are visible on the surface of the stem. Pith damage may occur right on the petiole and as a result, mid-stem lodging can occur (**Photo 2**).

Disease control

The fungus overwinters in infected sunflower debris on the soil surface. Deep ploughing that burry plant residue as well as crop rotation can accordingly reduce incidences and severity of the disease. Crop rotation is important as it prevents disease build-up in the field by interfering with the life-cycle of the disease on its host, the sunflower.

Leaving crop residue on the soil surface will also encourage the development of the disease. Control of insects such as sunflower stem weevils can help minimise the spread of the disease. Dense plant stands favour black stem development, therefore, optimum plant densities and nutritional inputs can reduce infection. No hybrids have been identified as being immune to the disease, although some hybrids appear to be more tolerant than others.

Article submitted by Moses Ramusi and Bradley Flett, ARC-Grain Crops Institute, for SA Graan/Grain SA April 2015. For more information, send an email to ramusim@arc.agric.za or FlettB@arc.agric.za.



Lodging observed on stalks severely infected with Phoma.

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Let the experts dispose of your empty hazardous waste



Empty pesticide containers can become a headache to the farmer.

hile we are waiting for the approval of the industry waste management plan, the Association for Veterinary and Crop Associations of South Africa (AV-CASA) would like to advise farmers on the environmentally friendly disposal of obsolete pesticides and empty plastic pesticide containers with the support of registered hazardous-waste management companies and recommended plastics processors.

Farmers need safe and responsible technology and methodology to dispose of obsolete pesticides and empty plastic pesticide containers. This applies in particular to farmers who produce fruit and vegetables, as certification companies insist on such waste being managed and destroyed in a responsible manner.

These old pesticides and empty pesticide containers are a hazard to public health and the environment and can also affect farmers' certification if they are not managed and destroyed responsibly.



Producers may store such containers on the farm and contact one of the recommended processors to dispose of the clean containers. Last year AVCASA consulted registered hazardous-waste management companies on the disposal of obsolete pesticides, and also a number of plastics processors on the disposal of empty plastic pesticide containers.

Processing of empty plastic pesticide containers

There should be no reason for farmers to be saddled with empty plastic pesticide containers. Such containers should be rinsed with clean water three times and the rinse water should be poured into spraying tanks. This makes the containers ready for processing.

Farmers may store such containers on the farm and contact one of the recommended processors to dispose of the clean containers. Some processors collect containers on farms, while others prefer the containers to be dropped off at their premises.

The list of recommended processors is available on www.avcasa.co.za, together with guidelines for handling and disposing of containers that have been rinsed three times. Farmers are recommended to use the AVCASA-recommended processors because they comply with regulatory requirements and provide a good service. Remember:

 Empty, obsolete plastic pesticide containers may not be thrown away in waste collection areas. They may not be buried on farms either, as they pose a material risk of poisoning groundwater.



Obsolete pesticides are a danger to people and animals.

· Containers may not be burnt on farms, because the heat energy of ordinary fires is insufficient and toxic gases are released, MADE POSSIBLE BY THE MAIZE TRUST

Grain SA interviews... Remember Wiseman Mthethwa



nowledge, technology, working hard and having a passion for what he does, is what makes Remember Wiseman Mthethwa the dedicated farmer he is. Remember is part of the Advanced Farmer Programme, a 250 Ton Club member and is currently the chairman of the Amajuba Study Group in Newcastle.

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

I farm in the Dannhauser area, between Dundee and Newcastle in northern KwaZulu-

Natal. I lease the farm Milnedale, from Mr Albert Eicker from Pretoria, which is 612 ha in extent. This was a family farm but was not occupied by the family for many years, and was leased out to various farmers since the late 1940s. I have managed to extend and open lands to 200 ha. When I originally started there were about 40 ha lands available, with some very old fallow lands.

Last year I purchased a 14 ha neighbouring smallholding, Greenvale, which had rudimentary pig facilities and some lands too. I am leasing 80 ha lands from Mr Henk Zaal, on the farm Lilydale, and a further 20 ha from Mr Willem Raubenhorst.

I have planted 260 ha maize and 53 ha sugar beans this year, having lost some of my previous years hired lands. I run a 140 beef unit, of which I have 80 cows with calves. I also have a 12 sow breeding unit, 70 sheep and 52 goats. The pigs are a fairly intensive business, and I use some of my maize to mix their feeds to keep the costs down. Currently I will have enough maize to get through to harvest time – this makes a very big difference in the face of rising feed costs.

What motivates/ inspires you?

We grew up on the farm Lilydale and worked and lived for Mr Louis Alberts, but we also farmed for ourselves. Mr Alberts was my rolemodel – he worked hard, he worked us hard and he managed the whole range of enterprises on the farm. I learnt to see that farming is my life – it gives my family food, an income and also a future. It is important for our nation too, as all people need food to live.

Describe your strengths and weakness

Strengths: My strengths are the skills I have learnt – cropping, livestock and knowing what was needed on the farm. I work hard and have a passion for what I do. I also enjoy working with people, helping those I can and learning from those that have something to offer. I am willing to try new things and am open to try everything, I don't feel limited.

Weakness: My weakness is that I was not highly educated, and often need help with these skills. At times this limitation can be very frustrating, but I am striving to improve.

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

When I started in 2012, my yields were poor – white maize was 2 t/ha and yellow maize was 3 t/ha. At that time it was better than we did at home but I could see that the commercial farmers were doing MUCH better and I wanted to improve too. My first crop was on 40 ha.

Last year was also a drought year for us, but I managed close to a 4 ton average. This year the crop is looking much better despite the drought - I believe I have the potential in me and on these lands to produce 6 t/ha. Some of the lands could produce 7 t/ha, none should yield less than 5 t/ha. It is still in the hands of the Maker to determine what the yield this year will be.

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

Knowledge and technology. I started to do soil sampling, and apply better agricultural techniques, using better seed, chemicals and fertilisation. For cropping I believe my future lies in the soil, and thus need to improve it. Where I can, I use chicken litter to help improve (humus levels) the soil. I have learnt from my mistakes and am always willing to try new methods. This year I have started to try some 'no-till' to see how that goes.

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

When I first started out, Seda assisted me with business training and management skills. The Department of Agriculture has helped with training courses, especially for the livestock side. The SA Breweries project this year has given us some training and I have also attended training courses through Grain SA. My mentor has also assisted with in-field training and explanations. I would like to develop my skills in the engineering and maintenance side, welding etc.

I have not done a specific maize course and would like to do one, taking it further to a more advanced course as this is my main crop and agribusiness. I would also like to learn more about precision farming and using the technology available with it, especially GPS monitoring and applications.

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

It is nice to have those thoughts, but to get there is something else. One must be realistic, acknowledge it will take very hard work, capital (feels like it's just a dream) and an unpredictable climate and conditions. I would like to be utilising the best technology available, applying precision farming and doing this all myself. I would like to have my own place. Renting is risky as I put in much effort, and each time I improve, the rental just goes up.

What advice do you have for young aspiring farmers?

My advice is to have a PASSION for farming, work hard, be dedicated and use the opportunities. Don't wait for someone else to do everything for you, start with what you have and don't be in a hurry. Learn what you can, from mistakes you make and from others. You won't always make much of a return but you need to persevere – farming is not a high return business.

Knowledge is complicated, you can learn about it but you need to practise it and get those who have done it to help teach you.

This drought has taught me that water is precious, for people, livestock and for cropping. Everything must be done to improve, store, and utilise this resource carefully.

In my spare time I am constantly thinking how to improve myself and my industry. Our nation needs food.

Those thinking of entering farming need to consider carefully what they REALLY want, too many people want to farm, and getting farms are actually NOT farmers. As a farmer you need to be able to rely on yourself, to be able to do it yourself. Don't think you can rely on others or contractors to do it for you with all your best interests at heart. You need to be able to DO IT YOURSELF.

Article submitted by Graeme Engelbrecht, Development Co-ordinator of the Grain SA Farmer Development Programme, KwaZulu-Natal. For more information, send an email to graeme@grainsa.co.za.

Let the experts dispose of your empty hazardous waste



Producers need safe and responsible technology and methodology to dispose of obsolete pesticides and empty plastic pesticide containers.

posing a major risk to people, livestock and the environment.

 They may also not be sold or donated to anyone to be used as containers for any food or drink. It is life-threatening to use such empty containers for food or drinking water.

Disposing of obsolete pesticides

Obsolete pesticides can be destroyed by three of South Africa's biggest hazardous-waste management companies. AVCASA has negotiated with all three and they are listed on the website, *www. avcasa.co.za*.

These companies have good service records, the necessary human resources, skills, equipment and infrastructure to safely destroy extremely hazardous waste like obsolete pesticides.

Farmers who want to have obsolete pesticides destroyed must approach one of the companies for quotations. Such persons are required to draw up an inventory indicating the brands, active ingredients, types and condition of containers, remaining mass or volume and product safety data before quotations can be compiled.

AVCASA can assure producers that if they use the services of the recommended compa-

nies, they can expect a professional service. AVCASA is not in a position to accredit or certify any plastics processor or waste management company. We can only underwrite their operations and recommend their services. Because of the sensitive nature of these operations, we reserve the right to recommend only those processors and waste management companies that comply with the industry requirements.

Article submitted by Dr Gerhard H Verdoorn, Griffon Poison Information Centre and Association of Veterinary and Crop Associations of South Africa (AVCASA) for SA Graan/Grain April 2015. For more information, send an email to nesher@tiscali.co.za.



PANNAR SEED's 2015 top salespeople honoured



From let to right are: Ashley Cotterrell; CEO, Flip Botha; National Sales Manager, Welcome Zulu; Sales Representative Zululand and John Odendaal; National Marketing Manager.

ANNAR SEED was proud to announce their top salespeople for the 2015 season on 26 January at a conference held in the Drakensberg.

Welcome Zulu was named salesperson of the year. He represents the company in Zululand

and the surrounding areas. Ras Meintjes won the award for runner-up in sales. He is the representative in the Reitz region.

It is the energy, passion and capability of our teams that drives the PANNAR brand and our relationships with our customers and stakeholders forward. We therefore thank Welcome, Ras and all our salespeople throughout our business who are so critical to our (and our farmers') success.

Article submitted by Peet van der Walt, Advertising Manager, Pannar Seed. For more information, send an email to peet.vanderwalt@pannar.co.za.

Pula Imvula's Quote of the Month

`Luck is a dividend of sweat. The more you sweat, the luckier you get.' ~ Ray Kroc

The Corner Post

KOOS MTHIMKULU Start preparing for the future from a young age



here is an African proverb that says, 'He who learns, teaches'. Koos Mthimkulu, the humble winner of the 2011 Grain SA/Absa Developing Grain Producer of the Year award, did not enjoy school nor did he complete his schooling, but this has not prevented him from absorbing information and learning whatever he can from those who cross his path. And what he has learned, he shares not only with his farming partner, Clifford but also with other emerging farmers in the district.

Born in the Paul Roux area as one of six children to a father and mother who both worked for the farm owners, his fate to become a farmer was sealed. Here he played with the farm children and when he was old enough he started doing various tasks on the farm – simple tasks like looking after the sheep and milking cows, but with each task he learned something which he could one day apply in his own farming enterprise. Later he moved on to the mechanical side of farming, driving tractors and using farm implements.

After his decision to leave home to look for greener pastures, he was employed by Frikkie du Preez in the Senekal district. Koos mentions that this farmer played a very big role in his development as a farmer as he gained the most work experience on his farm. He recognised that Koos was eager to learn and started training him to repair tractors and farm implements as well as building new implements. As Du Preez did not believe in short-cuts he also learned a valuable lesson that you should do things the right way to save time. When livestock farming became Du Preez's focus, Koos took over some of his equipment and started to do contract work for other farmers in the Senekal area. The money he earned was used to pay off this equipment.

As his knowledge (and agricultural possessions) grew, he was later able to lease 55 hectares of arable land where he planted maize. He was offered the 524 hectares farm Astoria in the Senekal district in 2007 by the Department of Land Affairs. Here the father and son team now cultivate maize and sunflowers and also farm with Bonsmara cattle and Merino sheep.

Koos and wife Lydia have two daughters, Irene and Petunia, and a son, Clifford, who are all married. Clifford, who completed a two year course in marketing management and agriculture joined his father in 2009 and loves the cattle side of the farming. He also sees to the maintenance of the mechanical equipment. Koos on the other hand is a keen crop producer, but the drought of the past season prevented him from planting maize this season, so only sunflower was planted and some sorghum and oats for fodder. Fortunately, another valuable lesson he learned was that in agriculture one should not put all your eggs in one basket. The expansion on the livestock side of his farming enterprise has proved helpful in difficult times.

In a good season they plant 150 ha of maize with an average yield of 3,5 t/ha and 350 ha of sunflower with an average yield of 1,5 t/ha. Clifford has great admiration for his father and says the biggest lesson he has learned from his dad is that you must learn to do things yourself and not depend on others to do everything for you. He is very proud of his dad and hopes to follow in his footsteps and perhaps even one day receive an award himself. Koos mentions that he will be forever grateful to Grain SA and the Department of Land Affairs for their support and input in his farming career. He has gained a bucket full of skills, training and knowledge from the Senekal Study Group of the Grain SA Farmer Development programme. Johan Kriel, his mentor also plays a big role in ensuring that his production practises are on track. The award he received in 2011 came as a big surprise, but he knows that it made him a more confident farmer.

To encourage young and developing farmers he shares the following guidelines:

- Love what you do be passionate about farming. Farming is easy when you love it.
- If you work hard, you will make money, but work comes first.
- Be a hands-on, on the land farmer. You have to know what is happening on your land. Be involved and do the work.

• Learn all you can from those with experience. Another proverb, 'If you want to go fast, go alone. If you want to go far, go together,' describes this father and son team. Each one knows where his strength lies. They learn from each other and aren't afraid to share what they have learned with those who cross their paths. For the future Koos and Clifford hope to invest in more land to become commercial farmers and contribute to food security in a bigger way. This is a team with a bright future ahead.

This month's edition of The Corner Post was written by Louise Kunz, Pula Imvula contributor. For more information, send an email to louise@infoworks.biz.

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