PULA IMVULA

GRAIN SA
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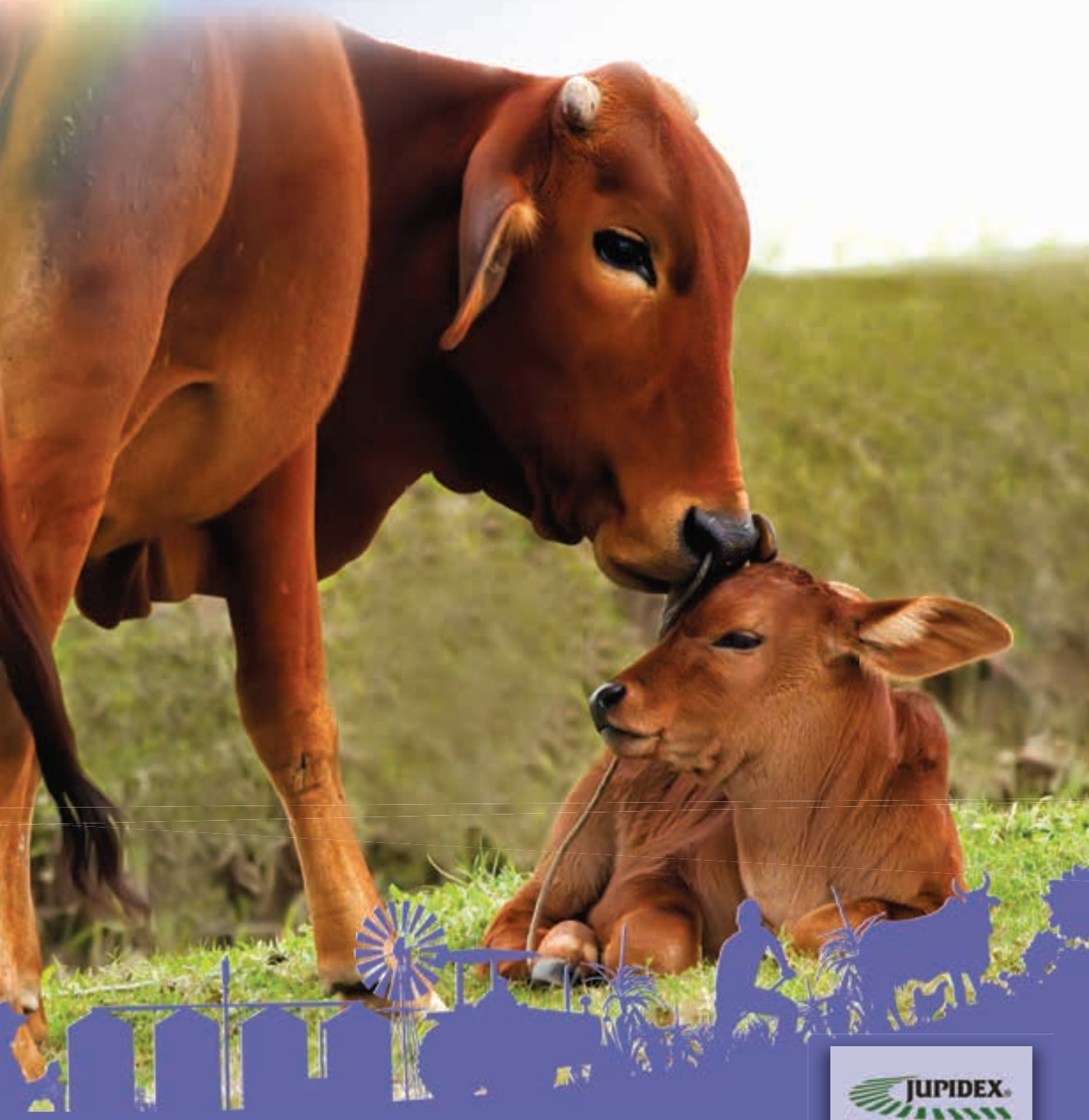
>> GROWING FOOD >> GROWING PEOPLE >> GROWING PROSPERITY >>



PULA IMVULA

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

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Afrikaans, Tswana, Sesotho,
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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

Naas Gouws
Mpumalanga (Belfast)
▸ 072 736 7219 ◂ naas@grainsa.co.za

Jurie Mentz
KwaZulu-Natal (Vryheid)
▸ 082 354 5749 ◂ jurie@grainsa.co.za
▸ Office: 034 980 1455 ◂ Sydwell Nkosi

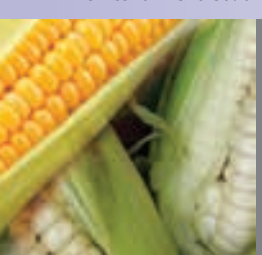
Ian Household
Eastern Cape (Kokstad)
▸ 078 791 1004 ◂ ian@grainsa.co.za
▸ Office: 039 727 5749 ◂ Luthando Diko

Lawrence Luthango
Eastern Cape (Mthatha)
▸ 076 674 0915 ◂ lawrence@grainsa.co.za
▸ Office: 047 531 0619 ◂ Cwayita Mpotyi

Liana Stroebel
Western Cape (Paarl)
▸ 084 264 1422 ◂ liana@grainsa.co.za
▸ Office: 012 816 8057 ◂ Melercia Kotze

Du Toit van der Westhuizen
North West (Lichtenburg)
▸ 082 877 6749 ◂ dutoit@grainsa.co.za
▸ Office: 012 816 8038 ◂ Lebo Mogatlanyane

Vusi Ngesi
Eastern Cape (Maclear)
▸ 079 034 4843 ◂ vusi@grainsa.co.za
▸ Office: 012 816 8070 ◂ Sally Constable



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NKGONO JANE SAYS...

IN THIS ISSUE...

Farmers have little time to rest – last month you were still harvesting the previous crop and here you are again starting to prepare for the next crop. This is the cycle of life and it must continue. How blessed we are to know that this year it will rain again and we will be able to plant another crop!

A very important aspect of sustainable farming involves the use of a good crop rotation that includes a legume. Larger farmers are able to use from a number of different crops to use in the rotation as there will be a market for almost anything. However for the smaller farmers it is good also to grow a legume that you can add to the diet of the family, like beans. Most families eat dry beans and these can be grown successfully in many areas of South Africa. Legumes are a wonderful choice for the crop rotation as they are broad-leafed and maize is a grass which means that the weeds that are difficult to control in maize (like grass) can be controlled easily in beans. The legumes also create nitrogen in the soil that will be used by the next maize crop – in this way you can reduce the fertiliser requirements and in that way reduce your production crops.

If you are unsure about planting other crops (like beans), try them on a small area so that you get to know the crop and learn how to plant is sustainably and profitably.

Farmers often run the risk of only having enough money for diesel, seed and fertiliser and then they plant the crop without chemicals and with no additional money for top dressing. It is far better to plant a smaller area knowing that you have enough money to do it properly than to plant a large area and only get a low yield. It is also sad to see that farmers are tempted to get more land than their tractors can handle – this also results in a poor crop because you end up doing everything late. Rather plant smaller and do everything really well and getting good yields on the smaller land might enable you to make the profits that will enable you to expand your business.

Use what you have really well and develop your farm from profits – this is the sustainable route.

Starting out right in the starting blocks!

It is most important to give your fields which you plan to plant to maize this coming season all your attention as early as possible. All soils need to be well prepared and the weeds present in the field need to be controlled.

Soil preparation

This will normally take some form of tillage and can be divided into different categories depending on your unique approach for your farming operation. The three most common forms of tillage are:

Conventional tillage

This has been the most standard practice for many years where farmers used a mouldboard plough for primary tillage followed by several secondary tillage processes, as well as cultivation once the crop was up and growing. Today's modern farmers have to a large extent, turned away from using the mouldboard ploughs. There are many reasons for this but mainly, because they tend to leave minimal residue on the surface of the soil, which reduces the amount of valuable organic matter on the surface of the soil. It has been found that by reducing mouldboard plough usage, and increasing the organic matter in the soil, the soil erodes much less and the organic matter enriched soils, hold more water.

Reduced tillage

This is normally done with a chisel plough and is a popular tillage process because it has been shown that this leaves at least 15% to 30% more residue covering the soil.

Conservation tillage

This includes minimum till or strip-till and no-till methods. In no-till, there are no normal tillage processes at all and the new season's seed is placed directly into the previous season's crop residue. Other reduced tillage methods refer to very limited use of tillage for example in strip-till, only the narrow strip of land where the crop row will be planted is tilled. These conservation methods will likely leave at least 30% residue coverage on the soil.

Before you implement conservation tillage consider the following:

It is important that farmers understand that changing methods does not happen overnight but rather it is a process. One of the most important factors to consider is whether there has been a build-up of a plough pan in the soil after years of using conventional tillage farming practises. This can be determined by the digging of profile holes or by using a penetrometer. If there is such a layer, then this needs to first be broken up by means of a ripping action at the appropriate depth. If this is not done then you won't get the true benefits from conservation farming as the roots won't get as deep as they should and neither will the soil retain the amounts of water that it could.

Of course, for farmers in communal areas, the move to these improved methods of farming present an even greater challenge because

if the local livestock must have access to these fields, then they consume all the valuable organic matter left on the surface of the soil anyway. This problem will need to be managed better in the future as soil health and soil moisture retention is becoming ever more critical as we learn to cope with variations in the climate and droughts and reduced rainfall levels become more prevalent in our part of the world.

Environmental concerns related to soil preparation

Soil erosion

The contributors to Pula Imvula have written repeatedly about this major environmental concern particularly since it is a huge problem in South Africa. Too few farmers realise that the problem is critical since it is the valuable top soils which we need to grow our produce in that is being eroded away every year. Indeed, it is also farmers who have even contributed to the crisis through poor tillage and land management practices! Soil erosion is a natural process that occurs when wind or water cause the topsoil to be removed and carried elsewhere and it can erode at a rate of several tons of soil per hectare per year.

Water erosion

Is caused either by run-off or by the power of raindrops falling on soil so clearly, if the soil has no protection from vegetative matter, this is worse than if there was protection on the surface of the soil.

Wind erosion

Is a particular problem in windy areas – which just about describes all of South Africa, but is particularly severe in the vast, wide open spaces of the Free State and North West Province.

The impact of soil erosion is serious and yet so few farmers worry about it because they can't easily see or measure the disappearance of their top soils. However over time there will be increasing evidence of:

- Lower fertility levels;
- Development of channels and gullies in or next to the fields;
- Less water infiltration into the soils;
- Increased crusting of the soil; and
- Increased run-off after rain.

Conservation is the best management practise to reduce erosion and as a relatively simple, low cost practice, can have a huge impact on reducing the amount of top soils being eroded.

Weed control

Prior to planting, some form of chemical "burn-down" process is essential to kill the weeds in the seedbed that would crowd out the crop and compete for the water and nutrients in the soil. Weeds are always vigorous growers and will "bully" the tender plants of the new season's crop if they are not dealt with efficiently. (There are some interesting results from trials conducted by Grain SA's Jurie Mentz in KwaZulu-Natal in an article on page 8 by Gavin Mathews in this edition of Pula Imvula with detailed information which may be interesting to you.)

Always remember, that if you want to finish well and be a winner in the end, then just as an athlete prepares long and hard for a very brief race by putting in hours of preparation on the track, in the gym and by watching his nutrition; it is exactly the same for the farmer who must prepare the soils, conquer the weeds and nurture the maize throughout the season right up to harvest for success to be experienced to its full potential.

Article submitted by Jenny Mathews, Pula Imvula contributor. For more information, send an email to jenjonmat@gmail.com.

Inspection and servicing of tractors and planters before the planting season

Why should your tractor and implements be serviced and checked before the planting or sowing season?

If your tractor breaks down during this period, you basically have two problems:

1. Valuable time is lost.
2. Such a breakdown will cost you a lot of money.

If you do not check the slack on the clutch, the clutch can start slipping and the tractor will have to be opened up for repairs.

This could mean that the tractor is out of commission for three to four days for repairs. You could have done a considerable amount of sowing or planting during that time. It is expensive to replace or repair the clutch.

If the tractor's fan belt is not checked, it can break and cause considerable damage. The engine can overheat, and if you do not stop quickly enough, it can even seize. Repairing such an engine is very expensive, and your machine will be idle for quite a number of days.

Example of service and inspection

If the tractor has almost reached its service-hour limit, it should be serviced and you should not wait until the middle of planting, as valuable time could be lost then.

Tractors receive two types of services: the ordinary service that should be done after 200 to 300 hours, and the major service that has to be done every 1 000 hours.

The 200-to-300-hour service

This service involves only the draining of the engine oil. The oil for the gearbox, differential, final drives and front differential is only checked.

1. Replace engine oil and filters.
2. Replace diesel filters.
3. Clean air filters. If there is any doubt, replace them.

Slack on clutch.

Safety screen for pulley.

Radiator must be clean.

Replace the diesel filter during the service.

Battery poles must be clean and tight.

Brake pedals should be adjusted and connected.

4. Check battery water, clean poles thoroughly and make sure that the battery is securely clamped.
5. The radiator must be clean, otherwise the tractor can overheat.
6. The water level in the radiator must be at the right height and it must contain the correct amount of antifreeze.
7. The fan belt must be in a good condition.
8. Make sure that the fan belt is tight enough, otherwise it can slip and the engine can overheat.
9. All rubber pipes must be in a good condition and the clamps must be secure.
10. Make sure that all wheel-bearing adjustments are correct and that the bearings have sufficient grease.
11. The clutch should have the right amount of slack or the height should be adjusted.
12. Adjust the brakes to the same height so that they grab at the same time. Pedals should be connected together.
13. Make sure that the handbrake is in a working condition.
14. The tyres should be in a good condition and the pressure in the front and rear should be correct.
15. Make sure that all wheel nuts are in and securely fastened.
16. Make sure that the front and rear lights work well so that the tractor is clearly visible.
17. Grease all grease nipples.
18. Make sure that the drawbar bolts are securely fastened.
19. Fill up the tractor with diesel in the evening, as this will prevent condensation in the tank, and thus water from entering the fuel system.
20. Be on the lookout for any oil, diesel or water leakages and repair them.

The major service at approximately 1 000 hours must be done by the dealer.

Daily and weekly routine

Certain things on your tractor must be checked daily and weekly.

Daily

1. Check the oil level.
2. Check the water level in the radiator.
3. Make sure that the radiator is clean and that no debris is blocking the air intake.
4. Check for oil leaks.
5. Check for diesel leaks.
6. Check the condition of the fan belt and whether it is tight.

Weekly

1. Check everything on the daily list.
2. Check the battery terminals and make sure that they are clean and tight.
3. Check the water levels in the battery.
4. Make sure that the air filters are in good repair and clean.
5. Test the brakes to see whether they are working properly.
6. Check the front wheel bearings for play and adjust them if necessary.
7. Check the pressure in all the tyres.
8. Check the clutch slack.
9. Grease all parts as prescribed.
10. Clean the tractor.

Safety hints for the tractor driver

1. Every tractor driver should have a valid driver's licence.
2. No passengers may be picked up, unless the tractor has a passenger seat.
3. All safety screens should be in position on the tractor and the implement. Make sure that the PTO shaft covers are in position.
4. All road regulations should be obeyed.
5. A driver may not drive a tractor while under the influence of liquor or drugs.
6. Always be careful and responsible, and remember: a tractor is not built for speed, but for power.

Inspection of and repairs to the planter/ sowing machine

1. Make sure that the tow bar bolts and all other bolts attached to the frame are tight.
2. If it is a wind-driven planter, the blower must be thoroughly checked.
3. If it is the gravity-box type, the box must be checked thoroughly to make sure everything is in working order.
4. Clean the box well before and after use.
5. Check all seed and fertiliser pipes well for any leakage and make sure that they are securely fastened.
6. The distribution tower must be checked and cleaned.
7. Repair wear and tear at all the share points if necessary.
8. Make sure that the pressure wheels and the tines follow one another correctly, otherwise problems can develop with the seed bed.
9. Remember to lift the planter from the soil when you turn, otherwise the tines will twist.
10. All chains should be checked and replaced if too much wear and tear is visible.
11. Check the wheel bearings and replace them if there is any doubt.
12. Also examine the pressure-wheel bearings and adjust them if necessary.
13. Grease all grease nipples every day, as these parts operate in a dusty environment.

Article submitted by Jurie Blom, Retired Mechanic and Pula Imvula contributor. For more information, send an email to jurieblm@gmail.com.

Advantages of planting genetically modified crops for small scale farmers

With the implementation of study groups all over the country, run by Grain SA's Farmer Development Programme, we are noticing the rapid progress in the methods and techniques used by many small scale farmers.

This is encouraging and inspiring to see, as emerging farmers take up the reins of current modern trends. In this article we will take a look at the results and findings from small scale farmer trials in the KwaZulu-Natal province. There were ten trials co-ordinated by Grain SA's Jurie Mentz, which primarily focussed on the advantages of using Roundup Ready maize in conjunction with minimum-tillage practices and good chemical control.

Dukuza trial near Bergville, KwaZulu-Natal

This trial was performed using no-tillage practices. Before planting, there was a considerable amount of crab grass, commonly known as kweek. For this trial, Roundup Ready maize was planted at a seeding rate of 45 000 plants/ha. At planting time 1,7 litres/ha of Roundup Powamax was applied. This was effective in burning down the weed to the point that there was very little competition at the time of emergence of the maize. The maize performed well during the initial growing stage. At knee height, another 1,7 litres of Roundup was applied per hectare. This was done at the same time that the fertiliser top dressing was applied of 200 kg LAN/ha.

At about 60 days, there was a recurrence of crab grass as well as the weed commonly known as 'morning glory', therefore another 1,7 litres/ha of Roundup was applied as well as 24D which was mixed together. The trial result was good considering the large amount of weeds at planting time. In hindsight it was thought that it would have been better to apply a burn down dose of Roundup 2 weeks before planting time.

Important:

- The trial confirmed that no large expensive machinery was needed to perform the planting of the GM seed in no-till conditions.
- Planting was done using planting hoes. These machines have a sling bag for seed which hangs on the shoulder, as the hoe penetrates the soil a seed is discharged at a pre-set depth.
- All the spraying was done by hand with knapsack sprays.
- No tractor entered the land and still a good crop was achieved using up to date products.

Emangweni trial near Estcourt, KwaZulu-Natal

This trial was done on the plot of Patrick Nxumalo who has been a member of the Emangweni Grain SA study group for five years and has improved his farming practises significantly over the years.

The plot was prepared and tilled using a disc only. It was then planted with planting hoes with Roundup maize seed at a rate of 45 000 plant/ha. As the land was disced there was no need for a burn down chemical application. After emergence of weeds 1,7 litres of Roundup Powamax was applied in conjunction with a Karate pesticide. 40 days later, another 1,7 litres of Roundup was applied with a small percentage of 24D added to the mix. The weeds were not overpowering but were evident on the plot. Next, 200 kg of LAN was applied as a top dressing when the maize was 30 cm high. All the spraying was also done by hand on this plot using a knapsack spray.

Comments:

- Mr Nxumalo achieved a good crop on the trial.
- The Roundup chemicals and the Roundup seed performed well.
- The members of the Emangweni study group are

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Photo1: Mhlungweni trial – maize tasselling before the hail storm that destroyed this crop.
Photo 2: Mhlungweni trial – the damage caused by an unfortunate hail storm.

Photo 3: The clean lands at the Emangweni trial.
Photo 4: Emangweni trial – Patrick Nxumalo standing on his plot of land.
Photo 5: Dukuza trial – the non sprayed area.
Photo 6: Dukuza trial – local farmers work as a co-operative.
Photo 7: Dukuza trial – the no-tillage and clean lands.

also excited to start using the products on their lands this coming season.

Mhlungweni trial near White Mountain, KwaZulu-Natal

This trial was planted on one of the larger plots managed by Mr Mtshali from the Ntabamhlope study group. It was planted with Roundup ready maize using a tractor and conventional lift three point planter. Land preparation was done by tractor and disc but the spraying was done by hand.

At planting time, 1,7 litres/ha of Roundup Powamax was applied as well as 100 ml/ha of Karate. The crop grew exceptionally well and the weeds were being suppressed effectively. At 35 days, there were some weeds emerging, especially water grass and crab grass. For this reason, another 1,7 litres/ha of Roundup and Cervion mix was applied.

Observation:

The chemicals worked excellently and the crop was looking very promising, until an unfortunate hail storm caused terrible damage at the grain filling stage. Sadly the promising crop was lost and no further assessment could be done on the trial.

General comments

- On all of the trials there were promising and encouraging signs from these practices.
- Many of the ten trial plots were successful in the first year.
- The most promising result of all is the positive attitude that all study group members have about the potential for their smallholdings with the use of modern products such as Roundup.

When using Roundup chemicals it is important to remember:

- Only spray Roundup chemicals on certified Roundup ready seed.
- The only time when it is safe to use Roundup chemicals without planting Roundup seed, is if it is being used as a burn down treatment a few weeks in advance.
- The best time to spray Roundup is when weeds are in their growing stage and about 10 cm high.
- It also has its best effect if the weeds are green and not under stress.
- Roundup is a non-selective chemical and will therefore have an impact on most, if not all, weeds in the land.
- It is absolutely crucial to use clean water and a buffer additive when mixing the chemicals as it can become inactive if the Ph level is not correct from dirty water.
- Remember:
  - Always handle chemicals with care;
  - Keep them away from children; and
  - Wash your hands after using them.

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

Timely ordering of inputs for this planting season

The harvesting of your crops seems to have just been completed and we are already faced with deciding about the inputs for the coming season. Some farmers would have experienced record crops of maize, sunflowers, soybeans, sorghum, other crops such as groundnuts, dryland beans and baled fodder crops for livestock.

The yields realised for dryland crops recently harvested will reflect the rainfall experienced as well as the application of fertiliser, seed, herbicides, insecticides and other direct inputs used. Irrigation farmers will also need to critically analyse any management and production input factors that need correcting on or improvement.

It is always sensible to look at each production input and be able to analyse if there should be more or less or a totally different product required so that the production of the coming crop can be fine-tuned and optimised.

The planning should be completed by the end of August so that all the suppliers of inputs can be approached for the recommended application rates and costs thereof.

Detailed planning

Detailed planning can be started during August by looking at soil types and soil potential and the exact areas that will be planted to maize or other crops. If you need to take soil samples these should be handed in before the middle of August so that you can have the results back early. The soil laboratories become overwhelmed with samples at this time of year. This information can be used to prepare a gross margin analysis for each crop. The income using potential yields and future Safex prices can be estimated to determine whether or not the crop will be profitable.

The various direct costs such as seed, fertiliser, herbicides and insecticides should be carefully assessed with emphasis placed on the exact amount of each required. Input costs required per hectare can range from R5 000 to R7 000 per hectare or more.

This all amounts to a huge investment of R500 000 to R700 000 for every 100 hectares planted.

Seed

Producers of maize will have to look at plant population related to the soil potential and whether or not GM or normal maize is to be planted. This choice will determine the particular weed and insect control chemicals required. Normal or conservation tillage methods will also influence exactly what will be required. GM maize is valued per pip at about R0,04. The yields of the various cultivars on your farm can be used to choose the correct cultivars. Early ordering of seed from suppliers will ensure you are able to be certain that you have a popular cultivar's seed on hand and with the seed size to suit your planters. It is very important to plan to buy non Bt maize cultivars that will be contractually required to plant as refuge areas in or around the main blocks of Bt maize. This slows down the build-up of insect resistance to the Bt types.

Fertiliser and lime

The soil samples can be assessed by the farmer, agronomists and fertiliser agents to be able to use the correct mixes of nitrogen, phosphates

and potassium. Fertiliser supply companies are increasingly making up specific custom mixtures for various lands and crops. It is thus important to be able to purchase the correct product mix for delivery onto your farm before the ideal planting time. A bottleneck of undelivered orders at the mixing plant can be very costly if you cannot plant your crop on time. Different mixes and planning for top dressing of nitrogen mixtures in the case of maize production should also be taken into account.

If you decide to apply lime to some lands, this operation will also have to be completed during August or September taking prevailing soil conditions into account.

Weed and pest control

Likewise the planning of an integrated weed and pest control programme should be carried out with the seed types and fertilisation methods that will be used. It is critical to go through your lands with a chemical supply consultant to identify your exact weed problems in each. Choice of a spraying programme will have to take your future crop rotations into consideration to avoid any residual chemical damage to the crops in your rotation.

Production input suppliers

This is also the time to assess your relationship with various suppliers as to the effectiveness of products and the levels of service received. Make sure you shop around for two or more quotes on all products required. The ideal combination especially for chemical spray programmes change every season.

Conclusion

Planning in time will enable you to organise the finances needed for the new seasons crop production and to have all inputs on hand well before planting commences.

Article submitted by a retired farmer.

A NEW YOU – reaching new heights!

Feeling stressed? Frustrated? Worried? Anxious? Unmotivated? All of us feel some of these feelings some time or another. Research has shown that troubled employees cost their employers 20% - 25% of their annual income in lost production.

What do we mean by emotional well being and why should it be important to you?

Many people think “This is just the way I am” or “I guess I’ll have to live with it, because this is as good as it gets”. Some people believe that emotional health is a remote ideal that many people want, but very few achieve!

Emotional health or well being is having total peace about who you are, what you’re doing, and where you’re going, both individually and in relationship with those around you – also in the workplace!

It is a feeling of being at peace with the past, present and future of your life.

Life should not be an emotional agony. In contrast to what many people think, emotional health is just as practical and attainable as physical health. Spiritually, emotionally and mentally, one has to “be fed” and cared for properly.

Not being emotionally healthy (feeling “unhappy” if you will) may lead to some of the following:

- On the job absenteeism;
- Unsatisfactory work performance;
- Loss of concentration;
- Lack of motivation and energy;
- Fatigue and indifference;
- Negative effects on communication and relationship at work;
- Theft and fraud;
- Emotional outbursts and inappropriate behaviour; and
- Ongoing dismissals and replacement of staff.

In the next articles we will take you on a journey to reach new heights in you emotional well being. We will be your ticket to emotional health!

Our journey towards an emotionally healthy new you, will start with a look at how you deal with conflict in your life and the influence it has on you – both at home and in the workplace. Communication starts and ends with you.

Our second stopover will focus on substance abuse and the reasons why we often feel better after that drink although our problems seem bigger in the morning. We will provide you with alternative strategies to provide relief when the going gets tough.

Thirdly, we will focus on healthy family relationships and how your own emotional state of mind influences your family, but also vice versa.

Our fourth destination along our journey will take a closer look as to how you are managing your stress levels…yes, stress can be managed!

And lastly, ensuring your emotional health also means taking your financial situation into consideration. Often feelings of inadequacy can be linked to how you perceive your current financial state of affairs.

Join us on this amazing journey to reach new heights… emotional health can be yours – let’s make it happen!

PROCARE is a national association of psycho-social professionals in private practice. The PROCARE team offers a dynamic, diverse and holistic approach to psycho-social issues. PROCARE renders a wide range of counselling services, training and life skill programmes.

Article submitted by Petra Nel from PROCARE. For more information, send an email to petra@procare.co.za or contact PROCARE at 0861 7762273 or 021 873 0532.

Do you need to keep a logbook for SARS? – CLAIMING MADE EASY

SARS has changed its laws regarding business travel and fuel rebates and the onus is now on the individual to keep a detailed logbook of all business usage. If your mind immediately turns to laborious handwritten records, banish the thought immediately. Little LogBook offers you an unbelievably simple electronic solution to this requirement.

If you use a vehicle for your own business or for company kilometres, you need to keep track of the distances you travel and/or fuel usage in order to claim a travel allowance and SARS fuel rebates. In fact, all tax payers with a car need to submit a logbook to SARS with their tax return.

Without this logbook, the allocated monthly tax benefits are lost and the shortages would need to be paid back to SARS at the end of the tax year. For example, a car with a value of R250 000 with 20 000 business kilometres travelled, could result in a payment to SARS of R15 892 at the end of the year. In other words, failure to provide a log book results in an unnecessary and entirely avoidable financial penalty.

Little LogBook offers you a simple solution for tracking your vehicle movements and usage. The handy plug in and go GPS trip logger uses the latest tracking technology to electronically log your daily usage. You simply plug the device into your cigarette lighter socket or working USB port and the device records the coordinates of each trip you make. Supporting software then enables you to download a SARS compliant record of your travel for the week and allocate your trips to business or personal with just the click of a mouse.

> *“Little LogBook is ideally suited for business, tax and SARS fuel rebates.*

The software allows you to view trips; speeds travelled and extract reports of all the usage. You can personalise your destination e.g. “Home” or “Office” and the instinctive software will memorise and automatically capture future trips to the same place under your personalised title.

Little LogBook enables you to generate various report types:

- The summary report provides a breakdown of business versus private kilometres over a tax year broken down into months.
- The detailed report provides a breakdown of business versus private kilometres over a tax year broken up into individual trips.
- Export reports to Excel (.csv) and Google Earth (.kml)
- Once in Excel you can input all the associated costs and formulate the spread sheet to reflect a host of results to service your specific requirement, be it for SARS fuel rebates, a tax compliant logbook or time keeping and efficiencies.

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Article submitted by André Swanepoel, Sales and Marketing Director, Little Logbook, for SA Graan/Grain August 2013. For more information, send an email to support@littlelogbook.net.

Preventive measures against disease are important

"The best practice for farmers is still to vaccinate their stock regularly against Rift Valley fever," said Prof. Bob Swanepoel, an independent expert in this disease, at the recent meeting of the Animal Health Forum.

He recommended to farmers not to vaccinate their stock during an outbreak of Rift Valley fever. The fact that vaccinations against the disease were ineffective in the past does not mean that the vaccines were faulty, but was perhaps rather a case of vaccines that were not administered correctly, he said.

It is a problem that South African farmers in general do not have a preventive measure against disease. Proper estimates of weather and possible disease are essential, as this will help vaccines to have a longer shelf life.

During the meeting it was reported that the proposals by the forum are viewed seriously by the Department of Agriculture, Forestry and Fisheries. One of the matters that was examined at the last meeting with the department was the problems experienced in getting research projects approved. The department committed itself to addressing such matters more quickly.

As far as compulsory community service for veterinarians was concerned, it was clear that the system would not be introduced before 2015. A trial run was supposed to have been done in 2013, but will now occur only in 2014. The various role players in the industry were requested to apply pressure so that the trial run does in fact take place in 2014, otherwise there could be a risk of 150 people wasting a year of their lives.

The occurrence of unregistered vaccines remains a problem, and the Department of Agriculture, Forestry and Fisheries indicated that its investigation in this regard would be completed soon. Case-specific vaccines may be manufactured only by registered facilities. At this stage it is not quite clear in terms of which legislation cases of unregistered vaccines should be prosecuted. If there were no market for these vaccines, there would be no problem. The red-meat industry has a responsibility to address the problem.

At the meeting it was also reported that Johne's disease had been declared a notifiable disease. The department had already made certain concessions. It is important for the developing sector to be part of the process.

In the case of foot-and-mouth the current position is a stalemate. The industry has replied to all the questions of the international organisation for animal health, the World Organisation for Animal Health (OIE), and the department is also convinced that its documentation on the disease is complete. One of the biggest problems identified by the OIE is the identification and tracing of animals. South Africa's trading partners will also refuse to trade with us if a system of traceability is not in place.

In this case the identification of animals merely means that every animal in the country can be accounted for, and that it will be clear exactly how many animals there are in South Africa. A system for controlling the movement of animals in the country is also essential for controlling animal diseases and trade.

In the meantime there is a risk that South African livestock can be infected with Peste des petits ruminants (PPR) via Namibia and Angola. Animals entering South Africa from these two countries should be slaughtered.

This matter, as well as the issue of Lesotho grazing permits, will be addressed at the next meeting with the Department of Agriculture, Forestry and Fisheries.

Article submitted by Gerhard Schutte, chief executive officer, Red Meat Producer Organisation, for SA Graan/Grain August 2013. For more information, send an email to gerhard@rpo.co.za.

Do you have questions about tuberculosis?

Bovine tuberculosis is an age-old disease that is better known as TB. It was recorded in South Africa for the first time at the end of the eighteenth and the beginning of the nineteenth century.

Tuberculosis was probably brought to South Africa by infected animals that were imported. Bovine tuberculosis has been a notifiable disease in South Africa since 1911. It is a chronic disease that is caused by a Mycobacterium bacterium, and it affects virtually all types of vertebrates.

There are three types of tuberculosis, namely bovine tuberculosis, caused by Mycobacterium bovis, human tuberculosis, caused by Mycobacterium tuberculosis, and avian tuberculosis, which is caused by Mycobacterium avium. All three types have an impact on the economy and health.

Although the diseases are related, the causal organism in all three cases differs and can be identified through laboratory tests. The organisms can also cause the disease in other types of animals in addition to cattle, birds and people.

Tuberculosis is a zoonosis disease (can be transmitted from animals to people and vice versa). This means that animals can infect people, and people can infect animals.

The development of tuberculosis in cattle and people

In cattle and people the bacterium penetrates the body mostly through the lungs, but it can also occur through the digestive system. After the bacteria have settled, their activities stimulate the formation of tumour-like lesions called tubercles.

The tubercles increase in size and the middle part can die, develop a cheesy texture and later calcify. It has a light-orange colour. Where bacteria escape this original focus point, they can spread to other parts of the body via the lymphatic system or blood and form tubercles there too. If many organisms get into the blood in this way, they spread throughout the body and form multiple lesions, which could lead to toxaemia (blood poisoning), weakness, feebleness and death.

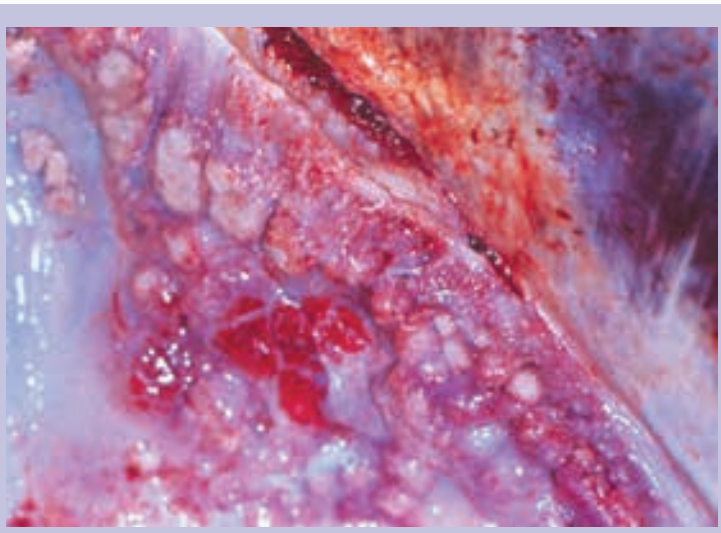
Sometimes lesions are encapsulated to such an extent by the thick connective tissue that they do not spread further through the body and the disease is restricted. Lesions also usually develop in the lymphatic glands, which drain the lymph from the affected body part or organ, and that is why the glands are usually examined to determine the presence of tuberculosis.

How are animals infected?

In most cases transmission occurs directly from an infected animal with open lung lesions to healthy animals. Direct infection via the respiratory system mainly occurs in byres and other buildings. Cattle with open lung lesions cough up infected mucus or the germs can be carried by small, exhaled moisture droplets and breathed in directly by other animals in the immediate vicinity. The germs can also land on the ground and be whirled up with dust particles and breathed in, causing indirect infection.

Infection by mouth occurs when infected water or milk is consumed. Grazing or licks polluted by germs from open lung lesions through coughed-up mucus play an important role in infection.

The disease can also be transmitted where the saliva or food in the digestive tract was contaminated by lesions in the tract itself and germs are excreted in the dung, as well as by milk, urine and vaginal secretions if the organs concerned have been infected. Infected



'Grape-like' tuberculosis lesions in the chest of an ox.

Bovine tuberculosis is generally a chronic and sometimes non-visible disease. In most cattle tuberculosis is unobtrusive.

lymphatic glands that break open externally can also infect the food and water sources.

There is a possibility that infection can be transmitted through contaminated teat needles, milking machines, specula and other apparatus, or during service if the sexual organs are infected. Infection through wounds is also not excluded.

Transmission to an unborn calf when the womb is infected or if the cow develops general lesions is also possible. The period for which the organism remains infectious outside the body depends on climatic conditions. Desiccation and direct sunlight are harmful to the organism.

Standing drinking water can remain infectious for 18 days, and in moist dung the germ can remain alive for six to eight weeks. If the soil on which the infected dung lies is cultivated and the sun is hot, the period could be shortened to seven days.

Signs of the disease

Bovine tuberculosis is generally a chronic and sometimes non-visible disease. It takes months and sometimes years for signs to develop. In most cattle tuberculosis is an unobtrusive disease

In most cases the animal's lymphatic glands and then the lungs, udder and other internal organs are affected. In the majority of infected cattle reacting positively to the tuberculin test (skin test) no signs of the disease can be observed.

Animals with lesions distributed throughout the body can become emaciated gradually and have a variable appetite and temperature, and a dull coat. Such animals become lethargic, but their eyes remain clear. The signs become apparent during stress and when high demands are made of the body, for example with calving.

In the case of advanced lung infection a single suppressed wet cough can occur, particularly early in the morning, after exercise or when it is cold. Respiratory distress occurs in advanced cases where a considerable amount of lung tissue has been damaged. Enlarged pulmonary lymphatic glands exert pressure on the airways, which can lead to respiratory distress. An animal can bloat repeatedly because of pressure on the oesophagus by enlarged pulmonary lymphatic glands.

If superficial lymphatic glands are enlarged, they can be seen or felt. Metritis as a result of tuberculosis can hamper fertilisation or result in abortion during advanced pregnancy. Infection of the udder endangers the calf or people who drink the infected milk if it has not been boiled or pasteurised.

It is sometimes difficult to distinguish this type of mastitis from mastitis resulting from other organisms. Tuberculosis mastitis sometimes presents with induration and enlargement of the upper part of the rear udder quarters. In such instances the lymphatic glands are enlarged.

If the glands are enlarged without tangible lesions in the udder itself, this often points to tuberculosis. Initially the milk looks normal, with flakes developing later if the milk has been standing for a while, and in advanced cases the milk appears light yellowish brown and watery.

Diagnosis

A veterinarian is responsible for diagnosing tuberculosis in cattle and other animals, and also for confirming it. The history and clinical signs in the animals will be taken into account in the diagnosis of tuberculosis.

Smears can be made of pieces of mucus that are coughed up, of the sediment after milk and urine have been centrifuged, of sheath secretions, dung or infected lymphatic glands and other organs. These smears are coloured according to the *Ziehl-Neelsen* method and examined under a microscope.

A biological test can also be carried out by injecting suspensions of the above into guinea pigs and then carrying out an autopsy six weeks later.

The same material can also be used to grow the tuberculosis-causing bacteria on suitable media, but the disadvantage is that his method, like the biological test, requires considerable time.

The intradermal tuberculin test is the test that is used most often to identify tuberculosis infection. This test is based on a sensitivity that develops in the body after a period when infection with Mycobacterium has occurred.

The living organisms can cause pathological changes, visible lesions and disease. In South Africa a tuberculin test may be carried out only with the approval of the senior manager: animal health, and the conditions set must be complied with.

Other tests that are available for diagnosing tuberculosis is the temperature test, double intradermal test and the Stormont test.

Tuberculosis as a zoonosis disease

A zoonosis disease is a disease that people can catch from animals, and vice versa. People who are infected with M. tuberculosis can also infect cattle, but this seldom occurs. Although progressive lesions usually do not develop,

The incidence of bovine tuberculosis in beef cattle is much less than in dairy cattle.

In order to test cattle for tuberculosis a small amount of tuberculin is injected into the skin (intradermally) of the animal. After 72 hours the thickness of the skin is measured to establish whether the injection site is swollen (the animal can then be positive).

Do you have questions about tuberculosis?

cattle are still sensitised and this makes the interpretation of the tuberculin test difficult.

Where people are infected with M. bovis, lesions usually occur in the bones and mesenteric (and sometimes other) lymphatic glands. However, there have been cases where lung infection has occurred, and of people with open lesions becoming a source of infection to cattle. The possibility of the re-infection of tuberculosis-free herds by infected people with M. bovis should therefore not be ignored.

Chickens, pigs, sheep, horses, goats and some types of game (such as lions and kudu) are also susceptible to tuberculosis, and infected animals pose a health hazard to people. A veterinarian can/will carry out an autopsy on animals that have died from or that were slaughtered due to suspected tuberculosis.

Reasons why tuberculosis should be combated and eliminated

Tuberculosis is one of the diseases that is controlled by the Animal Diseases Act (Act 35 of 1984) and the fixed regulations made in terms thereof. In addition to compulsory reporting of the disease, the regulations also authorise compulsory tests where the disease occurs or is suspected and applying other measures such as quarantine or slaughter to combat and eradicate the disease.

The production of meat and milk in infected cattle is known to be negatively affected – such a production loss can be between 10% and 25%. In a small percentage of cases the sexual organs of the male and female animals can be affected. Reproductive losses as a result of abortions or infertility can occur in such cases.

The general spread of the disease through the body can also lead to deaths and these losses occur more often with poor feeding conditions when food is scarce, like during droughts.

Under extensive farming conditions tuberculosis usually spreads slowly. However, there is a tendency towards more intensive farming these days, and an increasing number of animals are kept on smaller areas – on planted grazing, in feedlots and in dairies around the big cities. This creates favourable conditions for the disease to spread more quickly in the byres, at feeding stations and water troughs and through the licks that are provided, as well as through mass grazing.

It is also important to eradicate this disease in order to protect the country's export trade in animals, meat and animal products. The developed countries of the world have increasingly strict requirements with respect to the absence of tuberculosis in countries from which they allow imports.

As people, and particularly young children, are also susceptible to bovine tuberculosis, public health concerns demand the eradication of the disease. In herds where the incidence of the disease is high, there is a risk that people can breathe in polluted air in interior areas like byres where there is close contact with cattle. Drinking raw infected milk can also lead to infection in people. A few cases of people being infected through wounds, such as knife wounds incurred in autopsies on infected cattle, have also been reported.

Control and prevention

The main aim of the battle against bovine tuberculosis is the total eradication of the disease. In order to do this, it is compulsory for cattle to be tested for tuberculosis. Various test schemes have been implemented (e.g. accreditation and the diagnostic herd testing scheme) to identify, control, combat and eradicate tuberculosis. Consult the government veterinarian on details regarding the prevention and control of tuberculosis.

Pasteurisation of milk

Milk that has been pasteurised (72ºC for 15 seconds) is safe for human consumption. The pasteurisation of milk kills all disease-causing (pathogenic) bacteria like those that cause tuberculosis and brucellosis.

Article submitted by Dr Jan du Preez, managing director, Institute for Dairy Technology, for SA Graan/Grain August 2013. For more information, send an email to jan.dupreez@mpo.co.za.

An emaciated cow with advanced tuberculosis. Tuberculosis is a government-controlled animal disease in terms of the Animal Diseases Act (Act 35 of 1984).

The milk of cows with tuberculosis mastitis is infected with germs (bacteria). If a person or calf drinks such infected milk, they can develop tuberculosis.

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Vicon RO-EDW GEOspread spreader.

Introducing the new Vicon RO-EDW GEOspread spreader. With the introduction of this model, Vicon is again setting new standards and even more accurate spreading by introducing GPS possibilities on the weighing spreaders.

The RO-EDW GEOspread is equipped with two actuators on each dosing unit. One of these actuators controls the setting of the discharge point of the dosing cup onto the disc (letter setting), the other controls the application rate.

The GEOspread system makes it possible to adjust the letter setting individually for both discs electrically from the tractor cab. This means the working width can be easily adjusted quickly and accurately just by touching the ISOBUS terminal! The GEOspread system can be operated by every ISOBUS Universal Terminal with section control capabilities. When running IsoMatch GEOcontrol in addition to GEOspread you can set the RO-EDW GEOspread even more accurately. The working width will automatically be adjusted to suit the overlap and coverage using a GPS positioning system. For example, when driving in a wedge or irregular shaped field, GEOspread will start to decrease the working width step by step. GEOspread uses the section control function of IsoMatch GEOcontrol software which is in the IsoMatch Tellus Universal Terminal. The spreader working width is adjusted; the application rate (kg/min) is also adjusted automatically to match the revised spreading width.

This unique combination of working width and application rate adjustments makes the RO-EDW GEOspread extremely accurate and a must have for every farmer.

Article supplied by Jupidex. For more information send an email to info@jupidex.co.za.

Grain SA interviews...
Daliwonga Nombewu

Meet Daliwonga Nombewu, a young, dedicated and committed farmer from the Tsolo area in the Eastern Cape. Daliwonga aims to be a commercial farmer in five year's time and wants to create jobs for the unemployed thus improving the economy of the country.

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

I farm at Gungululu in Tsolo, (Mhlontlo Local Municipality, Eastern Cape Province). This season I planted 8 hectares of maize and the coming season I will produce 58 hectares of maize, all with the help of my local chief and community, who allocated 50 hectares of land that has not been in use for 25 years, to me.

What motivates/inspires you?

My mother motivates me. She earns a living from producing vegetables and maize on 2,5 hectares of land. I grew up assisting her with the planting as well as the watering (by hand) every day after school.

Describe your strengths and weaknesses

My strengths: Dedication and commitment to the farming business and producing for profit is my strength. I also set goals with time frames.

My weaknesses: My only weaknesses are access to finance and the lack of commercial business skills.

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

When I started farming I produced 3 tons/ha and now I am producing 5 tons/ha.

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

Buying machinery and relevant implements for production and getting contracted, gave me experience. The advice received from Grain SA as well as the training courses offered have contributed to my success.

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

Ihave completed the Introduction to Maize Production Course, the Tractor Maintenance Course and the Contractors Course. I would still like to complete the Farm Management and Bookkeeping Course.

Where do you see yourself in five year's time? What would you like to achieve?

In five year's time I want to be a commercial farmer producing more than 5 tons of maize.

What advice do you have for young aspiring farmers?

As young as I am, I wish others will follow in my footsteps by being self-employed and by creating jobs for the unemployed so that we can improve the economy of the country.

Article submitted by Lawrence Luthango, Development Co-ordinator of the Grain SA Farmer Development Programme. For more information, send an email to lawrence@grainsa.co.za.

The Corner Post

Why we do what we do

Grain SA is consists of a team of people who look after the interests of all the grain farmers in South Africa. People are not always aware of all that is being done, mainly because it happens behind the scenes.

These aspects include developing subsistence and small-scale farmers to become commercial farmers, as well the protection of farmers' interests in the policy environment which entails keeping up to date with new or changes to existing policies. We are also working on import replacement which includes objectives such as Biofuel production and the reduction of imported Wheat and Maize.

Economists work on supplying independent market information so that farmers can make the best possible decisions for their business. Ultimately, Grain SA's primary focus is to improve producers' profitability and to ensure sustainable grain production. The following actions are aimed at improving profitability: Competitiveness of input suppliers, quality monitoring of inputs, research aimed at increasing yields, technology transfer, responsible application of biotechnology, cultivar improvement, facilitating the registration process of new pesticides and herbicides and so forth.

Farmer Development Programme

We find many types of jobs or professions within the agricultural sector. We get farmers, farm workers, researchers, economists, input suppliers, policy makers, departmental officials, people working for the local co-op, working at silo's, contractors, grain carriers, quality controllers and much more! There are thousands of people within the agricultural sector that go to work every day who are involved in agriculture in one way or another.

As a Grain SA employee falling under the Grain SA Farmer Development Programme, I have decided to write to you to give you a better understanding of what this programme is about. Firstly, I have to say with all honesty that there is not one person within this programme that sees their work as a job, but rather as a passion. This programme prides itself on honesty, integrity and absolute transparency. As you know, the one and only goal of this programme is to assist, uplift and empower farmers like yourself to unlock your potential and to help you to help yourself to become a self-sustaining, independent farmer.

One can never start too early. When we consider all the different types of careers within the agricultural sector, the goal of our schools programme is to create awareness of agriculture among school children. These learners will be the next generation farmers, researchers, economists, input suppliers, policy makers, departmental officials, co-op employees, working at silo's, contractors, grain carriers, quality controllers and so forth that will in turn guide and support the new farmers of their generation. We need to extend our knowledge to them as our future leaders in the agricultural sector.

We also focus our efforts on presenting monthly study group meetings, to give you the opportunity to comfortably engage with other farmers like yourself and for you to acquire important information over time. We also invest in you through training courses in order to build your knowledge base, to acquire practical and managerial skills and to guide you in the right direction. Once you have reached independence, we continue to assist you on a one-on-one basis. We must always remember that even the biggest, most successful commercial farmers all have advisors, mentors, and a range of people who assist them in making the best decisions. Many of these farmers also attend study groups and learn new things every day! The most important thing is just to keep on learning and to acquire as much (relevant) information and knowledge as possible.

> *"You will undeniably encounter challenges on your path, as long as you stay true to yourself, persevere and keep on doing the right thing, you WILL come out on top!*

Always keep in mind that although you will undeniably encounter challenges on your path, as long as you stay true to yourself, persevere and keep on doing the right thing, you WILL come out on top!

Remember: "The more I want to get something done, the less I call it work." – Richard Bach.

This month's edition of The Corner Post was authored by Liana Stroebel, Western Cape Development Co-ordinator. For more information, send an email to liana@grainsa.co.za.

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Lime Capacity - 14.5 Ton
Drive - Hydraulic

- AS35B -
Cubic Capacity - 7 Ton
Lime Capacity - 13 Ton
Drive - Contact

- AS55C -
Cubic Capacity - 8 Ton
Lime Capacity - 14.5 Ton
Drive - Contact

- AS120C -
Cubic Capacity - 8.5 Ton
Lime Capacity - 15 Ton

- AS85C -
Cubic Capacity - 7 Ton
Lime Capacity - 13 Ton

- AS100C -
Cubic Capacity - 8 Ton
Lime Capacity - 14.5 Ton

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Cubic Capacity - 4 Ton
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