NO-TILL CLUB

P O Box 526, Hilton, 3245
Tel 033 330 2062
Cell 082 472 5987
Fax 086 579 6926
ntcsandra@gmail.com
richardfindlayntc2@gmail.com
www.notillclub.com

NOVEMBER 2015

BRINGING YOU THE FACTS ABOUT NO-TILL – CONSERVATION TILLAGE

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FROM THE EDITOR'S DESK

2015 International Year of Soils

As we come to the end of "The Year of The Soil"

The 2015 No-Till Conference was once again a blessing, a source of knowledge and a battery of enthusiastic energy conveyed to the delegates by speakers, who lead our thoughts in the direction of awareness and the urgency in the race, not only to persuade and encourage the agricultural but society in general, of the importance for all of mankind to endeavour to build, maintain and respect healthy soil which has so much to offer the world with good nutritious food security so badly wished for by the public of the world.

The prominent theme of all the talks was that helping to regenerate a soil from having a poor structure and lacking the basic elements needed to support growth is not "rocket science", but in the main common sense, provided the basic soil is still in place and has not been carried away to the ocean through erosion.

The basics are: Soil cover to reduce soil surface temperature, decrease water run-off and increase rain fall effectivity by facilitating better moisture infiltration – as little inversion of the soil as possible – increase organic matter with cover or grass leys, manure and compost.

The No-Till Club AGM 2015

Why is it so difficult to attract members to an AGM? It was decided that the 2014 AGM be postponed. Many people complained that it took up much valuable time during the conference proceedings, so instead of holding it at the same time as the conference in September 2014, it was postponed to February 2015, during the season when plants are growing by themselves and physical work pressure is low!

Please write and give us ideas to make AGM meetings more exciting and attract the members, it will be helpful to know!!!!

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Caption Guy Thibaud standing next to Babala at demo site for AGM looking at how VELVET bean, a legume, had grown into the Babala and yielded a great deal of organic material.

SUMMER COVER CROP DEMO DRAKENSVILLE

Our demo site at Drakensville was planted, especially in the interest of our members with summer sown annual cover and forage crops. It looked fantastic. Along with this practical demo we introduced a business theme of the increase of accurate records and books in farm management efficiency for the sustainability of any farming enterprise. These talks were stimulating and made one aware of the fact that farming is a business for the appropriate actions to be taken in managing for profit so as to keep the farming enterprise solvent and growing.

GRASS LEY CROPS AND INTEGRATED LIVESTOCK MANAGEMENT

This is the third year we have featured "Grass Ley Crops" at our conference and for good reason!

Many soils throughout Africa and the world are in a sad state. We are confronted with numbers of articles regarding the use of short season annual cover crops. These cover crops result in an improvement brought about by having the soil surface covered with live plants and roots providing a more suitable habitat for insects like earthworms and micro-organisms, which are essential for improving the health and structure of the soil. This regenerates the soil resulting in a healthy and organic structure within the soil that will enable better moisture infiltration and retention; sufficient humus is then formed in the soil enabling better retention of nutrients and moisture, the prime requirements for plant growth to take place.

WHAT DO I CHOOSE?

In African, and especially in the summer rainfall areas, we have a shortage of moisture during the winter when we want to grow annual cover crops. A farmer who returned from The No-Till Farmer Conference in the USA in January this year was telling me about David Brandt, a farmer in Ohio who had spoken about his success with cover crops and the improvement to his farming enterprise due to the introduction of the cover crops. Yes, cover crops can do wonders provided you have moisture at the correct times of establishment and the growing period.

In an email to David Brandt I enquired about the rainfall he received to which he replied that they received 31 inches (775mm) of rain during the summer with a dry autumn, **BUT** in addition they normally receive 20 inches of snow during the winter, and depending on the density of the snow, this will add a further 75 to 100mm of rain. This extra moisture during the winter and the slow infiltration of the moisture from the snow, no doubt, is the key to his success!

The total moisture received in Ohio is the average rainfall of the Midlands of KZN but we more often than not receive very little or no moisture during the winter period, making annual cover crops risky and in the drier Highveld regions, even more of a risk.

Hence my advice in commencing the process of soil regeneration on your summer rainfall farm is to introduce a "Grass Ley Crop" into a rotation in an agronomic cropping system. The species suggested are Eragrostis Curvula, Smuts finger grass, Panicum Maximum, Rhodes grass and maybe Lucerne; there are a number of other alternatives. These are established in January while rain is still a possibility in the summer rainfall regions, allowing the seedlings sufficient opportunity to develop to withstand our winters. Having a "Grass Ley Crop" occupying a land for three to four years will allow the soil to regenerate, provided the grass is established and managed correctly.

COVER CROPS AND GRASS LEYS COST MONEY TO ESTABLISH!

The Cedara Combud budget figures for 2015 show the following:

1. Annual productions costs per ha of Oats (annual cover crop) R2950.00
2. Establishment of a grass ley like Smuts finger grass per ha R7000.00
3. Maintenance of Smuts finger grass as being per ha per annum at R3121.00

These figures in any language are substantial so the need to utilise the dry matter produced in the production of meat and/or fibre (wool) while at the same time regenerating the soil, these costs need to be recouped to make the effort in this investment worthwhile.
It is attention to detail: "If you do not measure an enterprise, you cannot manage an enterprise!" That is a fact!

When one launches into both cover and grass leys, you are launching "another farming enterprise" along with your current cropping one that requires:

- To be researched and budgeted for – Get advice.
- In order to make these "crops", for that is what they are, accomplish the goals envisaged when you took the decision to get the regeneration and /or maintain the health of a well-structured and fertile soil you want on your farm, these "crops" need to be established correctly and managed like the annual crops in your farming enterprise!

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In order to judge the results of your decision to include a cover or grass ley it is imperative to accomplish the following:

- **Optimum yields** and utilisation per ha of dry matter needed, so as to make the effort and costs worthwhile.
- Introducing the correct specie for your soil, site and climatic conditions. Should it be temperate or tropical grass specie? And in some cases cultivar will also need to be taken into consideration.
- You need to have the soil analysed in order for corrections to be made to allow your ley crop the best opportunity to achieve what you want and need it to do to produce in matter along with quality feed. Quality is needed to ensure that profits are made. It is also a good idea to see where you are starting and to measure improvement as the introduction of a grass ley unfolds over the years.
- Plant only good clean and weed free seed from a reputable seed company and insist on a germination certificate. This might be necessary in case of a problem of non or poor germination.
- It is important to harvest (either by grazing or conserving roughage in the form of silage or hay) the dry matter with the greatest efficiency by wasting as little as possible and having a good nutritive value in that conserved feed.
- The quality of the dry matter at harvest cannot be over emphasised. In order to obtain the most cost effective food conversion rate (FCR), it is absolutely necessary to harvest optimum meat and/or fibre yield per ha to ensure that this venture is profitable.
- ***Measure your results in kg of meat or wool per ha and not per animal, as hectares are the constant in your farming enterprise.***

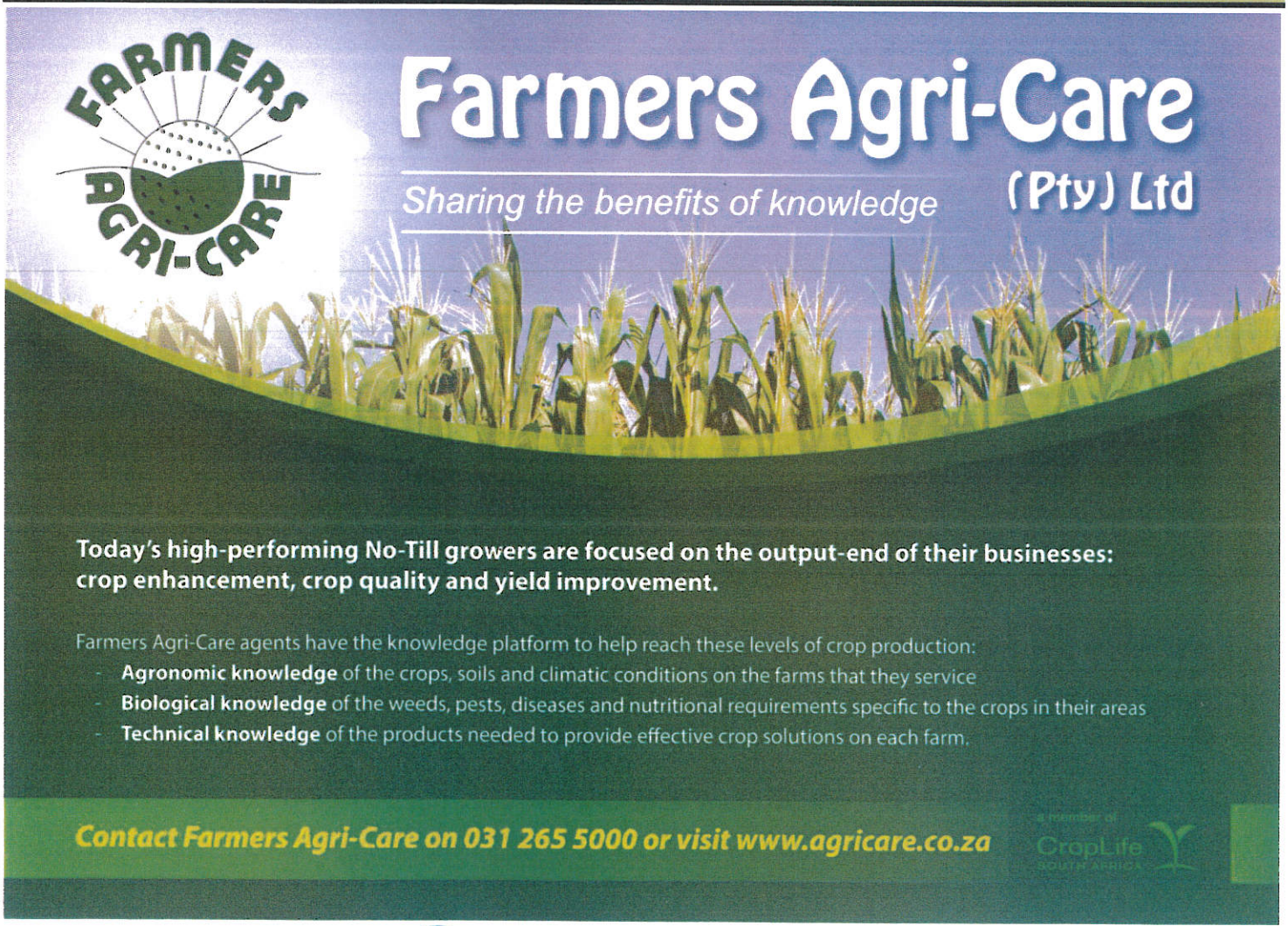
To achieve success in the economics of introducing a cover or grass ley crop you need to make it happen with efficient dry matter intake by animals while looking after the plants, using correct grazing management techniques which are assisted by the proper use of an electric fence system planned for your farm for ease of management by you!

Ultra High Density Grazing can help!

It is with the facts placed in front of you that I have included an article (the last article that Peter Hittersay wrote for The No-Till Club) about the grazing system which André Lund from Beaufort West employs and which he presented at our 2014 No-Till Conference, on his veld management in the Karoo. ***Small camps – high stocking rates - frequent moving of the stock from one camp to the next – allowing the grass to recover.***

Electric fencing essential to obtain the results you require for success

Maurice Williamson of *Stafix* has commenced a series on electric fencing titled ***"The Shocking Truth"***. This series will assist you in understanding and implementing an electric fence grazing control system on your farm. This will help you to make money from your cover or grass ley pastures with effective roughage quality and animal consumption of these grass systems introduced to enhance the health of our most precious resource The Soil.



Impressions of the 2015 No-Till Conference

by Martin Adams

I was very pleased to have been invited as a guest to the 2015 No-Till conference, after being involved with the farm machinery business for 46 years, including No-Till equipment, and now retired for the last 3 years.

What particularly impressed me at this conference was the range of interesting subjects covered by the speakers, from the rangeland management in Texas, the many aspects of agronomy, to the talks by farmers who had started No-Till, and their experiences over time, developing from the negativity of conventional tillage, to successful No-Till farming system, learning and discovering the nitty gritty of conservation agriculture.

It is certainly one way that farmers who want to change to No-Till, will be able to get the information to make the important and necessary changes. All this can be accomplished by attending such an important conference.

It was encouraging to hear that full conservation agriculture is being successfully done in Viljoenskroon, and it is hoped that this much needed system will spread in that important cropping region.

I quote from Bill Crabtree's book "Search for Sustainability". This book was available for sale at the conference.

"In 2009 the level of adoption of No-Till in Western Australia was approximately 90%, of the cropped land. This puts WA amongst the highest level of No-Tillage adoption anywhere in the world. This proportion would be similar to some regions of South America and Canada.

The acceptance of No-Till has been greatly aided by self-help farmer groups such as WANTFA (Western Australian No-Till Farmers Association). This was a matter of necessity for WA soils. These soils are the oldest, most weathered and infertile soils anywhere in the world. Many of these soils have sandy surfaces, often containing little clay, only 1-3%, few nutrients, and very low organic matter levels."

The talk on the massive scale of cropping in the Sudan, as well in other regions of Africa, highlighted the spread of No-Till in Africa. This illustrated what can be achieved.

There was an adequate range of machinery and other inputs, with a good representation of No-Till planters, from the widest, to the just as important hand operated punch planter.

With the continuing emphasis on cover and green manure crops, the demonstration plots were well laid out, and an important feature.

Overall the 2015 conference was well organised, and of great interest.

... to the Editor

It is always a privilege to hear from readers with advice, experiences, a complaint or a complement.
Write, email or fax Richard Findlay: richardfindlayntc2@gmail.com | Fax 086 579 6924 | P.O. BOX 526 HILTON 3245

Photo taken by OFM's Jan Nel van Dyk
Sand storm near Bloemfontein, October 2014

From: Ken Evans
Date: 10 October 2015 at 09:32:46 SAST
Subject: Wind erosion

Hi Richard
Today we have a 30km wind. The no-till fields are resting awaiting the new rains. You would be distressed to see the wind erosion on the cultivated fields, especially the fields that had peanuts or beans last year. It's a consolation to know that for us 'wind blowing' is a thing long gone.
Regards
Ken Evans

Ons is op soek na iemand wat Afrikaanse artikels vir ons nuusbrief kan skryf teen kontantbetaling.
Richard Findlay: 074 104 7081 | 033 330 2062 | richardfindlayntc2@gmail.com

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Adriaan Jacobs
Sales & Engineering

Haraka Planter

For more information contact

Eden Equip (Adriaan Jacobs)
cell: 082 728 1213
email: info@eden-equip.co.za
email: eden.equip@gmail.com
fax: 086 694 7465
web: www.eden-equip.co.za

Growing Nations
(August Basson)
083 658 3410
www.growingnations.co

Haraka planter

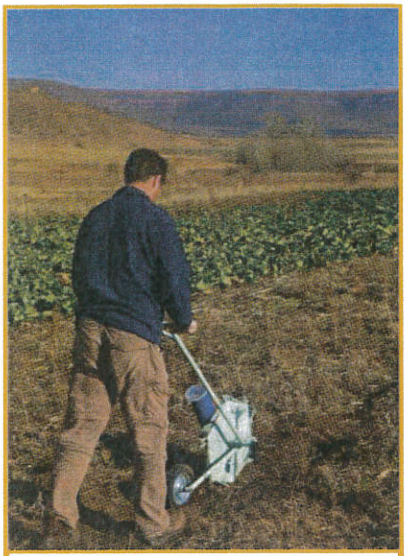
We hope that a few years from now, when you hear "Haraka planter", you will not wonder: "What are they talking about?" Especially if you are a small scale farmer we hope that you will not only know exactly what the term "Haraka planter" means, but also own one of these fantastic pieces of CA equipment yourself.

The Haraka Planter

What is the Haraka Planter?

In technical terms the Haraka planter is a rotating punch planter. It is a seed planter. The main planting part consists of a wheel with six punching points. As it rolls over the soil it punches holes into the soil every 300mm and places seeds in the holes.

It is a hand push planter to be used by small scale farmers on fields typically between a ¼ and 2ha. "Haraka" means "fast" in Swahili. Its name is due to its unequalled planting speed when compared with other types of hand planters.



Using the Haraka Planter

The Haraka can plant through mulch

Is it a no-till planter?

Yes, absolutely! The concept of the rotating punch is not a new idea. We adapted the concept specifically to function in a no-till and CA environment. The Haraka's punch points are narrower than its predecessors so that it can punch easier through mulch and non-loosened soil. So, what about hard dry soil? Yes, the Haraka has its limits. As with most planting equipment you have to wait until planting conditions are right with appropriate soil moisture. In cases where the soil is on the harder side, small concrete weights are attached to either side of the planter to add some extra down force.

In what types of soil can it work?

Sandy soils are always the easiest because of its relative softness and non-stick properties. Loam soils work well too. As the clay content increases the challenge rises. High clay soils are very hard when too dry and very sticky when too wet. Timing is important. Packing is not the main problem – yes, it packs, but not so that the planting mechanism stops functioning. The challenge comes with the closing of the punched holes. If the clay is too sticky, the holes may stay open without any loose soil to close the seed. We improved the Haraka's ability to close the seed holes by adding a special spring that supplies more down force to the closing wheel. This was a notable improvement. Very high clay stays a challenge, but this is not unlike most other no-till planters. We think the Haraka is doing pretty well.

Maize planted with the Haraka, 2013 (Vastfontein, Pretoria)

Which crops can you plant?

The Haraka was mainly designed for maize and beans. Sunflower and sorghum work well too. Five different seed plates are supplied with each planter and the correct seed-plate must be selected for the type of seed you want to plant.

Haraka Planter – *continued from previous page ...*

To increase the plant population you may have to plant the same line twice to get a smaller spacing between your plants. Or simply make the rows closer together.

One of the recent developments is that we got the Haraka to plant pumpkin seed with a special seed plate with fewer holes, so that the distance between punch holes is 900mm.

What about cover crops?

Yes again! We discovered that the Haraka can be used to successfully plant a variety of cover crops. Examples of cover crops planted are: cow peas, grazing vetch, oats, fodder radish, stooling rye, etc. If it is not too fine, the Haraka will plant it. Pastor August Basson of Growing Nations (Lesotho) says they went into the maize field in February and planted the cover crops between the maize plants. During harvest time the cover crop was already growing.

Fertiliser?

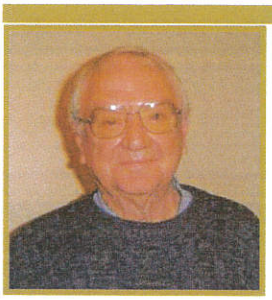
Important question! The Haraka planter does not have a separate bin for starter fertilizer. Here are the reasons: Firstly, it will increase the price and make it less of an option for small scale farmers. Secondly, it will require additional energy from the operator that will make it too difficult to push.

The solution we found, is to apply the fertilizer during a second run over the same lines where you have planted the crop. Simply select the seed-plate with the biggest hole size, fill the seed container with fertilizer and go again. People immediately complain if they hear about going over the land twice. We found it not to be a big problem as you can really speed up during the fertiliser application. Where seed takes two-thirds of the time, the fertilizer takes one-third. It is the easiest and most economic way.

According to August Basson, soil under proper CA develops enough cracks and pores so that (in their case) you can broad cast the starter fertiliser on top and the rain will wash it in. They used this method at Growing Nations' base in Lesotho.

Background

The development of the Haraka planter was a project by KEL Growing Nations Trust. Eden Equip was responsible for the technical development. Eden Equip is based in Potchefstroom, South Africa and is now manufacturing the Haraka planter.



Tribute to Peter Hittersay

Peter Hittersay attended every No-Till Conference that Sandra and I have organised since 2007. He would always write his report on the conference in a way that would make anybody who had not been there know exactly what had gone on and at the same time, possibly made the person reading the report feel that they had missed out by not having been at the conference.

His favourite was to visit farms and would paint a picture in words of exactly what was transpiring on the farm, and what motivated the farmer he was writing about to be a proud No-Tiller both of the farm and owner. He would always take copious notes at each conference and used the speaker's PowerPoint presentation to spell out the pertinent points of the talk. All these articles and reports made up the greater part of our No-Till Club Newsletter during the following year.

Peter and I used to discuss many issues regarding the content of each edition of our newsletter and one day I asked him to write an article on Peter Hittersay which I wanted to place in the No-Till Club newsletter. He asked why, and I said many farmers had read his articles, including me, and we felt that we all needed to know who Peter Hittersay was.

Peter, a strong advocate of No-Till Conservation Agriculture, understood the principles and was passionate about getting the system adopted in the interest of Conservation Agriculture. One of Peter's dreams was to have a No-till CA organisation that would champion CA throughout South Africa and he proposed that The No-Till Club of KZN be the organisation to do this. The proposal was made at a meeting the FAO hosted in about 2008 in Johannesburg. Unfortunately this has not happened but it is felt that through his articles and his encouragement, and knowledge he passed on through his ability to write about No-Till CA, will continue to contribute to us all having a better understanding and passion to continue what Peter spent many years doing in the promotion of sustainable system that can lead to a more secure way of farming and better food security in South Africa and Africa.

The No-Till Club of KZN will miss Peter greatly as a friend, colleague and a confidant in-striving to increase both the awareness and adoption of No-Till CA in South Africa.

Sandra and I will miss Peter very much as he would often phone to discuss an idea he had in mind and often, just to chat and encourage us.

Thank you Peter for your positive contribution to No-Till Conservation Agriculture.

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THE SHOCKING TRUTH

(Series one)

INTRODUCTION

(The following is the first in a series of articles by Maurice Williamson addressing the Do's and Don'ts of electric fencing. Maurice has been involved in the electric fencing industry for over forty years having introduced the first high powered energizers into South Africa in the 1970's. Should any member have any specific questions or problems regarding electric fencing, we invite you to send in your questions to ndlovu@stafix.co.za so that we can all benefit from each other's experiences.)

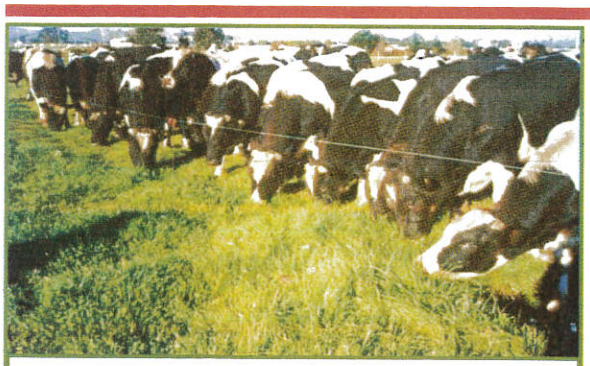
There is nothing new about the use of electricity to control livestock. Farmers have been using electric fences successfully for almost a century. However, despite the successes achieved and thousands of farmers swearing by it, there are still some farmers who swear at it, and here I'm not referring to when they accidently make contact with a live fence. Why these contradictory responses? The answer is simple: those that swear by it understand and apply the basic principles of electric fencing when installing their grazing management systems.

In this series of articles I will be addressing the most common challenges encountered. Hopefully, existing users will also benefit from these articles which could help to improve existing electric fence systems.

An electric fence works on the simple principle of giving an animal a short, sharp, powerful shock that they will not forget in a hurry. In other words it is really a psychological *fear barrier* as it relies on fear to control animals. Thus it is important that an animal making contact with an electric fence for the first time learns to respect it by receiving a good strong shock.

The *psychological fear barrier* characteristic of electric fences gives them a number of advantages over conventional fencing. For example, one can get away with much more lightly constructed fences resulting in considerable cost savings. They are aesthetically pleasing, and with the cost savings one is able to erect more fences making the management of one's pastures and natural veld easier with less wastage, better utilisation and ultimately more profit – otherwise why even consider using it? Other advantages, not often appreciated, are the reduction in parasites in pastures as a result of the quicker rotation and lengthier resting periods, the reduction in damage to hides from barb wire scratches, the ease with which one can back fence thereby preventing the pasture regrowth from being grazed too early. The addition of electrified wires to existing fences will also greatly prolong their life span. Simple and economical electrified gates, floodgates for river crossings, and cattle grids can also be constructed. And finally there is the security aspect where adding alarm monitoring can warn against rustling and homesteads against crime.

What are the disadvantages? Electric fences do require some management. However this can be relatively simple with a bit of forward planning in the initial stages, the judicious installation of cut-out switches, the use of directional fault finding volt meters and the incorporation of fence voltage or current monitors.



Strip grazing

There are three classes of electric fences:

Fence rejuvenation

- Portable electric fences for temporary grazing systems – strip grazing, pet control.
- Off-set electric fences – the attachment of offset wires to existing conventional fences – fence rejuvenation or reinforcement.
- Permanent electric fences erected for the control of all classes of livestock and for farm security.

Whatever the class of fence the same basic principles of electricity transmission apply. However, before discussing these basic principles let us start by looking at some Golden Rules of Electric Fencing. Existing users of electric fences can benefit immediately by conducting an audit of their systems and making improvements if necessary.

A permanent fence on a dairy farm

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THE GOLDEN RULES FOR AN EFFECTIVE ELECTRIC FENCE SYSTEM

- **Plan** your layout with the future in mind.
- Use high powered energizers with **legal standards.**
- **Understand,** and **apply**, the basic principles of electric fencing.
- Never underestimate the **importance of good earthing.**
- Use the **correct fence design** for the animals you intend to control.
- **Position** energizers as **centrally** as possible within a layout or along a fence line.
- Leave your energizers **ON** at all times.
- Install **lightning protection.**
- Use only hot **dipped galvanised components** to avoid electrolysis.
- Position **cut-out switches** at strategic locations to facilitate **fault finding.**
- Make sure **all joints** are securely **clamped.**
- Use the **correct insulator** for the task in hand.
- Use **double insulated underground** cable, encased in polythene piping, when going under gateways.
- Use only the **best quality materials** available. 'Goedkoop is duurkoop.'
- Have a fence **maintenance program** and implement it.
- Remember that animals need **time and space** to become accustomed to electric fences.
- **Fire up** your fence lines as construction progresses.
- Have your **staff trained**, especially with regards to fault finding.
- **Know the law** as it applies to electric fencing.

Using the above rules as a skeleton we will, in this series, flesh out the concepts of electric fencing by addressing them more in detail. We will also look at certain specific components of an electric fence system such as gateways, river crossings, electrified cattle grids, fence sectoriszation, fence monitoring, and fault finding. We will also address any specific problems a member may be experiencing with his/her system.

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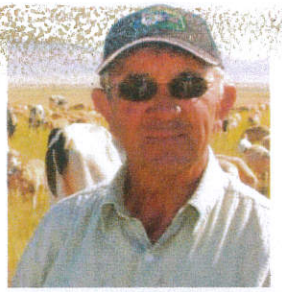

ANDRE LUND, born in 1939 in Beaufort West and lived on the farm Elandsfontein for 73 years. He started farming in 1958 with his father and brother.

The farm became his classroom and the ruminant industry his subject.

He cooperated in research projects with National Botanical Society, Cape Town Technikon and Western Cape Department of Agriculture.

Andre followed the principals of John Acocks, Allen Savory and Johann Zietsman. He ran Karoo Grazing Experiment for 10 years.

His passion is sustainable farming by proper management of natural veld.

Managing "Grass Leys" Using Ultra High Density Strip Grazing – Part 2

André Lund: Third generation farmer raising livestock on Elandsfontein farm in the Karoo

LOW DENSITY GRAZING

As pristine grazing no longer exists, which is the worst scenario, the Econo/Eco Graph would classify this as Low Density Grazing (LDG) – low density selective grazing where production per animal is the main aim. The last category in the vegetation section of the graph as identified above is the most important:

- Seedlings for sustainability of the plant population
- Annuals and super plants are usually green in the winter and have a special function during that season

It may well be that your grass lay crop problems lie in this area – lack of annuals and super plants to compensate for the lower quality of the grass. LDG is defined as a grazing system run at a stock density of less than 12 SSU/ha (Small Stock Units) in paddocks of over 100ha with grazing periods longer than three weeks. For ages this has been the easiest way of getting an income from stock farming and is the main cause of veld degradation – arguably having the same adverse effects on the soil as the plough has on lands planted to crops.

Ever since man decimated the wildlife and started practicing LDG in this part of the world, erosion has accelerated at an alarming rate washing away the very soil we, and our future generations, need to survive. Every good rainfall now results in a devastating flash flood. For instance, during my farming career from 1958 to 2012 on our farm, Elandsfontein, there were two major flash floods in the Salt River. While the 1961 flood was described as a once in 250 year flood, the1988 flood measured more than half a metre higher over the 500 metre breath of the Salt River Poort in spite of millions of Rands having been spent on erosion prevention works in the catchments area. The history of the Salt River system reveals that similar volumes of water from such rainfalls would have taken years to travel the same distance. This when the ecosystem was in its former pristine state due to the natural vegetation impeding water runoff, so allowing it to infiltrate the soil and replenish the underground water resources.

In his book *Manna in the Desert*, Alfred de Jager Jackson gives a comprehensive account of life on the farm Kamferskraal in the Nelspoort area and surrounds from 1830 to 1860. What intrigued me was how healthy and unspoilt everything was before they started farming with Merino sheep. Shortly after the sheep were introduced: the ecosystem started deteriorating; flash floods became a regular occurrence; river water became muddy (silt laden); the fish disappeared; the entire vulture colony on the mountain was poisoned, and; the river eventually became a gully. It is incomprehensible to me how farmers and extension officers, as custodians of our natural resources, then and now, could allow this to happen – surely they could and can see what was, or is, going on?

From 1946 to 1983 (period of 37 years), the then Department of Agriculture enforced a reduction of 50% in the carrying capacity in 11 districts of the Northern Cape as the veld progressively deteriorated without investigating the root causes and developing solutions – I wonder what the carrying capacity is now after a further 31 years? Some research was conducted as reported in the Farmer's Weekly during March 2012 with 4 SSU/ha, 8 SSU/ha and 16 SSU/ha and grazing periods of one month by a man who is now a spokesman for the Department as an expert on high-density grazing. This in sharp contrast to the Karoo Grazing Experiment I initiated and conducted from 2003 to 2011 with a stock density of 8,000 SSU/ha and 8 to 10 moves per day using 3.72/ha grazing per day during the final stages. This project was intended to be a cooperative venture where the research institutions of the country had the opportunity to study all aspects of UHDSG in the Karoo. Apart from a few generous sponsors from the private agricultural input sector such as: NMR Engineering of Newcastle, who provided portable kraal and stock handling equipment; STAFIX, who provided electric fencing stock handling equipment; Axoxon, who provided electronics and a stock scale, and; Andrag, who provided plastic piping for water distribution, no one else was interested in the project. If you Google Elandsfontein farm, you will easily spot the 240ha experimental plot standing out due to the improved vegetative cover.

HIGH DENSITY GRAZING

As an example of the positive effects that High Density Grazing (HDG) had on a farm previously categorised as LDG, an Eastern Cape farmer purchased a 630ha farm in 2001 with his pension payout in spite of neighbouring farmers and the local extension officer advising him that it would never carry more than 50 to 60 cows. This as the farm was totally overrun by Bankrotbos due to LDG having been practiced on it for the previous 100 years and the severe erosion it caused resulting in deep dongas being formed. Today that farm carries 280 Drakensberg cows following his establishing paddocks, laying on drinking water and adopting a HDG system. When I visited him in 2013, the Bankrotbos had been, except for one very small remaining patch, eradicated and replaced by grass species.

However, the HDG system alone is for some considerations only a stepping stone and not a final solution as in this system grazing density can never be high enough to stop selective grazing completely. But, strip grazing is more versatile allowing you to incorporate it in both HDG and UHDG systems.

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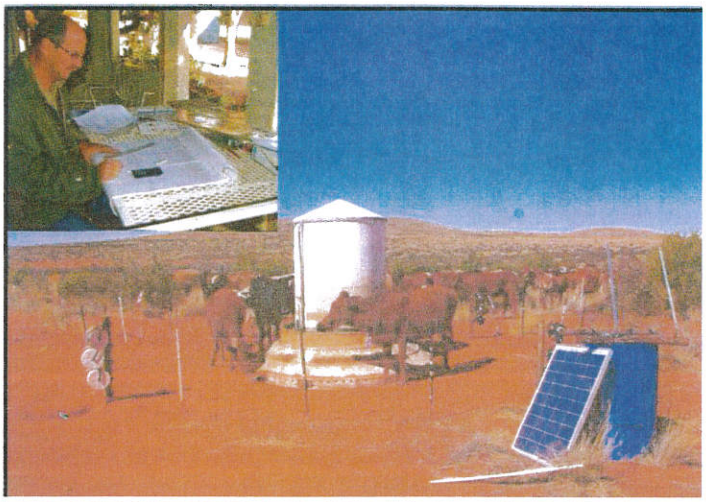
UHDSG SYSTEM

The system allows for the progressive grazing of livestock moving forward from section-to-section in a time-controlled manner as determined by the state of the natural veld. Also, the higher the stock density, the shorter the grazing period, the better the animals do and the ecology flourishes. To prove this point: in Zimbabwe 3,000 LSU/ha (Large Stock Units) can be grazed on natural veld receiving an average of 800mm of rainfall per annum, whereas in the Karoo under a well installed and managed UHDSG system a mix of 50% LSU (cattle) and 50% SSU (75% Merino sheep and 25% Boerbokke) – 6,000 to 10,000 of SSU/ha or 764 to 1,274 LSU/ha (Large Stock Units) – can be grazed on an average rainfall of 250mm. The number and ratio of SSU to LSU will change with the rhythm of the ecology, but all three species are essential for a healthy ecosystem because of their differing grazing habits.



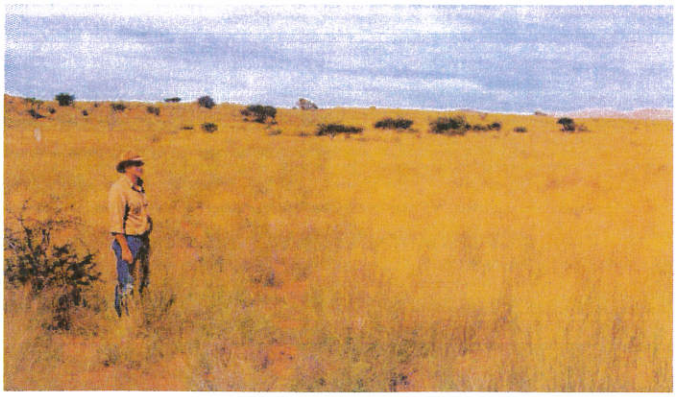
Solar energy panels that power the electric fence so important for the success of this grazing system

UHDSG in the KALAHARI
The correct planning of an UHDSG system is of vital importance. The mistakes will catch up with you sometime or other. Then don't blame the system

Our UHDSG system basically operates as follows:

- The electrically operated automatic gates are set to open for grazing periods of one and a half hours.
- The most suitable stock density is at a level of 8,000 SSU/ha or 1,019 LSU/ha.
- While the stock graze together in the strips the equipment is moved forward thus making UHDSG a mobile, precision routine operation that is operator friendly and highly efficient.
- Lando Esua, our stockman, works alone on his own time schedule leaving home at 5:00 am on his motorcycle and is back at home by 3:00 pm. He keeps a meticulous diary in which he records all activities and events. Upon arrival at the UHDSG sites he moves the stock by raising the electrified tjop (colloquial term for section) line by means of a light insulated pole to allow the animals through underneath the elevated tjop line into the next patch of 0.4ha of fresh grazing which he had previously demarcated by erecting another tjop line.
- In the case of the automatic movement of the animals, the insulated pole is replaced by an electronically operated mechanism with a counterweight that raises the tjop line in the same manner as the above pole does when a time-controlled trigger is released to allow the animals to move through on their own calmly and peacefully to the next patch of 0.4ha fresh grazing every 1½ hours. The 1½ hours is determined by the time it takes for the animals to graze all the edible plant material in the 0.4ha patch. It must be noted that the size of the patch is determined by the number of animals in the herd. Also, the ideal is to maintain a fixed, strict, routine in moving the animals when using the system as any deviation leads to their confusion.
- Over the weekends you can save on labour by only lifting the tjop lines every 12 hours for the animals to move into the next larger patch, or as many moves as possible, as is required. Never stop their progressive movement for too long as the animals then go into a selective grazing mode leading to an energy drain, as opposed to the non-selective energy booster mode aimed at under a UHDSG system.

Notable improvements in the condition of the veld have been observed under our UHDSG system. The vegetation flourished in the microclimate formed and there was an increase in the insect, small animal and bird populations, with even Kudu coming for fresh grazing. Because UHDSG requires, much like no-till does, a high degree of management, the Econo-Eco Graph grazing categories can be used to plan short- (6 months) or long-term (12 months) livestock and veld management practices. All one requires is your grazing, livestock and rainfall records recorded in the stockman's diary combined with the predicted long-term weather forecast and an assessment of the available hectares fodder and/or grazing reserves there are. Armed with this knowledge, a time frame for increasing or decreasing livestock corresponding to market trends can be determined. It is vital that the stockman in charge be fully trained to identify and record in his diary the main indicators for future reference. This will ease your planning and management tasks while giving your stockman a sense of pride at being part of the success of the system.



The farmer in the Kalahari, under Andre Lund's mentorship, looking at how the grass had increased on his farm using Ultra High Grazing Management.
On the left the animals had just grazed and on the right where the cattle were going to graze next.

On our Elandsfontein farm of 7,000ha, which is considered an average economical unit in the Karoo, receiving an annual average rainfall of 250 mm, the official departmental LDG LSU/ha carrying capacity ratio (defined as a measure of the efficient use of grazing and rainfall) is 1:24ha, while under HDG it is 1:12ha and under UHDG it is 1:3.72ha.

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The grazing systems that are followed on the farm are:

Grazing System	Paddock Size	Grazing Period	Rest Period
Low Density	41ha	14 days	1 year
High Density	41ha	7 days	1 year
Ultra High Density	0.5ha	1½ hours	1 year

It is of interest to note that grazing pressure comparisons expressed as Large Stock Grazing Days/ha/year are: Departmental systems 16.5, Elandsfontein 30.0 and Karoo Grazing Experiment 60.0>.

CONCLUSION

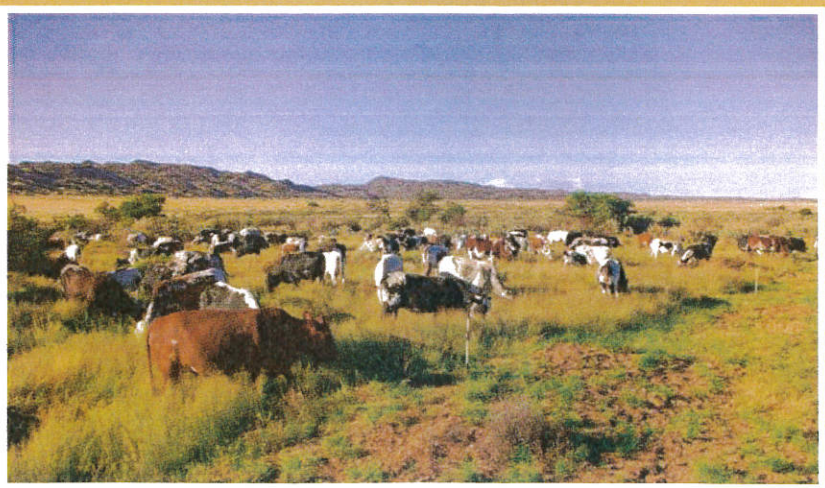
It seems to me from the lack of interest from both the establishment and the stock farmers in the research possibilities of the Karoo Grazing Experiment (a UHDSG experiment), that people either do not understand the seriousness of the situation or have just given up on finding a solution for the real problem which is selective grazing with inadequate recovery. Stepping out of one's comfort zone is quite difficult. Ultra-high density strip grazing has so many advantages and benefits for increased productivity combined with ongoing ecological improvement that it is surely worth the effort.

KAROO GRAZING EXPERIMENT 2003 – 2011
ELANDSFONTEIN INFO

Effectivity:	:	± 75%
Farm Size	:	7 000 Ha (Average Economical Unit)
Average Paddock Size	:	41 Ha
Average Paddock Size:	:	UHDSG = 0.4 Ha (40 x 100m)
Number of Paddocks:	:	170
Average Paddock Size of Area	:	250 – 1000 Ha
Annual Rainfall	:	250mm

GRAZING RECORDS

	Stock Density LSU/Ha	Grazing Pressure. LSGD/Ha	Caring capacity L.S.U/Ha/Year
Official	1.68	16.5	1/24
High Density – Elandsfontein	5-8	30.0	1/12
Ultra HighDensity Strip Grazing - Karoo Grazing Experiment	764-1019	60.0 or more	1/3.72



GRAZING PRESSURE
193 LSGD's/ha

Should you wish to know more, contact André Lund: 082 719 2030 | 023 415 1132 | andreenmartie@gmail.com

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FROM THE HEART
by Richard Findlay

Getting yourself heard and at the same time understood seems simple enough, but how to carry the message over to the person or audience so that they comprehend your point is often frustrating and problematic, especially if you are confident that you have information and/or a positive solution that is practical to a perplexing situation.

We have matters that are important to society and in the hype and emotion little truths often get embellished and people who need to know what the real solution is, are left to try and get to a conclusion that confuses and muddies the water more.

My task using The No-Till Newsletter is to investigate and research some of these important matters so we might have a better understanding of some complex environmental issues.

My pet aversion at the moment is *"climate change"*.

We have all been informed about "the problem of global warming". What keeps me pondering about this state of affairs is not being able to believe and understand the TRUTH about it all, due to varying and sometimes unbelievable statements.

- Is it the problem with the academics or the media? That is the question?
- Or is it going to fizzle out like the dreaded Y2K that was going to shut down cities, lose all the money in your bank account and crash your computer? All that hype by a ***few so-called experts*** and with a great deal of stirring by the media we all felt vulnerable to this physiological stress and prayed the turn of the millennium would not occur. It is commonly termed "making a mountain out of a mole hill" which we can say with confidence as the threat of the Y2K is now over, and to my knowledge there were no real calamities to write home about. The "EXPERTS of DOOM" have disappeared and have not been invited back onto the radio or TV stations to give reasons for their predictions.

Are the farm animals to blame for climate change? What about volcanoes and earth quakes?

The earth quake that caused the tsunami a few years ago actually changed the vertical degree of the earth ever so slightly. I remember what a small difference in measurement can result when laying out rectangles on a field for a cover crop trial. The one measurement of the second square which was to run parallel to the first was a centimetre out on one side and the difference on the other end some 70 meters away was significant when compared to the first rectangle. So have we considered the slight change in the vertical angle of the earth and its possible effect on climate change?

Why am I rambling along so much? Because I am trying to get the truth of the question of the truth about climate change!

With the talk of using cover and grass ley crops to improve soil health and the possibility of grazing livestock, I decided to "Surf the Net" – (Old dogs do learn new tricks!) In order to find out if we we're taking you down the wrong path, causing you to incur the wrath of the media and academics!

I enquired of Google: "Do cows cause climate change?" Well it sounded like a report from our parliament as I read through some of the views, predictions and comments - total confusion!

The lobby say that cows are the problem. And I am using is a term for which I apologise, but known by most of us and as used in a few of the comments by expert commentators:

- **"Cattle by farting release methane gas into the atmosphere and because of this natural phenomenon, and as there are so many cattle in the world, it is a major problem." (The year 2006/7.)**
- **Another expert explained: "It is the burps from the cows and not the farts that are the problem." Confusion reigns!**
- **Vegetarians call for a ban on meat and for the public not to eat meat on a Monday as a *"protest"* to save the world which is in danger because of climate change and cattle play a big role in causing global warming. Are these individual and/or lobby groups' agendas or not?**
- **In 2011 meat eaters state: "Sorry vegetarians, cow burps are not causing (as much) methane as you thought and blame the vegetarians for also producing excess methane gas – as vegetarians consume only plant material like the cattle they are blaming.**

Trying to establish the correct facts is not easy, much like Y2K.

No-Till Conservation has a major role to play in limiting and reducing climate change.

Dr Richard Teague who was our guest speaker at the 2015 No-Till conference sent me a very interesting paper researched by The Rodale Institute in the USA.

In our next newsletter I will be "unpacking" the details of this most interesting paper titled: **"Regenerative Organic Agriculture and Climate Change".**

Till next time

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