NO-TILL CLUB



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BRINGING YOU THE FACTS ABOUT NO-TILL

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FROM THE EDITOR'S DESK

Under the banner of ***'No-Till is Conservation Agriculture in Action'*** the Club's 14th AGM and conference were held for the sixth time at the ATKV Drakensville Holiday Resort KZN, near Bergville, from 3 - 5 September 2013. This well-organised, ever-popular and much looked forward to event was attended by 205 delegates from many of the provinces in South Africa, and some from Zimbabwe and Mozambique. No less than 15 exhibitors showcased their products and services; the farm equipment on display was estimated at a value of R38 million. (Taken from Peter Hittersay's conference report, the full report can be read on www.notillclub.com).

MACHINERY DEMONSTRATIONS (our apologies)

We, as well as many of the delegates, were disappointed that the machinery was not demonstrated in the field; the ground was extremely hard due to the lack of rain over the winter period – exactly the opposite to the situation in 2012 when we had 90mm on the day we were going to have the demonstrations.

Many farmers look forward to the machinery demos. However, in recent years weather conditions have led to cancellation in demo times, resulting in much frustration. The machinery aspect of the conference now needs to be re-looked at. We are working on this to ensure a solution that will be exciting as well as food for thought for delegates to take home with them in 2014.

THE NO-TILL FARMER MAGAZINE FROM THE USA

Recently I phoned Frank Lessiter, editor of *The No-Till Farmer* and asked him if we may publish some of the material they print, in our newsletter. We may do so as long we acknowledge them. So our first use of one of their articles is ***Building a Better No-Till Soil*** written by Daniel Davidson.

This article is most probably site specific and it would be beneficial to get advice from advisors or fellow no-tillers near you, to work out over time what will work for you.

No-till is s system requiring patience to allow what you have started to work itself out. Remember no-till's ultimate goal is to build a good healthy soil with a good structure. Most of the conventionally tilled soils we are battling with have deteriorated over a period of time and you therefore need time to re-build that soil.

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SINARAR ARGENTINA

Ramõn Vidal and Juan Ferla came to visit Guy Thibaud and me about a service I have felt is very necessary not only for new converts to no-till but also to those who have been in the system for some time, and that is management consultancy. This type of consultancy has worked well in the dairy and sugar farming business.

They told us that they are aware that Argentina is well advanced in the techniques of no-till but that in order for a farmer to make a profit after tax in Argentina he needs to be able to know the finer aspects of getting the most out his inputs and resources. Ten years ago they started working successfully with Russian farmers. Soon they will be opening an office in that country, due to the fact that farmers have realized the difference a consultant or "coach" can have in obtaining the best returns in yields as well as profit on a farm.

Romõn and Juan have been looking to come to South Africa to get a similar service to farmers going. This is the type of consultancy which could be of great assistance to farmers who are members of a study group. Your consultant would be able to stay in an area and visit the members and their farms regularly to get to know where they all need help.

Should any of you like to know more about this consultancy offer please contact me on:

0721479703 or richardfindlay@intanet.co.za.



No-Till consultants Juan and Ramõn with Guy and Egon.



Guy Thibaud, Leonard Diederichs, Ryan Rankin

CASTOR OIL PROCESSING

On 18 October we had a visit from Leonard Diederichs, Grower Development Manager: Agricultural Division of PYRATRADE, a division of the Pioneer Foods Group.

PYRATRADE will be erecting two extrusion oil plants, one near Port Elizabeth and the other near Durban. When these oil mills are operational they will require 6000ha ground in KZN alone. Leonard gave us an indication of the economics of planting Castor. A couple of demo plots will be planted in KZN for us all to follow the progress this season and we will keep you informed should there be any info days arranged. If you would like to consider planting CASTOR as a new crop on your farm please contact us and we will pass your request onto Leonard.

- 013/14 Contract Price at R 4800 per ton (de-hulled)
- Income R 14 800/ha (3t) to R 24 000/ha (5t)
- Input Cost:
  - Seed R 1 200/ha
  - Fertilizer R 1 400/ha
  - Chemicals R 820/ha
  - Mechanization R 4 200/ha
  - Harvesting R 1 380/ha (R12.50/l)

Total R 9 000/ha

Gross Margin R 4 900-R 14 700/ha

Crop	Maize	Soya	Castor
Yield	5t/ha	3t/ha	3t/ha
Income	R 2300/t	R 4 700/t	R 4800/t
Direct Cost	R 1317/t	R 3 390/t	R 3000/t
Gross Margin	R 983/t	R 1390/t	R 1800/t
Per ha	R 4915/t	R 4170/t	R 5400/t

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A VISIT FROM CANADA



On October 22, members of The Mennonite Central Committee from Canada met with us at Anthony Muirhead's farm in the Winterton area. The day was cold and I am sure the Canadians were wondering where sunny South Africa was as they felt the cold, but the talks and fellowship talking about agriculture and especially no-till conservation agriculture was warm.

Mennonite Central Committee (MCC) is the international service organisation for the Mennonite Brethren in Christ churches of Canada and the United States. MCC's mandate is relief, development and peace in the name of Christ. Canadian Foodgrains Bank was founded by MCC in the 1970's and currently is a partnership of 15 Canadian churches and church-based agencies working together to end global hunger through food security programmes. MCC and CFGB are based in Winnipeg, Manitoba, Canada.

James Alty, MCC's representative based in Pietermaritzburg, asked if we could gather a group of agriculturalists so that Dan Weirs and Mike Salomons, from MCC and CFGB could gather information and hear first-hand stories about conservation agriculture initiatives in South Africa. Their report will be submitted to the Canadian International Development Agency (CIDA) which is the Government of Canada's overseas aid agency. MCC and CFGB are encouraging the Canadian Government to target their agriculture aid funds at conservation agriculture programmes in the developing world.

After the visit with us, Dan and Mike travelled to Zimbabwe to meet with no-till farmers and agencies supporting conservation agriculture. Later on in the year they will be visiting East African countries where MCC and CFGB have food security programming. For your information MCC'S key agriculture partner in this part of the continent is in Lesotho with Growing Nations Trust headed up by Rev. August Basson. Feel free to contact James or August to find out more about this conservation agriculture partnership.

Chairman's report

Addressing members at the Club's AGM in an open meeting to which conference delegates were also invited, Callie van der Linde reported the following:



Callie van der Linde

The 2012 conference was attended by 250 delegates including 29 who were an UN Food and Agricultural (FAO) group from 13 sub-Saharan countries, including South Africa. Notables attending were Ms. Alexandra Milner-Smyth, executive officer of the South Australian No-Till Farmers Association, and Juan Miguel Cassissa, deputy head of mission of the Embassy of Argentina. Due to heavy unseasonal rainfall, the machinery demonstrations had to be cancelled; however, the newly established cover crop demonstration plot had proved to be popular with delegates.

The committee reduced the number of committee meetings to two per annum in the face of rising costs as a number of members had to travel considerable distances to attend. Of these, a one-day committee meeting was held in Dundee on November 28, 2012 and a combined two-day committee and planning meeting was held at the ATKV Drakensville Holiday Resort KZN on February 13 and 14, 2013.

Committee members conducted a number of activities during the year. Meetings were held at various venues in Gauteng, the Free State and KwaZulu-Natal to: explore the creation of benchmarking for no-till crop farmers; determine the establishment of no-till pastures; forge closer relationships with INTA (the equivalent of our Agricultural Research Council) of Argentina; gauge the interest farmers had in the extraction of furvarel from maize cobs; discuss if the Club's webmaster would take over the Club's website; improve the working relationship with Grain SA following their appointment of a CA Facilitator; maintain close contact with the National Conservation Agriculture Task Team, and; explore the possibility of having the Club's No-Till Guide translated into Afrikaans.

Committee members: Egon Zunckel addressed delegates to the COP 17 Conference in Durban; Anthony Muirhead addressed delegates to the World Soyabean Conference in Durban, and Guy Thibaud and Egon Zunckel addressed delegates to the Sustainable Crop Production Conference in Stellenbosch – all about No-Till/CA. In addition, Wynn Dedwith represented the Club at the South Australian No-Till Farmers Association's annual conference.

Two donations were made to worthy causes by the Club. A rickshaw pull-type sprayer was purchased and presented to Growing Nations in Lesotho and delivered there by Valtrac. Six thousand Rand was presented to the Xanga Mission in Botswana for fencing to keep cattle and game out of their community vegetable garden. Projects in progress are a new coloured A5 size no-till manual, a no-till wall mounted planning chart to manage and record no-till activities and a simple reference guide to cover crop specie and management.

The chairman closed by sincerely thanking Richard and Sandra Findlay for their managing the Club's affairs during the year and their sterling work in making the conferences the successes they were. He also thanked all those committee members who gave so freely of their time to actively engage in the Club's activities.

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Super Soya Yield Competition



Johann du Plessis

On behalf of the Protein Research Foundation and the KwaZulu-Natal Department of Agriculture and Environmental Affairs, at this year's conference Johann du Plessis, coordinator of the competetion, announced the 2013 winners of first Super Soya Yield Competition, which was launched during last year's conference. The winners are Frik Cronjé of Normandien with a yield of 4.05t/ha and Dieter Schroeder of Winterton with 4.65t/ha. The number of entries was disappointing as only 10 were received from Dundee, of which the average yield was 3.33t/ha, and six from Bergville/Winterton, of which the average yield was 4.18t/ha.

The aim of the competition is to increase the production of soyabeans per hectare in KwaZulu-Natal by motivating farmers to try new innovative approaches in crop production and management to produce the highest possible yield per hectare on a small portion of their farms.

It is planned to extend the competition to cover the rest of South Africa in 2015 and to compete with USA farmers in their 100 Bushel (6.8t/ha) Club. Entry forms and more information regarding rules and regulations can be accessed at www.proteinresearch.net or contact **Johann du Plessis on 082 496 830, Graeme Oats on 082 559 1594**. You can also contact The No-Till Club at richardfindlay@intanet.co.za, as well as **072 147 9703**.



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RUSTENBURG FARM TOUR



Delegates on farm tour. Egon near right with black cap. Dr Alan Manson, with floppy hat, in pit.

Judging by the steadily swelling number of delegates that kept on arriving for the farm tour of Egon Zunckel's farm Rustenburg after the starting time of 10h00 on the first day of the conference, the tour ended up being a huge success. Pity that some delegates arrived late as they missed hearing about some of Egon's 18 years of no-till experience, his production of cover crops and participating in the earlier discussions. To encourage those who arrived late to arrive on time in future, and for those few who never attended, the following background is worth repeating.

Rustenburg farm is 2150ha in extent of which 1 000ha is cropland, a third of which is irrigated. Subsoil acidity is not a problem and fertility is generally good. Soil sampling is conducted every 2 – 3 years using the grid mapping method and corrections made. During summer, maize and soyabeans are planted on a 50/50% rotation basis. During the winter cropping season, a third of the irrigated lands are planted to wheat and canola. The balance of the irrigated and drylands are cover cropped with oats, vetch and/or radish, or left fallow. Maize yields peaked at 15.8t/ha last year on irrigated lands and 14t/ha on drylands this year – dryland yields of 8 -12t/ha for maize are common on Rustenburg. The peak yield for soyabeans has been 5t/ha with the average being 3.7t/ha across all fields. Cover crops planted this year were a mixture of oats and radish with vetch planted on its own as well.

There were two stops on the tour where soil profiles had been dug, Egon addressed delegates on his crop practices and Dr Alan Manson, soil scientist of the KwaZulu-Natal Department of Agriculture and Environmental Affairs, discussed the soils' status. Livestock for the production of weaners was introduced into the system this past season to utilise crop residue and cover crops more profitably and Bruce Shepherd, a fellow neighbouring no-till farmer with years of experience in integrating livestock with no-till, addressed this subject towards the end of the tour.

Be on time next year – it's worth it as you never know what you will miss out on if you're late!

SELECTED SUMMARIES OF CONFERENCE PRESENTATIONS

USE OF ALLELOPATHY IN CONTROLLING WEEDS

- Dr Suzette Bezuidenhout



Dr Suzette Bezuidenhout

Cover crops not only improve soil conditions, but can also suppress weed growth. In a field experiment at Cedara the influence of two cover crops (stooling rye and annual ryegrass) on the growth of maize and yellow nutsedge (water grass or eientjiegras) was compared to the latter crop and weeds growth at three control treatments which involved weed residues left on the soil surface, application of herbicides and weed control by hoeing. Maize emergence and growth were delayed in the presence of residues of both cover crop species, especially in annual ryegrass residues. Yellow nutsedge growth was significantly inhibited in the area between the maize planting rows by the cover crops for the first 14 days after maize emergence, but this growth-suppressing effect diminished after 28 days.

In a controlled environment study, the influence of the same cover crops, together with oats and three cultivars of annual ryegrass were evaluated. Maize and yellow nutsedge growths were suppressed, especially by the root residues of the cover crops with the annual ryegrass cultivar 'Midmar' being the most suppressive. Chemical analysis of the leachate of root residues indicated the presence of known allelochemicals. Therefore, weed growth could be reduced by the allelochemicals leached from cover crop residues but in order to achieve prolonged, effective weed control the combination of mulch retained on the soil surface and the application of herbicides will probably be required. A cover crop mulch in an integrated weed management approach is likely to be a reduction of the type and number of herbicide applications required for effective weed control.

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THE STORY OF A DETERMINED EMERGING "COMMERCIAL FARMER"

Victor Mahlinza, past chairman of the of the Umtshezi District Farmer's Association, and crop and vegetable farmer at Ntabamhlope near Estcourt in KwaZulu-Natal on *How I adopted No-Till*



Standing up on the stage facing 200 delegates, Victor explains why he is wearing checked pants. The colours represent a colour of a door and they are the doors he has knocked on to get where he is today. He says that he has knocked on many doors in his life and found that so many had been opened where he had learnt from the person who answered, or been helped in many ways to lease land, find credit and most of all encouragement and advice.

In the 2013/2014 season Victor will be establishing 100ha of ground to maize and dry beans.

What an amazing story from a young boy leading his father's team of oxen at planting time, then working on the mines, to being a fully-fledged No-Till farmer and entrepreneur.

[Shortly before going into print we learnt with great sadness that Victor Mahlinza had passed away after a short illness. No-Till Club wish to convey their condolences to Victor's family.]

First public display of Haraka planter



Rev. August Basson walking beside the Haraka planter being operated by Adriaan Jacobs.

The Haraka manually operated no-till rotary punch planter for women made its debut at the conference amongst an array of other smallholder and commercial farming no-till equipment on display. The Haraka planter came about by KEL Growing Nations Trust (Growing Nations) being a Grand Challenge Explorations winner, an initiative funded by the Bill and Melinda Gates Foundation, to conduct an agricultural development project. Developed by Rev. August Basson, founder of Growing Nations, in collaboration with Adrian Jacobs, an agricultural engineering consultant, the planter is designed to plant maize and other crops, be user friendly, inexpensive, fast working and women friendly, both physically and culturally.

The Haraka planter complies with Conservation Agricultural (CA) principles, which Growing Nations believe are key to the development of sustainable agriculture in Southern Africa. Initial testing will be carried out on the Growing Nations demonstration farm at Maphutseng, Lesotho, and in a variety of locations across Southern Africa to assess its suitability for use in different soil and climatic conditions.

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HOE EN WAAROM EK OORGESKAKEL HET NA DIE "NO-TILL" STELSEL

George Steyn

My plaas is 1 625ha groot waarvan 1 250ha vir plant van graan gebruik word. Dis 'n gemengde boerdery wat bestaan uit skaap, bees en 'n braaikuiken vertakking. Die gronde bestaan hoofsaaklik uit Avalon, Clovelly en Hutton's met 'n effektiewe diepte van 100-220cm. Die boonste 15cm het 6-12% klei, so dis redelik sanderig.

My pa het alreeds in 1978 met deklaag bewerking begin. Hy was een van die eerste boere in die Noordwes Provinsie (Wes-Transvaal) wat met die praktyk begin het. Die grondbewerking was met 'n JD 1600 beitelploeg gedoen. Met dié bewerkingspraktyk het ons 14 voltydse werkers in diens gehad, die trekkers het by benadering 3 000 ure per jaar gewerk en die dieselverbruik was meer as 100ℓ per ha. Vir 'n sekere aantal jare het ons 8 rye x 90cm mielies geplant teen 'n stand van 18 000 - 21 000 plante per ha.

Van 2007 tot 2009 het ek spoorverkeer *("controlled traffic")* gedoen met implemente wat ek laat bou het wat aan die trekkers se drie-puntstelsel gehaak is – ook hier het ek 8 rye x 90cm mielies geplant teen 21 000 stand per ha. Al die trekkers is toegerus met outomatiese stuurstelsels wat spoorverkeer baie vergemaklik het. Gedurende hierdie periode was daar nog steeds 14 werkers in diens maar die trekker se werksure het gedaal tot ongeveer 2 700 ure per jaar en die dieselverbruik het gedaal na 70ℓ per ha. Die onkruiddoderprogram het R330 per ha gekos.



Goeie dekking van material van vorige gewas

In 2010 het ek oorgeskakel na die "No-Till" stelsel op die helfte van my saaigrond en die jaar daarna op die ander helfte. Wat 'n omskakeling was dit nie vir my boerdery nie!! – vir die eerste keer sedert 1991 wat ek boer is daar niks wat my meer opgewonde maak as die "No-Till" stelsel nie. Ek het baie meer begin betrokke raak in dit wat op die lande gebeur en die take self begin doen, van spuit tot stroop, maar nou sien ekself waar daar probleem kolle is wat aandag nodig het. Ek gebruik tans net 5 permanente werkers en kry planttyd nog 4 stukwerkers by om met die plantproses te kom help. Die trekker- en spuiture staan nou op 1 000 ure per jaar, die dieselverbruik het gedaal na 30ℓ per ha en die onkruiddoderprogram kos nou gemiddeld R614/ha.

Die tweede jaar, vandat ek die "No-Till" stelsel begin gebruik het, het ek my rywydtes verander na 10 rye x 0.76cm en die derde en vierde jaar het ek ook die plante se stand aangepas na 30 000 plante per ha. Die besluit was nie ligtelik gemaak nie want die LNR/ARC het standproewe op my plaas gedoen vanaf 2002 - 2007. Die gemiddelde reënval vir die vorige 6 jaar was 610mm. Daar was plantstande van 22 000, 32 000, 42 000 en 50 000 wat geplant is. Die 32 000 stand se opbrengs was die beste oor hierdie tydperk. Toe kom die Argentyne en beveel aan dat ons nouer rye moet plant en enkelstammige kultivars moet beproef en hoër plantpopulasies moet begin plant – wel, die res is geskiedenis. Toe kry ons in 2012 tussen 190mm en 250mm reën en in 2013 300mm. Die opbrengste vir elke jaar is in die tabelle hieronder.



Grond waarin sonneblomme groei is goed bedek en beskerm deur mieliereste van die vorige oes op George Steyn se plaas, Humanskraal.

Die jaar daarna is ek weer terug na 18 000 – 21 000 stand mielies. Sonneblomme gaan vanjaar geplant word teen 40 000 en die sojabone teen 280 000, want daar is nie veel vog wat oorgedra was nie. Van die 1 250ha wat ek plant word ongeveer 850ha mielies, 200ha sojabone en 200ha sonneblomme geplant. Wanneer die sojabone en sonneblomme klaar gestroop is word daardie lande kalk gegooi, wat wissel volgens die grondontledings wat die vorige jaar gedoen is. Ek wil graag die sojaboon hektaar meer maak, maar op die oomblik, met die twee droë jare wat ons gehad het, doen die sonneblomme tans baie beter as die sojabone per hektaar.Die mielies doen tot 0.5t/ha swakker hierdie jaar op die lande waar daar die vorige jaar sonneblomme was. Dit was as gevolg van die droë jaar.

	CONTROL-TRAFFIC	NO-TILL
Year	2007-2009	2010-2013
Ha	1250	1250
Yield	4.060t/ha	4.275t/ha
Rainfall per year	550mm	529mm
Kg maize/ mm rainfall	7.3kg/mm	8.08kg/mm
Diesel	70litre/ha	30litre/ha
Herbicide	R330/ha	R614/ha

YEAR	RAIN	HA	YIELD t/ha	PLANT POP.	KG/MM RAINFALL
2010	634mm	1200	5.135	21 000	8.09
2011	893mm	1060	7.416	21 000	8.3
2012	255mm	914	3.700	30 000	14.5
2013	337mm	867	0.850	30 000	2.5

NO-TILL CLUB

THE COVER CROP DILEMMA

Richard Findlay

Do cover crops have a role in No-Till conservation agriculture?

Well browsing through the articles in The No-Till Farmer from the USA we read headings like:

- **Choosing covers to maximize your no-till nitrogen**
- **Double up no-till benefits by cover cropping for forage**
- **Cover crop enthusiasm helps no-till get more with less**



NO-TILL CONFERENCE 2013: A photo of the cover crop demo site.

These article titles are much like looking at a smart restaurant menu but we need to sort out what will suit our farming practices and initially what we can afford from our budget.

Cover crops need money to make the initial switch over to introducing them into our system so the more we know about the various species that have been categorised as cover crops.

Let us start with the cereals OATS AND STOOLING RYE!

FARMERS AGRI-CARE

Farmers Agri-Care (Pty)Ltd

Farmers Agri-Care aims to make a meaningful contribution to profitable crop production for KZN farmers:

- With over 40 experienced field agents, FARMERS AGRICARE services commercial agriculture in KwaZulu- Natal, and parts of the Eastern Cape and Mpumalanga.
- Sustainable, profitable crop production in KZN lies at the centre of Farmers Agri-Care's business philosophy
- In line with this, Farmers Agri-Care is a single-face, on-farm service provider of crop protection technology

ACDASA

NO-TILL CLUB

Forage cereal types: yield and utilization differences

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Forage cereals planted in autumn make a useful dryland pasture for winter forage. These forage cereal pastures have various specific uses within a fodder flow depending on the type. They are widely used for sheep but can also have a role on a dairy farm. Forage cereal pastures can be planted in addition to irrigated ryegrass in cases where the area under irrigation is limited. For farmers without any irrigation forage cereals are also an option for winter pasture. It is generally not economical to plant forage cereals under irrigation as ryegrass will be a far better choice providing higher yields than the forage cereals.

Forage cereals is a collective term given to some of the rye, stooling rye, oats triticale and a few wheats that are suitable for herbage production as opposed to grain production. The rye and stooling rye are both of the species *Secale cereale*, the oats are *Avena sativa* while black oats, such as the variety Saia, is *Avena strigosa*. Triticale or Korog is a cross between rye and wheat hence called *xTriticosecale*, and wheat is *Triticum aestivum*. Within each of these species of forage cereal are types with differing flowering behaviour. The flowering behaviour affects the duration of the pasture and also the time of peak herbage production. These are important considerations when choosing varieties, as the choice of variety will be determined by a farmer's requirements as to when the herbage is required and for how long the pasture is required.

The three forage cereal types based on their flowering behaviour and thus the duration of the pasture are SHORT-, MEDIUM- and LONG-DURATION TYPES.



Cedara Planting 22 September 2006, showing the different maturity dates of oats.

The SHORT-DURATION TYPES flower before mid-winter and thus only produce approximately two grazings while still in the vegetative stage (leafy) and possibly a third grazing but are then already in the reproductive stage (flowering) with poor quality herbage. The advantage of SHORT-DURATION TYPES is that they are able to produce herbage quicker than the other types. They are also useful if the pasture is only required to fill a relatively short gap in the fodder flow and is then to be replaced with another crop. These varieties are also suited to late planting after maize silage has been taken off and used either for grazing or also for ensiling.

The MEDIUM-DURATION TYPES start flowering from mid-winter onwards. The exact time depends on the climatic conditions, which includes combinations of short and long daylengths and also low temperatures. The MEDIUM-DURATION TYPES thus remain in the vegetative phase for longer than the SHORT-DURATION TYPES. The MEDIUM-DURATION TYPES are slower growing than the SHORT-DURATION TYPES after establishment but have the advantage of lasting longer with good early to mid-winter production and thus providing more grazings. These varieties are best planted in autumn. The pasture can then utilize the residual moisture in the soil for establishment and start growing while temperatures are still relatively warm.

The LONG-DURATION TYPES have the longest time from establishment to flowering. Similar to the MEDIUM TYPES they require a specific combination of daylengths and low temperature to flower. Of the three types the LONG-DURATION TYPES thus remain vegetative (good quality herbage) the longest and provide grazing up to late winter/early spring. As with the other types at the end of their growing season, the herbage will be reproductive and thus of lower quality. The LONG-DURATION TYPES, like the MEDIUM-DURATION TYPES, have a prostrate (low-growing) growth form, are densely tillered, and are thus well suited to sheep grazing. They are slow to start growing after establishment but have the advantage of lasting the longest and providing herbage in late winter when the other two types are already either dead or in the reproductive stage. For these varieties an autumn planting is also advisable.

According to the trials run at the ARC-Range and Forage Institute (ARC-RFI) at the Cedara Centre it Has been possible to categorize the ryes and stooling ryes (*Secale cereale*) into the three different types as shown in the table below. Data is still being collected on the oats varieties and these will then also be categorised in the same way.

The different types of forage cereals thus fulfil different roles and a farmer may choose to plant one of each type or possibly two of the three types to ensure availability of good quality pasture from early winter through to the beginning of spring. To date no research has been conducted on the mixing of varieties of the different types in the same pasture and thus it is advisable to rather plant the different types separately.

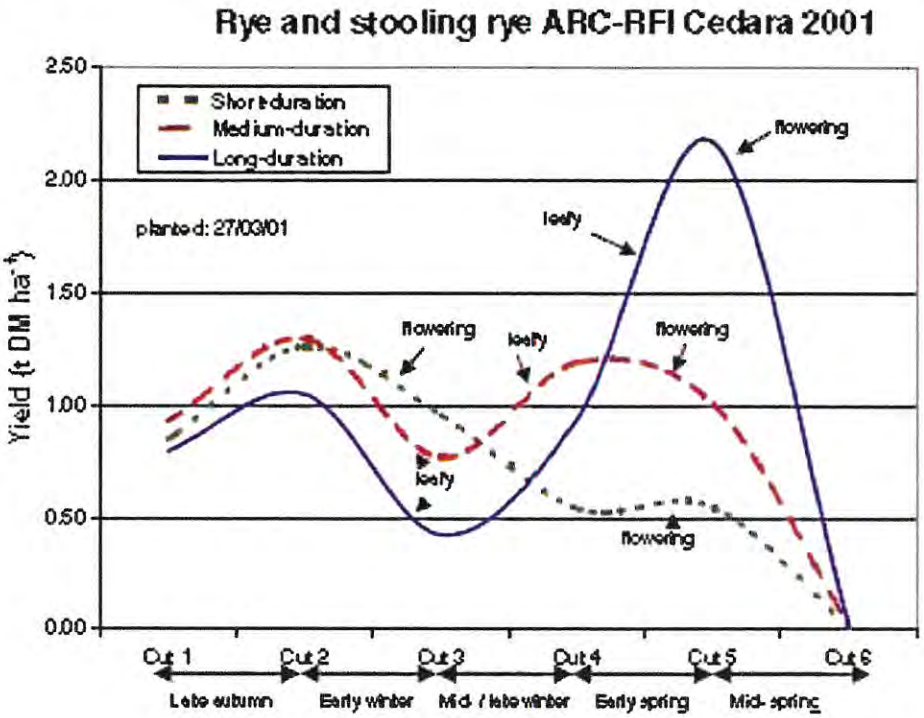
It is important to remember that the herbage yield obtainable from these dryland forage cereal pastures is to some extent dependent on planting date and the climatic conditions of the particular season. If the pasture is planted late the peak production period for the three different types will also be shifted to later but it is also likely that the yield could be affected depending on moisture and cold conditions of the particular season. Yield will depend on the residual moisture from the summer rains and if there are rainfall events in winter the yield will be boosted.

The graph below shows the average yield of the varieties within each category from the trial at ARCRFI Cedara during 2001. The data shows the three types producing peak yields at different times from autumn to spring. It is also important to note when the flowering process starts as this will negatively affect the quality of the pasture although the yield at that time is substantial. Once the plants are flowering and grazed there is tiller mortality and the pasture thins out dramatically with severely reduced regrowth, if any.

Categorization of forage rye and stooling rye varieties

Short-duration rye	Medium-duration rye	Long-duration rye
Henoch	Maton	Agri-Blue
SSR 1	NCD Grazer	Blue Chip
SSR 727	PAN 233	Leba
Southern Green	Southern Blue	Mac Blue
	Trojan	SSR 729

Published: Dairy Mail vol. 9 no. 9, September 2002



Forage cereals (Rye (R), Oats (O), Triticale (T))

Short duration	***Medium duration***	***Long duration***
Early flowering	***Medium flowering***	***Late flowering***
Southern Green (R)	Southern Blue (R)	BlueChip (R)
LS 35 (R)	Trojan (R)	SH 423 (O)
SSR 727 (R)	NCD Grazer (R)	Magnifico (O)
AGF R1 (R)	PAN 263 (R)	AgriBlue (R)
Henoch (R)	Maida (O)	SSR 729 (R)
Pallinup (O)		LS 62 (R)
Sederberg (O)		Echo (R)
Overberg (O)		Drakensberg (O)
Heros (O)		Targa (O)
Korhaan (T)		Nugene (O)
PAN 248 (T)		SWK 001 (O)
SSH 421 (O)		LeTucana (O)
SSH 491 (O)		SSH 39 W (O)
Sorom (O)		

Sigrun Ammann, Derryn Nash
ARC – API Cedara
2012

NO-TILL CLUB



Crop-Tech se Jumil -planters laat geenbewerking werk

Wenkenmerke:

- Plant perfek deur enige plantreste, selfs in ongelyke grond
- Akkurate saad- en kunsmisplasing
- Presiese spasiëring en plantdiepte
- Kalibreer maklik
- Betroubare kardanasaandrywing verg min onderhoud
- Duursame verseëlde laers verg net een smeerdiens per seisoen
- Beskikbaar vir enige aantal rye en enige konfugirasie
- Puik naverkoopdiens

Hennie du Toit 082-850-3744
of 056-817-7210

www.croptech.co.za

Daar's 'n Jumil-planter

JM 7090/7080: Die groot boer se planter

- Hou tot 4 428 kg kunsmis en 961 kg saad
- Plaas 40 tot 1 400 kg kunsmis per hektaar akkuraat
- Beskikbaar met hidroulies aangedrewe vakuumwaaier of plaatuitmeter



PERFEK

JM 3090/3080: Die gewilde keuse

- Tandemraam beskikbaar om twee planters aan een trekker te haak
- Plant verstommend akkuraat
- Beskikbaar met vakuum- en plaatuitmeting



vir jou plaas

JM 3070/3060: Kontoere se baas

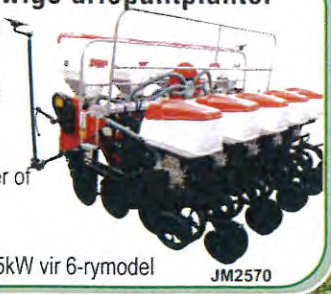
- Plant 4 tot 11 rye
- Beskikbaar met vakuum- en plaatuitmeting
- 17-duim voorsnykouters



JM 3060

JM2670/2570: Stewige driepuntplanter

- Beskikbaar in modelle van 3 tot 6 rye
- Hou tot 530 kg kunsmis en tot 160 kg saad
- Beskikbaar met hidroulies aangedrewe vakuumwaaier of plaatuitmeter
- Trekkerkrag benodig: 45 kW vir die 3-rymodel; 75kW vir 6-rymodel



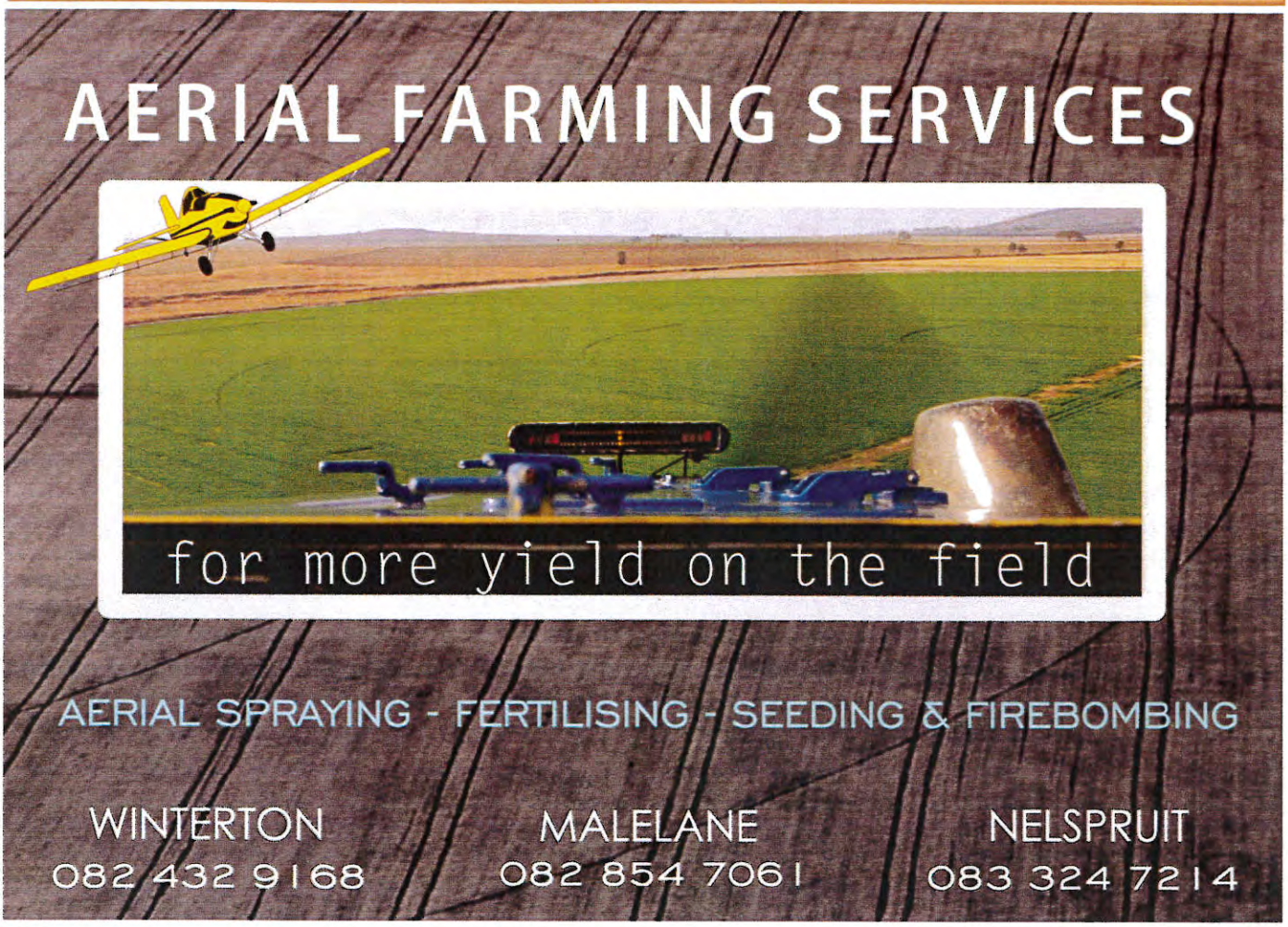
JM2570

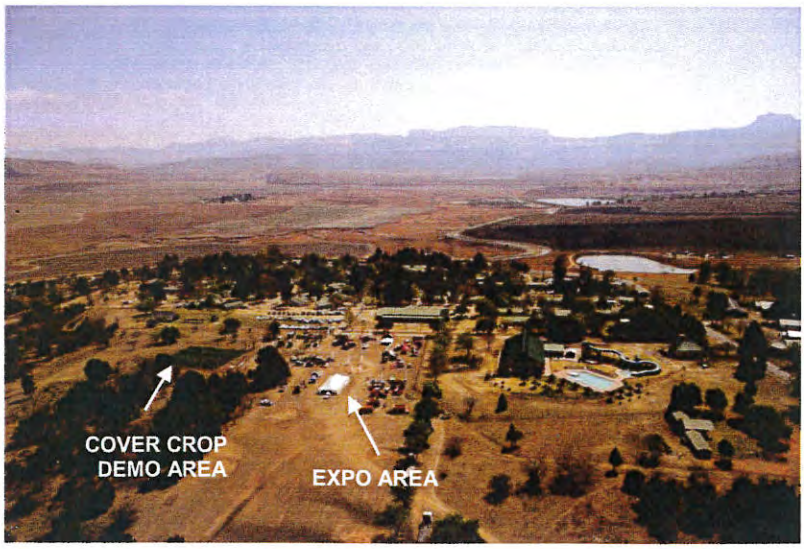
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Butterworth: Fred Potgieter	083-605-9440
Dundee: Johan Pretorius	071-213-5184
Ermelo: Johan Hattingh	082-574-6219
George: Sidney Haddad	082-255-6038
Hartswater: Flip Bloem	083-456-0629
Heilbron: Bertus vd Westhuizen	058-852-1212
Hectorspruit: Henk Bezuidenhout	082-377-1933
Hoopstad: Hennie Roos	053-444-1900
Hopetown: Rudi Sutherland	082-771-9906
Kokstad: Wally Tolmay	083-457-6205
Kirkwood: Riaan Pretorius	082-563-3607
Ladybrand: Lodie Minns	082-451-4573
Lydenburg: Kobus Coetzee	013-235-2871
Modderrivier: Albie van Niekerk	082-992-0276
Mooirivier: Craig Webster	082-450-4281
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Ottosdal: Louwrens Rudolph	083-388-5291
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Port Shepstone: Bryan Taylor	082-320-4126
Reitz: Francois Visser	082-550-0543
Riviersonderend: Theuns Human	083-305-4391
Standerton: Dolf Volschenk	082-824-1821
Tarlton: Bart Tijsen	082-929-5850
Thabazimbi: Justin Piha	082-782-4908
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Winterton: Jan Vermaak	083-625-7512

NO-TILL CLUB

The No-Till Club wish to thank Steve Bolt of AERIAL FARMING SERVICES for the fantastic series of photos he took of the 2013 No-Till Conference displays, from his helicopter. Much appreciated.





Aerial view of the conference centre at ATKV Drakensville Holiday Resort



Part of the R38 million in value of equipment at the EXPO



...they come in all sizes.....



NO-TILL CLUB



....and they talked business....

Building A Better No-Till Soil

Gypsum, cover crops, manure and even vertical tillage can be part of a multifaceted no-till system that improves soil health and brings in higher yields.



By Daniel Davidson

THERE'S NO DOUBT most no-tillers are good stewards of the land and want to conserve it for themselves and future generations. To most farmers, that means conserving their soil base - and to others it means improving it.

Conservation tillage, including reduced tillage and no-till, has conserved soil, reduced nutrient and soil runoff and saved production costs. And over time, hopefully these benefits have led to increases in both yield and profitability.

But how do you know for sure if your soil is improving? Have you ever bothered to check it?

The sight of corn-stalk and soybean residue covering undisturbed soil is always appealing to no-tillers, and many of them probably take it for granted that the residue is first being consumed by earthworms and then by other organisms down the food chain. This process can transform soil from average to exceptional.

While I consider no-till a good practice, no-till alone will not automatically transform soils. I say this from a point of experience with two of our fields.

We farm 160 acres that have been in continuous no-till for 12 years. The soil has remained virtually unchanged and has underperformed during that time.

We have another 80 acres of a similar soil type and landscape that has also been in continuous no-till, but we've improved it to where it performs far beyond our expectations. It went from being the worst field to the best in terms of crop yield, soil fitness and softness.

A testimony to success is that the neighbors who plant, spray and combine that field have commented on how different it is. Something is working right.

Maybe a farmer can use soil softness – or that spongy feeling you get walking across soybean stubble – as a possible index of tilth. Farmers realize fields after soybean harvest are spongier than fields after corn is harvested.

But we can extend that same sponginess we see in soybean stubble to the next corn crop if we incorporate the right techniques.

1 Using Vertical Tillage. There's no doubt that no-till is the underlying foundation in keeping as much residue on the surface as possible and protecting the soil from erosion. It slows the decomposition of residue and produces more stable humic compounds, rather than releasing much of the carbon as carbon dioxide back to the atmosphere.

Refraining from tillage also keeps the natural soil structure intact and gives it an opportunity to build.

But I've come to appreciate that vertical tillage can have some benefits. It helps process corn stalks or wheat stubble by slicing, discing and shearing the material while throwing on a little soil to help stimulate residue decomposition.

It also levels the seedbed, evenly distributes residue and remedies surface compaction and crusting. Depending on the design of the equipment, it can create divots in the soil that remedies compaction to a depth of 8 inches while improving water infiltration and aeration.

2 Incorporating Cover Crops. Cover crops can be implemented after either corn or soybeans.

I planted cereal rye as a cover crop on that 80-acre field for 6 years in a row, but unfortunately missed planting a cover last fall (possibly for the best, since the drought last summer and the cold weather this spring would have reduced the stand and suppressed early growth this year).

Cover crops can protect the soil, suppress winter annual weeds, add back organic matter, scavenge soil nitrate and ammonium and help create a better seedbed.

But what I consider the true benefit of cover crops is its root growth and natural root leakage of sugars and nutrients. This leakage stimulates soil biology in the fall and spring when the soil rhizosphere is generally inactive because there are no actively growing plants. Cover crops make an excellent green bridge.

3 Adding Compost Or Manure. Fortunately, this 80-acre parcel is only a quarter mile away from a compost site, so transport is inexpensive and I can haul and spread it myself at about 6 tons per acre every other year.

The operator composts paunch manure with crop residue or grass hay creating a fertilizer-like product that provides both nutrients and carbon to the soil. The compost feeds both the crops and soil organisms to help build tilth.

4 Utilizing Gypsum. I've applied pelleted, mined gypsum or a synthetic gypsum product from a citric-acid plant.

However, in this field, we applied 1 ton per acre of the synthetic Pro Cal 40 from Soil Solutions every 3 years.

Gypsum provides both calcium and sulfur to plants and soil fauna and flora. And the calcium helps build soil structure by flocculating soil particles into more natural aggregates, which improves structure and tilth and provides numerous benefits.

I once applied some biological products containing living organisms to this field, but I haven't been able to get my head around whether this technology works consistently enough to justify the application.

While this technology seems to make sense, I need to do more homework and fieldwork before I draw any conclusions.

All four of these technologies, wrapped together in a system, have helped improve soils on my farm, but it takes time.

It doesn't happen overnight and you have to be patient. It could take 5 or 6 years to see the cumulative benefits. If you expect to see a change and return after the first year, you might be disappointed.

Veteran farm advisor and agronomist Daniel Davidson no-tills near Stanton, Neb., and works as a private consultant.

NO-TILL CLUB

FROM THE HEART

Richard Findlay

Recently I was interviewed on SAFM Enviro Show, and only after I had finished I realized that somehow I got talking about the no-till "system" instead of why we have adopted the no-till system! I'm sad to admit, I missed a great opportunity!

Yes, it is time that the general public gets to know about No-Till Conservation Agriculture and the positive benefits the system has on the environment and sustainability.

Other environmental groups want society to sit up and take note of what their organisation believes important to take seriously, e.g. the rhino.

The No-Till Club's responsibility is to inform the general public, government and agriculturalists of the importance of reducing water and wind erosion and to improve soil health which will result in saving our top soil. Are we being dramatic enough for people to take note? Please look at this website
www.world.time.com/2012/14

.

John Crawford of the University of Sydney asked the World Economic Forum on 14 December 2012: "What if the world's soil runs out?"

In 2010, Andrew Hough wrote, "Britain facing food crises as world's soil vanishes in 60 years. Just around the corner!" Read more on www.telegraph.co.uk.

We need to take these findings seriously. If we do not look after our precious soils the *rhino* might still be around without any of us having food!

Rhinos and soil, as well as every plant, insect, reptile, bird, person and animal need to be conserved! ***Please write to me and share your views on this subject.***

I read a fantastic story on the Internet, of a Brazilian farmer who, 27 years ago, started using No-Till CA on his 16,000ha sugar plantation. Within 27 years (almost half of 60 years for the soil to vanish) the farmer is now farming totally organically.

Read more on this link. It is fascinating.

http://www.wired.co.uk/magazine/*archive*/2013/08/features/post-organic

Are we ready to take on the challenge?

They say every problem is a golden opportunity. Let us prove that point!

All we have to do is to start the journey with a dream, passion and enthusiasm and adopt the fundamental rule of any successful person in any walk of life, and that is self-discipline and attention to detail.

The No-Till Club wants to be of service to you and we appreciate any suggestions or criticism you might have about the content of both the newsletters and the conference.

Write to us at richardfindlay@intanet.co.za and tell us which topics you want to read, and speakers you want to hear.

The No-Till Club needs you to be both guide and judge for us to deliver what you want.

NO-TILL-AGE®

How Tillage, Soil Cover Impact Water Infiltration

Tillage System	Water Infiltration Rate (After 1 hour)	Total Infiltration (After 1 hour)
Plowed, disced, cultivated, bare soil ...	...0.26 inches per hour	...0.71 inches
No-till, bare surface	...0.11	...0.48
No-till, 40% cover	...0.46	...0.92
No-till, 80% cover	...1.04	...1.73

- Ohio State University

(NO-TILL FARMER/September/2013)

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