No-Till Club of KZN
20 years old!

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JANUARY 2018

Is soil erosion eroding your income and your future EXISTENCE?
Please be advised to read the content of this
No-Till Newsletter

From the Editor's Desk

BE WARNED!

We are about to reveal many BRUTAL FACTS

International Decade of Soils 2015-2024

SOIL is FINITE

IF NOT LOOKED AFTER

It is imperative to *warn you of the evils of soil erosion*

- Our mandate given by The No-Till Club's constitution is to promote the adoption of No-Till Conservation Agriculture. So in this issue it is hoped that more people will be encouraged to take this responsible decision to adopt No-Till as a system for their farm and strive for the highest standards mention by **Anthony Muirhead – *"THE SILENT KILLERS"* –** in our section **"From the Heart".**
- We asked **Dr Philip Theunissen, MAIN FEATURE ARTICLE,** if we could publish his article, asking the question ***"Does your Farm Have a Scrap value?"*** *If* you are not aware of the cost of erosion on your farm, you need to take heed of what is written!
- Having been asked if No-Till is a new technology, got me thinking. Yes, it is a form of technology but more a call for the technique of "responsible husbandry" that needs dedication, patience and a love for the environment for which we have been instructed to be responsible. Read more in "***Technology with a difference".*** **Richard Findlay elaborates**
- ***"LET US DISCUSS WINTER COVER CROPS IN A SUMMER RAINFALL AREA"***. Cover crops the discussion point of the farming community at present. **Richard Findlay** explains what happened in a practical planting of a winter cover crop for the 2017 No-Till Conference.
- Pictures of promise in ***" It makes it all worthwhile"***

Do we need to take No-Till Conservation Agriculture seriously?

Genesis 1:31 New International Version (NIV)

31 God saw all that he had made, and it was very good. And there was evening, and there was morning—the sixth day.

2:1 Thus the heavens and the earth were completed in all their vast array.

Genesis 2:15 "The Lord God took the man and put him in the Garden of Eden to work it and keep it."

Psalm 24
1 The earth is the LORD's, and everything in it, the world, and all who live in it;
2 for he founded it on the seas and established it on the waters.

TRELLEBORG MONSANTO agricol NO-TILL CLUB FARMERS AGRI-CARE DUPONT PIONEER Landbou weekblad VALTRAC

NEED WE SAY ANYMORE?

I wonder what God is thinking at present, as He cries over His world!

Just comprehend the devastation happening all over the world, reported in the media and what we witness during our travels with our own eyes – increased erosion, loss of quality grazing and insidious increasing desertification taking place at an alarming rate. The cutting down of large areas of millennia old forests, the "lungs and air filters" of the world – polluted rivers and destroyed estuaries and wetlands – silted dams – lower yields – polluted oceans with coral reefs being destroyed by the **Crown-of-Thorns-starfish** that thrive on silt containing large quantities of nutrients and sewerage waste! ***AND –*** where does that come from?

Please help us to take action……

There must be more publicity regarding these looming problems. Most needed is firstly your moral and then if possible financial support in order to get this messages out to where it can render assistance to preserve our soil and environment. The No-Till Club of KZN has taken on this task and is prepared to work hard to achieve this goal. There is also more practical on-farm research to be facilitated, the need for members, i.e. farmer, private individuals, companies, interest groups' and government's backing and co-operation in this regard is required. Contact us via email or phone should you have questions, ideas, propositions or suggestions.

Richard richardfindlayntc2@gmail.com or **074 104 7081**

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NOTICE OF THE 2018 NO-TILL CONFERENCE

Please diarise these dates 4 to 6 September

- Venue **will be ATKV Drakensville Holiday Resort KwaZulu-Natal**
- **Book your accommodation early**
- ATKV Drakensville Holiday Resort 036 4386287
- Central Berg Information Centre 0364881207
- Backpackers 0828559767
- Email richardfindlayntc2@gmail.com for details of the comference content
- www.notillclub.com
- The No-Till Conference is practical, stimulating, friendly and ecologically inspiring

No-till is Conservation Agriculture in action, environmentally friendly and achievable by all!

Guest Speaker at 2018 No-Till Conference

STEVE GROFF

The No-Till Club of KZN are proud to be bringing Steve Groff from the USA , a farmer plus a man who has imparted his knowledge of the benefits and uses of using Cover Crops in a No-Till CA farming system.

Steve has helped farmers in Europe, The USA and Australia comprehend the necessity of using cover crops in No-Till CA to improve soil health.

So do not forget to diarise the dates that Steve will be with us
4 - 6 September 2018 Venue ATKV Drakensville

DISCLAIMER

While every care has been taken to ensure the correctness of the information contained in this publication, many of the comments are personal observations of the writers concerned. The No-Till Club cannot be held responsible for any consequences that may arise out of the use of the information provided. This also applies to the use of trade names of various agro-chemicals and machinery. Use of these brand names should not be taken to intimate sole support by the No-Till Club of that particular brand. It is recognised that there are other products on the market equally suited to the task.

DOES FARM LAND HAVE A SCRAP VALUE?

by

DR PHILIP THEUNISSEN

In 1995 an American agricultural economist, Prof. Arnold W. Oltmans, published an article entitled "Why Farmland Cannot, Will Not and Should Not Pay for Itself". The argument he advances in this article is that the big difference between the production value of land, which is calculated on repayment capacity, and the considerably higher market value of land, which is the actual price farmers pay, should be ascribed not to the overvaluing of farm prices but rather to an erroneous form of land purchase financing. The "error" that financial institutions are making, according to Oltmans, is that they want to finance the purchase of a farm like a form of hire-purchase. While hire-purchase is the instrument of choice for financing an item like a tractor, which depreciates in value, it is the wrong instrument for financing an item which appreciates in value.

A tractor that is depreciating eventually reaches the end of its life and is left to rust under a gum tree with an empty coffee tin over its exhaust, waiting to be cannibalised for parts. Land, in contrast, never wears out and its value never reaches scrap value. It should therefore be financed on the assumption that no final payment should ever be made, because then the production value and the market value would be the same. But is the professor correct in assuming that land could never reach the stage where it becomes an abandoned object under a gum tree with a coffee tin over the exhaust pipe?

Title deed

Land as fixed property is described in a title deed as a flat surface area. Consequently ownership does not vest in the land itself but instead attaches to a document which assigns certain rights to the holder of the document in respect of an immovable, specified flat surface. Financial institutions like documents of this kind, through which they can acquire certain rights that would enable them to finance the purchase of the land at an amortisable amount. The American professor may well have a strong argument when he speaks of the wrong form of financing in respect of land as fixed property.

But land as a natural resource is not a flat surface area which can be described in a title deed. In this capacity it is a cube which is not confined to a flat surface. Its dimensions extend some way into the air and include rainfall and temperatures. They also reach beneath the surface and include the different soil profiles with the organisms that live on and in them. The condition of land as a natural resource could well change considerably whereas land as fixed property will always remain a flat, specified area on a title deed. Contrary to the professor's argument, the value of farm land might well degenerate to scrap level, depending on the context in which it is measured.

Erosion

In its natural state land is continually exposed to erosion. The erosion of arable land involves the accelerated weathering of the topsoil through the physical forces of wind and water, possibly hastened by cultural practices. This artificial erosion arises when the energy that builds up in rainfall or wind is transmitted to the soil. Raindrops that fall on bare soil launch small particles of dust into the air while the heavier particles that remain behind become compacted. When the lighter particles descend to the compacted surface, they easily tend to flow away or be blown away, especially on slightly sloping surfaces. But living or dead plant matter on the soil absorbs the raindrops or wind energy and prevents the dust particles from being launched into the air or the heavier particles from becoming compacted.

In contrast, soil formation is a far slower process than soil degradation and soil losses can therefore be regarded as irreversible. Continual erosion therefore causes permanent damage to the topsoil which impairs its ecological production and hydrological function. The best way to counteract the continual degradation of soil is therefore to provide a permanent vegetal cover.

Losses

The international soil erosion model, known as the Universal Soil Loss Equation (USLE), was used by Dr Jay le Roux and his colleagues at the University of the Free State to measure rainfall erosion for South Africa. In quantitative terms the model estimates that South Africa's average loss of soil as a result of rainfall run-off alone amounts to 12.6 tons/ha/year. This is naturally considerably more than the average natural soil formation of 5 tons/ha/year and means that South Africa is losing soil at a net rate of 6 tons/ha/year, simply as a result of water erosion. In comparison with a country like Australia (4.1 tons/ha/year), South Africa is losing three times as much soil per year. Dr le Roux ascribes this big discrepancy to the aggressive cultural practices applied on South Africa's arable land.

As mentioned previously, soil loses its ecological production capacity and hydrological functions if the topsoil is lost. This secondary effect, determined on the basis of American research, is shown in Table 1.

TABLE 1: SECONDARY EFFECT OF SOIL LOSSES DUE TO WATER AND WIND EROSION

Factors	Quantities lost Loss/ha (1 year)	Yield Loss	Quantities lost Loss/ha (10 year)
Water runoff	75 mm	7%	750 mm
Nitrogen (N)	15 kg	2.4%	150 kg
Phosphorus (P)	0.6 kg		6 kg
Potassium (K)	123 kg		1230 kg
Soil depth	1.4 cm	0.3%	14 cm
Organic matter	2 ton	0.2%	20 ton
Water holding capacity	0.1 mm	0.1%	1 mm
Soil biota	-	0.1%	0.0
TOTAL	**-**	**10.1%**	**6 ton**
FINANCIAL LOSS	**0.6 ton/ha/year**	**R 1 212**	**R 12 120**

** Based on 17 tons/ha/year*

*** 10 tons of water erosion and 7 tons of wind erosion*

**** Based on a maize yield of 6 tons/ha and a maize price of R2 000/ton*

According to Table 1, a soil loss of 17 tons/ha/year means an accompanying loss of 75 mm of rainwater, 1.4 cm of soil depth and 2 tons of organic matter. The loss of N, P and K means a consequent crop loss of 2.4%. Along with the other losses, the soil loss ultimately results in a crop reduction of 10.1%. At an average maize yield of 6 tons/ha, this would amount to 0.6 tons and based on a maize price of R2 000/ton it would mean an annual financial loss of R1 212/ha.

In retrospect a crop farmer could cumulatively lose one full harvest out of every ten as a result of water and wind erosion. A further consequence is that the country could forfeit a full year's grain supplies every decade if farmers continue to apply tillage practices that promote water and wind erosion.

Conservation

The potential for protecting agricultural land by means of conservation practices has been demonstrated many a time in scientific reports. Even the simple expedient of creating an organic cover on the surface reduces water and wind erosion of the topsoil. At the same time strong permanent subterranean root systems also contribute to the protection of the rest of the soil profile against erosion and leaching.

Table 2 contains information on soil losses resulting from different tillage practices measured at Cedara in Kwazulu-Natal in 1983 after ten years of continuous maize production.

TABLE 2: AVERAGE ANNUAL SOIL LOSS AND MAIZE YIELD FOR DIFFERENT TILLAGE PRACTICES

Treatment	Organic cover	Maize yield	Organic material	Average soil loss
	%	ton/ha	%	ton/ha/year
No till	70%	5.7	5.8%	0.5
Chisel	30%	6.6	4.6%	1.6
Mouldboard (Spring)	0%	6.7	5.2%	7.1
Mouldboard (Autumn)	0%	6.1	3.9%	9.9
Control (Rotavated)	0%	-	3.8%	61.9

** Cedara water runoff trials in 1983 after 10 years of continuous maize production*

After ten years of the same tillage methods, the maize yield produced by no till was 5.7 tons/ha as against the 6.7 tons/ha with spring ploughing. However, the loss of topsoil in the same year as a result of no till was only 0.5 tons/ha as against the 7.1 tons/ha that resulted from ploughing. Although the yield was higher, over 1 ton of topsoil was lost for every 1 ton of maize produced. With chisel ploughing a yield of 6.6 tons/ha was obtained while the soil loss was restricted to 1.6 tons/ha. But there was only 4.6% organic material present in the soil whereas there was 5.8% present in the case of no till.

Compatibility

South African farmers have been associated with farming and the land but at the same time there have always been anomalies surrounding the general view of their role in respect of conservation practices. Farmers are generally characterised in terms of their close ties with nature, their marked awareness of weather patterns and their stewardship of the earth. At the same time conventional farming practices are held accountable globally for the alarming degradation of the land as a natural resource.

For many farmers economic targets and the aims of conservation farming cannot always be reconciled. The lines are largely blurred by the continual sharp increase in the prices of land as a fixed asset, for the very reason that it is not seen as having a scrap value. On the other hand, the simultaneous degradation of the land as a natural resource is mainly invisible and in practice the financial implications are never really dealt with. Just as the farmer needs to understand the economic forces that determine land prices, he should also show an understanding of the natural forces that could destroy the sustainable value of his land.

Land as a natural resource is not an inexhaustible pantry for humankind and rainfall alone is often insufficient to solve all the financial problems. The land on which we are farming today has belonged to many people before us who are long dead and it will belong to many people who have yet to be born, and who will have to make a living from it. Something that will have to last for so long cannot simply be covered with a coffee tin and must be protected against degradation at all costs, so that its condition never degenerates to the point where it has no more than scrap value.

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BETHLEHEM
May 2017

Interesting data found in the No-Till Farmer magazine in America

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 www.no-till

~~~ from the SILENT KILLERS

..... Pioneer of No-Till system in South Africa for 30 years – he's walked the talk!

Beware of the silent killers which never go away but carry on regardless, killing mankind

1. Overpopulation; with a population edging towards 9 billion people.
2. Soil and wind erosion which relentlessly carry on destroying our topsoil which is the top 6 inches of our arable landscape and produces the majority of the world's necessary resources, which sustains every living creature.
3. We must get our priorities in order. We are exposed to global warming, nuclear war threats, water shortages, cancer and other diseases, crime, threats of the third world war etc.
4. The root of all these problems can be traced back to the incorrect use and management of our topsoil and water resources, the result of this being soil and wind erosion to the point of a global food and resource shortage.
5. We must not become accustomed to these poor soil management practices and accept these subpar standards as the norm, as these standards will not be sufficient to sustain an ever increasing population.
6. With an increasing human and animal population comes an increasing demand for resources such as food and fibre, which increases the need for improved management of the topsoil to maximise production potential. Long story short, your topsoil is your wealth.
7. The only solution at this point is continuous monitoring and to actively combat any further soil degradation or desertification.
8. There are several ways in which to combat soil degradation and desertification such as to attempt to restore the soil to its natural state before man's conventional production systems destroyed the pedosphere and ecosystem for the simple reason that we did not have the correct implements and chemicals to control the competition from natural vegetation and pests.
9. Today, with the latest technology and chemicals, we can prevent excessive soil disturbance on our agricultural lands.
10. As mentioned above, we should not allow ourselves to become accustomed to subpar standards, as a community we need to raise our standards and preserve a highly fertile and productive soil as it was in its natural state. To maintain these standards, we **need maximum soil cover (organic residue), increased infiltration rates**, **carbon** and **humus content** and **minimum soil disturbance**!!!

LET US DISCUSS WINTER COVER CROPS IN A SUMMER RAINFALL AREA

by Richard Findlay

The importance of using cover crops in a rotation programme between annual crops has been receiving much attention and has also become well documented especially by overseas farmers and consultants. Cover crops are catalyst in soil regeneration as they increase soil cover, helping to minimise wind and water erosion. In addition cover increases water infiltration into the soil while at the same time reducing evaporation from the soil. Cover regulates the soil surface temperature marginally, by increasing soil temperature in the cooler months and reducing it in the warm months. All these attributes make it more pleasant for the essential microbes, insects and earthworms to want to stay and regenerate while maintaining a healthy fertile and productive soil.

Moisture Availability Is Important

Deciding on a suitable soil regeneration or maintenance strategy for your farm, especially in the summer rainfall regions of Africa, needs to be given a great deal of thought and planning, should you want to adopt and succeed with a winter cover crop regime.

Why is that? Seed is an expensive item, only when it does not achieve the goal it was planted for! This is the main reason that careful and tactical thought must take place when deciding on a suitable "Winter Cover Crop system" for your farm!

Obviously summer cover crop species can be grown far more easily in a summer rainfall region but many farmers are reluctant to grow cover crops instead of their main income crop. We can discuss this in a later edition.

Winter on most crop farming enterprises in the summer rainfall regions is probably the period we think will be best to sow a cover crop as the field is not producing a revenue crop at that time. This is when we need to be rational in our planning! The farmer must have a use for the cover crop as it has costs money, time and effort. Try and make it produce added profit by doing it correctly and for a purpose.

- Do we grow the cover crop merely for cover?
- Should we grow it to make hay or silage for sale or as a fodder bank?
- Do we grow it to graze livestock and produce additional farm income from meat, milk or fibre?

TRELLEBORG MONSANTO agricol NO-TILL CLUB FARMERS AGRI-CARE DUPONT PIONEER Landbou weekblad VALTRAC

Planting into very dry soil on MP Badenhorst's field using a Semeato fine seed No-Till planter from Valtrac

Condition of the dryland demo 7 September 2017 during demo at conference

Drakensville resort is situated in the summer rainfall region of northern KZN. After obtaining permission from MP Badenhorst, who owns the farm adjoining Drakensville, a decision was taken to establish a dryland cover crop on one of his fields.

The following companies donated: seeds from Agricol, fertilizer from Kynoch, Valtrac did the planting along with the Cedara team, with Semeato fine seed planter, while STAFIX supplied an energizer, insulators and wire for the electric fence to protect our demo. Round Up from Monsanto was sprayed onto the fields by a local farmer, Foeti Beyers, two weeks prior to planting on 10 May 2017 in very dry soil. Soya had occupied this field and not a great deal of crop residue remained on the surface. All of us shared concern as to **IF** the seed would even germinate as it was so dry! But we consoled ourselves that we had undertaken this demo to see how it would survive? WELL! WELL! (…continued on page 8)

(Cover crop action tackled for No-Till Conference 2017 ….*continued)*

On 12 May the blessing of 42 mm of rain fell, allowing the seed to geminate, giving the seedlings a wonderful start.

When deciding to tackle this demo, I made up a mixture of seed and decided on a heavier seeding rate of 120 kg per ha instead or the normal recommended 50 – 60 kg per ha. The rational was that there would be casualties with struggling seedlings, during the growing period and the need for "reserves" was a good idea.

The Seed Mix We Planted

Kg/ha	Specie	Cultivar	Per kg	Total
40	**Black Oat**	Saia	R 16.60	R 664.00
20	**White Oat**	Pallinup	R 15.00	R 300.00
20	**Fodder Pea**	Slovan	R 19.00	R 380.00
30	**Stooling Rye**	Echo	R 15.40	R 462.00
2	**Fodder Rape**	Spitfire	R 110.00	R 220.00
2	**Fodder Turnip**	Green Globe	R 79.00	R 158.00
2	**White Mustard**	Braco	R 75.00	R 150.00
4	**Grazing Vetch**	Max	R 51.50	R 206.00
120				R 2 540.00
		AVERAGE COST PER KG		**R 21.17**

This mix contained root species, legumes and cereals, a mixture that looked good for the text books!

Between 12 May and 6 September no further rain fell which is what one would expect during a normal season in this part of KZN. A factor you need to take seriously when deciding on winter cover crops.

The seedlings in the initial stages grew well, achieving about 10 to 12 cm in height, possibly yielding approximately 2 tons of dry matter per ha, if grazed.

At conference time the demo had a drought stressed green colour not covering the surface of the field and not canopied, as one would like.

Planting cover crop Drakensville. Demo looking good 27 July 2017

The difference is moisture

Compare irrigated winter cover crop under irrigation planted a day after the dryland demo.

CONCLUSION

1. Our goal was to investigate the possibilities of a dryland winter cover crop in the summer rainfall region of northern KZN.
2. The seeding rate might have been a high and next time we try planting at a lower rate of say 50 kg per ha. Maybe if one has an earlier window in which to plant allowing for a greater production with better cover.
3. What was interesting was that all of the root and legume species succumbed to lack of moisture where the cereals survived and in a state that if rain had fallen during the conference, growth would have certainly commenced again, providing increased dry matter production for grazing.
4. Seed price needs to be brought into the calculation! In this case the less expensive cereal seed, black, white oat and stooling rye, survived.

Be careful when buying seed:

a. Over the fence or "brown bag" seed purchases from unknown sources could easily introduce unwanted weed species to your farm.

b. Should you want to grow your own seed, make sure the cultivar you choose does not have **Plant Breeder Rights**. This **PBR** seed can be grown on your lands, **BUT**! **This seed may not be sold or distributed by you!!** Discuss this with the seed company you bought the original seed from.

c. Use certified seed initially and after three years buy new certified seed again, as seed can retrogress over time from the standards it was bred for. Flowering date can become unstable, an important attribute when planning a winter cover crop.

We try again in 2018 different seeding rate and different planting date

Should you wish to discuss this with me, contacts are on 074 104 7081 or email richardfindlayntc2@gmail.com

This makes it all worthwhile

by Richard Findlay

It was a Friday afternoon and I received a phone call from a young man named Xolisa Jabe, who informed me that he had been able to secure a 2 ha plot of ground in his village in Willowmore in the Eastern Cape; as he was travelling to Cedara to attend a course, he asked if he could come and visit me the next day.

We had an interesting and enthusiastic discussion about what he wanted to achieve on his land and indulged in talking agriculture for the next 3 hours. If enthusiasm is what is required to make a success then Xolisa leads the way.

Xolisa took leave from his work in Kokstad to attended the 2017 No-Till conference where he could speak directly with Pastor August Basson and Erna Kruger, who both gave presentations and are involved in mentoring and encouraging small scale farmers in the techniques of No-Till Conservation Agriculture.

Shortly before Christmas I received an email from Xolisa with pictures of his maize that he had planted at Willowmore.

A picture tells the story, and well done Xolisa!

Drawing Furrows to Plant Maize 2017

UMGOMO

Ukuphikelela ukugqugquzela nokuhola ekutholeni izindlela ezongayo zokulima Ezingacekeli phansi imvelo, nezikhuthaza inqubekela phambili yomnotho ukuze kuhlomule wonke umuntu

Planting Maize – November 2017

NO-TILL-AGE®

How Cover Crops Boost Midwestern Corn Yields*

(Additional per acre yield from seeding cover crops)

Year	Corn	Soybeans
2013	11.1 bu.	4.9 bu.
2014	5.0	2.0

* Yield comparson on similar fields with and without cover crops.

– North Central Regional Sustainable Agriculture Research and Education program and Conservation Technology Information Center

NO-TILL FARMER/April/2015 www.no-till

MISSION STATEMENT

To actively promote and facilitate environmentally friendly, economically sustainable conservation farming, for the benefit of all.

Maize 2017

LET US START AT THE BEGINNING

- (Demo Day 7 November 2017)

by Richard Findlay

Soon after returning from the 2017 No-Till conference, Bright Mashiyana contacted me regarding the very good cover crop on the small demo sight at Drakensville planted in May 2017 under irrigation. Bright at a meeting at Cedara suggested, as the cover on the demo was so thick it would be an ideal opportunity to organise a demonstration to show small scale farmers who had doubts about planting maize and beans into such a thick mulch.

Plans were discussed and it was decided that we would conduct a practical demonstration for small scale farmers as well as some extension staff from the surrounding area in northern KZN. The date was set for 7 November and invitations would be sent via the network of The Department of Agriculture and Rural Development in KZN.

Three weeks before the demo date the Cedara staff went and sprayed the area with Round Up in preparation for the demo.

Lunch was Sponsored

Adrian Zietsman Catering Manager of Drakensville delivers lunch packs for the delegates.

AGT Foods, Farmers Weekly, Valtrac and PANNAR provided sponsorship for both morning refreshments and lunch. Being a hot, humid day, bottles of water were available sponsored by the No-Till Club. We had NO complaints regarding the catering, thanks to the Drakensville Catering manager Adrian Zietsman.

The Private Sector Gave Eager Support

Hand planting is successful into No-Till mulch

It was decided that we would plant crops normally planted by the small scale farmers. Firstly the Horticultural section of Cedara demonstrated how to plant vegetable seedlings into a No-Till mulch using the open furrow left by a tractor drawn no-till planter, a V shaped hoe to draw the planting furrow. They also showed how the no-till system can be done using a normal garden trowel.

Planting of vegetable seedlings into a thick No-Till mulch was also demonstrated.

Although it had rained the soil was fairly hard after a long dry spell but the demo using hand equipment went off well.

Tractor operated No-Till planter demonstration

Both green and dry sugar bean seed supplied by McDonald Seeds in Pietermaritzburg and maize seed donated by Agricol Seeds in Howick were planted.

VALTRAC Pietermaritzburg came with a small tractor plus a driver and a two-row JUMIL No-Till planter showing you do not have to use very big tractors and intricate No-Till planter if you are a small scale farmer or group of farmers working together as a syndicate or co-operative and wish to plant mechanically.

Maize is planted with a Jumil two- row No-Till Planter. Dry bean and Green bean seeds were also planted with this Jumil planter.

CONCLUSION

123 Delegates attend the information day from all around Northern KZN

This joint farmer's day between the KZN Department of Agriculture and Rural Development and the private sector in an effort to successfully achieve the technology transfer of planting vegetables and crops using the No-Till Conservation Agriculture system for a more sustainable future is something we need to place more emphasis on to assist ALL land users!

They say "the proof of the pudding is in the eating". This day was very well attended by farmers and advisors who came from all over northern KZN eventually totalling 123.

No-till is Conservation Agriculture in action, environmentally friendly and achievable by all!

From Producer to the World

WHY YOU SHOULD COVER CROP?

Cover crops rehabilitate,restore and help manage

soil health
- Organic matter
- pH buffering
- Soil microbes
- Nutrient cycling

soil structure
- Aggregate stability
- Aeration
- Water infiltration

environmental quality
- Reduce N-leaching
- Erosion control
- Reduce run-off

manage pests
- Weed supression
- Disease supression
- Nematode control

CONTACT US WE WILL HELP YOU TAILOR MAKE A COVER CROP SOLUTION FOR YOUR OPERATION.

AGT FOODS AFRICA

Johannesburg: 8 Jacobs Street, Chamdor, Krugersdorp, South Africa, 1740 *Tel:* +27 11 762 5261 • *Fax:* +27 11 762 4111

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Cape Town: *Tel:* +27 21 552 0456
Kwa-Zulu Natal: *Tel.* +27 33 346 063

Advance Seed
Cover Crop Division

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TECHNOLOGY WITH A DIFFERENCE

by Richard Findlay

Is No-Till a new technology or the art of husbandry? The latter defines No-Till Conservation Agriculture as having not just technology, but also the understanding of the action human management will cause, and its consequences on resources we are responsible for, which ultimately have a knock-on effect on the environment. Therefore the usual agronomic practices involved at establishment of crop and pasture are actual technologies. However, No-Till CA is responsible management. Visit www.notilclub.com for help

But why No-Till?

Without soil, there would be no agriculture or vegetation and nothing would live, having dire consequences causing devastation to society. Therefore the objective of encouraging ALL land users is to remind them of their responsibility towards how precious SOIL really is!

The actual mechanical and chemical technology of No-Till CA system is the KEY to use while caring for soil responsibly.

The mere fact having soil on your farm, which in many cases is in a"lifeless state" lacking structure, and often seen being transported down the road or hillside by water gushing along after a storm, chocolate in appearance, deserting the farm, and on its way to activate destruction elsewhere or being whisked away by strong winds taking it over the fence and landing we know not where.

The disappearing soil is part of your title deeds

Is EROSION a problem? – they ask. – References taken from "No-Till Advantages and Benefits in Crop Production" compiled by leading agricultural conservationist Dr Aubrey Venter.

It is estimated that South Africa loses the following annually:

- 300 million tons of soil due **to water erosion –** Equivalent to 10 million, 30 ton interlink trucks loaded. These trucks parked bumper to bumper would be220 000km – National Roads of SA report, paved roads = 158 124km, gravel roads =459957km. This indicates the magnitude of soil removed by water erosion.

Water Soil Erosion – Ademir Calagarie

Picture of Dust bowl and Free State

Chris van Jaarsveldt took this picture over Bloemfontein on 16 October 2016.

This storm was estimated to be 70 km wide reducing visibility and dropping the day temperature.

View this storm on YouTube click on http://youtu.br/Sn808 Ay_gOQ

- 90 million tons of soil by **wind erosion**
- **A loss of 1 mm of soil from a land is equivalent to 10 tons per hectare.**

Source: ***Internet hith-black-sunday-112847841-1-E.jpg***

What is agriculture's responsibility in this matter?

Erosion of our most valuable resources namely soil, along with water wastage needs to be reduced! Tremendous urgency needs to be adopted after an earnest evaluation of the effects erosion is causing to our land. Farming needs to be conducted responsibly, as society will eventually demand so in the future! In the pursuit of sustainability and food security. **No-Till CA technology must** be considered and ultimately adopted as the preferred choice of farming! No-Till has many benefits to the land user's property and positive farming success. If we do not adopt No-Till CA, it will have far reaching consequences a long way from our farm such as:

- Many wetlands have been damaged by cultivation/drained. Sedimentation decreasing capacity to store water.
- 45 of the 75 river estuaries in KZN are in a serious stage of degradation. (Nurseries essential for fish).
- Dams costing millions of Rand are silted up, reducing water holding capacity.
    - The Hazelmere dam in KwaZulu-Natal lost 20% of its original capacity in 12-years.
- River systems die in terms of aquatic life, due to high fertilizer content found in the silt washed into the system.
- Around the globe the Thorn Crowned Star Fish is decimating coral reefs which feed and provide the environment for the fish required by humans to eat!
    - **These star fish thrive on silt, fertilizer and sewerage effluent.**

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C O N C L U S I O N (... Technology with a difference – *continued)*

No-Till Conservation Agriculture has positive effects on the following, benefiting society:

1. The **MULCH/cover** created on the surface of the soil is probably the most essential aspect of **No-Till technology.** This being responsible for **it reduces** water and wind erosion by reducing the velocity of these elements and at the same time increasing the infiltration of rain and irrigation water as well as reducing excess evaporation from the soil. "**More crops per rainfall drop!"**
2. No-Till brings stability to yields due to extra organic matter in the soil, feeding essential microbes, bacteria, fungi and insects required for a healthy fertile soil.
3. No-Till sequestrates Carbon, a must in our fight against Global Warming.
4. No-Till is a Responsible Agriculture System.

"No-till is probably the most satisfying development that I have experienced in the last 30 years."
(Quote by a KZN farmer)

Sunflowers shine after hail storm

by Richard Findlay

When rain turns to hail especially when you have a field of soya looking so promising and it is mid-January a cool headed decision is required. *This is what nightmares are made up of*. Before lunch you drive past the field and all is well and things seem very promising then after lunch devastation flattens not only the field of soya but also your dreams along with the anticipations you have and create a "road block" in your farming operation.

This unfortunately occurred to Egon Zunckel of Bergville after he lost a 50 ha block of soya in mid-January 2017 due to a severe hailstorm one afternoon. After this Egon made a quick decision to plant the area to sunflower, a crop not often grown in KwaZulu-Natal.

It took 2 days to plant 50 ha with this John Deere 2117 planter

Seeking advice a short duration sunflower was decided on PANNAR Clear Field with a maturity period of 110 days. As he had planted the soya with fertilizer the decisions was to plant the sunflower seed between the soya rows, and not use any additional fertilizer when planting the sunflower.

Mature sunflowers on Egon's Farm

So on 27 January 2017 planting of the 50 ha commenced, one week after the hail storm, using a John Deere 2117 No-Till planter with a plant population of 50000 per ha. The operation was completed in 2 days.

Fortunately the sunflowers stayed disease free and no spraying was required during the growing period. Harvesting commenced on 29 June 2017 with the average yield being 1.4 tons per ha.

When asked if he would include sunflowers into his crop rotation in future years Egon's said not in KZN but might consider trying it out on his farm in the Warden district of the Free State.

The sunflower seed was planted between the soya rows after a severe hail storm

Hi there No-Tillers
– The No-Till Club of KwaZulu-Natal is now 20 years old!

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