

INSIDE:

New Brassicas | Pepper Procraft | Tomato Boudica | Marlo Tomato Trials  
Perlka | Seed Coating | Sugar Express

# the **FORUM**

VOLUME

1

2016



**HYGROTECH**  
SUSTAINABLE SOLUTIONS

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# 6<sup>th</sup> International Biofumigation Symposium

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**Visit the website: [www.biofumigation2016.co.za](http://www.biofumigation2016.co.za)**

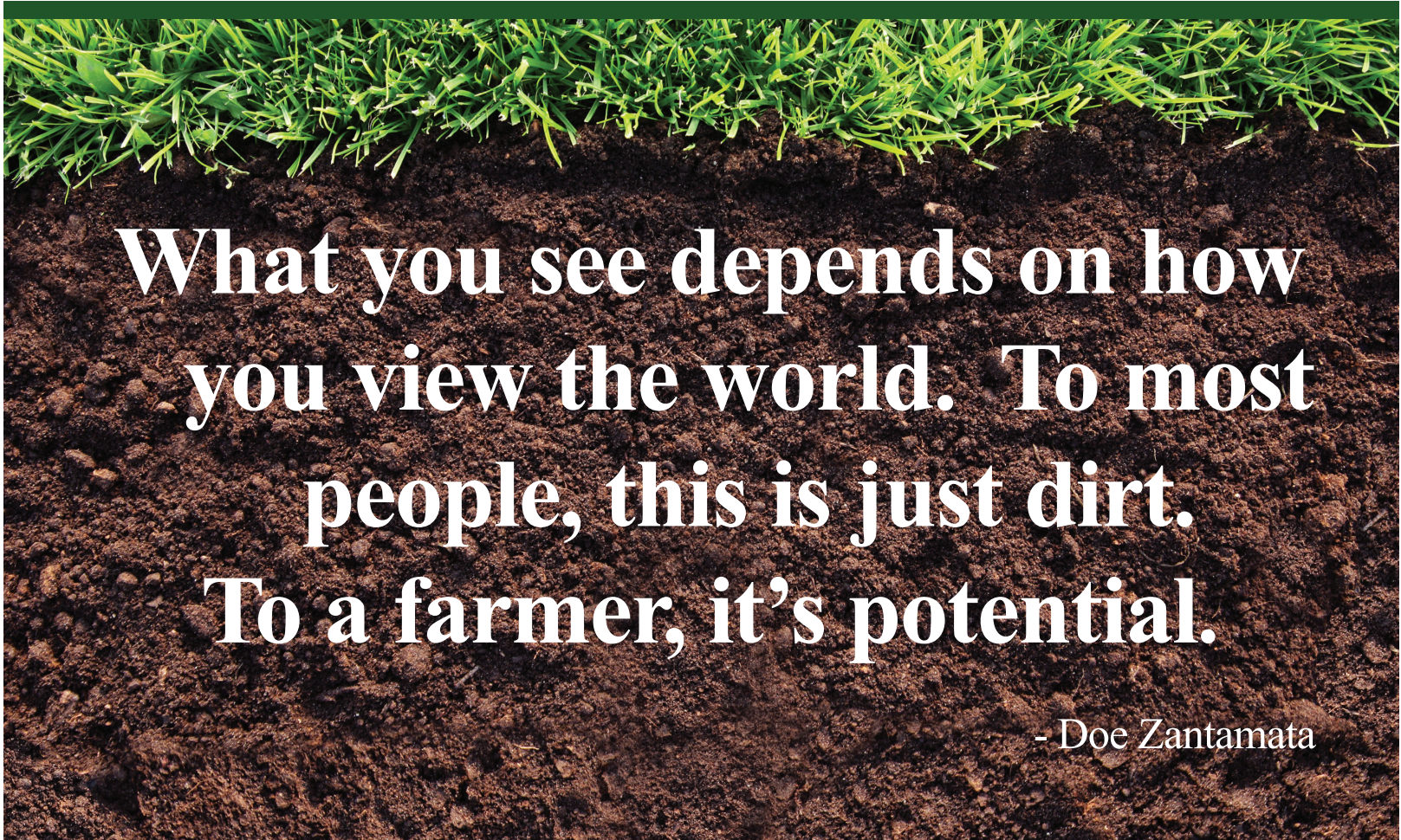
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- Dr Matthew Back, Senior Lecturer/Researcher: Centre for Integrated Pest Management (CIPM), England •
  - Dale Gies, High Performance Seed, USA •
- Dr Lucca Lazzeri, Council for Agricultural Research and Economics. Research Centre for Industrial Crops •
  - CREA-CIN Bologna (Italy) •
- Dr Vincent Michel, Pytopathologist: Institute for Plant Production Science, Switzerland •



**What you see depends on how  
you view the world. To most  
people, this is just dirt.  
To a farmer, it's potential.**

**- Doe Zantamata**



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## FRONT PAGE:

Standing in a young planting of Sweet Corn at the foot hills of the majestic Drakensberg near Hoedspruit, are from left to right: Leo Schoots - Snowy River Seeds in Australia, Kobus Boshoff - owner of the farm in the Hoedspruit district and Johan Stassen - Technical Marketing Manager: Hygrotech/Seedcor (Photograph-Fielies Nieuwoudt)

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Vredendal 027 213 5609  
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This information is based on our observations and/or information from other sources. As crop performance depends on the interaction between the genetic potential of the seed and variety, its physiological characteristics, the environment including climate, disease pressure, water quality and quantity, management etc., we cannot give any warranty expressed or implied, for the accuracy, performance or applicability for the information, recommendations or products supplied, nor for the performance of crops or products relative to the information given, nor do we accept any liability for any loss, direct or consequential that may arise from whatsoever cause.

\* These cultivars are not on the official cultivar list, but applications have been, or will be submitted.



# TO COAT OR NOT TO COAT... THAT IS THE QUESTION?

Written by: JJ de Klerk - Technical Manager - Forage and Pasture

**Seed coating** has long been a hotly debated topic with both sides ( for and against it ) taking a strong stance to support their theories. Some people say it's a seed business gimmick to sell a cheaper product at a higher price sighting value adding. Others say it's technology poised to change the way we seed fields and seed companies can now offer a superior product with more benefits to the end user.

Hygrotech has been using Nitro-coat for the last couple of years with success and has taken this process another step further. And this is what we have to offer for 2016.

Nitro-coat is a calcium coating used on various legumes with up to four strains of Rhizobium included. Nitro-coat has proven itself to improve seedling survivability, enhance early root development, accelerate conversion of atmospheric nitrogen and ultimately improve yield. Nitro-coat has proven in trials to improve stand density by up to 21%, increase protein content by between 4 and 8 % and Increase fixated Nitrogen by up to 8 %, and increase yield by between 15 and 20 %.

Along with improved performance Nitro-coat has been specifically formulated to sustain viable Rhizobium in a variety of environments and for extended periods of time. This is what the manufacturer has to say "Nitro-coat is formulated to maintain healthy populations of Rhizobium for massive colonization in developing alfalfa root systems. In addition, our exclusive Nitro coat inoculant is a blend of four strains of Rhizobium, allowing for higher rates of survivability in a range of soil conditions...Nitro-coat not only begins with extremely high live Rhizobium counts, but is also designed to keep these bugs viable until they have the opportunity to flourish in your crop root system"

Our complete HL range is coated with Nitro-coat and can still be planted at the normal seeding rate of 25 kg/ha. The debate that coated seed has to be seeded at higher rates in order to establish the same population, as a portion of the total weight is displaced by the seed coating, is not true. And here is the math to prove it.

Normally there is about 400-440 thousand seeds per kg. This total to about 10 to 11 million seeds per hectare if seeded at 25 kg per hectare. Our HL range is coated with 50 % Nitro-coat giving us an estimated 5 to 6 million seeds per hectare if seeded at the same rate. In comparison uncoated seed will establish about 720 plants per square meter at germination of 90 % and an 80% survivability. With the Nitro-coated HL range you will have about 360 plants per square meter under the same conditions.

According to the Queensland Governments Department of Primary Industries Lucerne management handbook - fourth edition. "the persistence of irrigated hay stands is maximized when established populations are 150 plants/square meter. There Is no benefit to long term persistence by increasing plant populations above this" and also state that "very high populations are suspected as the cause of higher leaf disease infections".

With this it is clearly evident that coated seed has various benefits to the end user. Sighting easier seeding and a better plant population,

which ultimately improves overall plant health and performance. The 360 plants per square meter of the Nitro-coat range thus still gives a buffer up to 70 % germination and only 50 % survivability and will still yield a fully productive stand, in cases where conditions are optimal which is hardly ever the case in South Africa.

The additional plants are far less than with uncoated seed and will give a better chance of yielding a good and productive stand.

In summary the Nitro-coated HL range has the following to offer the producer:

- Easier seeding due to larger seeds
- Good populations even under the harshest of conditions
- A close to ideal population
- Improved inoculation
- Improved Nitrogen fixation
- Improved feed quality in terms of protein
- Higher plant survivability
- Faster initial growth
- Improved yield

*Our current range consist of the semi winter dormant HL 6 and non-winter dormant HL 9. We will also be including the Nitro-coated HL 10 in the future and will have HLs 9.2 back in stock next season.*

## NEW PROSPECTS ON THE HORIZON

We will shortly start testing two new varieties which we are extremely excited about. Be sure to keep a look out for a trial plot close to you.

### HL 10 Lucerne

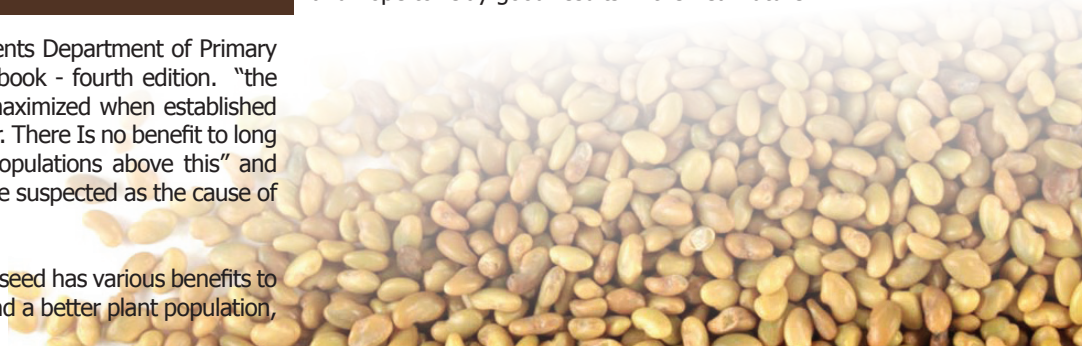
We are planning to expand our current highly successful Lucerne portfolio by adding a class 10 dormancy Lucerne. This Lucene falls in the non-winter dormant segment and is sure to out yield its predecessor in areas where extreme cold weather prevails in the autumn and winter.

HL 10 should yield in excess of 2 tons more than HL 9 where severe cold temperatures are experienced. As soon as we have data from our trials, we will post them in our Forum.

We will also start extensive trials with a well-established product line from DLF seeds in Denmark. These sugar beets are specifically bred for the forage market and yield high dry matter tonnage with exceptional palatability and animal performance.

Sugar beets have been used with great success in New Zealand and we hope to bring the advantages seen there, home to our producers.

We will be testing a sugar beet variety **Bangor** against old faithful's such as Radish cv Nooitgedacht and Turnip cv Mammoth Purple Top and hope to relay good results in the near future.





# “MEGA” Drum Kit

The new Mega Drum Kit is an attachment for the Hamilton Drum Seeder to allow much larger and heavier seeds to be sown than with the standard drum. The outer end plate of the seeder head is replaced, which allows the connection of a new vacuum source direct to the inside of a new type of drum, which has much larger holes than can be used on a conventional Duplex drum. Seeds such as corn, peas, pumpkin, sweet peas, squash, and many of the large tree seeds can be sown with a high degree of accuracy at high sowing rates. The new drum features an inexpensive outer sleeve, which can be replaced when changing seed sizes or trays. Sleeves can be drilled with multiple holes per cell/pot.



The kit comes with everything you need to get started, including one drum sleeve of your choice, vacuum source, pipework, catch tray, and a vacuum cleaner for removing excess seeds. Also included is a revised drum support post, so you can switch back to the standard drum setup in a matter of seconds. The kit will retrofit to all existing Hamilton Drum Seeders fitted with an Oscillating Seed Tray. The optional Tray Vibration Kit is also recommended. It should be noted that the cleaning and released air are not used with this arrangement, so some rudimentary cleaning of the seed may be necessary.



For more information contact: Dennis Lange, Hygrotech Head Office @ 012 545 8000

HAMILTON

DESIGN



# Snakes and lawn grass

Written by: Theo Schoonraad

## Snakes and lawn grass ?

### ***What's the relevance, you might wonder.***

Well, contemplate this.... if your yard is un-mowed and covered in junk or debris, then you can expect to come across snakes ( which could be of the venomous kind ! ) more often than you care to think about.

Off course, yards with no proper lawn, but only veld grass, natural shrubs and trees ( which you often see around farm dwellings) are even more likely to attract serpents. You will be amazed at what just mowing your lawn will do for keeping snakes away. The grassy areas of a lawn usually make up the majority of the space.

By keeping these locations short and well trimmed, you eliminate the snake's comfort level when it comes time to move around the yard. It sounds silly, but failing to mow your lawn or cut your trim is a huge sign to the dangerous and nasty ones of the snake world like black mamba, cobra, rinkhals and puff adder, that they can get to your home unseen.

A snake will be very reluctant to slither across your yard if the grass is too short to cover it. What's more, plants that have been allowed to grow without guidance can mean thick, beautiful gardens, but they will also mean frogs, insects and rodents....and snakes who prefer to feed on them.

Snakes want to live near places that have tall vegetation, lots of cover and off course, ample food. Make sure you clean up any debris around your property, as a snake will want something to hide under for shelter.

For a start therefore, it would be advisable to establish a proper lawn around your house, especially if you live on a farm or in a rural environment.

To establish a lawn, the seeding of a creeping, perennial turfgrass-type would be advisable and you don't have to look any further than HYGROTECH to supply you with technical detail, advice and the appropriate cultivar for your area. Please contact Theo Schoonraad ( 083 273 2624 ).

## 7

### **Tips to avoid snakes in your garden :**

- Keep your grass/ lawn short
- Be careful around/near snake habitat ( damp/cool areas, debris, wood piles, rocks, garages )
- Control rodents around the yard
- Know where to watch-out for snakes :
  - Hot days : shady cool areas, under your car, wood piles, debris.
  - Cold days : warming in the sun, driveway, or even in a car engine
- Stay vigilant : watch where you walk and reach.
- Water attracts snakes : water primarily attracts frogs, lizards, birds and rodents...which off course, attract snakes
- Respect their space : if you see a snake, don't panic...just slowly move away. Don't make any sudden movements and don't try to be a hero ! Most reports of snake bites involve victims who needlessly engaged a snake





# ONCE UPON A TIME THERE WERE 3 MUSKETEERS AND A 3006 CALIBER

Written by: Luhan Swart

All over the world the processing industry on sweet corn is trying to find an alternative for the domination of a specific variety. With these goals in mind several alternatives have stepped up for the challenge to defend the role play of yield potential, disease resistance and processing recovery.

Hygrotech, with Snowy River Seeds from Australia, have come up with the 3 Musketeers namely, Jubilation, Escalate and Gladiator to defend the market of sweet corn processing by being proactive, focused and specific.

The trend in sweet corn processing is to have higher recovery on varieties with the ability to give a wider window during harvesting to ensure maximum recovery and return.

Several other newer varieties were also trialed the past season and during a visit from Snowy River to South Africa, Mr Leo Schoots has evaluated several varieties with huge potential against the

standard older varieties. He also mentioned that with the current 3 Musketeers, a 3006 caliber will be the latest processing variety hitting the targets in the next production season.

#### The industry is looking for the following attributes:

- Good agronomical characteristics such as wide adaptability under difficult growing conditions and good disease resistances.
- Comparable yields for the farmer and factories.
- Good seed quality with hot and cold germination inside the required parameters.

In short, a variety that will yield consistently higher than planned, but with higher factory recovery will ensure the viability of sweet corn production in the future.

*The following varieties were evaluated during the past year:*

VARIETY	ROW	EAR	TIP FILL 1 EXCELLENT 5BAD	DISEASE	OVERALL SCORE	COMMENTS
Competition	18	18	1	2	3	Good competition
Gladiator	20	19	3	1	3	Reliable processing variety
Jubilation	22	20	1	2	2	Will stand 3-5 days longer at maturity
Escalate	20	22	1	2	2	Will stand 3-5days longer at maturity
Meteor	14	17	3	3	3	Very early for fresh market and start up
ZHY08740	18	18.5	1	1	2	Very good sweet corn for multi use. Multi cobb
ZHY03960	18	21.5	1	3	2	Good processing type
ZHY22280	18	19	3	2	3	Better alternative available
Hardi	16	19	1	2	3	Fresh market / processing
Competition 2	18	18.5	1	1	2	Good competition

WATCH THE SPACE WHEN  
CALIBER 3006 WILL SUPPORT THE  
MUSKETEERS IN THE FUTURE!!!!



# RATIONAL OF SPOREKILL® FOLIAR SPRAYS

Johann van der Vyver and Kobus Serfontein from ICA International Chemicals

*After two decades the most popular international application of Sporekill® remains foliar sprays. Depending upon the country these applications are applied either according to fungicide or sanitizer registration. Herewith a summary of why this AGRICULTURAL ICON is so popular within foliar sprays.*

## WHAT HAPPENS ON THE PLANT SURFACE WHEN SPRAYING SPOREKILL®?

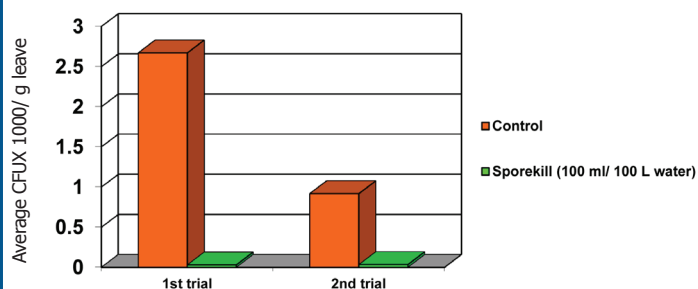
1. Being a sanitizer, Sporekill® kills plant pathogens upon contact on the plant surface.
2. In doing this, the pathogen populations on the plant surface are drastically reduced.
3. **Reducing pathogen populations on the plant surface has a direct effect on:**
  - a. The risk of **pathogen infection**.
  - b. **Pathogen dispersal** through wind or splashing of water. In fact, successive Sporekill® foliar sprays are so effective in reducing the infection potential and pathogen dispersal that Sporekill® (although being a sanitizer) is registered for fungicide foliar applications in South Africa (according to Act 36 of 1947) on various crops (cucurbits, carrots, citrus and wine grapes).
  - c. Less pathogens on plant surface results in **less pressure** rest of spray program.

## BENEFITS OF INCLUDING SPOREKILL® IN FOLIAR APPLICATIONS

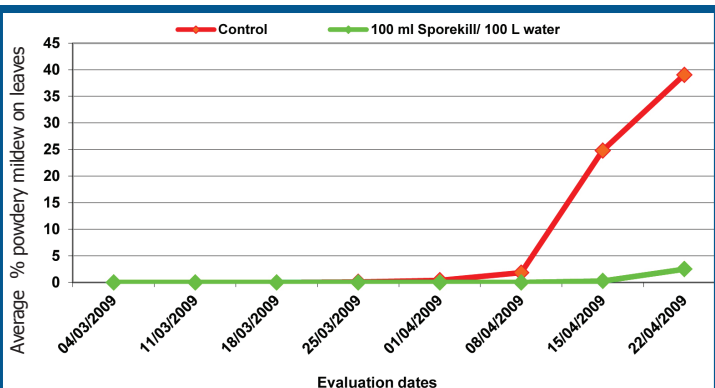
1. Sporekill®'s excellent sanitizer ability **broadens** the **pathogen target** organisms of the spray-mixture on plant surface. Upon contact Sporekill® has the proven ability to kill:
  - a. **Fungi** and **bacteria**.
  - b. **Mycelium** and **spores**.
  - c. Fungicide/ bactericide **resistant** fungi and bacteria **populations**.
  - d. **Pathogens** affecting **plant** and **human** health. Sporekill® kills fungicide resistant and susceptible pathogen spores indiscriminately and also lowers pathogen inoculum, thus preventing or/and delaying fungicide resistance in pathogen populations. Sporekill® is an integral part of fungicide resistance prevention strategy.
2. Proven **synergism** with conventional **fungicides** in spray mixture.
3. **Disinfecting spray-tank water** to minimise the risk of water, used in the spray-mixture, becoming a source of pathogen contamination. Especially relevant for crops under drip, micro or natural irrigation.
4. Broad list of **compatibility** with **agricultural chemicals** in spray-tank mixtures.
5. Wetting capabilities. Sporekill® within a spray-tank mixture breaks the surface tension of water. This improves coverage of plant surface.
6. Sporekill® foliar sprays (at recommended rates) are compatible with beneficial insects, as well as beneficial organisms in the soil.



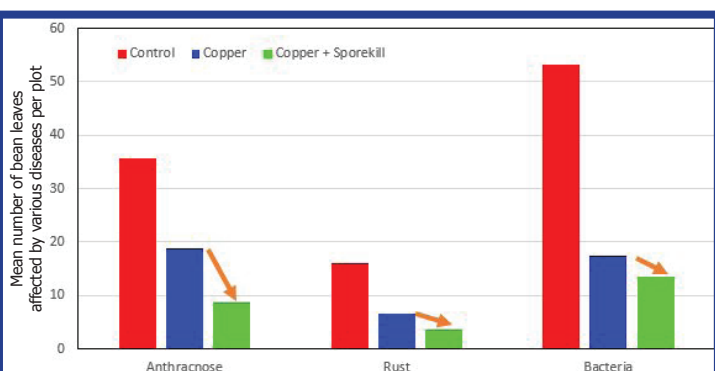




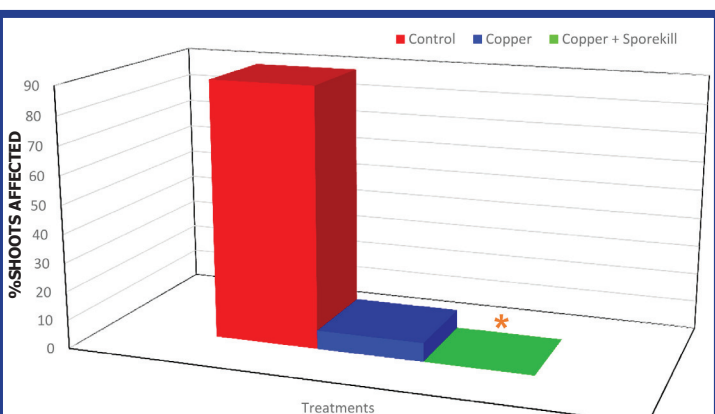
**Figure 1:** Summary of an investigation (2 trials) by the Plant Protection Research Institute of the ARC indicating the excellent ability of Sporekill® to kill *Pseudomonas syringae* pv. *tomato* populations on tomato foliage.



**Figure 2:** Registration trial results indicating the ability of Sporekill® to control powdery mildew on carrots by means of pathogen population reduction through successive foliar sprays. (Conducted by Agricultural Research Consultants)



**Figure 3:** Effect of various foliar sprays (applied weekly) on various diseases symptoms on bean leaves. Note synergism (→) of Sporekill® in spray-mixture with copper. (Conducted by JAL Agriculture, Research and Training Consultancy)



**Figure 4:** Effect of various foliar sprays (applied weekly) on average percentage peach shoots affected by leaf curl. Note synergism (\*) of Sporekill® in spray-mixture with copper. (Conducted by EsCape Research)

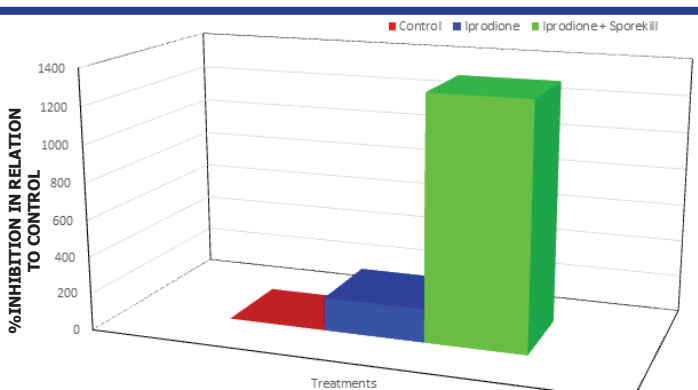
Photos indicating wetting capabilities of various foliar sprays on citrus fruit.



Poor coverage and drop formation of copper fungicide spray.



Excellent coverage of copper fungicide and Sporekill® spray.



**Figure 5:** Average percentage inhibition of *Botrytis cinerea* (dicarboximide resistant strain) by Iprodione and Iprodione plus Sporekill® in relation to control (Conducted by Department of Plant Pathology of the University of Stellenbosch)

**Sporekill®**



# ASsist

Various problems are associated with glyphosate administration, of which the most important surely is the influence of hard water on the stability of the glyphosate molecule. Dissolved minerals like Calcium, Magnesium and Sodium are able to bind with dissociated glyphosate anions (-) to form inactive salt connections. It is estimated that as much as a third of the applied glyphosate is lost in this way.

The second problem is that glyphosate, like all foliar applications, is dependent on a damp period on the leaf to be taken up and absorbed. Under conditions of low air moisture (relative humidity), it can result in the spray mixture drying off too quickly to secure adequate absorption of the active ingredient.

Thirdly, thorough covering on the target leaf is of the utmost importance for effective absorption. The agent should therefore be spread across the leaf and be in contact with the actual leaf surface.

When leaves are studied under a microscope, one notices more/less 'hairs' or spines on the surface. Fine droplets are inclined to stick to the hair blades and, without contact with the cuticula, dry off there. This part of the applied agent can't be absorbed. The most glyphosate formulations contain an unknown amount of wetting and spreading agents.

Fourthly, the acidity of the tank mixture can have a negative or positive influence on the glyphosate molecule. When the acidity level of the solution moves beyond certain boundaries, the composition of most chemical molecules could change by binding to unfamiliar dissolved ions and in so doing create new molecules.

These unfamiliar new molecules could be inactive and even detrimental. Care should therefore be taken to ensure that the acidity level (pH) of the spray mixture stay within acceptable norms.

All known glyphosate formulations acidify the spray mixture. The degree to which the mixture is acidified, depends on the water quality, the glyphosate formulation and the concentration. According to known information, glyphosate functions optimally at a pH- level of 5.5.

When acidifiers are added to the spray water to the optimum pH level of 5.5 and glyphosate is then added, the spray mixture is acidified to further unacceptable levels.

*ASsist is an ammonium sulphate based water conditioning substance which is used with glyphosate.*

Once again, this will be detrimental to the working of glyphosate. Laboratory tests have shown that available conditioning agents applied at normal dose, have acidified the mixture to a pH reading of 2.

**ASsist** consists of pure ammonium sulphate (technical grade), a true and effective buffer, an energy source, as well as a wetter. Apart from the fact that ammonium sulphate neutralizes the minerals in hard water, it has also been established that ammonium sulphate enhances the efficacy of glyphosate even with 'good' water. Why, nobody knows.

*A true buffer stabilizes the acidity levels of a solution at a predetermined pH. It therefore prevents the solution from becoming too alkaline or acidic when adding additional agents. ASsist stabilizes the spray mixture at pH = 5 – 6, the optimum acidity level for glyphosate. ASsist is formulated with a certain amount of molasses which serves as an energy source for plants. Glyphosate translocation through actively growing plants, is better compared to plants under stress. The uniqueness of ASsist lies in the wetter. The wetter uses available air moisture to keep the spray mixture damp on the leaf for a longer period. Administered glyphosate is now absorbed better and more efficiently. The combination of features makes for a better deposit and spreading of the spray mixture on the target.*

The usage of **ASsist** at 1-2 % concentrate, premixed into the spray mixture, ensures that glyphosate has the best chance to do its work. Spilling is minimized and the chance to spray a 'hop', is much smaller. *Unfortunately, nothing can be done about dust on the leaves, inversion, evaporation or strong wind. ASsist should therefore not be applied under unfavourable circumstances.*

TABLE

APPLICATION VOLUMES	
WATER ANALYSES	DOSE
Ca + Mg < 200 dpm	1.0 L / 100 L water
Ca + Mg > 200 dpm	1.5 – 2.0 L / 100 L water

**ASsist** should always be mixed-in the spray water first. Stir well before spray agents are added. Keep stirring the spray mixture while adding agents. Where glyphosate is administered in wind, add Mist Control according to instructions. To ensure rain fastness, add NuFilm P (last in the spray tank) at a lowered dose.

# DEMAND ASsist

## YOU DESERVE THE BEST!!

**ASsist** is manufactured and distributed by HYGROTECH SA. ASsist is only available at selected, knowledgeable dealers.

For enquiries contact : DC Coetzee ( 082 467 4867 )



# TOMATO 824

## the talk of the town

Written by: Liana Steenkamp

The theory behind pruning a tomato plant suggests that carbohydrates can be used more effectively for the fruit instead of vegetative growth; the nutrients are diverted from the growing shoots and instead used for flowering clusters.

Pruning is a way of physically manipulating the plant to force energy into rearing its fruit.

Benefits of pruning include:

- Bigger fruit weight (Wurster & Nganga, 1971)
- Earlier maturity – up to two weeks (Wurster & Nganga, 1971)
- Better fruit quality (Navarrete & Jeannequin, 2000)
- Less foliar diseases and pest problems (Saunyama and Knapp, 2003)
- Better spray coverage (Chen and Lal, 1999)
- Increases in yield (Davis & Esters, 1993)(Muhammad & Singh, 2007)



Pruning tomatoes is a common practice in greenhouses, but Mr. Niel Coetzee, from Brits, is delighted with the yield of tomato 824 after pruning to a double stem under open-field conditions.

Mr. Coetzee planted 1.1 ha of the variety in the first week of December 2015. As Mr. Coetzee is also a fruit farmer, pruning is his forte. He started harvesting 10 weeks thereafter. 824 is an indeterminate, large round tomato, suitable for the fresh market. In week 18 he has harvested just over a 100 tons of tomatoes, and is still going strong as 824 has large fruit (100-140g) and thick walls which ensure firm fruit with a long shelf life. Uniform green shoulder colour. His plants are extremely healthy and side shoots are often pruned. Disease package :Vd, Fol:0-1, N(Ir), Tmv, Tylcv (Ir), Tswv; On

# BOUDICA



**Boudica** (AD 60 or 61) was a queen of the British Celtic Iceni tribe who led an uprising against the occupying forces of the Roman Empire. An estimated 70,000–80,000 Romans and British were killed in three cities by soldiers led by **Boudica**.

Hygrotech has its own female warrior in the form of a tomato. **Boudica** is indeed a queen in her own right, she possesses an artillery with regard to its disease package which includes: Tomato Mosaic Virus, Verticillium, Fusarium race 2, Alternaria Leaf Spot, Tomato Yellow Leaf Curl Virus, Tomato Spotted Wilt Virus and Rootknot Nematodes.

The Rothmann's witnessed **Boudica** in her glory. Mr. Dawie Rothmann was kind enough to allow trials on his farm the past season. The tomato did not only survive several hail storms, it also surprised us with the exceptional fruit size, quality and yield.

**On average the fruit weighed 180-200g.**

The trial was planted the 22nd of October 2015. The yield over a period of 19 weeks of a 1000 Boudica plants came to an astonishing 2,856 kg despite 3 severe hail storms. Hygrotech would like to express their gratitude for the privilege to work with Mr. Rothmann, and personally thank him and his team. Rothmann Farm is a prime example of how the perfect farm should function.



# EL NINO & LA NINA

Written by: Liana Steenkamp

**Wild weather is gripping the planet. An El Niño has been wreaking havoc around the world, causing major flooding in South America, droughts in Indonesia and Southern Africa and an unprecedented hurricane season in the North Pacific, to name a few.**

**UPDATE ON STATUS OF 'EL NINO' - South African Weather Service.**

***Issued May 24th 2016.***

***The winter forecast for drought-hit South Africa shows the rapid fading of the El Nino weather pattern. Current observations still show the fast decay of this destructive phenomenon.***

***The Weather Service said there is a possibility for the development of a weak LA NINA towards late Spring and Summer. La Nina has the opposite impact of El Nino..and so it could bring above-average rainfall.***

***Climatologists are still calculating whether this is the biggest El Niño on record. What they do agree on is that there have now been three "super-El Niños" in the space of just over three decades — in 1982-83, 1997-98, and now 2015-16.***

***"The El Nino weather pattern may have been one of the strongest in more than half a century", experts at the World Meteorological Organization said in October 2015.***



The cycle begins when warm water in the western tropical Pacific Ocean shifts eastward along the equator toward the coast of South America. Normally, this warm water pools near Indonesia and the Philippines. During an **El Niño**, the Pacific's warmest surface waters sit offshore of northwestern South America.

**La Niña** is characterized by unusually cold ocean temperatures in the eastern equatorial Pacific, as compared to **El Niño**, which is characterized by unusually warm ocean temperatures in the equatorial Pacific.

South Africa has been impacted severely in various ways;

- Extreme water shortages in numerous towns.
- Agricultural sector has been influenced negatively, due to crops that could not be irrigated, in turn threatening food security.
- Cattle farmers lost all or the majority of their herds.
- Emerging farmers forced to stop agricultural practice due to little or no help from the government.

Various "weather-gurus" and specialists have tried answering the question everybody has asked: when will the rain come?

In November 2015 the South African Weather Service's Cobus Cronje said the lack of significant rainfall is expected to last until next year.

***"We can say that we are experiencing below normal rainfall and this season is expected to last into autumn next year. This is what the long range is indicating."***

On the 28th of March we had the privilege of conducting a telephonic interview with Professor Peet Pienaar regarding rain forecasts for South Africa.

He explained that patterns have indicated that there occurs a drought every 11 years and a major drought every 30 years, as the one we have experienced recently. He also stated that it takes about 3 years to recover from this extremely dry phenomenon.

Only in 2017-2018 we might experience normal or above normal rainfall. Professor Pienaar explained that the key to knowledge is observation in the finest detail, and that the ability to predict the weather was bestowed onto him by his grandfather that taught him to take note of nature.

Both the sun and moon play an integral part in predicting what Mother Nature has installed for us.

On the 29th Of March 2016 ENSO Wrap-Up posted: "International climate models suggest El Niño will continue to weaken during the southern autumn, returning to neutral levels by mid-2016.

For winter and spring, climate models suggest neutral levels and La Niña are equally likely. However, the accuracy of forecasts made at this time of year is lower than those at other times, and therefore some caution should be exercised."

It looks like 2016-2017 will entail a better year for the farmers in terms of rainfall and Hygrotech therefore wishes all farmers the best of luck for the year to come.

Professor Peet Pienaar a well-known academic who specialized in weather patterns and also a farmer for 40 years, gave Landbou Weekblad his own forecast that was published on the 8th of January 2016.

**According to Pienaar the first quarter of 2016 looks promising for the summer sowing areas:**

<b>Summer rainfall areas:</b>	
January	Rain 10-17 Jan. Storms 24-31 Jan, possibility of mini floods
February	Rain 10-11 February
March	Rain 9-12 March
April	Rain 6-8 April
May	Rain 5-6 May. First frost may appear
June	Rain and frost 5-8 June
July	Light rain 4 July. Frost and snow
August	August winds 2 Aug, snow is a possibility
September	Extremely windy
October	Rain 1-4 October & 16-20 October
November	Rain 14-16 October
December	Rain 14-16 December
<b>Winter rainfall areas:</b>	
March	9 March, cold front and strong South Easter
April	Cold front and scattered showers 7 April
May	6 May Cold front, rain and snow
June	Cold, windy and snow 5 June
July	Cold front with rain and snow with possible storms 4 July
August	Windy conditions with a cold front and rain 22 August
September	Windy conditions with a cold front 15 September
October	Light rain 1 October, Good rainfall expected 16-18 October
November	Over casted weather & light rain 14-16 November
December	Over casted with rain 14-16 December



# PERLKA

Written by: Liana Steenkamp

Calcium cyanamide is a very special fertilizer. It not only supplies the soil with nitrogen and lime, but it also offers a range of other unique positive effects. Many farmers insist on calcium cyanamide or **PERLKA®** in order to prevent yield and quality losses during increasingly tight crop rotations, or to be able to manage them properly once again.

**Why?** – because soil hygiene is more important than ever to ensure sustainable production. "Healthy soils mean healthy plants" goes the saying – and more than 100 years of calcium cyanamide production later this rule still hits the nail right on the head!

Discovered more than 100 years ago, calcium cyanamide was the first mineral fertilizer to enable atmospheric nitrogen to be used for plant nutrition. Today the multipurpose fertilizer still plays an important role in crop cultivation, because calcium cyanamide is the only fertilizer that contains the nutrient element nitrogen in the so-called NCN binding form. This helps ensure that plants are supplied with nitrogen over a longer time period as and when needed.

The second nutrient element that calcium cyanamide contains is calcium. This is mostly water-soluble and is immediately available to the plants. Calcium is an essential plant nutrient. It has many roles:

- Participates in metabolic processes of other nutrients uptake.
- Promotes proper plant cell elongation.
- Strengthen cell wall structure - calcium is an essential part of plant cell wall. It forms calcium pectate compounds which give stability to cell walls and bind cells together.
- Participates in enzymatic and hormonal processes.
- Helps in protecting the plant against heat stress - calcium improves stomata function and participates in induction of heat shock proteins.
- Helps in protecting the plant against diseases - numerous fungi and bacteria secrete enzymes which impair plant cell wall. Stronger Cell walls, induced by calcium, can avoid the invasion.
- Improves fruit quality.
- Has a role in the regulation of the stomata. Whereas other nitrogen fertilizers tend to make the soil more acid, calcium cyanamide improves the lime balance of the soil. In summary, on soils that are fertilized with calcium cyanamide plants receive the ideal amount of nitrogen, the structure of the soil is improved through the addition of valuable lime, and soil hygiene is improved at the same time.

The third important factor to consider is carbon. During the manufacturing process carbon is activated through electricity. Activated carbon is a porous substance and possesses increased adsorption ability. Adsorption is the adhesion of atoms, ions, or molecules from a gas, liquid, or dissolved solid to a surface.

This allows macro and micro-elements to adhere to the carbon which avoids leaching of valuable nutrients. As the carbon weathers it slowly releases these nutrients over a long period of time.

Fertilizing with calcium cyanamide also increases the biological activity of the soil. Soil-borne pathogens are forced into retreat by the stronger natural competition. It also serves as a very effective herbicide.

During the decay process calcium cyanamide is broken down into amongst others Calcium hydroxide  $[Ca(OH)_2]$  which is toxic to weeds and certain grass species. It also delays germination of most weed species.



With **PERLKA®**



Without **PERLKA®**



With **PERLKA®** - Cronwall 2006 (Cabbage from under fleece)





No **PERLKA**® - Cornweall 2006 (Cabbage from under fleece)

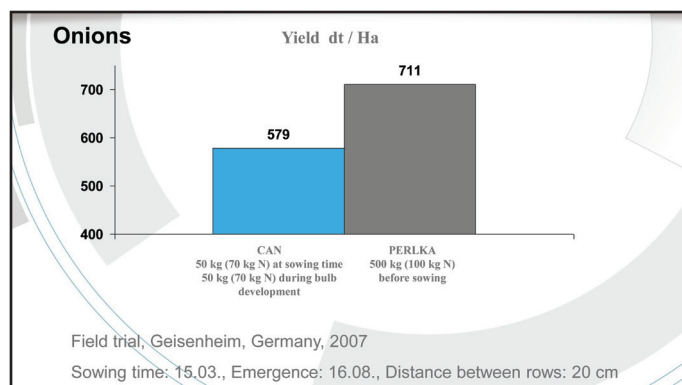
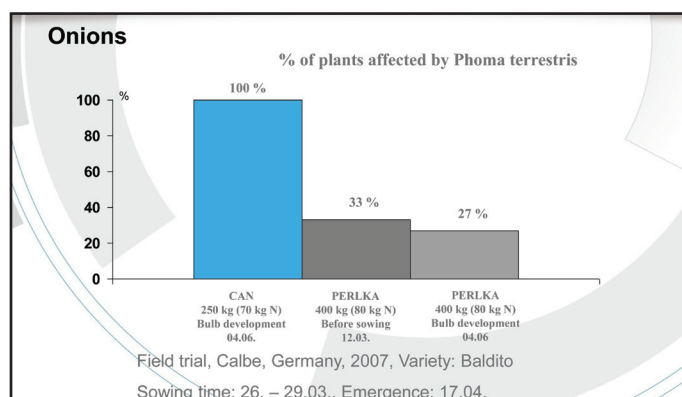
Pink Root (*Pyrenochaeta terrestris*) affects onions, garlic, leeks and shallots. The disease is active to a depth of up to 45 cm in the soil.

When air temperatures reach 24- 28 degrees Pink Root disease activity accelerates and is often seen on onion roots. Fusarium regularly works in conjunction with the Pink Root infestation.

**PERLKA**® suppressed Pink Root in a hybrid onion crop when applied 14 days before sowing, reducing the instance of root and plant infestation by almost 60% compared to a standard fertilizer.

The standard control application was Ammonium Nitrate. The soil type was a medium loam with pH of 7.3. Perlka is 19.8% Nitrogen and 50% Calcium Oxide.

**PERLKA**® distributor in the United Kingdom, Paul Corfield, has extensive experience with Perlka use on onions. This includes using rates of **PERLKA**® at 400 kilo /hectare on onions.



The grower considered the results to be a success with improved strength of the foliage resulting in a high quality skin finish and firmer, denser bulbs. At these same rates, there also appeared to be a suppression of Fusarium.

The non-leaching benefits of Perlka resulted in the grower requiring less nitrogen. This benefit, coupled with the crop having more available Calcium, makes Perlka an ideal fertilizer for onions.

In an experiment to determine overall soil health the Perlka research team measured metabolites and enzymes present in the soil responsible for decay and pH regulation.

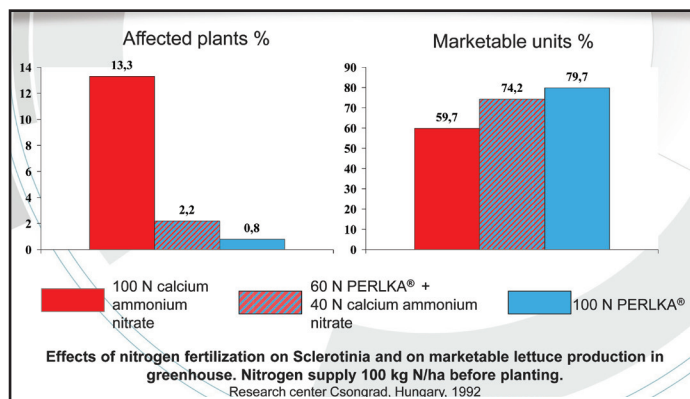
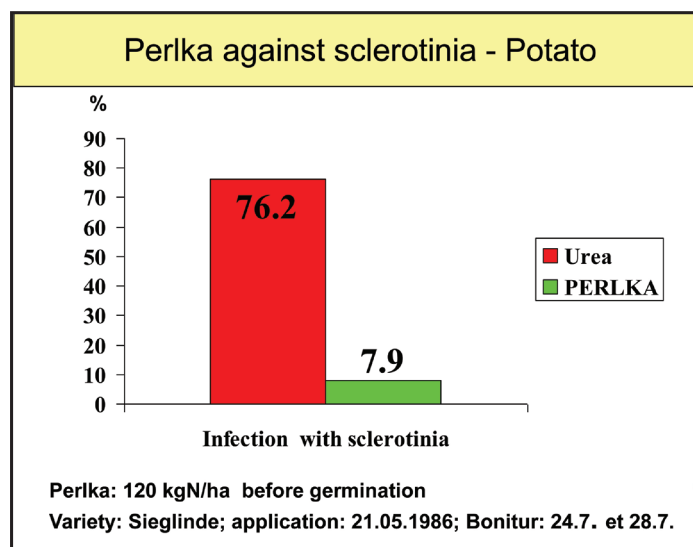
They found high levels of Dehydrogenase, an enzyme that catalyses the removal of hydrogen atoms from a particular molecule, particularly in the electron transport chain reactions of cell respiration in conjunction with the coenzymes NAD and FAD, in soil treated with calcium cyanamide.

This is a good overall indication of soil health and organic material availability that also aids in the ability to retain water.

Amylase, an enzyme responsible for the degradation of starch, that is also present in human saliva, was also found to be present in increased concentrations in the soil treated with calcium cyanamide.

**PERLKA**® is the ideal agrochemical to be used in all facets of agriculture. This multipurpose slow release fertilizer has the added benefit of suppressing soil borne diseases, improves soil health by stimulating beneficial microbes and suppresses weeds.

Be sure to contact the Hygrotech branch closest to you for more information on the revolutionary **PERLKA**®!





# ENTRÉE AND GLYPHOSATE HERBICIDE A DEADLY COMBINATION

Phillip Mans (FertAgChem Chemical Researcher, Southern region)

Additives have been used with herbicides for decades already. Now-a-days additives are specifically designed to enhance the effectiveness of specific herbicides.

## ADDITIVES CAN BE DEVIDED IN 2 GROUPS:

- Water adjustment products ( Hygrotech As-sistance ) in the use of glyphosate
- Product enhancement products ( penetration agents, stickers, wetter's, spreaders )

Glyphosate 450g/L is a systemic herbicide...which means that optimal absorption is necessary for the herbicide to be fully effective. How do you aid its absorptive capacity?

## WATER VOLUME

### Yes!

Too much water in a spray tank means more salts to react with the active ingredient and this will affect the potential effectiveness of the product. Less water results in fewer salts for the product to react with. It is therefore of the **UTMOST IMPORTANCE** that the correct volume of water and the water adjustment product (As-sistance) are used according to the prescription on the label. Lower water volumes are used with great success provided the label is followed stringently.

## WETTERS AND SPREADERS

No, wetter's should be avoided on herbicides with systemic action. This could develop in over wetting and result in run-off from the leaves... with the herbicide ending up on the ground and having no effect.

## OIL ADDITIVES

Definitely yes! Entrée is a diverse, penetrator seed oil, which is used to enhance the absorption of post emergence herbicides.

Entrée has the following features:

- Promotes the absorption of herbicides through the cuticula (A protective coating on the leaf).
- Increases the absorption of herbicides by making them more hydrophilic (able to be absorbed by water and taken into the plant)

## BENEFITS IN THE USE OF ENTRÉE:

- Entrée penetrates the waxy, hairy, cuticula of the plant.
- Entrée is used with great success on vertical leaves.
- Entrée enhances absorption of the herbicide.
- Entrée prevents run-off of the herbicide from leaves.
- Entrée has no risk of over-wetting.
- Entrée can be used with all post emergence herbicides.

### Trials

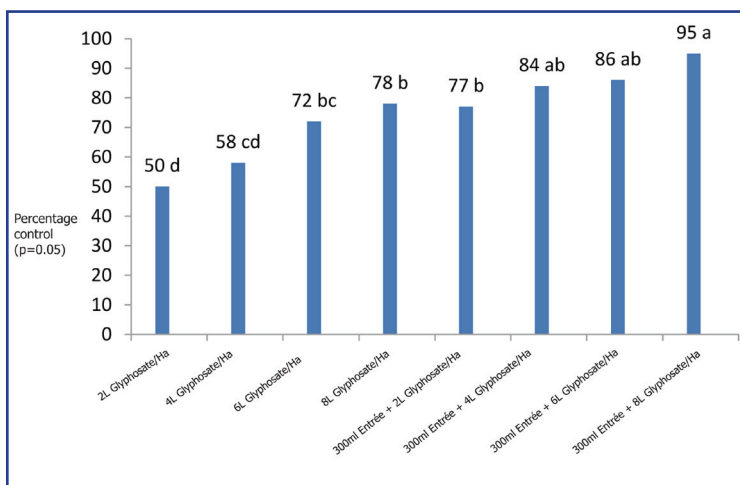
**The effect of Entrée and glyphosate 450g/l at different dosages on different weeds in the Western Cape Province. Water volumes through all the trials were 200 L / Ha.**

#### Trial 1

The effect of Entrée and glyphosate 450g / L at different dosages on semi- resistant rye grass, *Lolium* spp. in a pear orchard.

PLOT NUMBER	DOSAGE
1	2 L/ha Glyphosate
2	4 L/ha Glyphosate
3	6 L/ha Glyphosate
4	8 L/ha Glyphosate
5	300 ml/ha Entrée + 2 L/ha Glyphosate
6	300 ml/ha Entrée + 4 L/ha Glyphosate
7	300 ml/ha Entrée + 6 L/ha Glyphosate
8	300 ml/ha Entrée + 8 L/ha Glyphosate

CHART



### Summary

It is evident from the graph that there is no statistical differences between 8 L/ha glyphosate and 300 ml/ha Entrée + 2 L/ha glyphosate. The 300 ml/ha Entrée + 2 L/ha glyphosate have shown a significant difference against pure glyphosate at 2 L/ha. 300 ml/ha Entrée + 8 L/ha glyphosate, clearly had the best results.

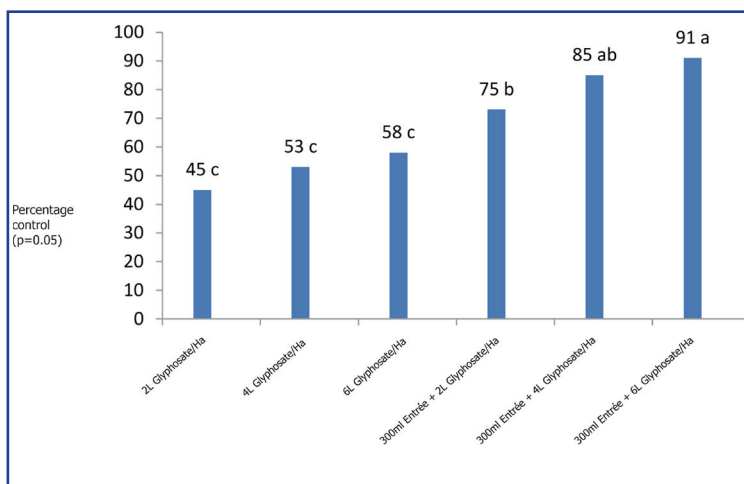
### Trial 2

The effect of Entrée and glyphosate 450g / L at different dosages on resistant Nutsedge *Cyperus rotundus* L. in table grapes.

PLOT NUMBER	DOSAGE
1	2 L/ha Glyphosate
2	4 L/ha Glyphosate
3	6 L/ha Glyphosate
4	300 ml/ha Entrée + 2 L/ha Glyphosate
5	300 ml/ha Entrée + 4 L/ha Glyphosate
6	300 ml/ha Entrée + 6 L/ha Glyphosate



CHART



### Summary

From the graph it is clear that there is a statistical difference between 6L/ha glyphosate and 300ml/ha Entrée + 2L/ha glyphosate. The lower dose of glyphosate and Entrée did significantly better than the much higher rate of glyphosate on its own and also yielded the best results.

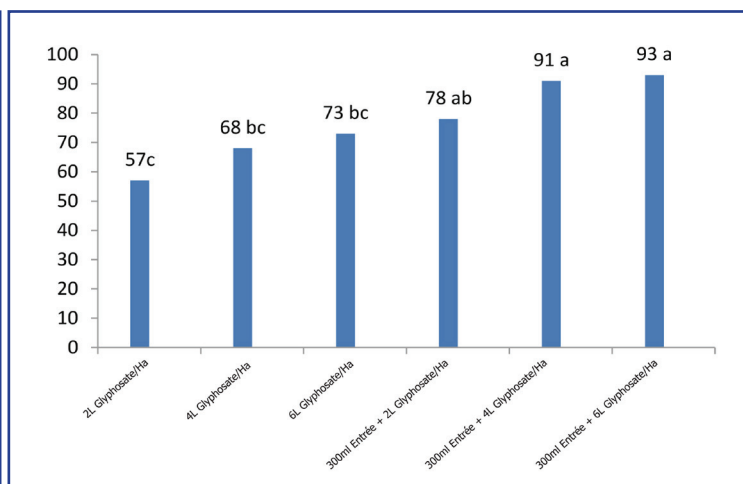


### Trial 3

The effect of Entrée and glyphosate 450g /L at different dosages on resistant Flax leaf fleabane (Skraalhans) Conyza bonarensis. in table grapes.

PLOT NUMBER	DOSAGE
1	2 L/ha Glyphosate
2	4 L/ha Glyphosate
3	6 L/ha Glyphosate
4	300 ml/ha Entrée + 2 L/ha Glyphosate
5	300 ml/ha Entrée + 4 L/ha Glyphosate
6	300 ml/ha Entrée + 6 L/ha Glyphosate

CHART



### Summary

From the graph it is clear that there is no significant statistical difference between the 6L/ha Glyphosate and 300 ml/ha Entrée + 2 L/ha glyphosate. The lower dose glyphosate and Entrée was just as effective in controlling the weeds as the highest dose of glyphosate. 300 ml/ha Entrée + 4 L/ha Glyphosate was statistically just as effective as 300 ml/ha Entrée + 6 L/ha Glyphosate.

### In conclusion

- The ideal dose for Entrée is 300ml/ha
- Remember that Entrée cannot replace Ammonium Sulfate in mixtures with glyphosate

### Mix Entrée as follows

- Adjust water with the correct amount of Ammonium sulfate in the case of glyphosate with --Hygrotech's very own As-Sistance.
- Next add the herbicide at the correct rate according to recommendations.
- Entrée must be added last to the tank to ensure proper mixing and efficient control of weeds.

"If the farmer is poor...  
then so is the whole country"  
-Polish proverb-



# STELLENBOSCHFA

A pictorial view of this much sought after annu

Proud employees of Hygrotech Stellenbosch



Back: Vivian White, Regan Sauls, Neil Afrika, Naas Fischer, Bradley White, Leonard Jordaan, Levann Cornelius, Andre Jordaan, John Winnie, Banton. Middle: Quinton Hendricks, Kevin Afrika, Cecil Jantjes. Front: Dean Lennert, Petrus Mouton, Jonathan Louis



Dukie Ramokgopa - Enza Zaden with future VUP farmers



Henry van der Voort, CEO - Hygrotech, with management of Dew Crisp



Ross Rennie - Rennie's Farms and Thinus van Staden from Htistill



Producers from Bredasdorp - Ruens area enjoying lunch



Theo Scholtz - Price Visser en Ian Grimbacher in a green pepper planting



# ARMERSDAY 2016

Annual event amongst Western Cape producers



Ig Terblanche - Hygrotech, Ceres, Braam Cofyn -  
Roodehoogte Nursery and Tony Longies - Little Oaks



Theo Scholtz - Hygrotech with Koos van Wyk, Landorf  
Nursery, Dereck and Ian Hallendorff from Cape Salads



Francois Marais from Karabib - Namibia, in a  
tomato field



PJ Fourie - Hygrotech with Frans Odendaal of Subtropico



Johan Stassen - Seedcor, with watermelon clients



Micheal Pinto chatting to Gavin Williams from Rennies  
Farms, Paarl



# FOCUS ON SURVIVING THE LONG TERM EFFECTS OF THE DROUGHT

Written by: Prof. Johan Willemse: Faculty of Agricultural Sciences  
Department of Agricultural Economics UFS

The 2015 calendar year was for South African agriculture the lowest rainfall year on record, during the past 104 years. The drought conditions continued into the first half of 2016—resulting in a bleak outlook for the winter (in the summer rainfall area), while the winter rainfall area also needs good rains in mid 2016 to replenish irrigation dams.

The irony is that this drought in 2015/16 coincides with a declining economic growth rate (good chances of an official economic recession in 2016), with a fast increasing inflation rate, the result of the weakening of the Rand. We are also in an increasing cycle of interest rates (to curb inflation and stabilise the rand?).

We need careful planning in business to manage an adverse economic and agricultural situation that will continue into 2016/17. The risk is that people think if rain falls, the drought effect has been broken. Depending on the industry it will take a few years to get back to normal production levels. As an example fruit trees were damaged, dryland soil lost fertility, sugarcane will take 2-3 years and in the case of the beef industry, it could be up to 4-5 years before we are back at normal production capacity.

**"As is the farmer,  
such is the farm"**

Hebrew proverb



# ON WHAT TO FOCUS:

- The most important tool in surviving this downturn, is to **stay in business** in such a manner that you are positioned for the upswing in the cycle from 2017 onwards.

Cattle farmers sell their whole herds with the view of buying back when grazing return to normal. However the chances are high that prices for breeding cows will sky rocket during the upswing phase making it very difficult to get back into production.

- Water** will become an increasingly scarce resource, with the cost of irrigation increasing. Managing this resource efficiently is critical, also take a long term view on the security of your farms water supply.
- Government's policy is not to assist commercial farmers, so part of your long term plan is to build up a taxfriendly **reserve fund** for the shortfall years (www.corporateguarantee.co.za). This is a must as part of your business survival tools for the years to come.
- Cash flow** is the biggest problem, not your liability/asset ratio. Farmers are forced to close down, not because they are insolvent, but because they run out of cash. Most agricultural industries/farms will be on a reduced cash flow after the drought. It is time well spend to do a conservative, monthly cash flow estimate for the next 24 months.

This is necessary to understand when and how much your cash shortfalls will be. Then you can start taking actions when you have a clear picture of what to expect.

You also need this to set up a meeting with your financiers. Please do it as early as possible! Bankers tell us, if you wait till the deadline for payment and then ask for assistance, it is TOO late. Do it as early as possible, to give time to make plans. Part of this discussion is, what are you going to do to reduce the shortfall and stay in business?

- Action plans that you need to carry out: Once you have identified your shortfalls and the time it will happen, take a hard look at which **payments you can postpone for a year** (talk to the creditors). For example: some insurance companies will keep the benefits in place for another year until you can resume payments.

**Creditors (Banks/agribusiness/suppliers) are normally willing to take reduced payments for a year -it is better than when you stop paying and they risk losing the whole amount-again do this after consultation. Keep the clock ticking!**

- The concept of a **zero-budget** approach is very useful. Normally when we do budgets for the next 1-2 years, we just escalate the current expenses with inflation etc.

You have to take a long/hard look at what expenses can be dropped or reduced significantly! Remember, you are in crisis mode and the business/family needs to survive. There are numerous examples where you can cut expenses. Yes, it will require sacrifices.

- Selling assets to assist cash flow** is always an option, but not income generating assets. For example, do you really need all the vehicles and their associated costs? You can buy again! Smaller amounts quickly add up to substantial amounts over a one year period.
- It is time to call a **family meeting**! I am really shocked when talking to groups of farmers and I ask who have regular family meetings to talk about business and planning?

It is about 5 percent! The risk of failure is very real if you and your family members are not on the same page and do not talk to each other on the road forward!

You can always make money again, but to lose your family in a time like this, is a big risk to survival.

Children and even wives/husbands are kept in the dark and on a high expenses lifestyle pretending everything is OK!!

## This discussions obviously also include your management and workers.

This is a very good time to have a good look at your **3-5 year business plan**. You need to clarify your goals for the next 3-5 years very clearly. You also need to clarify the action steps for each year, to move from your current position to your goal in the business plan.

This is not a time to make haphazard decisions and to start new enterprises you are not very familiar with. Paying school fees with new enterprises is a given and you can't afford to waste any cash flow at this stage of the cycle. You also can not take the risk of committing scarce capital to new enterprises unless you are 110% sure it will be successful and be cash positive from the start.

Most of us underestimate the cash and capital needed to establish a new enterprise! It takes about three years (production cycles) to establish a new enterprise.

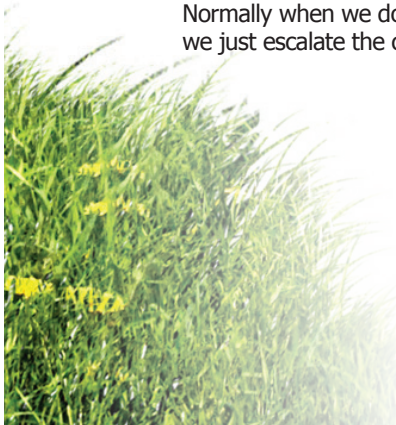
**To conclude**, there are practical action plans that you can take to survive this downturn and be ready for the upswing! You must have a longer term plan with goals and action steps (write it down and share it with family/partners/workers). Put a new cash flow budget in place and discuss it with your financiers/creditors.

Negotiate extended payment terms and reduced amounts to pay, but stick to the plan. Take a serious view on what assets can be sold, which commitments can be stopped/extended and what expenses can be cut. Remember you want your business to be in a fit state to benefit from the next upturn.

I am of the view that this drought with high food prices and even shortages, will change agriculture. Prices will stabilise on new higher levels. Government will be forced to rethink agricultural production and food supply policy.

The whole political landscape is also changing for the better(?).

Therefore make sure your business is lean and fit to benefit from the new upswing –most probably starting late 2016 or early 2017.





# mist-control®

**drift retardant and deposition aid for pesticide sprays**



## OFF TARGET PESTICIDE DRIFT IS NO ACCIDENT

**Mist Control** is an effective, easy to use product for drift retardation and deposition improvement in spraying operations.

When use in accordance with label instructions and applied with sound technology, **Mist Control** will effectively improve deposition within the intended swath area.

The degree of drift hazard varies with the type of pesticide, application conditions and vegetation near the sprayed area.

***Remember, pesticide drift is no accident. Common sense and sound application technology must be followed when spraying pesticides. Mist Control will retard, but not totally eliminate drift.***

Ultimately drift minimization is the responsibility of the applicator.

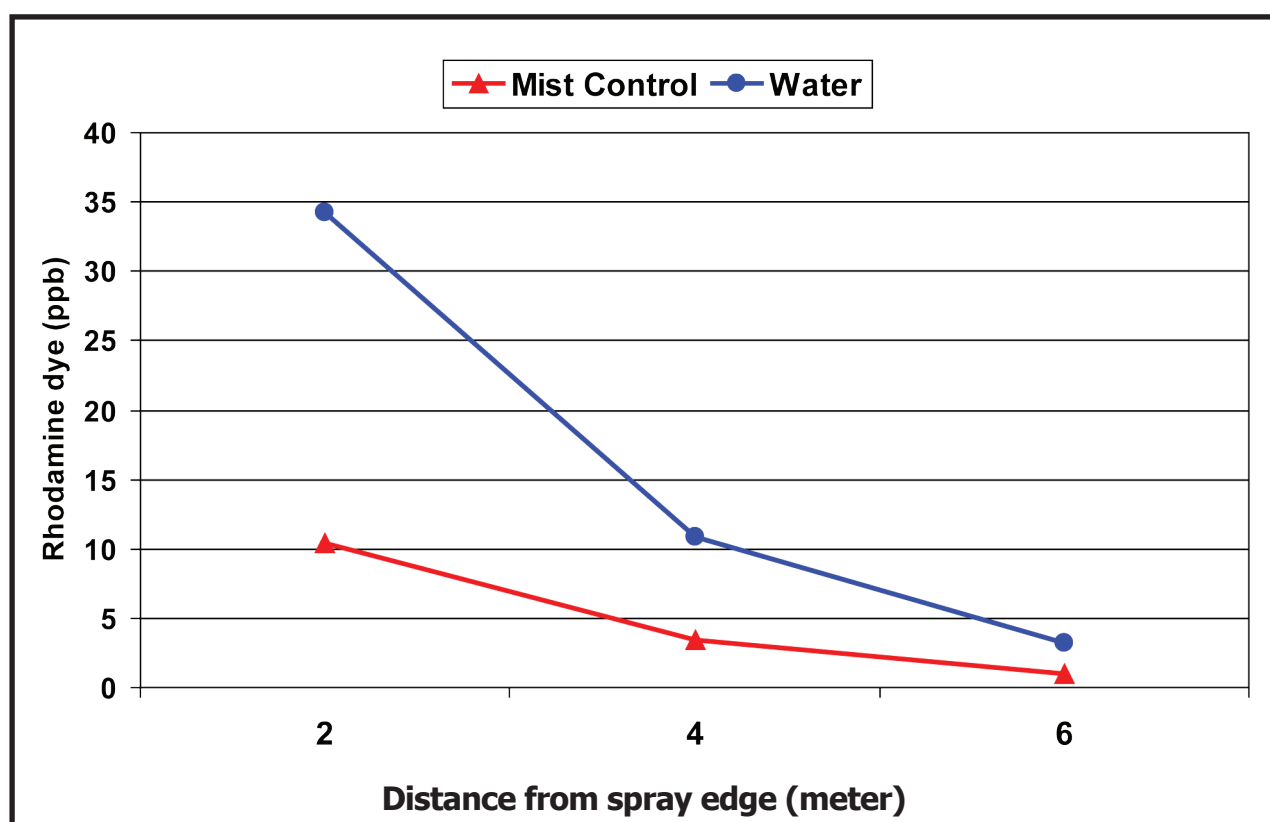
### SPRAY DRIFT TRIAL

The effectiveness of **Mist Control** to minimize drift was evaluated by Agrobiology Research in a field study. Treatments were water alone and water plus **Mist Control**.

Targets were placed at three distances from the edge of the spray boom for lateral drift determination at 2 meter, 4 meter and 6 meter. Two target types were used, 75cm X 50 cm water sensitive paper and 4 cm filter paper.

Rhodamine dye at 0.1% was added to the spray solution. Water sensitive paper targets were placed under the left, centre and under the right section of the spray boom. The filter paper disks were rinsed with 10 ml water and the Rhodamine concentration were determined by using a fluorometer. The water sensitive paper was scanned and analysed using a Pro 5 scanner.

### LATERAL SPRAY DRIFT – DYE CONCENTRATION WATER SENSITIVE PAPER



The data in the table indicated that **Mist Control** reduced spray drift three times more than just water.





	2 Meter	4 Meter	6 Meter
Mist Control	10.4	3.4	1.0
Water	34.2	10.9	3.2

Data collected from water sensitive paper indicated in the table that Mist Control minimize drift 3 times more than just water at 2, 4 & 6 meter from the end of the spray boom

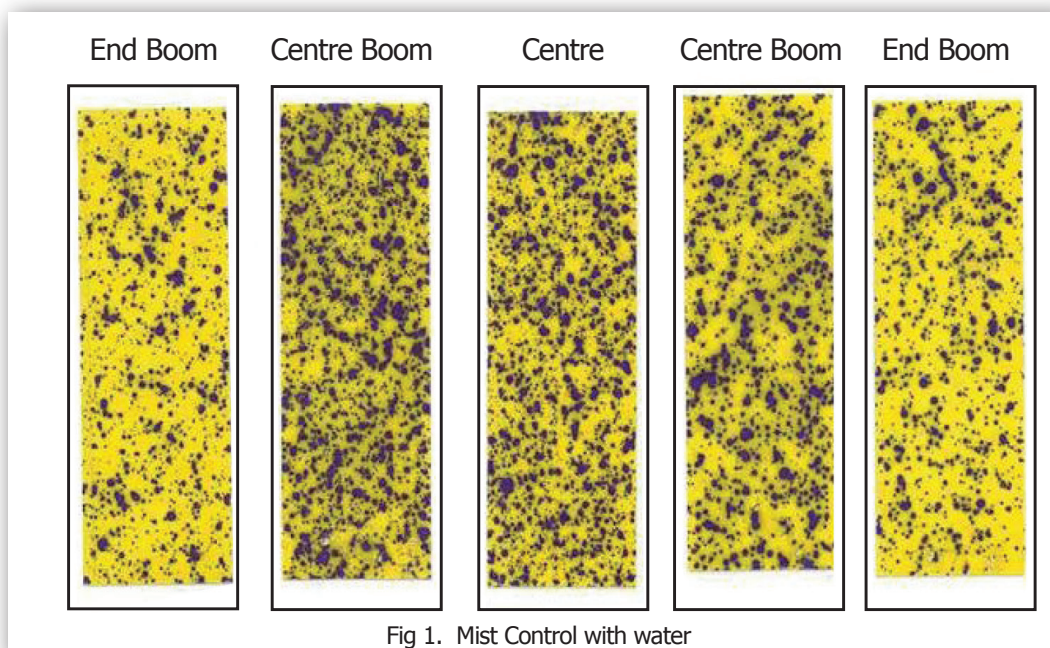


Fig 1. Mist Control with water

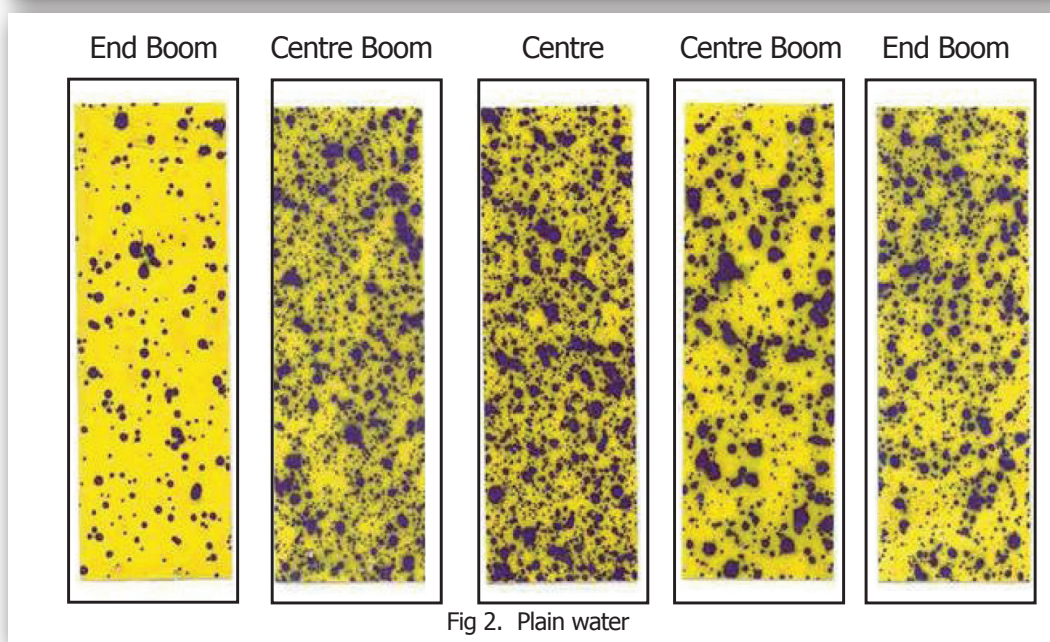


Fig 2. Plain water

The photos above of the water sensitive paper indicates that the droplets of Mist Control are more evenly spread out and with no extra large droplets that could lead to run off of spray water, which resulted in poor coverage with less effective pesticide performance

#### KEY POINTS

- Mist Control is well suited to aerial applications.
- Always add wettable powder pesticides before Mist Control.
- Always add liquid pesticides after wettable powder pesticides.
- Always add Mist Control as the last ingredient to the spray tank.
- Mist Control does not produce stringy or mucous like material typical of other drift retardants.
- Not salt or hard water sensitive.

#### • Ideal for:

- Growers using shielded sprayers.
- Growers with high pressure/air assisted spray equipment.
- Growers close to residential areas.
- Growers concerned about off target drift.
- Growers using particularly hazardous chemicals



# LIMPOPO TOMATO TRIALS

## MARLO FARMS

Written by: Johan Stassen-Product Manager



Picture 1: Enoch Deetlefs (Production Manager at Marlo) and Stephen Le Roux (Hygrotech), left, inspecting the determinate trial field.

Hygrotech and Seedcor were fortunate enough, this past season, to do a planting of their full tomato range at one of the leading saladette tomato growers in the Limpopo, Marlo Farms.

In conjunction with Marlo Farms, North of Polokwane a range of 4 indeterminate saladette's and 10 indeterminate round tomatoes were planted under hail net structures.

In open-field plantings 4 determinate round and 15 determinate saladette varieties were planted on short stakes with a range of processing varieties for the hawker market un-staked.

From the word go it was clear that these trials would provide priceless information. Before first pick, heavy pressure of Tomato Torado Virus was prevalent in the structures where the indeterminate tomatoes were grown.

A clear distinction could be made between varieties with high and intermediate resistance as well as susceptible varieties.

This trial proved once again that Hygrotech and Seedcor offer a range of excellent Indeterminate tomatoes with competitive yield and quality with the added benefit of Tomato Torado Virus resistance on selected varieties.



Picture 2: The indeterminate trials were of exceptional quality throughout the evaluation process.

Varieties	V	F2	F3	N	ToMV	TYLCV	TSWV	For	Ff:1-5	LT	Pst	As	*ToTV
<b>Indeterminate Round</b>													
<b>Batyla</b>	HR	HR	-	IR	HR	IR	HR	-	-	-	-	-	HR
<b>SCX 61068</b>	HR	HR	-	IR	HR	IR	-	-	-	-	-	-	S
<b>Boudica</b>	HR	HR	-	IR	HR	IR	IR	-	-	-	-	HR	HR
<b>Lola</b>	HR	-	HR	IR	HR	IR	IR	-	-	-	-	-	HR
<b>Hechichero*</b>	HR	HR	-	IR	HR	IR	-	HR	HR	HR	-	-	HR
<b>Baikonur*</b>	HR	HR	-	IR	HR	IR	IR	-	HR	-	-	-	IR
<b>E15A.50472*</b>	HR	HR	-	IR	HR	IR	IR	-	HR	-	-	-	HR
<b>Indeterminate Saladette</b>													
<b>Pamela</b>	HR	HR	-	IR	HR	-	IR	-	-	-	-	-	HR
<b>Portia</b>	HR	-	HR	IR	HR	IR	IR	HR	-	-	HR	-	IR
<b>SCX 643*</b>	HR	-	HR	IR	HR	IR	IR	-	HR	-	-	-	HR

**Tabel 1: Complete disease resistance packages of the most important Indeterminate varieties from this trial**  
**\*ToTV (Tomato Torado Virus resistance is based on field observation during this trial)**



The following varieties from the indeterminate trial are varieties to take note of:

### BOUDICA

A good disease package in combination with continuous good set led to Boudica being one of the highest yielding varieties in the trial.

### LOLA

This variety consistently produced the largest average fruit sizes throughout the trial. With the added benefit of F3 resistance it will be a force to be reckoned with.

### HECHICHERO\*

This was by far the strongest plant in the trial. Hechichero offers growers a very impressive disease package and excellent fruit quality.

### E15A.50472\*

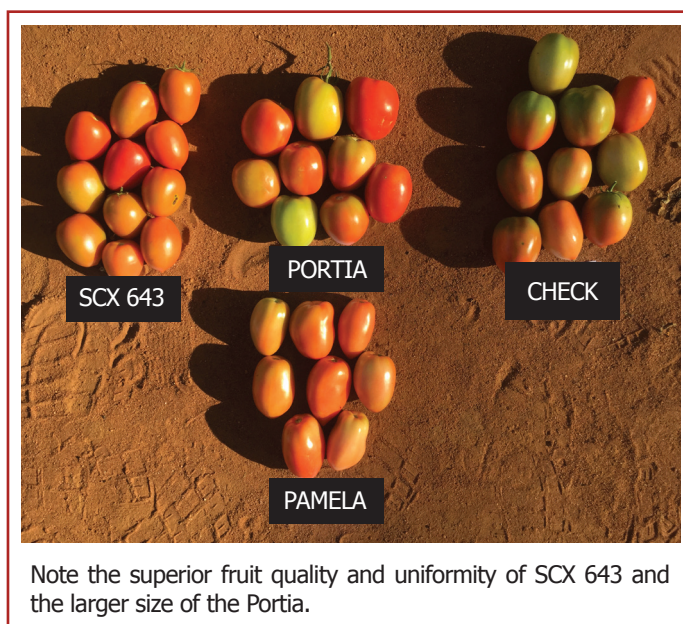
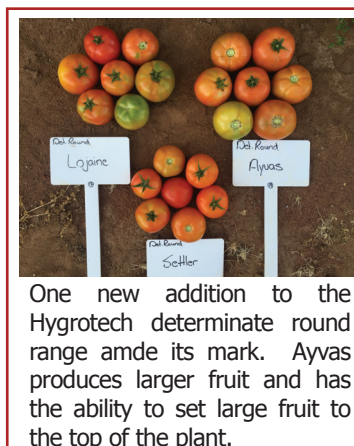
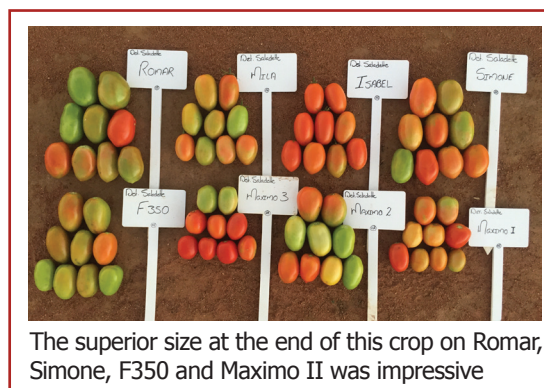
Very good fruit set throughout the trial. Regular trusses of 5-6 fruit ensures high yield potential under most conditions.

### PORTIA

One of the best large saladette varieties in the Hygrotech range that compared well with the standard variety grown by Marlo. It is similar in size with a more uniform green shoulder and the added benefit of Fusarium race 3 resistance. Portia produces excellent fruit size in the top of the plant.

### SCX 643

Although slightly smaller than Portia and the standard variety in the trials this variety has by far the best internal and external quality. SCX 643 also has high resistance to Fusarium race 3.





# HYGROTECH BRASSICA DEVELOPMENT

**Written by:** Michael Pinto & Robert Young

Product Manager: Michael Pinto, Product Specialists: Pieter Vermaas & Robert Young

*This season has been an exciting time for Brassica development within Hygrotech. We have achieved great success from trial results with new Cabbage, Broccoli & Cauliflowers varieties to varieties in more specialised segments such as Sprouting Broccoli and Kale - which have started to attract a lot of interest in the South African market.*

Hygrotech is proud to launch the following varieties this season...

## LEGEND:

- Full Commercial: Commercial seed is available
- Semi Commercial: Commercial seed is limited at present.
- Trial: Trials still in process but look promising. Commercial is either not available or very limited.

## BROCCOLI OVERVIEW

### **Majestic** New / Semi Commercial

Majestic is a new all-round cultivar, with dome shaped heads & good storage potential. The variety has good cold and heat tolerance and has performed well in various trials completed on a national level.

Majestic produces dark green smooth heads with medium-fine beads suited for fresh, pre-pack as well as frozen veg markets. The variety is also quite resistant to hollow stem rot.

Maturity (transplant to harvest) is reached between 75 to 85 days.

**Majestic is an outstanding variety!**



### **Cyclone** New / Trial & **Crystal** New / Trial

Cyclone & Crystal are varieties still in trial phase, but they are already starting to show potential in our more affordable broccoli segment which includes our current commercial varieties Gem, Jade & Royal Max.



## CAULIFLOWER OVERVIEW

### **Crenique** New / Commercial

Crenique is our new winter variety in Lagardo's slot. The variety has good uniformity, disease tolerance and pure white curds with good protection and head fill.

The best growing period for Crenique is between mid-December to end June. The cultivar is ready for harvest in 85 – 95 days from transplant. Trials have shown good head sizes that range from 800 – 1200g, making it suitable for pre-pack and freezing.

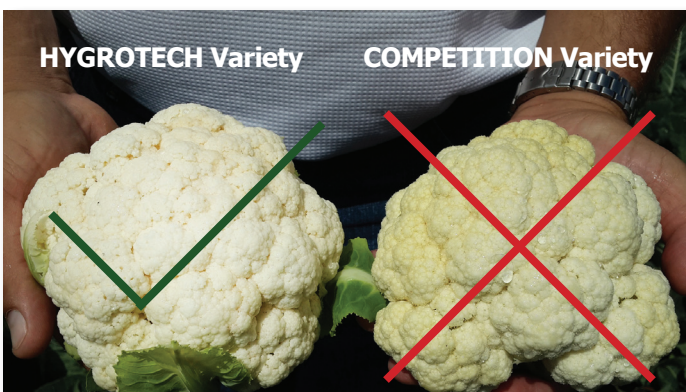


### **Telergy** Commercial

Telergy has now become Hygrotech's standard summer variety that also does well in mild winter conditions (i.e Brits & KZN etc).

The variety has become famous for its excellent curd protection due to its tight wrap and has a good field holding capacity which is beneficial to farmers looking for flexibility at harvest time.

The cultivar is characterised by its strong, upright growth, blue-green leaves and curds of high quality and weight.





## CAULIFLOWER OVERVIEW

### Livia New/Commercial

Is fast becoming our cabbage of choice for farmers looking for a medium to large (4-6kg) size variety with good black rot tolerance.

The variety is adaptable to warm and cold conditions - doing especially well in winter plantings! The variety has large / strong wrapper leaves with good head protection. The head is characterised as round, blue / green and sits higher off the ground which helps to deter various diseases due to "sitting" in water.

Livia has very good uniformity and vigour and you can expect days from transplant to be from 85 – 110 days (depending on season and management)



### Menina New/Commercial

Menina is a compact variety with a medium head size between 3 - 4.5kg. The variety is extremely fast (55-65 days from transplant) and has high tolerance to Fusarium Yellows & Black Rot. We have received a lot of interest in the variety in South Africa - in the medium size "bag market", as well as in other African countries due to its competitive price, disease tolerance and vigour.



### Rose New/Commercial

Rose is a wonderful red cabbage that is very adaptable to different plant densities and therefore head sizes (Baby: 1-1.5kg or Medium: 1.5-3kg).

Rose has a nice round head with good compactness and thinner midribs which give the variety a more attractive look for fresh or the processing segment. Rose has a good field holding capacity with a good shelf life. The variety has remarkable tolerance to both hot / cold temperatures, black rot and Boron deficiency.



### Maya New/Semi Commercial

Maya is Hygrotech's new baby! ....that is.....a small frame variety suited for baby cabbage production. The variety is early maturing and adapted to dense plantings.



## KALE OVERVIEW

Kale is fast becoming known as one of the new "Superfoods" together with Spouting Broccoli.

The interest in supplying Kale for the various markets in South Africa is growing at a rapid pace and Hygrotech is pleased to announce that we are now supplying a range of Kale varieties to the South African market and grower.

### Health Aspects:

During World War II, the cultivation of Kale in the U.K. was encouraged by the Dig for Victory campaign. The vegetable was easy to grow and provided important nutrients to supplement those missing from a normal diet because of rationing.

Kale contains more than 1,000% of the recommended daily intake of vitamin K, 98% of vitamin A and 71% of vitamin C.....that's more than an orange!

Kale is also a great source of calcium, magnesium, iron, antioxidants, and has a good balance of omega-3 and omega-6 fatty acids, necessary for heart health.

List of health benefits associated with Kale:

- High Nutrient Profile
- Heart Health
- Diabetes Management
- Weight Management & Digestion
- Cancer Prevention
- Brain Health
- Cholesterol Management
- Bone Health
- Skin & Hair Care

## VARIETIES:

### Southern Blue Commercial

Southern Blue is a dwarf blue-green curly kale type that is fast becoming our leading variety. The variety compliments salads and is excellent when steamed. The variety is also tolerant to cold weather.





**Cavolo Nero** *New/Commercial*

Cavolo Nero is also known as black kale, black cabbage, Tuscan kale, or by its Italian names Lacinato and Nero de Toscana.

With its distinctive long, dark green, almost black leaves, Cavolo Nero originates from the fields of Tuscany where it was first believed to be grown in 600BC.



Generations of Italians have appreciated the delights of Cavolo Nero and now South Africans are catching on to its benefits too. Many traditional Italian & Portuguese dishes are made with Kale, from soups through to main meals.

Cavolo Nero is an extremely versatile vegetable with a marvellous rich, intense and slightly sweet flavour, which means it can be used in a number of different ways. It is great in hearty meals like minestrone soup, but is also delicious in lighter dishes such as salads.

**Borecole Red** *New/Semi Commercial*

Borecole Red is more premium type Kale, with attractive, scarlet coloured curled leaves that complement salads etc.

**Russian Red** *New/Semi Commercial*

Russian Red is a highly indented leaf with a green-grey colour and an anthocyanic stem that looks attractive as a mature leaf as well as a baby leaf.

The variety is characterised as having a mild cabbage flavour.

**SPROUTING BROCCOLI OVERVIEW**

Sprouting Broccoli, also known as Broccolini® & Tenderstem®, is a green vegetable similar to broccoli but with smaller florets and longer thin stalks. Often misidentified as young broccoli, it is a hybrid of a broccoli and Chinese Kale - both cultivar groups of *Brassica oleracea*.

**Like Kale, Sprouting Broccoli is also known as a "Superfood" as well as for their superior flavour ....from the floret to the stem!**

The entire vegetable is consumable, including the occasional yellow flower. Common cooking methods include sautéing, steaming, boiling, and stir frying. Its flavour is sweet, with notes of both broccoli and asparagus, although it is not closely related to the latter.

Nutritionally, there's twice the vitamin C content in Sprouting Broccoli than in the same fresh weight of oranges, not to mention it is also high in vitamin A, B6, potassium and a good source of iron, calcium and folic acid.

**VARIETIES:**

Hygrotech has decided not to limit our Sprouting Broccoli range with exclusivity agreements, which are common with Broccolini® & Tenderstem®. Instead we have decided to make our varieties available to any grower or market.... any shape or size! We believe our clients come 1st.... not our varieties! Hygrotech is already known for Apollo, our leading commercial Sprouting Broccoli, but we are in the process of launching new varieties in this segment that we are all quite excited about!

*Here is an overview of our range.....*

**Apollo** *Commercial*

Apollo is Hygrotech's commercial standard at the moment and is known for its high production potential and slightly thicker and heavier stems.

**Royal Tenderette** *New/Trial*

Royal Tenderette is a new variety that Hygrotech has been trialing. Initial trial results have been favourable, showing the variety has longer and thinner stem length with good smoothness and flavour.

**8840** *New/Trial*

8840 still needs a commercial name. Early trial results indicate a strong plant with earlier production and the stems are shorter and thicker.



# FEEDING your CLIVIA'S

Hygrotech's special fertilizer mixtures and foliar feeds can be used to supplement soil applied fertilizer or to help the plant overcome periods of maximum nutritional uptake or when signs of specific nutritional disorders become noticeable.

These fertilizer mixtures are compatible with most insecticides and fungicides. It is however advisable to first test the compatibility of the product with that of other products when applying a cocktail spray. This can be done by first mixing small quantities of the various products in a glass jar and observe if any incompatibility exists between the products.

## Benefits of using foliar fertilizers:

- Yield increases
- Longer harvest period
- Resistance to disease and insect pests
- Improved drought tolerance
- Enhanced crop quality
- Increased uptake of nutrients from the soil

Descriptions, summaries and applications of Hygrotech's foliar feeds and fertilizers.

## Kic-Start (7:3:1) (Root application) (Reg.No. KS442)

Kic-start is a water soluble nutrient solution with chelated micro elements which can be used as a root drench when transplanting seedlings. Kic-start is formulated to stimulate growth during the first crucial weeks after transplanting. Kic-Start helps seedlings to recover faster when transplanted, and gives the seedlings a "kic-start" when planted to start growing.

## Nitrospray Plus (Root and foliar application) (Reg.No. K4415)

This is a liquid NPK foliar spray which incorporates high nitrogen levels with chelated micro nutrients. The product is applied to all crops while still in the vegetative growth phase.

The product stimulates leaf and stem growth when needed. An additional bonus is that the product contains the growth hormone, cytokine which stimulates root formation. This hormone counters the negative effects of high nitrogen applications.

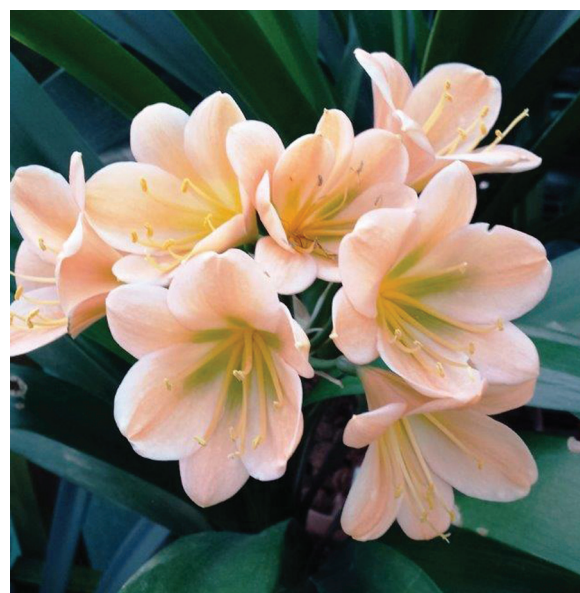
## Hygroboost Flo (Foliar application) (Reg.No. K6252)

Hygroboost Flo is a highly concentrated Nitrogen with micro-nutrient mixture, which can be applied as a water soluble foliar spray. Hygroboost Flo is formulated to stimulate plants after stress situations such as cold, drought, hail, bad soil conditions or when very high temperatures occurred.

Hygroboost Flo stimulates side shoot development which in turn increases yield. Hygroboost Flo decreases flower and fruit drop if it is sprayed in a preventative program. Hygroboost Flo has the total range of chelated micro-elements. For best results use Hygroboost Flo with a sticker such as Nu-Film P or Nu-Film 17.

## Fosfaspray (Root and foliar application) (Reg.No. K2248)

Fosfaspray is an NPK mixture with high levels of phosphates. It is used to supplement phosphate levels within the plant during periods of high demand or when the phosphate movement within the plant is slow. Fosfaspray can be applied as a foliar feed or as a soil application.



## Potaspray (Root and foliar application) (Reg.No. K2247)

Potaspray is an NPK mixture with high levels of potassium. It is used to supplement potassium levels within the plant during periods of high demand. This usually occurs during the fruit set and fruit growth stages. Potaspray enhances the quality and post harvest storage of fruit.

## Calmabon (Root and foliar application) (Reg.No. K5272)

Calmabon is a Ca, Mg, N mixture in combination with boron and molybdenum. The product is used when the ratio's of Mg and Ca within the plant and soil is sub-optimal. It is used extensively to overcome the blossom-end rot and premature fruit rot in many crops. In these cases it must be applied directly onto the fruit.

It is generally accepted that the ratio between Calcium and Magnesium in the soil and plant should be a cation composition of 65% to 25% on a me % basis. Calmabon is ideally suited to meet these requirements. An excess of Calcium may result in a Boron deficiency. The Boron in Calmabon will solve this problem.

## Millerplex (7-3-6) (Foliar application) (Reg.No. K6899)

Millerplex is a proprietary liquid fertilizer formulation containing macro nutrients and sea plant extracts from (*Ascophyllum nodosum*) Kelp. Millerplex may be used at any time to help alleviate crop or nutritional stress and maintain healthy growth.

*The information provided is given in good faith as a general guide only.*

*Significant variations may occur due to geographic location, climate, soil type, soil conditions, cultural practises and other grower and development factors. No liability will be accepted by Hygrotech or any of its representatives as to the accuracy of this information.*

Contact: Randolph Young at our George Branch for more information on Clivia's @ Tel: 044 870 7808

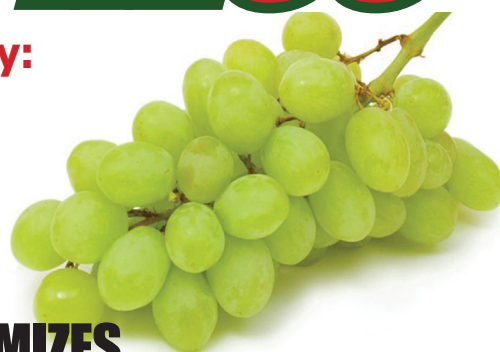


# Sweeten Your Harvest and Profits with Miller's **SUGAR EXPRESS**

Patented Technology By:



**SUGAR EXPRESS MAXIMIZES**



**Brix Development • Colour • Weight • Vine Strenght • Firmness**

## THE PROBLEM

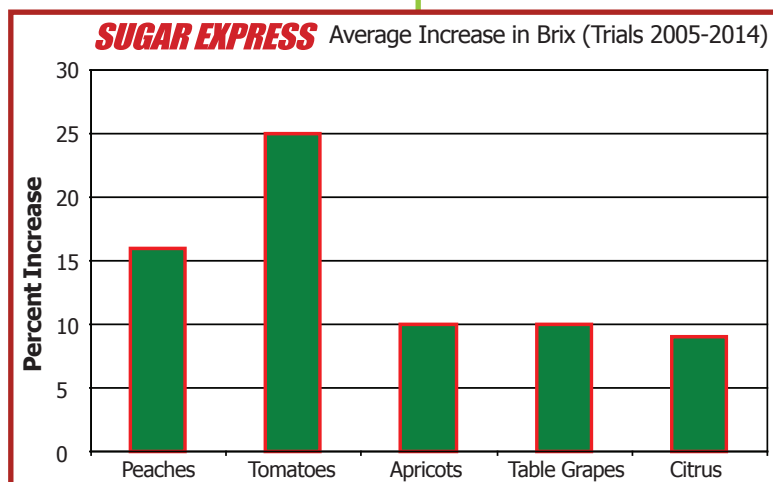
Uniform fruit ripening, colour development and Brix accumulation can be affected by various factors including but not limited to, photosynthesis, leaf age, nutrient deficiencies and disease pressure.

As plants begin to senesce closer to harvest, photosynthesis and metabolism may be reduced. This can lead to uneven ripening and poor sugar development.

## THE SOLUTION

**SUGAR EXPRESS** applications maximize normal photosynthetic processes which are a driving force required for Brix accumulation.

Earlier Brix accumulation may improve ripening and colour which is necessary for uniform quality in many crops.



## DIRECTIONS FOR USE

**SUGAR EXPRESS** may be applied from 30 days before harvest up to harvest.

Maximum Brix improvement has been seen when applications are made close to harvest.

Application rate is 7 to 10 kilogrammes per hectare.

Tank mixing Miller Colour Up® with **SUGAR EXPRESS** has enhanced ripening, colour and firmness.



Sugar Express applied at 10 kg/ha close to harvest has increased Brix levels above the threshold required for harvest



# MAXIMO II

Performs in the Limpopo Bushveld!

Maximo II was planted on short stakes by Mr Pieter Grobler in the Swartwater region and is exceeding all expectations. The uniform, large sized fruit with excellent quality fits the requirements of both the fresh and hawker markets perfectly. Fruit size obtained during the first pick ranged between 140 -160g and the latter sets looked very promising.

Written by: Johan Stassen - Product Manager



**Picture 1: Very uniform fruit with excellent size ready for the market**

One of the main characteristics of Maximo II is the ability to maintain good fruit size right to the end of the crop.



**Picture 2: The uniformity of the fruit size and shape on the plant can clearly be seen in this picture.**

Maximo II provides growers with the option of growing it flat on the ground and will also perform very well staked, as proven in this planting in the Swartwater area.



**Picture 3: Note the uniform growth of staked plants of Maximo II**

Maximo II provides growers with a good disease resistance package of: HR: Verticillium ; Fusarium 0&1(race 2) IR: Nematode; Tomato Spotted Wilt Virus & Tomato Yellow Leaf Curl Virus



# PROCRAFT

## REVEALS IT-SELF AS THE NEW SWEET PEPPER SENSATION IN THE LOWVELD!

Written by: Johan Stassen - Product Manager

Early success from Hygrotech's new "On Farm Trial Strategy" materialised in the form of commercial sweet pepper success in the Mooketsi Valley

Procraft made its mark with earliness, quality and being the top yielder from 15 cultivars, including opposition varieties in yield trials during the 2015 season.

Kallie Coetsee in the Mooketsi Valley was one of the first growers to plant Procraft commercially and it soon became clear that it was something special.

Some of the outstanding attributes were

- Earliness
- Strong uniform plants
- Improved early leaf cover
- High quality blocky fruit

Apart from the fact that Procraft is fairly early it still has the ability to give growers a long, extended set through winter.

**Procraft offers growers a very good disease package of Bacterial Leaf Spot race 1-3, Tomato Mosaic Virus, Potato Virus Yellows and Tomato Spotted Wilt Virus.**

**Picture 1:** Note the well balanced early set of Procraft • **Picture 2:** Procraft field at Kallie Coetsee. Uniformity of the field is clear in this picture • **Picture 3:** Uniformity of the first fruits picked into the crates was remarkable •

**Picture 4:** First Procraft packed and ready to leave for the market • **Picture 5:** The excellent leaf cover of Procraft will limit sunburn risk





# 'LANGSDIEOEVEVER'Show

**The annual agricultural show 'Langs die Oever', took place again on the 8th and 9th April 2016.**

The show is known for its exhibitions from agricultural companies and suppliers, as well as numerous tractor and implement demonstrations.

On the Friday evening Steve Hofmeyer took to the stage to the great excitement of a big audience.

The Hygrotech booth once again set the example and was colourfully presented. Tzaneen branch personnel **Mandi Badenhorst** and **Lanese Fox** ( right on photo ) did a sterling job of looking after the exhibition and providing farmers with information.



## SCANDINAVIAN EXPERIENCE



Temperate grass trials in Denmark

*Robyn Nicolay, KZN Technical Officer : Pastures and Forage, recently attended a Scholarship Programme on sustainable agriculture at Hogskolen i Hedmark, Hamar campus, Norway for a semester.*

During this time, Robyn was lucky enough to travel and see Norway in its entirety as well as other Scandinavian countries.

In between lectures, she managed to also visit DLF, based in Denmark. DLF is the world's leading international supplier of grass seed and a major supplier of seed to Hygrotech.

She was taken to the company's breeding station in Boelshøj, one of Europe's most outstanding grass breeding units.

In addition, she was fortunate enough to be given a behind the scenes look at the inner working of DLF's headquarters in Roskilde, Denmark as well as spending time with DLF professionals, Ole Gronbaek, Søren Busk and Thomas Didion.

**A truly enriching experience indeed !**



# WORDSEARCH

Lets test your knowledge. ....



R	F	Q	G	X	D	G	H	G	A	K	J	F	D	E	H	E	G	B
Y	V	S	A	W	I	N	S	T	O	N	U	U	J	O	E	A	S	C
W	O	R	S	S	Q	W	R	A	D	F	G	H	K	Y	H	U	H	T
D	N	G	D	Q	C	O	P	P	E	R	C	O	U	N	T	F	F	Q
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C	N	G	U	R	K	F	R	J	W	T	Y	H	L	U	C	E	R	N
B	U	H	G	C	J	T	E	F	T	D	E	J	D	C	C	V	G	Y
S	F	Y	T	V	H	D	M	S	J	E	R	U	D	O	L	F	F	I
X	I	T	E	B	G	R	A	S	J	L	J	L	H	G	F	D	S	F
B	L	Y	D	N	F	T	G	W	A	Q	R	I	R	T	Y	U	I	S
N	M	W	S	T	D	Y	N	Z	Q	Q	Z	A	L	L	T	E	T	I
G	P	W	Q	H	S	U	A	X	A	D	T	X	N	K	F	T	G	S
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Y	S	Q	O	E	Q	R	E	X	U	I	Z	B	Z	O	W	L	J	E
K	D	E	W	C	E	U	W	P	O	X	A	X	U	K	C	A	K	Y
L	U	Y	P	O	R	T	I	A	Y	K	I	Q	A	N	A	C	L	E
I	R	H	R	Q	Y	A	F	L	X	L	R	W	A	X	K	S	I	W
W	G	J	Y	S	J	W	F	L	X	B	Y	D	F	G	X	E	O	S
A	A	O	Y	P	L	Q	K	T	W	R	T	X	X	W	S	D	R	F

**Find the following words... ENJOY**

VONDEN  
HTX  
RONDEX  
BUNKER  
MAGNATE

WINSTON  
MAJESTIC  
BOTIOLA  
JULIA  
TALON

COPPER COUNT  
WALTHAMAX  
HYGROMIX  
RUDOLF  
DURGA

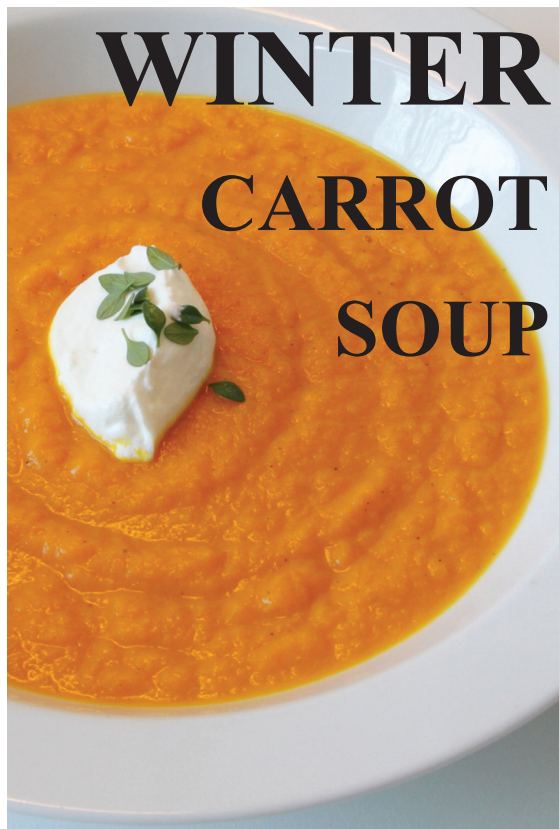
CLAIR  
KENNEDY  
KURODA  
LUCERN  
PORTIA

SEMAL  
BOUDICA  
NUFILM P  
SISLEY  
TYRIA

SPOREKILL  
PYTHON  
PROCRAFT  
ESCALATE



# WINTER CARROT SOUP



## INGREDIENTS

- 45g unsalted butter
- 1 medium onion, finely chopped
- 3 cloves garlic, finely chopped
- 10 medium Rugani carrots, peeled and cut into 2.5cm slices
- 2 Litres chicken stock(homemade or low-sodium tinned)
- 2 Tbsp sugar
- 1 tsp salt
- 1 tsp freshly squeezed lemon juice
- Freshly ground black pepper to taste

Heat the butter in a large soup pot over medium heat. Sauté the onion and garlic until soft. Add the carrots and cook until somewhat tender, stirring occasionally.

Pour in the broth and sugar. Season the soup with the salt. Bring to a boil, lower the heat, and simmer, covered, until the carrots are very soft. This should take about 30 minutes. Remove from the heat and allow to cool.

Working in batches, transfer the carrot soup to a blender and puree until smooth.

Return the carrot puree to the pot and reheat over medium heat. Stir in the lemon juice and season with pepper.

Divide among warm soup bowls and serve immediately.

scrumptious • healthy • fresh • scrumptious • healthy • fresh

# DR. FAQ

Dear Dr.FAQ,

**I am vegetable farmer. I am having difficulties identifying diseases on my crops. If I Google the symptoms it seems that all my plants have cancer and will most likely die. Do you have a solution to my dilemma?**

Regards

**Very-confused-by-google**

Dear **Very-confused-by-google**

*I understand your problem completely. Identifying diseases is extremely difficult as some symptoms may look similar or that you diagnose a secondary infection instead of the primary cause.*

*Lucky for you Hygrotech offers a service where the latest technology is used for the identification of diseases for a small fee.*

*Specialised cards are used to collect a sample of the infected crop and then analysed by PCR (Polymerase Chain Reaction) to identify the disease using the DNA collected. This procedure ensures quick and accurate diagnosis.*

Kind regards  
Dr.FAQ







**YOU USE THE BEST EQUIPMENT  
AND VARIETIES YOU CAN GET  
YOUR HANDS ON...**

## **NOW do the same with your fertilizer**

- 19.8% Nitrogen
- 50 % Calcium
- Extremely slow leaching of nutrients
- 2/3 of calcium is immediately available to the plant
- Liming effect on soil
- Improved crop yield and quality compared to other nitrogen sources
- Lower nitrogen application rates can be achieved
- Activated and non activated carbon source
- Suppression of certain soil borne pathogens\*
- Suppression of certain germinating weeds\*
- Enhancement of certain beneficial micro-organisms\*

**THE FIRST FERTILIZER TO FUNCTION ON A BIOCHEMICAL  
LEVEL TO IMPROVE CROP QUALITY, IMPROVE YIELD AND  
DISRUPT SOIL PATHOGENS, WEEDS AND PESTS\***

\*Perlka® may have stated effects if used in accordance to regulations and within prescribed parameters. No guarantees or claims has been made with said statements and said statements are based on results of external trials and scientific papers from third parties. Perlka® therefore in no way guarantees or gives any warranty of the results as stipulated above.

**HYGROTECH**  
SUSTAINABLE SOLUTIONS

**Contact your nearest Hygrotech office for more information**

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