

the FORUM

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Vol.1
2020



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SUSTAINABLE SOLUTIONS

INSIDE: Vegetable cultivars | Agri-Chemicals and fertilizers | Forage and pasture | Miscellaneous



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from the

EDITOR'S PEN



SOLACE IN NATURE

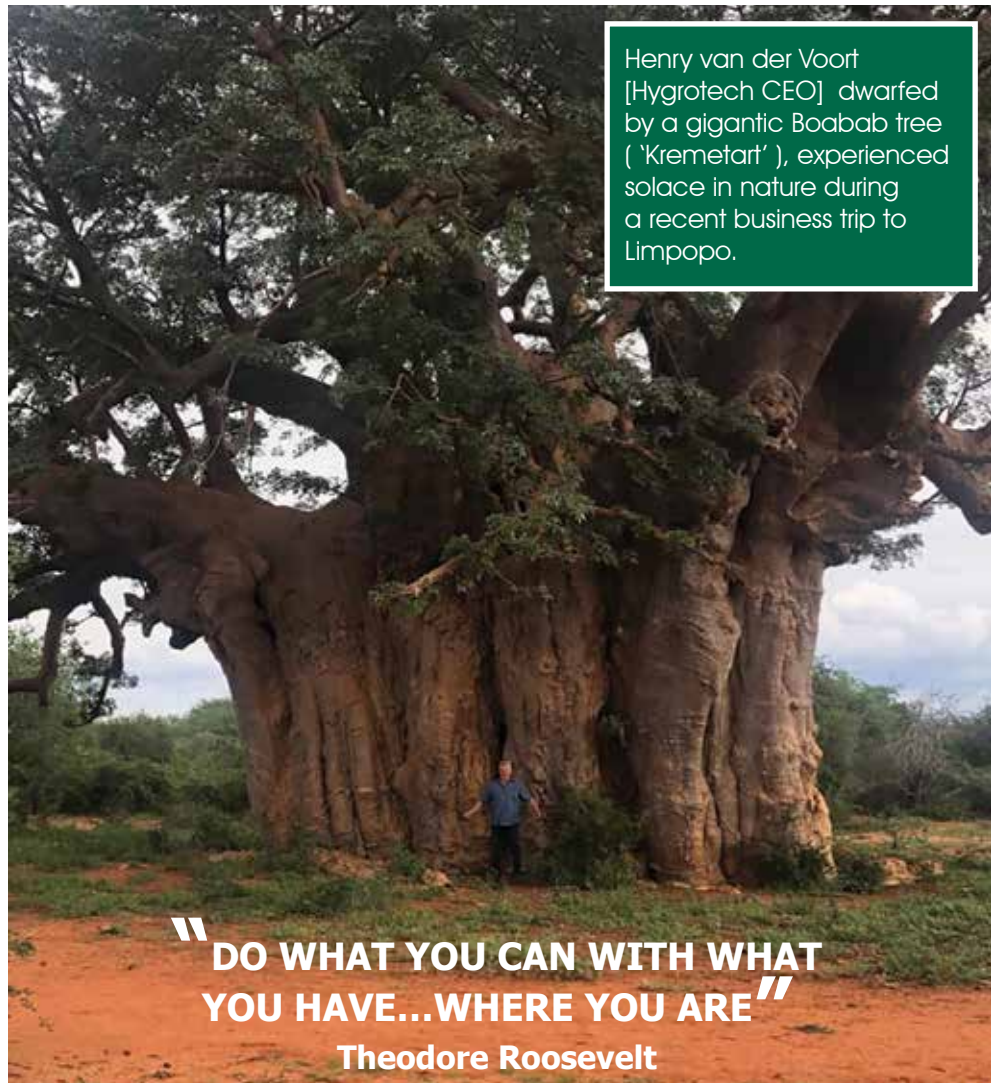
Solace is defined as 'comfort or consolation in a time of distress, misfortune, unexpected havoc or sadness'

The world is in turmoil, so much we know already. The global viral pandemic has caused many infected sick people and sadly also huge loss of life. The financial impact is beyond catastrophic and global economies will suffer for some time resulting in a roll-on effect of predicted hardship for millions of people. That is the bad news.

The good news is that amidst this doom and gloom, there will **always** be hope and solace.

Helen Steiner Rice said " Comfort comes from knowing that other people have made the same journey and solace comes from understanding how others have learned to sing again"

Nature provides solace 'par excellence'... whether you are a religious person or not. Get outside, somewhere you can be quiet, alone with the heavens and nature. Even in your own garden. You will soon experience a feeling of comfort and content.



Henry van der Voort
[Hygrotech CEO] dwarfed
by a gigantic Baobab tree
('Kremetart'), experienced
solace in nature during
a recent business trip to
Limpopo.

**" DO WHAT YOU CAN WITH WHAT
YOU HAVE...WHERE YOU ARE"**

Theodore Roosevelt



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ON THE COVER: An impressive commercial Sweet Pepper planting near Strydomblok, Komatipoort



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.

Henry van der Voort

The Covid-19 pandemic has posed challenges to humanity as a whole and each country's population faced more or less the same hardship and disruption. The World Health

Organization has published guidelines and each country has implemented these guidelines with slight variations depending on the unique circumstances in the respective countries. This has also been the case in South Africa.

Two of the more unique local adjustments have been the initial ban on alcohol sales and the ban on cigarettes, which have evoked many contrasting opinions and emotions. Enough has already been said on social media and on the news on these topics !

Amidst all this, Hygrotech made the bold decision to operate as close to normal and at full capacity, while at the same time putting guidelines and measures in place to ensure the safety and health of it's personnel. We already had masks and sanitizers in place at all our premises even before the lockdown was initiated. Over and above that, every employee was supplied, free of charge, with liquid sanitizer for home use.

We are proud to announce that at the time of writing this article, Hygrotech has ridden the ups and downs of doing business in these challenging times and has capitalized on opportunities in the market. Small scale farmers have streamed to our branches in their hundreds to obtain scarce raw materials which included seed, fertigation and other products. Our dedicated and competent staff at the depots not only did the paperwork, but also supplied technical information to clients, if so required.

Our biggest challenge, other than keeping our staff safe, has been the challenge all countries in emerging markets face, namely the devaluation of the Rand against international currencies, including of course the US\$ and the Euro. This is nothing new during an international crises, but matters were made worse during the worldwide lockdown which affected the supply and flow of critically needed product ! This too we have adjusted to and overcome.

In conclusion, we would like to thank the following people:

- Hygrotech personnel for their dedication under very trying circumstances, especially those suffering through home schooling with kids of all ages at home during the lockdown
- All our loyal and new clients who visited our premises and supported us during this pandemic
- Visitors at our Head Office and branches who adhered to our guidelines of hand sanitization, wearing of a face mask and social distancing.
- Clients who were willing to welcome Hygrotech representatives on their farms. Thank you very much for your hospitality, good conversations and in many instances, great coffee !

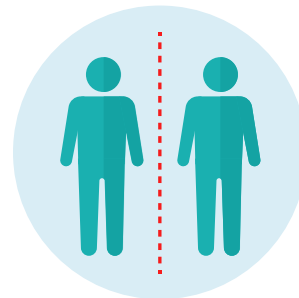
We will continue our high standard of service for the duration of the pandemic and will see you at one of our depots/branches or on your farm in the very near future !

COVID 19 PREVENTION



Wash hands with soap/sterilizer

Cover your nose and mouth when sneezing



Keep social distance

Wear a mask



Don't touch your face

TOMATO 1722 F1*

- excitement is in the air...

Written by Hugo Burger – Technical Manager, Stellenbosch

Shortly after the arrival of Tomato 1722 F1* in the country 3 years ago, the quality and vigour of this cultivar were observed and further trials were put out with the aim to confirm our belief in this variety.

Semi-commercial plantings were done in the Western- and Eastern Cape the past season and the results are very promising. Many new semi-commercial plantings are also underway in tomato producing areas in the rest of South Africa and the excitement is tangible among producers. Technical feedback will be published in our next Forum.

1722 F1* consists of a very strong and vigorous plant and it has a complete disease package i.e

- Verticillium Wilt
- Fusarium Races 1 and 2
- Nematodes
- Tomato Mosaic Virus
- Tomato Yellow Leaf Curl Virus
- Fusarium Crown Rot

The fruit weighs between 150 and 170 g with a good shelf life. Fruit is exceptionally uniform and the plant carries on average 7 fruits per bunch. **This cultivar is only suitable for production in tunnels and or net structures.**



Indeterminate Tomato

1722 F1*

Features

- Very strong growing habit
- Very uniform trusses
- Firm fruits with LSL
- Very high yield potential
- Indeterminate grower
- For tunnel and shade net production

Disease Resistance

- Verticillium Wilt
- Fusarium Races 1 and 2
- Nematodes
- Tomato Mosaic Virus
- Tomato Yellow Leaf Curl Virus
- Fusarium Crown Rot



* This variety is not on the official varieties list, but an application has been or will be submitted



SPECIFICATIONS

Suitability: Prepack and fresh market

Type: Indeterminate grower

Days to Maturity: 80 – 85 days

Fruit mass: 150– 170g

Fruit shape: Flat round



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FINALLY A TRUE BABY YELLOW SCALLOP SQUASH!

By Habe Roode: Hygrotech Consultant

This type of golden to light yellow scallop squash originated from a flower seed company **GOLD SMITH SEEDS** in the foothills west of Gilroy, California more than 40 years ago by its owner/breeder Glen Goldsmith.

The unique yellow colour and sweetish taste and flavour compared to the other scallops with cream white, pastel green and dark green colours made it an instant hit.



This first F1 hybrid was not precocious and had a green and yellow parent line which resulted in a slight green blossom end mark which could be expressed in a 1.5cm to a 3.0cm blotch at the flower end of the fruit

depending on growing conditions, day and night temperatures, soil quality, drainage and general stress conditions.



This variety and other ones to come have always been sold as baby scallop squash approximately 5-8cm in diameter. In later years these little squashes we harvested as button squashes and sold in mixed punnets, and very popular to put whole in "potjie kos".

Another version was developed by the then PETO SEED CO. in California which was precocious – both parental lines were yellow/white – no green at all but with a pale, light yellow colour and when sliced turned brown much quicker than any other scallop squash regardless of the colour of the baby fruit.

*Then out of the blue came a yellow scallop squash **LEMON SUN**, brand new out of a Dutch/USA breeding programme. Finally the industry has access to a full precocious, bright yellow, uniform "tart" like sweet and tender fruit, that will never have green blotches on the blossom end with huge yield potential from button – 3-4cm – to full size – 5-8cm – fruit.*



On the top of the fruit the light green stem will break clean from the fruit and on the bottom the blossom / stem end will have a very light pastel green / white mark after removing the flower and quickly drying from light green to a white, light brown blossom scar.

An interesting feature of **LEMON SUN** is although no claims are made for resistance or tolerance to Powdery Mildew and various viruses that occur in zucchini and pepo squashes, no sign of the above leaf diseases were seen in trials and production fields during the world-wide product development activities.

The fresh market baby marrow range will certainly enjoy new acceptance by the public for this type of yellow scallop squash.

Contact your local Hygrotech branch and sales representative for more information; price and availability.

YELLOW SCALLOP SQUASH

LEMON SUN F1 HYBRID*



* This variety is not on the official varieties list, but an application has been or will be submitted



Features

- Attractive bright yellow scallop squash
- Vigorous, Strong bush plant habit
- Produces exceptional yields of uniform yellow scalloped, disc shaped fruit
- No greening on the blossom end
- Fruit are sweet and tender
- Harvest from baby 3 – 5cm with flower attached to full size 8 – 10cm in diameter
- Large quantities of male flowers are perfect for frying

SPECIFICATIONS

Days to Maturity:	45 - 50 days
Fruit Colour:	Precocious bright yellow, no blossom-end greening
Fruit shape:	Scallop/disc shaped
Fruit size:	3 - 10cm
Plant type:	Open habit



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STELLENBOSCH

FARMERS DAYS

2020

Written and compiled by Hugo Burger : Technical Manager,
Stellenbosch, Western Cape.

After months of hard work and a lot of preparation to get all the crops ready for our annual farmers days which were held on the 5th and 7th March 2020, we can look back to a successful two days with our producers / farmers, supermarket personnel and representatives of the canning industry. Like in the past, this year produced exciting new material which came to the forefront. Hygrotech is particularly excited about the new yellow **Patty Pan Lemon Sun** which shows enormous potential. This cultivar stays yellow at all times and under all circumstances.

Tomato 1722 F1* has been trialed intensively at our premises for 3 years.... also by key clients and it has shown huge promise for the future.

Sweet corn SS 3778 takes the sweet corn industry to the next level of quality. Its very high sugar content and soft kernels make for an exceptional eating experience. Be on the look-out for this product at selected supermarkets! A whole bunch of new tunnel peppers of all colours show big promise and further trials will be done to ensure that the right cultivars are selected for the industry.

The three new products in the **Snack pepper range, Rose F1, Light F1 and Ginger F1**, with their unique size and wonderful taste, makes this range exceptionally suitable for the 'prepack' market.

Honey Nut and Butter Baby are two new mini butternuts who have already created much interest for the export market. Honey Nut has an unique honey flavour and a particularly high sugar content. **Butter Baby** consists of the shape and flavour of a normal butternut. These two cultivars compliment each other when packed together. Definitely good prospects for the future!

Both days were well attended by people from the vegetable industry with some clients even traveling from Tsumeb, Namibia to come and view the new material on display. Thank you very much to everyone who attended and the constructive criticism and views expressed by all. We hope to do the same again next year !

For more technical information on specific cultivars, kindly contact your nearest Hygrotech branch office or Hugo Burger at our Stellenbosch branch.



Sweet corn
3778 and
Dennis Zettler



Tomato 1722 F1*



Butternut Butter Baby



Tomato 1722 F1*



Snack Pepper Ginger F1



Butternut Honey Nut



Snack Pepper Rose F1



Snack Pepper Light F1

Photograph's of products on display in the trials.....

Hygrotech weighing in on *Tunnel Sweet Pepper Range*

Written / compiled by Christo le Grange – National Product Development Manager – Hygrotech.

Last season Hygrotech continued their Sweet Pepper programme and extended it from open field towards under-protection productions. This was done in the Limpopo area where semi-commercial cultivars were planted against competitor cultivars. Included in this trial, some screening material were given a chance to prove themselves. **Thank you to Andrew and the Marlo Farming team, for the opportunity in working closely together to obtain and collate this data.**

The trial was sown during October 2019 and picking of the coloured fruit started in the first week of January 2020. **Data was collected every week for the duration of 19 weeks.** This gave us the opportunity to see the cultivar performance weekly, as well as the plant height vs plant yield ratio. Every farming practise is different and in this case 3 stems cultivation was used in the tunnels. In the rows 20 plants of every cultivar were selected to form part of the data collection.

The selected cultivars are the following:

TAYLOR F1 – Green to Red – tunnel & net house cultivar

Disease Package: Tomato Spotted Wilt, Tobacco Mosaic Virus 1 & 2, Potato Y Virus

FLOYD F1 – Green to Red – open-field, net house & tunnel cultivar

Disease package: Tomato Spotted Wilt, Bacterial Spot, Tobacco Mosaic Virus (L4) & Bacterial Leaf Spot 1,3

HOPKINS F1 – Green to Yellow – tunnel & net house cultivar

Disease Package: Tomato Spotted Wilt, Tobacco Mosaic Virus 1 & 2, Potato Y Virus

HY 1052 F1 (Phase trials only) – Green to Yellow - open-field, net house & tunnel cultivar

Disease package: Tomato Spotted Wilt, Bacterial Spot, Tobacco Mosaic Virus (L4) & Bacterial Leaf Spot 1,3

The drive behind the programme was not just to find the best option for tunnel production, but also looking at versatile options for the growers. The two cultivars achieving this were, **FLOYD F1** (commercial already) & **HY 1052 F1** (only in phase trialling). Tunnel, net house & open-field productions on both the mentioned cultivars are possible. Tunnel & net house production on **TAYLOR F1 & HOPKINS F1** came to the fore reaching final plant heights of 2,8 – 3,5m. These selected



Hopkins - on green harvest week 5



Andrew – Marlo Nursery/kwekery

tunnel cultivars will give the needed quality to any grower in this market segment. From the get-go **TAYLOR F1** outgrew all the other material with a strong leaf cover structure. We decided to stop collecting data in week 19 since most of the material was going into stress due to cold conditions. **TAYLOR F1** stood the test of times and was still growing strong. **HOPKINS F1** has a smaller structured plant, but do not be fooled by the finer plant, because the facts have shown that it was the highest yielder during this period.

Yield (fruit weight), fruit quality & plant structure formed the basis of the trial and we are happy to share our findings below. **The table below shows the yields obtained per week from the data collected on the Green to Red options (1)** “Damaged” fruits refer to mainly sunburn and deformed fruit.

	TAYLOR F1						FLOYD F1					
Harvest	Marketable (g)			Damaged (g)			Marketable (g)			Damaged (g)		
p/20 plants	Weight	Fruits	Ave p/ fruit	Weight	Fruits	Ave p/fruit	Weight	Fruits	Ave p/ fruit	Weight	Fruits	Ave p/fruit
Week 1	6005	29	207,1	270	3	90,0	6754	33	204,7	617	6	102,8
Week 2	8037	38	211,5	999	8	124,9	7508	41	183,1	223	2	111,5
Week 3	3877	19	204,1	452	3	150,7	3240	17	190,6	838	6	139,7
Week 4	1652	8	206,5	263	2	131,5	1585	8	198,1	127	1	127,0
Week 5	2261	9	251,2	0	0	0	1357	6	226,2	1180	6	196,7
Week 6	5377	21	256,0	0	0	0	7565	34	222,5	422	2	211,0
Week 7	7033	27	260,5	0	0	0	6550	29	225,9	275	1	275,0
Week 8	4362	18	242,3	348	2	174,0	3997	18	222,1	71	1	71,0
Week 9	2320	9	257,8	475	2	237,5	1886	9	209,6	85	1	85,0
Week 10	6980	27	258,5	1152	6	192,0	2486	11	226,0	1186	10	118,6
Week 11	2711	11	246,5	340	2	170,0	3880	18	215,6	914	5	182,8
Week 12	7792	35	222,6	0	0	0	6743	39	172,9	1016	8	127,0
Week 13	3517	16	219,8	0	0	0	2999	16	187,4	0	0	0
Week 14	1576	7	225,1	0	0	0	470	2	235,0	212	2	106
Week 15	1556	6	259,3	0	0	0	3126	16	195,4	718	4	179,5
Week 16	960	4	240,0	448	2	224	2369	12	197,4	228	1	228
Week 17	2345	11	213,2	195	1	195	5037	27	186,6	1316	13	101,2
Week 18	5238	22	238,1	675	4	168,75	1421	8	177,6	416	3	138,6
Week 19	2340	10	234,0	0	0	0	2053	12	171,1	598	3	199,3
Totals	75939	327	234,43	5617	35	168,94	71026	356	202,5	10442	75	150,04

Yield from to 20,000 plants and projected yield from 30,000 plants :

p/20,000 plants	75,939 kg	TAYLOR F1	p/30,000 plants	113,909 KG
p/20,000 plants	71,026 kg	FLOYD F1	p/30,000 plants	106,539 KG

Weight per plant :

TAYLOR F1 : p/plant	3,80 kg
FLOYD F1 : p/plant	3,55 kg

Fruits per plant :

Even with higher fruit volume shown by Floyd F1, the average fruit weights were smaller, for this reason that Taylor F1 obtained higher yields.

TAYLOR F1	16,4	Fruits per plant
FLOYD F1	17,8	Fruits per plant



From left to right: Dirk le Roux, Herman de Beer and Emile du Plessis



Taylor - harvest week 5



Taylor - harvest week 16



(2) Yields obtained per week on the Green to Yellow options :

	HOPKINS F1						HY 1052 F1 (Phase trial)					
Harvest	Marketable (g)			Damaged (g)			Marketable (g)			Damaged (g)		
p/20 plants	Weight	Fruits	Ave p/ fruit	Weight	Fruits	Ave p/ fruit	Weight	Fruits	Ave p/ fruit	Weight	Fruits	Ave p/ fruit
Week 1	5526	53	104,3	482	5	25,6	3733	19	197,5	0	0	0,0
Week 2	6714	48	139,9	566	5	113,2	5259	26	202,3	306	3	102,0
Week 3	2338	15	155,9	693	6	115,5	2368	12	197,3	0	0	0
Week 4	1313	8	164,1	378	3	126,0	3978	17	234,0	163	1	163,0
Week 5	4675	23	203,3	409	2	204,5	2636	12	219,7	206	1	206,0
Week 6	7894	48	164,5	789	5	157,8	9773	41	238,4	606	3	202,0
Week 7	6415	33	194,4	555	4	138,8	7260	32	226,9	705	3	235,0
Week 8	2997	15	199,8	726	5	145,2	2170	9	241,1	0	0	0
Week 9	2570	12	214,2	494	3	164,7	2086	9	231,8	278	2	139,0
Week 10	8344	40	208,6	633	3	211,0	6906	28	246,6	539	3	179,7
Week 11	8035	40	200,9	412	3	137,3	3452	15	230,1	445	2	222,5
Week 12	4853	26	186,7	1291	7	184,4	6636	28	237,0	188	1	188,0
Week 13	1370	7	195,7	588	3	196	1530	7	218,6	0	0	0
Week 14	2805	14	200,4	708	4	177	4653	18	258,5	0	0	0
Week 15	5074	24	211,4	1419	13	109,1	3388	14	242,0	325	2	162,5
Week 16	3995	18	221,9	1366	7	195,1	4013	17	236,1	0	0	0
Week 17	1873	9	208,1	514	4	128,5	3689	16	230,6	231	1	231
Week 18	1862	8	232,8	290	2	145	2801	14	200,1	300	2	150
Week 19	984	5	196,8	0	0	0	2456	11	223,3	184	1	184
Totals	79637	446	189,65	12313	84	148,6	78787	345	226,9	4476	25	181,9

Yield from 20,000 plants and projected yield from 30,000 plants :

p/20,000 plants	79,637 kg	HOPKINS F1	p/30,000 plants	119,456 kg
p/20,000 plants	78,787 kg	HY 1052 F1	p/30,000 plants	118,181 kg

Weight per plant :

HOPKINS F1 : p/plant	3,98 kg
HY 1052 F1 : p/plant	3,94 kg

Fruits per plant :

HOPKINS F1	22,3	Fruits per plant
HY 1052 F1	17,3	Fruits per plant

Pepper plants
on harvest -
week 10



Harvest - week 3 Red



Harvest - week 3 Yellow



Harvest - week 13 Red



Harvest - week 13 Yellow

We believe with this data, every tunnel farmer will have the tools and information to make an informed decision. Hygrotech's **Sweet Pepper Range** will grow from strength to strength with continued work been done to keep us on top of our game.

Please feel free to contact your local Hygrotech office for more information.



Emile du Plessis - Harvest week 18



Hopkins - Harvest week 11



Hopkins - harvest week 16

Snack Peppers

— A fast growing market

Written by Michael Luttig, Lodewyk van Staden and Christo le Grange

Three hybrid snack pepper varieties were launched by Hygrotech namely Sweet Rose F1 (green to bright red), Sweet Ginger F1 (green to bright orange) and Sweet Light F1 (green to bright yellow). The sweet and tasty bite size snack appeal to young and old.

Photo 1. Johann Wolfaardt from DJW Boerdery, Strydomsblok, Komatipoort requested a longer red snack pepper and Hygrotech delivered. From left to right: Sweet Light F1 (green to bright yellow), Sweet Rose F1 (green to bright red) and Sweet Ginger F1 (green to bright orange) produced at DJW Boerdery.



Photo 2. At DJW Boerdery, Dirk Wolfaardt and sons Johann and Andries produce the three colours of snack peppers namely Sweet Rose F1, Sweet Ginger F1 and Sweet Light F1 in the open field in a box format.





The newly launched snack peppers are in production in the Komatipoort area in the open field (DJW Boerdery) as well as in a net structure (Domar Boerdery).

Sweet Rose F1 is the only large red snack pepper variety in the market that maintains its size relative to the orange and yellow snack pepper varieties throughout the harvest period. Allowing pre-packaging of the three colours of snack peppers of the same size.

PRODUCTION

Days to maturity are 65-75 days, with fruit length 7-8cm for Sweet Ginger F1 and Sweet Light F1, and 8cm for Sweet Rose F1.

The Hygrotech hybrid snack peppers can be produced in the open field and in net structures.



Photo 4. Sweet Rose F1 grown by Thomas Smit, pruned to 3 stems and grown up a string trellis.



Photo 5. Sweet Ginger F1 grown by Thomas Smit, pruned and trained to three stems.



Photo 3. Stand of peppers in net house

The EFFECTS of plant population and spacing

Written by Herman de Beer / Dirk le Roux – Hygrotech Tzaneen, Limpopo

To reduce the input cost of vegetable farming, farmers tend to plant fewer seeds per hectare. This may save money upfront but it may have a huge influence on the yield if the optimum plant population is not adhered to.

On the other hand, when the plant population is increased above the optimal plant population the yield also tends to decline as a result of inter plant competition.

The plant population refers to the NUMBER of plants per unit area of land.

Plant spacing is the ARRANGEMENT of plants in the row.

There are many factors that influence the optimum plant population in a specific crop, such as water availability, nutrients, sunlight, plant potential, and managerial ability.

There is no exact answer to what the optimum plant population or spacing for a specific vegetable crop is. With an understanding of plant growing behaviour and conditions under which crops are grown, it is possible to make a good estimate of plant spacing for most vegetable crops.

The aim must be to reach a plant population that gives an acceptable economic yield.

An acceptable economic yield is when the end product meets the market requirements on fruit size, fruit colour, fruit quality, and sold for an acceptable price.



TOMATO

Row width (centre to centre of the row)	Amount of drippers/ha 1.20m	Amount of drippers/ha 1.50m	Amount of drippers/ha 2.0m
0.30m Spacing of Drippers	-	22,000	16,000
0.60m Spacing of Drippers	13,900	11,000	8,300

Recommended plant population/ha for tomatoes

HAWKERS& PROCESSING

HTP 328 F1*	22,000
Qwanto F1	22,000
Maximo 3 F1	22,000
Romar F1	22,000



Guidelines as to how many plants to be planted per dripper:

	Amount of drippers/ha			
	8,300	11,000	16,000	22,000
	Amount of plants/dripper			
HTP 328 F1*	2	2	1/2	1
Qwanto F1	2	2	1/2**	1
Maximo 3 F1	2	1/2	1/2	1
Romar F1	2	1/2	1/2	1

** This means 1 plant at the 1st dripper , then 2 plants at the 2nd dripper and continue as such.



2 and 3 plants per dripper on a 600 mm dripper spacing and 1,5 m spacing between the rows

Determinate/ Indeterminate, Round & Saladette (Plants/ha)

Clarabelle F1*	12,000
Gourmet Extreme F1*	12,000
Boudica F1	12,000
Pamela F1	15,000
F-350 F1	15,000
Hy 1831 F1*	15,000



Guidelines as to how many plants to be planted per dripper:

	Amount of drippers/ha	
	8,300	13,900
	Amount of plants/Dripper	
Clarabelle F1*	1/2**	1
Gourmet Extreme F1*	1/2	1
Boudica F1	1/2	1
Pamela F1	1/2	1
F-350 F1	1/2	1
Hy 1831 F1*	1/2	1

** This means 1 plant at the 1st dripper , then 2 plants at the 2nd dripper and continue as such.

An interesting phenomena is that the percentage loss in yield, due to plant losses, is usually half that of the percentage of plant loss e.g. 10% plant loss results in 5% yield loss.

The following must be remembered when there is an increase or decrease in plant population:

1. Fertilizer requirement must be adjusted.
2. Fruit size may be influenced.
3. Yield per hectare and per plant may be affected.

In this evaluation, we are going to look at plant population and spacing of processing Tomatoes as well as round Tomatoes and Saladettes, specifically planted under drip irrigation with different inline spacing.

The following information is used as facts:

1. Processing tomatoes/round determinate & indeterminate as well as Saladettes
2. Drip irrigation is used with a spacing of 0.3m and 0.6m inline drippers
3. Difference between row spacing of 1.5m and 2m.

In the next addition, the plant population of green peppers will be discussed.

So be on the lookout for practical advice for farming with Hygrotech.

Contact your nearest Hygrotech branch for more information.



Stella F1* - Indeterminate Orange Mini Plum



Disease Resistance

(Hr) Tobacco Mosaic Virus
(Ir) Tomato Spotted Wilt Virus,
Tomato Yellow leaf Curl Virus
Nematodes (Ma, Mi & Mj)

Features

- Grown unpruned, pruned to a single or double stem.
- Jointed peduncle
- Unique flavour and taste
- Very firm fruit
- Speciality, high value variety

SPECIFICATIONS

Cultivar name: Stella F1*
Type: Indeterminate Mini Orange Plum
Maturity: Mid season
Fruit shape: Oblong / Oval
Fruit weight: 20-25g
Fruit colour: Deep orange
Plant size: Medium / Large
Fruit size : 25-30mm

HYGROTECH
SUSTAINABLE SOLUTIONS

* This variety is not on the official varieties list, but an application has been or will be submitted

1 Gerard Braak Street, PYRAMID, 0120
PO Box 17220, PRETORIA NORTH, 0116, South Africa | Tel: +27 12 545 8000 | Fax: +27 12 545 8088

BUTTER BABY*

Features

- Produce prolific amounts of uniform personal-size butternuts.
- Higher amount of marketable fruit than any other Cucurbita Moschata witnessed in trials in the USA and South Africa.
- Tan / light brown skin colour and dark orange flesh
- Better storability than other mini-butternuts.
- High yields of sweet, nutty 250 – 450 gram fruit which can increase if plants are spaced further apart. Brix value of 10 – 11

*The variety is not on the official varieties list, but an application has been or will be submitted.



SPECIFICATIONS

- **DAYS TO MATURITY:** 100 – 105 days from sowing
- **FRUIT COLOUR:** Tan to light brown with dark orange flesh
- **FRUIT SHAPE:** Typical Butternut with thick necks and slight bulb
- **FRUIT SIZE (L x W):** 15 cm x 8 cm
- **PLANT TYPE:** VINING 2 – 3 M
- **DISEASE RESISTANCE:** POWDERY MILDEW
- **PLANT DENSITY:** 15,000 – 20,000 plants per hectare



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MIST CONTROL®

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SUSTAIN®

SUREBUFF
ENTREE™

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BY WATER, AIR & LAND**

WAR ON WEEDS

PRODUCED BY



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AS-sistance contains 520 g/L Ammonium sulphate. Reg. No. L8015 of Act 36 of 1947.

Hygrobuff contains 85 g/L Alkylaryl Polyoxyethylene Glycol Phosphate ester & 497 g/L Organic acid buffer system. Reg. No. L5512 of Act 36 of 1947.

Surebuff contains 480 g/L Acidifier, Buffer. Reg. No. L6539 of Act 36 of 1947.

Mist Control® contains 20 g/L Polyvinyl polymer. Reg. No. L4567 of Act 36 of 1947. Sustain® contains 875 g/L Poly-1-p-menthene. Reg. No. L7690 of Act 36 of 1947.

Entree contains 819 g/L vegetable oil blend. Reg. No. L8055 of Act 36 of 1947.

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White Fly – Red Eyed Nymphs

A strange happening in the Limpopo processing tomato growing area when late summer production of a roma type variety produced almost rainbow coloured fruit in the ripening process

This unusual phenomena rattled field men and seed companies to the point where the question was asked..."is there not something wrong with the seed ?"

Upon investigation qualified technical employees of the University of Florida, USA came up with a very interesting cause and solution for this phenomena.

The **SILVERLEAF WHITEFLY**- *Bemisia tabaci* bio type B is the culprit from where the damage is started when perfect weather – dry and warm – for whiteflies occurs during late summer and early winter. Poor market conditions also cause growers to hold their crops that may not be adequately sprayed and overlap with spring crops when irregular ripening start to occur. This irregular ripening is not variety or crop type specific and all tomatoes basically grown on the ground or short stakes will show this phenomena when climatic and other growing conditions are suitable for the over-population of whiteflies.

The result is that whiteflies that built up in late summer crops are moving to spring crops carrying the virus with them. Irregular ripening as a physiological disorder is unrelated to virus but caused by feeding of whitefly nymphs, not adults. The threshold of irregular ripening is 1 nymph per 2 leaflets. Nymphs are best monitored on the underside of the lower (5 – 7th node) leaves.



Adult whitefly



Third and fourth instar red eyed nymphs on tomatoes.



Irregular ripening of Roma tomatoes

LIFE CYCLE:

- About 3 weeks from egg to adult
- Adults can live up to 2 weeks
- Estimated 5 weeks between generations

WHAT NEEDS TO BE DONE ? :

- Kill any old tomato crops as quickly as possible. Spray first with a tank mix of pyrethroid and malathion to kill whiteflies in the old crop.
- Treat seedlings with a systemic insecticide in the transplant water. If on drip, make a second soil application in 30 days using a systemic insecticide of different mode of action.
- Scout crops every week and apply insecticides as needed to maintain control. Target nymphs.

IN SUMMARY- IRREGULAR RIPENING vs TYLCV

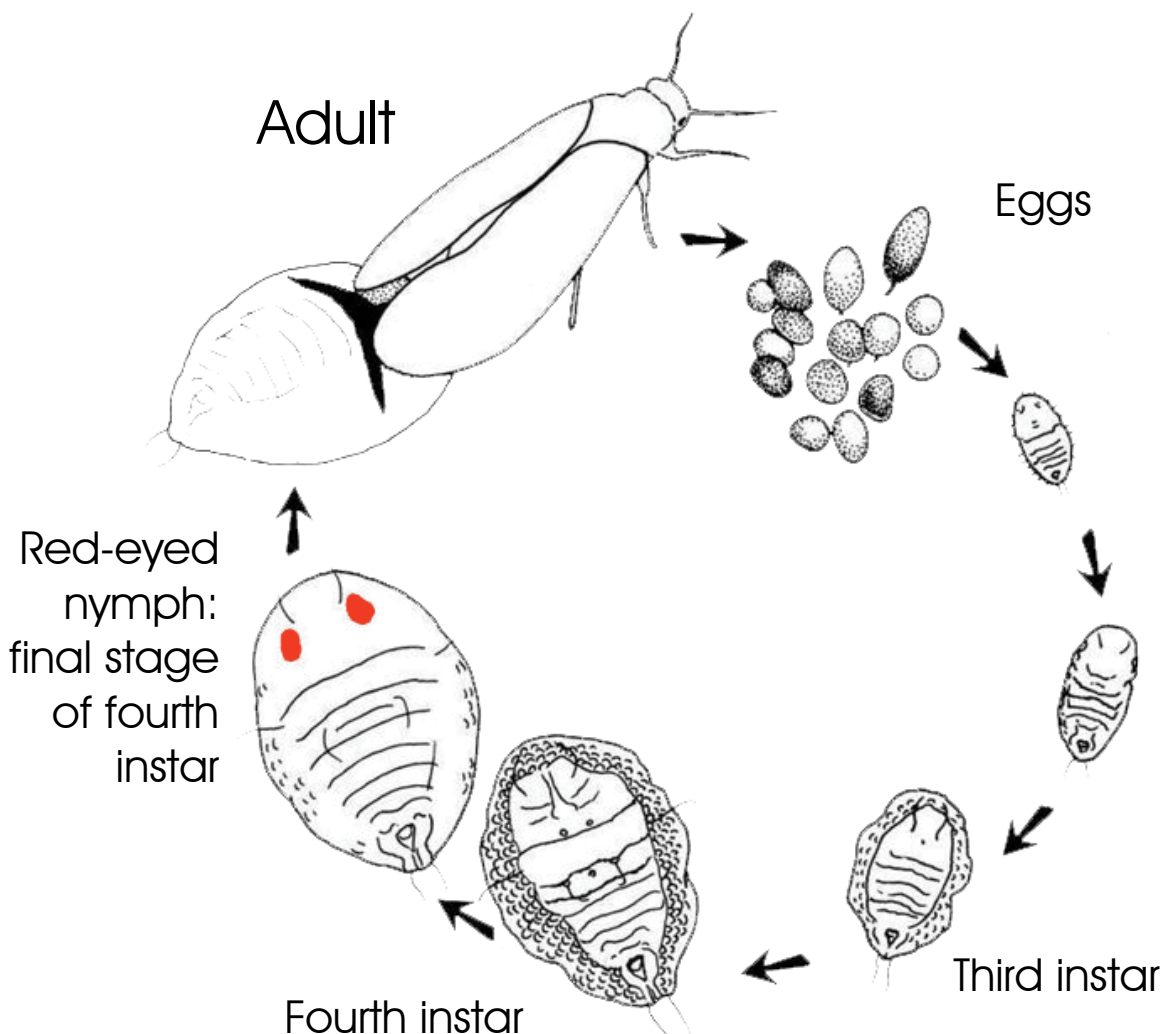
Irregular ripening

- Caused by high numbers of nymphs
- Source of whiteflies does not matter

TYLCV

- Even low numbers of viruliferous whiteflies can cause high infestation
- Tomato is probably the only relevant source

Life cycle of Silverleaf Whitefly



LETTUCE TRIALS 2019/2020 - Kwazulu-Natal

Written by Stephen Pennells – Product Marketing – Pietermaritzburg branch / KZN

Will Rodgers once said that a farmer must be an optimist, or he would not still be a farmer. This statement rings true for most farmers, but especially for vegetable farming in Kwazulu-Natal. These farmers must face high temperatures, high rainfall, high humidity, and high disease pressure. All of this would make any normal person crumble under the pressure, but the optimism shown by farmers in this region has allowed them to thrive.

In the days past farmers were not too worried about the genetics of the varieties they planted because most pests and diseases could be handled using some or other chemical spraying programme. Yield of the various varieties was also not that much of a worrying factor since there was enough food produced to feed the world. Growing populations and the introduction of the green movement however has changed the entire agricultural landscape. Farmers have become less reliant on hard chemicals and more reliant on genetics within various crop varieties to achieve higher yield and to minimize the impact of pests and diseases.

In KwaZulu-Natal lettuce is still one of the major crops that farmers rely on. It however is highly susceptible to disease and changing weather

patterns. If the right variety is not chosen it can be catastrophic for the farmer. Varieties for lettuce vary in their disease tolerance as well as their bolting habits, which are two factors that continue to be a problem in KwaZulu-Natal. Farmers tend to make use of various varieties since most varieties currently on the market do not fit well into all the summer planting slots. Early bolting is any lettuce farmers worst nightmare and thus in summer months is one of the deciding factors when doing variety selection. **Hygrotech** currently has a large range of summer varieties each with their own unique characteristics. In terms of slotting however not all of them fit well into all the different planting slots within the KwaZulu-Natal landscape. Two of these varieties have shown to be more consistent and fit well into most of the planting slots. These varieties are **Helga and Heather**, with Helga being the most consistent

“Farmers have become less reliant on hard chemicals and more reliant on genetics within various crop varieties to achieve higher yield and to minimize the impact of pests and diseases”



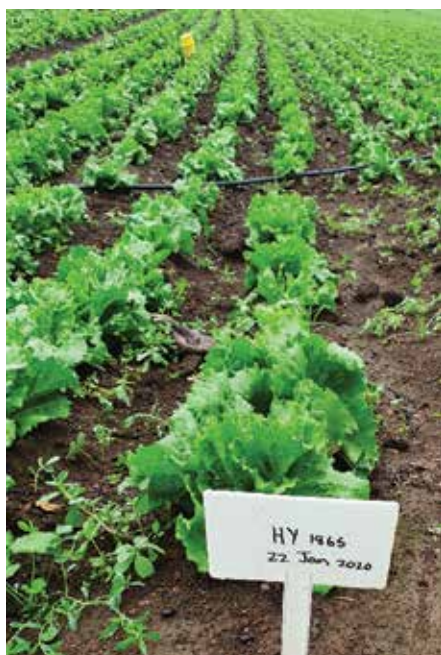
of the two. Continuous trialling is necessary to be able to ascertain which varieties would be the best fit for KwaZulu Natal and if new promising varieties come through to be able to see where they would fit in. During the past summer season, we did some trials during January to February. These months are renowned for its high temperatures causing bolting on a lot of varieties. If our varieties were able to weather the storm during this period, they would be able to fit into the other slots as well. The following varieties were trialled: **Heather, Hanna, Holly, Helen, Heloise, HY1864, HY1865 and HY1866.**

Do Vale farm, located in Tala Valley, Kwazulu-Natal formed the basis for this trial. The farm is situated at an elevation of 665 meters above sea level at GPS coordinates; 29°47'15.62" S 30°31'26.51" E. The farm is family owned and run by John Salgado as well as other individuals. Tala Valley is characterised by hot, humid summers (>30°C) and cold, dry winters. The area receives a mean annual rainfall of 600 mm – 900 mm per annum. The closest town to the farm is the small town of Camperdown.

Most of our varieties showed good uniform growth and achieved high pack out rates. Out of all the varieties trialled, **Heather** seems to be the most consistent commercial variety, although currently in KZN **Helga** is Hygrotech's most favoured variety. **HY1864** seems to be to most promising of the new varieties trialled and could possibly be a very favourable commercial variety although it still must be trialled within all the different slots. Out of our current commercial varieties trialled **Heather** seems to be the only variety that can fit into most summer slots. The other variety that this is possible with is **Helga** which, as I mentioned, is currently our best performing variety. **HY1865** also performed very well. It has a smaller head size but makes up for that with its taste. It is thus a variety that I would also look out for in the future.



HY1865 – Iceberg Lettuce



- HY1865 planted 22/01/20
- Excellent health with no disease present.
- Light green in colour.
- Good taste.
- Smaller in size, but can compete for pre-packing market

HY1864 – Iceberg Lettuce



- Grower & Prepack Comments:
- HY1864 planted 22/01/2020
- Good size and taste (Fills up trays)
- Very favourable taste
- Good colour
- Internal density between 2, 3 and 4, which might be due to weather as some heads gained a lot of weight in the last week
- No signs of disease
- Could possibly be harvested at 6 weeks
- Very much appealing for prepacking and most favourable of all varieties.

Heather – Iceberg Lettuce



- Heather planted 22/01/20
- Excellent health with no disease.
- Light green in colour.
- Minimum deformity in shape and very consistent size
- Average weight (480g) within 300g-600g spec
- Harvested at week 7, although might have to be cut at week 8 in the future
- No bolting
- Highly recommended variety and good competition for Musketeer, Nomugi and Waikiki.

The ASCO-GRO® effect

By Charl Kotze, Michael Luttig and Lodewyk van Staden

INTRODUCTION

The increasing world population and a changing climate contribute towards the challenges that growers face today. Not only to increase food production, but to manage this under harsher environmental conditions. It is therefore of utmost importance to examine all alternatives to ensure sustainable food production. One possibility could lie in the use of kelp-based products. The benefits of these have been widely reported and include among others: better root formation, an increase in fruit set and yield, along with the ability to not only increase stress tolerance, but initiate the plant's natural defence system towards diseases as well. Several of these products are commercially available today, each with its own compositions and formulations. One such product is Asco-Gro (Reg. no. K6714 of Act 36 of 1947) from Miller™ Chemical and Fertilizer. It consists of kelp extracts (with amino acids and carbohydrates) which is combined with macro- (N, P and K) and several chelated secondary nutrients (Mg and Ca) along with molybdenum.

To determine the effect of Asco-Gro on leguminous plants in South Africa, three statistical trials were conducted on two different crops in 2019 as well as two semi-commercial trials during the 2020 season. The crops included during the 2019 trials were soya beans in the Ermelo region of the Mpumalanga Highveld and dry beans (sugar beans) at two trial sites in Lydenburg and Ohrigstad respectively. While the semi-commercial trials during the 2020 season were conducted in the Bethal area of Mpumalanga on soya beans only. Asco-Gro had a positive effect on all the parameters evaluated for both crops when compared to the untreated controls and/or the grower standard programmes.

MATERIALS AND METHODS

Soya beans

2019 Production season

A 10 ha plot in the Ermelo region, which was propagated under dryland conditions and received a standard regime of preplant soil preparation and fertigation, was selected as trial site. The treatments applied consisted of 2 L/ha Asco-Gro in comparison to the grower's standard foliar feed. Both were applied at two different phenological stages, the first during flower (R1) and the second at pod formation (R3). Each treatment was applied using a self-propelled broad boom sprayer which was calibrated to apply 150 L water/ha and consisted of four alternating spray band plots, respectively. Combined, the 4 plots of each treatment accounted for 5 ha a piece. At harvest, five plants were randomly selected from each plot and then pooled together to serve as a replicate. Each treatment was evaluated according to several criteria which included the number of beans per pod, total number of pods, combined dry weight of the pods, the total number of beans and the accumulative bean dry weight per replicate.

2020 Production season

During the 2020 production season two commercial trials were conducted under dryland conditions in the Bethal region of Mpumalanga. The first trial consisted of a shorter growing soya bean type, propagated on two adjacent 10 ha plots. Each plot received either an Asco-Gro (2 L/ha) or a grower standard treatment. The second trial comprised of a longer growing soya bean type propagated on a 122ha plot, here the grower standard was applied to 118.5 ha, while the remaining 3.5 ha received an Asco-Gro (2 L/ha) treatment. At both trial sites the treatments were applied at the R1 growing stage using a broad-boom sprayer calibrated to 166 L/ha application volume. At crop maturity each plot was harvested separately and the accumulative mass per hectare determined using a weighbridge.

Dry Beans (Sugar Beans)

Ohrigstad

Nine-and a half hectare of a 10-ha plot under centre pivot irrigation, was treated with 2 L/ha Asco-Gro at flowering using a trailer mounted broad boom sprayer calibrated to apply 350 L water/ha. The remaining half hectare served as the untreated control. At harvest 4 groups of 5 plants each were randomly collected from four predetermined sections of each treatment. Each of the groups of 5 plants served as a replicate. The treatments were compared using several different criteriums which included the total number of pods, total dry weight of the pods, the total number of beans and the accumulative bean dry weight per replicate.

Lydenburg

At the trial site in the Lydenburg area of Mpumalanga two adjacent plots received one application of Asco-Gro at 2 L/ha, respectively. These were applied during flowering using a trailer mounted broad boom sprayer calibrated to apply 350 L water/ha. Each plot received a spray band of Asco-Gro, while the rest of both plots were treated with the grower's standard foliar feed. Another plot next to the two adjacent Asco-Gro treated plots served as the untreated control. This plot however received double the regiment of soil fertiliser as the treated plots.

At harvest two sets of 5 plants each were randomly collected from the two adjacent Asco-Gro trial plots, as well as from the two plots treated with the grower's standard foliar feed. From the untreated control plot four sets of 5 plants each were collected from 4 predetermined spots throughout the plot. At the grower's request

“The increasing world population and a changing climate contribute towards the challenges that growers face today. Not only to increase food production, but to manage this under harsher environmental conditions.”

4 more samples of 5 plants each were collected from a fourth plot that received another (second) type of grower standard foliar feed. Each set of these 5 plants also served as a replicate. All the treatments were evaluated using predetermined criteria of total number of pods, total dry weight of the pods, the total number of beans and the accumulative dry bean mass.

Statistical Analysis

Data collected from the Ermelo, Lydenburg and Ohrigstad trials were statistically analysed through the Fischer's student t-test of least significant difference, using the statistical package XLSTAT. All the trials yielded significant differences except for the trial conducted in Ohrigstad where $P \geq 0.05$.

RESULTS

Soya beans

2019 Production season

Four weeks after the first application of Asco-Gro, the trial plot was visually inspected. There was a distinct difference observed in vegetative growth between the two treatments as can be seen in Fig 1. The plant on the right came from one of the Asco-Gro treated spray bands, while the plant on the left came from one of the grower's standard

Table 1. Five different criteria used to evaluate the effect of Asco-Gro applications on the yield of soya beans planted under dry-land conditions near Ermelo, Mpumalanga.

Treatment	Number of pods divided among number of beans/pods					Number of pods	Total pod dry weight (g)	Total number of beans	Accumulative dry bean weight (g)
	0 beans	1 bean	2 beans	3 beans	4 beans				
Asco-Gro	71a ^y	339a	504a	298a	3a	1214a	458a	2251a	311a
Grower Standard	37a	154b	348b	235b	2a	776b	305b	1565b	224b
VALUES INDICATED ARE THE MEAN FOR 5 PLANTS									

^y Means followed by the same letter do not differ significantly

Table 2. Four different criteria used to evaluate the effect of Asco-Gro applications on the yield of dry beans (sugar beans) planted under irrigation near Ohristad, Limpopo.

Treatment	Number of pods	Total pod dry weight (g)	Total number of beans	Accumulative dry bean weight (g)
Asco-Gro	183	546	857	420
Untreated	151	441	721	317
VALUES INDICATED ARE THE MEAN FOR 5 PLANTS				

Table 3. Four different criteria used to evaluate the effect of Asco-Gro applications on the yield of dry beans (sugar beans) planted under dry-land conditions near Lydenburg, Mpumalanga.

Treatment	Number of pods	Total pod dry weight (g)	Total number of beans	Accumulative dry bean weight (g)
Asco Gro	227a ^y	668a	1001a	516a
Grower Standard 1	134b	302c	459c	215c
Grower Standard 2	145b	454b	604c	335bc
Untreated	193a	551b	804b	397b
VALUES INDICATED ARE THE MEAN FOR 5 PLANTS				

^y Means followed by the same letter do not differ significantly

foliar feed spray bands. This was however only a superficial observation and was not measured. The analysed data (from the plants randomly collected at harvest) on the other hand indicates that Asco-Gro induced more pods in each of the number of beans per pods categories (0-4), with the number of pods with 1-3 beans per pod being statistically more (Table 1). The same was observed for all of the other criteriums as well, with the Asco-Gro yielding statistically more pods (1214 compared to 776), a higher total pod dry weight (458 g compared to 305 g), more beans (2251 compared to 1565) and therefore a higher accumulative dry bean weight (311 g compared to 224 g) per 5 plant grouping respectively.

2020 Production season

The weighed data collected indicate that for both soya bean growing types the Asco-Gro showed an improvement in yield when compared to the grower standard. The yield increase at the trial site consisting of the shorter growing type was 248 kg/ha (Table 4), while the longer growing type showed an increase of 351 kg/ha. During this period, the price of soya beans ranged between R5700 and R6747/T. Using an average price of R6150/T this accumulates to an average increase of R1525.20 and R2152.65/ha in income for the

two respective growing types. Furthermore, aerial imaging (Fig 3) indicate a more even vegetative growth of the soya beans treated with the Asco-Gro when compared to the grower standard. It should be mentioned that there was little to no follow-up rain after planting.

Dry Beans (Sugar Beans)

Ohristad

A visual inspection was done of all the treatments 14 days after the Asco-Gro application. It was observed that not only were the vegetative growth more in the treated plots than the untreated plots, but it had more pods as well (Fig. 2). The observations made during the visual inspection is supported by the analysed data collected from plants that were sampled just prior to harvest (Table 2). Although not statistically, the Asco-Gro treatment yielded a higher number of pods (183) than the untreated control (151). This is reflected in the increased dry weight of the Asco-Gro pods (546 g) compared to the untreated (441 g). Furthermore, it was found that the treated plot yielded 136 more beans per 5 plant grouping than the plants from the untreated plot. This had a direct influence on the 103 g increase in accumulative dry bean weight over the untreated plants.



Table 4. Soya bean yield as determined at harvest after being treated with 2 L/ha Asco-Gro during a commercial trial planted under dry-land conditions near Bethal, Mpumalanga.

Growing type	Treatment	Hectares harvested (ha)	Yield (kg/ha)	Income/ha (@ R6150/T)*
Short Grower	Asco-Gro (2L/ha)	10	1123	R6 906,45
	Grower Standard	10	875	R5 381,25
Long Grower	Asco-Gro (2L/ha)	3,5	1669	R10 264,35
	Grower Standard	118,5	1318	R8 105,70

*Average determined using the market price during the harvesting period



Figure 1. Soya bean plants sampled from a trial near Ermelo, Mpumalanga. A) Grower standard foliar feed and B) Asco-Gro treated.

Lydenburg

Data analysed from the plants collected at harvest indicates that the Asco-Gro treated plants statistically outperformed all the other treatments according to the criteriums used for evaluation (Table 3). One exception was the mean number of pods (per 5 plants) of the untreated plot (receiving double the regiment of soil fertiliser) which were not statistically lower than that from the Asco-Gro plants (Table 3). These results are supported by the yield data collected at harvest when the total yield of the Asco-Gro treated and untreated plots were determined. The untreated plot yielded 2.6 T/ha compared to the Asco-Gro treated plot that yielded 3.6 T/ha.



Figure 2. Dry bean (Sugar bean) plants sampled from a trial in Ohrigstad, Limpopo. A) Untreated control and B) Asco-Gro treated.



Figure 3. Sectional aerial images of two 10 ha soya bean plots, one treated with 2 L/ha Asco-Gro (A) and the other with the grower standard (B).

CONCLUSION

The results from these trials suggest that Asco-Gro has the potential to increase the yield of soya beans and dry beans by applying it at a rate of 2 L/ha during R1 developmental stage. Not only did the Asco-Gro induce a higher yield when inspecting 5 plants per plot, but on a bigger commercial trial scale as well.

Should you require any further technical information,
contact Charl Kotze (charl.kotze@hygrotech).



Managing **weeds** on Maize using **SUSTAIN®**

By Charl Kotze, Michael Luttig and Lodewyk van Staden

Weeds have adverse effects on all crops especially those planted annually such as maize, soybeans, sunflower and grain. They compete directly for water, nutrients and sunlight, resulting in a reduced crop yield and poor crop quality. Furthermore, it has been reported that weed control is the single most natural occurrence issue affecting growers today. Not only contributing towards high financial inputs due to multiple applications of pre- and post-emergent herbicides, but due to the inhibiting effect that herbicides have on resistant crops as well.



Therefore, by increasing the efficacy of the pre-emergence herbicides you can reduce the number of post-emergent herbicide applications and in turn reduce financial input. One method of increasing efficacy is by the addition of adjuvants. Miller® Chemical and Fertilizer, LLC has a series of adjuvants of which the PINOLENE® containing SUSTAIN® (Reg. no. L7690 of Act 36 of 1947) was developed solely for this purpose. With the addition of the product, you have the added benefit of a reduction in leaching, in the case of UV sensitive actives there is a higher tolerance towards sunlight and the volatility of some actives are reduced.

To investigate the effect of SUSTAIN® on commercially used pre-emergence herbicides, two trials were conducted on the sandy soils of the Mpumalanga Highveld during the 2019-20 planting season.

MATERIALS AND METHODS

A maize field that was planted on sandy soil in Middelburg (Mpumalanga Province) was selected as a trial site. The first 11.2 ha was treated with the pre-emergence herbicide Acetochlor (at a rate of 1 L/ha) and the pre- and post-emergence herbicide Mesotrione (at a rate of 230 ml/ha) in a tank mixture with SUSTAIN® (at rate of 277 ml/ha) using a broad boom sprayer calibrated to 150 L/ha. Thereafter, the rest of the field was treated with the herbicides, without SUSTAIN®, which served as the untreated plot. Three months after the initial herbicide applications each plot was subjected to a visual assessment using aerial photography.



Figure 1. Experimental plots used to determine the number of weeds per treatment at Bethal trial site.

A second trial was conducted in the Bethal area of the Mpumalanga Province, where a 10 ha maize plot planted on sandy soil was treated with a grower standard rate of Atrazine and Mesotrione with the addition of SUSTAIN® (500 ml/ha). An adjacent maize field planted on the same day which received a similar herbicide regime, but without SUSTAIN®, served as the untreated control.

All treatments were applied using a broad boom sprayer at a spraying volume of 200 L/ha directly after plant. Numerical data was collected three weeks after these applications using 4 plots (Figure 1) from predetermined areas in each treatment consisting of 4 in-between rows with a length of 5 m each. The total number of weeds in each plot was counted, whereafter the data were expressed as the mean number of weeds per experimental plot.

RESULTS AND DISCUSSION

The data collected from both trials, visually and numerically, indicate that SUSTAIN® has a positive effect on pre-emergence herbicides. The visual observations made from the aerial photography at the Middelburg trial clearly show a significant difference between the plot that had SUSTAIN® added to the herbicides and the one where it was omitted (Figure 2).

Furthermore, (Bethal trial) when the number of weeds was calculated from experimental plots that were placed at predetermined spots throughout the maize fields it was determined that on average the addition of SUSTAIN® reduced the number of weeds from 41 to 17 when it was compared to where it was omitted (Graph 1).

Graph 1. Mean number of weeds per experimental plot placed at four predetermined areas throughout each of the pre-emergence herbicide + SUSTAIN® treated area vs the pre-emergence herbicide treatment only in maize fields.

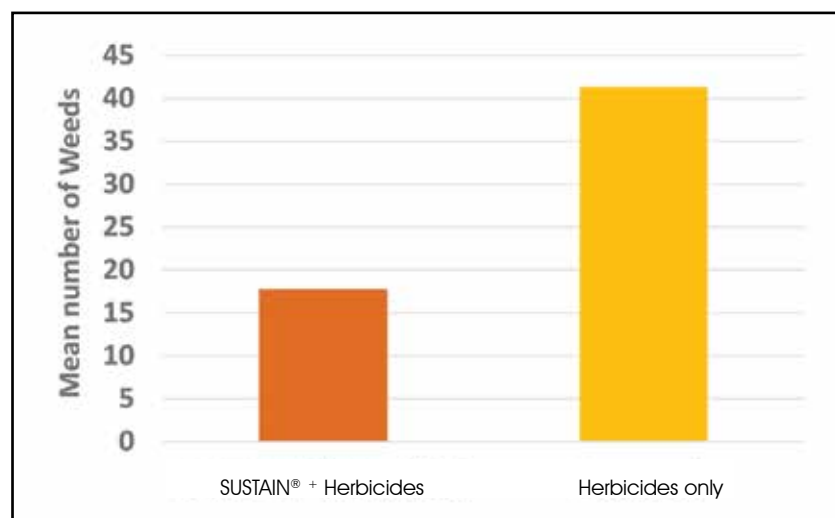


Figure 2. Aerial views at Middelburg: (A) Section of maize plot treated with Acetochlor and Mesotrione herbicide, as well as SUSTAIN®; (B) Section of maize plot treated with only Acetochlor and Mesotrione herbicides. Note the more weeds present where Sustain® was omitted

Should you require any further technical information contact Charl Kotze (charl.kotze@hygrotech.co.za). Visit <https://millerchemical.com/index.php> for a video on the trial conducted in Middelburg. Always refer to and follow label instructions of SUSTAIN® and herbicides when using them.

Sweet Pepper Programme

page 1

Growth Stage: Root Stimulant

At transplant:	- Kic Start (Drip System)	5L/ha
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Growth Stage: Vegetative Growth

Week 2-4 :	- Nitrospray Plus (Foliar)	300ml/100L or 2L/ha Max
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Growth Stage: Flowering & Fruit Development

Week 5:	- Asco Gro (Drip System)	1-2L/ha
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Week 6:	- Calmabon Plus (Foliar)	3L/ha
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Week 7:	- Grotonic (Foliar)	500ml/ha
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Week 8:	- Calmabon Plus (Foliar)	3L/ha
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Week 9:	- Grotonic (Foliar)	500ml/ha
---------	---------------------	----------

	- Asco Gro (Drip System)	1-2L/ha
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Week 10:	- Calmabon Plus (Foliar)	3L/ha
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Week 11:	- Grotonic (Foliar)	500ml/ha
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Foliar Spray Options:

- Hygrobuff 4 (Buffer)	100ml/100L
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- NuFilm P (Sticker/Spreaders)	38ml/100L or 150ml/ha
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- Sporekill (Fungicide)	100ml/100L
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Contact your nearest Hygrotech representative

Sweet Pepper Programme

page 2

Growth Stage: Harvesting

Week 12:	- Calmabon Plus (Foliar)	3L/ha
Week 13:	- Asco Gro (Foliar)	1.5L/ha
	- Asco Gro (Drip System)	1-2L/ha
Week 14:	- Calmabon Plus (Foliar)	3L/ha
Week 15:	- Millerplex (Foliar)	300ml/ha
Week 16:	- Calmabon Plus (Foliar)	3L/ha
Week 17:	- Asco Gro (Foliar)	1.5L/ha
	- Asco Gro (Drip System)	1-2L/ha
Week 18:	- Calmabon Plus (Foliar)	3L/ha
Week 19:	- Millerplex (Foliar)	300ml/ha
Week 20:	- Calmabon Plus (Foliar)	3L/ha
Week 21:	- Asco Gro (Foliar)	1.5L/ha
	- Asco Gro (Drip System)	1-2L/ha
Week 22:	- Calmabon Plus (Foliar)	3L/ha
Week 23:	- Millerplex (Foliar)	300ml/ha
Week 24:	Repeat Weeks 20-21 until end of harvest.	

The above programme is presented in good faith based upon years of experience. It is not necessarily an absolute guideline under all conditions, among all pepper varieties or through the occurrence of various pests and diseases. Exercise Good Agricultural Practices and **ALWAYS REFER TO AND FOLLOW GUIDELINES OF THE PRODUCT LABELS**. For further information contact your nearest Hygrotech branch.

Kic-Start, Reg. No. K5442* of Act 36 of 1947; Nitrospray Plus, Reg. No. K4415* of Act 36 of 1947; Asco-Gro®, Reg. No. K6714# of Act 36 of 1947; Calmabon Plus, Reg. No. K7315* of Act 36 of 1947; Grotonic, Reg. No. K6942# of Act 36 of 1947; Hygrobuff 4, Reg. No. L5512* of Act 36 of 1947; Nu-Film® P, Reg. No. L2980* of Act 36 of 1947; Sporekill®, Reg. No. L7115^ of Act 36 of 1947; Millerplex®, Reg. No. K6899# of Act 36 of 1947.

*Registered by Hygrotech Properties (Pty) Ltd, 1 Gerard Braak Street, Pyramid, 0120.

#Registered by Miller Chemical SA (Pty) Ltd, P.O. Box 16603, Pretoria North, 0116.

^Registered by ICA International Chemicals (Pty) Ltd, P.O. Box 2312, Stellenbosch, 7601.

KENYA'S GRASSY FUTURE



Written by Andrew Mules – General Manager, Hygrotech Kenya.

Kenya has had a long historical association with cattle grazing on the once great plains of Africa. Pastoralists for centuries followed the rains across vast tracts of open land to graze their cattle. As long as their cattle were fat and healthy, the people were happy. During these times, the African population was relatively small and the effect of their herds grazing on the surrounding countryside was minimal.

Since those times, there has been a dramatic change in the landscape of Kenya. The population of around 2m at the turn of the 20th century has burgeoned to 45 million today and by 2050, it is estimated to be over 95 million!. Vast swathes of land have been swallowed up by urbanization and new farming practices have sadly caused the old way of life to disappear.

According to a 2017 report issued by the FAO/Kenyan National Bureau of Statistics, it was estimated that in Kenya alone, there were over 14 million head of indigenous cattle and 3.3 millions head of exotic breeds being farmed. On top of this, there was the equivalent of 18 million sheep, 28 million goats and 3 million camels. All these animals have to be fed so that in turn, they would feed an ever growing population. With the waning of the old way of life, farmers are now having to produce far more feed from less land. New types of forage crops adapted to different types of environments have to be sourced so that they can keep abreast with the ever increasing demands.

There are some very good local grasses and forage crops for sale to farmers in Kenya, but quality and reliability continue to hamper regular availability. A locally bred variety of **Rhodes grass (*Chloris gayana*)** called 'Boma' is as good, if not better, than the 'Katambora' Rhodes grass of Southern Africa. There are also many indigenous legume plants being bred here, but as yet it has not gotten to a large enough commercial scale to satisfy local demand. A lot of uncertified seed is used, planted at high seeding rates which may or may not be viable.



We, at Hygrotech EA (HTEA), in cooperation with Hygrotech SA (HTSA), are planning to help improve the availability and variety of forage crops to assist both large and small scale operators to improve the quality and quantity of their feed. Earlier this year, HTEA gave out numerous samples of different grass and forage seeds to farmers to test them in their specific regions. HTEA also planted a wide range of similar grasses and forage crops at their trial site in Naivasha to see how adaptable some of the newer varieties were to this country.



“The uses of grass for hay production is becoming more important so that farmers have food reserves during the drier periods of the year to feed their animals ”

Most of these trials were a great success, For some time, **Know Kandy (*Sorghum x Sudan*)** has proven a successful choice to those farmers used to growing sorghums and the likes of Napier grasses. Larger operations with access to irrigation have been buying **Lucerne (*Medicago sativa*)**, such as **HL 9** and **HL 10**. Being treated with Nitrocoat inoculant, this has helped speed up planting and improve the quality of their feed mixes, especially for dairy cows. Small scale operators are very keen on planting certain forage crops such as turnips for their animals.

The uses of grass for hay production is becoming more important so that farmers have food reserves during the drier periods of the year to feed their animals. There are a couple of large hay producing operations that only grow and sell hay to milk and beef producers. Those with irrigation or who farm in the more reliable rain fed areas, have shown great interest in the annual rye grass **Lolan** and its improved version **Excellent**. The under sowing of a legume, such as the Arrow leafed clover (***Trifolium vesiculsum***) variety **Zulu** to this grassland is also to take hold in many farmers minds to help improve protein and digestibility.

Farmers in drier areas are now relooking at the **Hybrid Pearl Millets (*Pennisetum hybrid*)**. **Grazing vetches (*Vicia villosa*)** and **Cowpeas (*Vigna unguiculata*)**, to help provide better feed quality during these dry periods, all of which we have access to.

There are still plenty of challenges ahead to overcome, especially with phytosanitary requirements constantly changing and becoming more stringent. **However, with an open mind, a desire to succeed and a professional backup service, we at HTEA and HTSA feel there is a great future for the new range of grasses and forage crops to be introduced. This, we are sure, will bring a brighter future for Kenyan farmers to improve their methods of production and improve the weight of money in their pockets.**



Naivasha trial grounds

Kow Kandy **VS** Hy Pearl Millet

Written by JJ de Klerk – National Technical Marketing Manager, Pasture & Forage



KOW KANDY



HY PEARL MILLET

One of the most asked questions we field in Spring is...sorghum or millet?

Although these two crops are comparable there are however a few critical differences that need to be taken into account when selecting between the two species.

Kow Kandy

Kow Kandy (KK) with its sorghum sudan cross gives the producer the best of both worlds, with a high yielding leafy crop that is drought tolerant from the sorghum parent line. Adding palatability and regrowth rate from the other parent line, resulting in a high yielding palatable multipurpose crop. Depending on the demand KK can be grazed or cut for hay and silage and even left as foggage (standing hay) to over-winter livestock on. KK also makes for a great cover crop/mulch.

Its large seed also makes for easy cultivation and a crop that is very quick out of the gates under a variety of conditions and climates. With yields of 15 plus tons per hectare dry matter it is a crop that is hard to beat under dryland (>600mm), or irrigation where yields can be in excess of 25 tons/ha.

From seeding one can expect to graze KK as early as 6-8 weeks post seeding under certain conditions and can be ready to harvest for hay 2-4 weeks later at seed head emergence. Silage should be cut at soft dough stage which can be around 12-16 weeks post seeding depending on conditions. When managed optimally, 2 to 4 cuts/grazings can be taken per season.

KK is a heavy feeder of Nitrogen with targets of 100-150 kg/N/ha and even higher under irrigation should be maintained. Be sure to control broadleaf weeds 2-4 weeks post emergence with a suitable broadleaf herbicide and add Entrée for improved uptake and efficacy. When cutting and grazing KK, do so to about 3-4 inches or a minimum palm width from the ground to encourage fast recovery. Seed KK at 15-25 kg/ha. Lower seeding rates when cutting for silage to encourage thickening of the stems and to reduce the risk of possible lodging, and higher seeding rates for grazing and hay to encourage thin stem formation. Kow Kandy can be seeded

anywhere from mid-October through to January in moderate climates.

Hy Pearl Millet

Hy Pearl Millet (HPM) is a hybrid millet (Afrikaans: Baster Babala) which has all the familiar traits of common millet but with more punch. One can expect improved yields, palatability and high regrowth rates.

Compared to KK when cultivated under similar conditions and seeded at 12-15 kg/ha from mid-October to January in moderate climates. KK will in most cases out yield HPM in total DM. KK will also be the more palatable between the two crops. **Where HPM trumps KK is in fertilizer demand and drought tolerance.** HPM has a lower demand at 60-100kg/N/ha and is predominantly planted dryland with a water demand of 400-800 mm per ha for the growing season. Yields of 10-15 ton DM/ha is expected on average.

HPM can be grazed at an early stage and left to cut for hay when the seed head emerges. Silage should be cut at soft dough stage. Use as foggage is also possible but not recommended. Weeks to the respective stages is similar to that of KK. In either case remember to apply the 3-4 inch or palm rule as per KK. Regrowth rates will be slightly slower or comparable to KK with 2-4 cuts or grazings per season as the norm. Weed control is crucial at 2-4 weeks post emergence with an applicable broad leaf herbicide. Remember to add Entrée as per above.

Both crops can be seeded in rows or broadcast. In most cases either crop is seeded broadcast. This can be done with either a fine seed planter or broadcast spreader and planted at a depth of 10-15mm into a clean firm seedbed. Rolling after planting is beneficial.

In summary:

- **Kow Kandy for yield and palatability under most conditions.**
- **Hy Pearl Millet for yield and drought tolerance under tougher conditions.**

Be sure to confirm your order with you HygroTech representative as stock tends to clear out rapidly in Spring.

SPRING PASTURE SPECIALS

PRETORIA DEPOT

Lucerne HLS 9.2 (Class 9, SALT TOLERANT, Pre inoculated)
Lucerne HL 9 (Class 9, Pre inoculated)
Kow Kandy (Sorghum x Sudan)
Teff SA Brown
Cowpea IT 18
Cowpea Bechuana White

R 4900-00 per 25 kg
R 3650-00 per 25 kg
R 300.00 per 25 kg
R 375-00 per 25 kg
R 533-00 per 25 kg
R 520-00 per 25 kg

UITENHAGE DEPOT

Italian Tetraploid Ryegrass Jeanne
Italian Tetraploid Ryegrass Mondora
Italian Tetraploid Ryegrass Danergo
Perennial Hybrid Ryegrass Storm
Perennial Tetraploid Ryegrass Power

10-19 bags
R 839.50 per 25 kg
R 867.00 per 25 kg
R 805.50 per 25 kg
R 1236.50 per 25 kg
R 1260.75 per 25 kg

20 and more bags
R 818.00 per 25 kg
R 844.75 per 25 kg
R 784.75 per 25 kg
R 1204.75 per 25 kg
R 1228.25 per 25 kg

PIETERMARITZBURG DEPOT

Kow Kandy (Sorghum x Sudan)
Cowpea IT 18
Cowpea Bechuana White
Italian Tetraploid Ryegrass Jeanne

R325.00 per 25 kg
R558.00 per 25 kg
R545.00 per 25 kg
R889.50 per 25 kg (10-19 bags)

R868.00 per 25 kg
(20 and more bags)

*All prices exclude VAT
*All prices for collection Pretoria/
Uitenhage depot
(Delivery fee can be quoted)
*Prices valid on available stock

***Offer ends
1 Dec 2020**

FORAGE AND PASTURE SCREENING TRIALS UPDATE

Written by JJ de Klerk – National Technical Marketing Manager – Forage & Pasture crops

As mentioned in our previous issue we have been expanding on our current forage and pasture screening trials all with the aim of identifying new improved varieties which our valued customers will have access to in 2021/22.

From our last round of summer trials we have been able to identify 2 potentially new additions to the Hygrotech range.

1. Hycover Mix:

This mix was developed with the following goals in mind; drought tolerance, species diversity and biomass production. We believe we have ticked all the boxes with the Hycover mix. **This mix includes sunflower, forage sorghum, hybrid millet, sunhemp and cowpea**, all in an ideal ratio to promote optimal growth of all species concerned. This mix will yield high biomass under dryland conditions and can be used as a forage crop if needs be. The species diversity will not only benefit the soil in terms of carbon deposition when incorporated, nutrient scavenging and subsoiling due to the various root structures, but will also attract various pollinators as well as some other welcome guests.

2. New radish:

Hygrotech has long been a marketer of the reliable Nooitgedacht and has launched its very own Daikon/ripper/tiller radish i.e. Sodbuster in 2019. We are glad to say we will now be able to offer our farmers a new improved Japanese radish variety out of Germany. The new variety (name to be determined) is a prolific leaf and root producer when compared to other top commercial varieties. **However, the greatest noticeable benefit is in the smoothness of the leaf. This will greatly increase palatability and intake which in turn will improve animal performance.** The variety is also well suited to spring plantings as it is very resistant to bolting. Be on the lookout for the launch early 2021

3. Lucerne variety selection trial:

We are currently running an in-depth Lucerne cutting trial and at time of print would have finished our 5th cutting. The trial is expected



A welcome guest in the Hycover trial



to run well into 2021 with the aim of collection a full years' worth of yield data. **With this we will not only be able to determine the best variety, but will also be able to supply comparative data over all seasons.**

We have included our current portfolio of HL9, HL10 and HLS 9.2 along with relevant well-known opposition varieties. Along with this we have been very fortunate to test some new lucerne varieties from DLF seeds, a company that is synonymous with world class temperate grass and clover varieties. Looking at current data, they are sure to add Lucerne to their list.

- We have also seeded our winter screening trials which include, oats, rye, radish, turnip, beet and mustard. We will have more info on these trials in the next Forum.

**Hycover Mix full-stand****Hycover Mix close-up****Winter screening trial - Oats****Lucern trial**

GLOBAL SEED VAULT

IN THE ICE

Compiled by Theo Schoonraad

The Svalbard Global Seed Vault is a secure seed bank deep inside a frozen mountain, in the permafrost i.e. a thick subsurface layer of soil and bedrock that remains below freezing point throughout the year, on the Norwegian island of Spitsbergen in the remote Arctic Svalbard archipelago.



The seed vault is an attempt to ensure against the loss of seeds in other gene banks during large-scale regional or global disasters or catastrophes. It is seen as humanity's last hope against extinction after a world crises...and is aptly named the 'Doomsday Seed Vault'.

It is designed to survive any global catastrophe, including nuclear war, gene modification or gene pollution. The vault preserves a wide variety of back-up plant seeds that are duplicate samples of seed held in smaller gene banks worldwide.

The vault is the ultimate insurance policy for the world's food supply, offering options for future generations

to overcome the challenges of climate change and population growth. It will secure, for centuries, millions of seeds representing every important crop variety available today . It is the final back-up.

The seed vault can hold massive amounts of seeds. A whopping 4.5 million varieties of crops, with each variety containing around 500 seeds, can be stored in the vault. This equates to over 2.2 billion seeds !!

At the time of the vault's 10th anniversary in February 2018, the total number of seed samples held at the vault was 967,218... originating from almost every country in the world and representing over 4,000 plant species and 13,000 years of agricultural history.

The seed vault functions like a safe deposit box in a bank. Ownership remains with the depositor, who has the sole right of access to those materials in the seed vault. No one has access to anyone else's seeds from the vault.

The seedbank is 120 m inside a frozen sandstone mountain on Spitsbergen Island and employs robust security systems. Spitsbergen was considered ideal because it lacked tectonic activity and of course had permafrost, which aids preservation.

The vault is 130 m above sea level which ensures that the site is kept dry even if the ice caps melt. If the cooling equipment fails, at least several weeks will elapse before the facility rises to the surrounding sandstone bedrock's



temperature of minus 3 degrees C and is estimated to take two centuries to warm to 0 degrees C ! The seeds are stored in sealed three-ply foil packages, then paced into plastic containers on metal shelving racks. The storage rooms are kept at -18 degrees C . The low temperature and limited access to oxygen ensure low metabolic activity, keeping the seeds viable for very, very long periods of time.

This unique vault is truly an insurance policy against accidental loss of diversity in traditional gene banks.

It's a comforting feeling, isn't it?



References:

Wikipedia - Safeguarding seeds for the future (<http://www.seedvault.no/>)
Nordic genetic resource centre (Nordgen) (<http://www.nordgen.org/index.php/en/content/view/full/2/>)



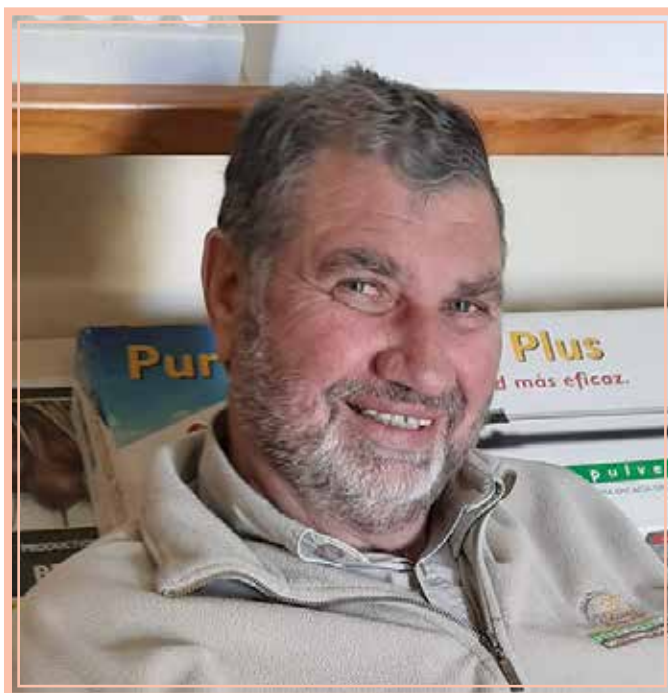
Two veterans with vast experience say goodbye

Compiled by Theo Schoonraad

You can't buy experience, know-how and respect....you earn that. It is certainly true about Robert Young and Fielies Nieuwoudt who worked for Hygrotech for 29 and 19 years respectively.

Robert Young

Robert started his career with Hygrotech in June 1991 and ended up as Regional Manager of the Southern Cape based in the beautiful town of George. From humble beginnings, Robert and his team transformed this region into a top quality outfit... being of service to the farmers, vegetable canners and other clients. Robert also initiated the start of a Hygrotech trial ground in George which led to vegetable cultivar tests as well as extensive trials on pasture and fodder crops. Information days at the trial site also enhanced their marketing efforts. The latter created huge interest amongst milk farmers, among others, and a sizable market share quickly followed. Robert devoted his life, so to speak, to Hygrotech and between himself and his wife Christa, they served the company for 53 years !



Fielies Nieuwoudt



Fielies joined Hygrotech in June 2001 as a Regional Manager in Tzaneen, Limpopo and with the help of excellent marketing people and devoted branch personnel created a region to be proud of. Farmers and chemical distributors in the northern parts of our country benefitted from his excellent people skills, sense for detail/ record holding, orientation towards service and no-nonsense business acumen. No stone was left unturned and speedy follow-up actions always resulted in problems being solved and happy customers.

Robert and Fielies, we thank you for your devotion and astute business principals. May you both enjoy your retirement, with good health, family-time and love.

STUFFED

PEPPERS

Ingredients

- ½ tbsp olive oil
- 1 onion, finely chopped
- 2 garlic cloves, crushed
- 500g beef mince
- 100g mushrooms, quartered
- ½ tsp dried thyme
- Salt and black pepper
- 4 red, orange or yellow peppers, or a mixture, halved and deseeded
- 100g Cheddar, grated



Instructions

1. Preheat the oven to 200°C/180°C fan/gas mark 6.
2. Heat the oil in a large pan and cook the onion for 2-3 minutes. Add the garlic and cook for 30 seconds, then add the mince. Cook for five minutes, breaking it up with a wooden spoon, until thoroughly browned. Drain off any excess fat.
3. Return to the heat, add the mushrooms and thyme and cook for a further three minutes. Season and set aside.
4. Place the pepper halves facing upwards on a baking tray. Season with salt and pepper, then spoon the mince mixture into each pepper until full.
5. Bake for 20-25 minutes until the peppers are almost tender. Sprinkle the cheese evenly on each one and return to the oven for a further 5-6 minutes until the cheese is golden and bubbling.



LAWN GRASS TO BE PROUD OF

Make sure your lawn catches the eye and stand out this Spring and Summer. A beautiful and healthy lush green lawn will always unleash positive response.

Hygrotech supplies and distributes seed of the following lawn/ turf grass varieties:

- Kikuyu
- Bermuda kweek (Cynodon)
- Bahia Pensacola
- Annual turf rye grass
- Perennial turf rye grass
- Turf fescue
- Hygro Lawn grass mixture

We are also supplying an excellent range of specialized lawn grass fertilizers :

- Profeed 18-6-18
- Calpomagnit
- Spes Maxi-Turf
- Spes Hygro ASN 40
- NC 32
- Green-Up
- Liquid 6-3-4 (20)
- Hygro Sports Pack



Contact Theo Schoonraad (083 273 2624) for advice on seasonal preparations, technical details, availability and prices of our lawn grass products.