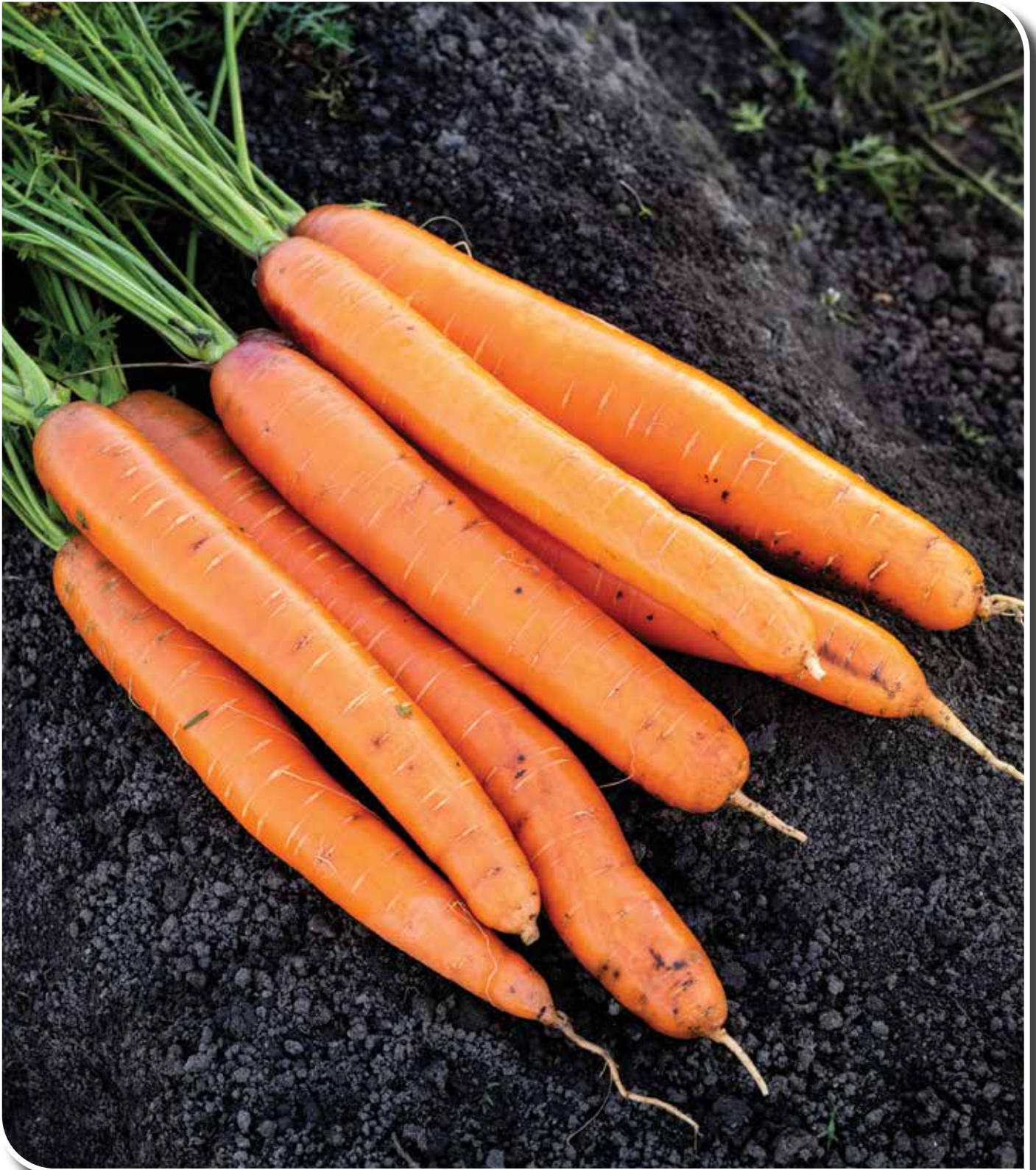


# the FORUM

Since 1991

Vol 1.  
2022



**HYGROTECH**  
SUSTAINABLE SOLUTIONS

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

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# COINCIDENTAL

**M**ost people, I am sure, have wondered at some time or another why certain incidents seem to happen with them more often than not. Why are you seemingly always stuck in traffic, or in the bank or supermarket in the slowest moving lane or queue? Why do furious thunder storms rage seemingly only on Friday evenings and then leave you with a lawn scattered with debris and branches for the rest of the weekend when you have already invited friends over? Why do most things in your house break, blow a fuse or block-up during the night or on weekends? Why do your children seemingly always get sick during the night ?

There are most probably some scientific or psychological theories as to why these things happen, but in my view it is just straightforward coincidence and bad timing. It's well documented that unoccupied time always seems to pass more slowly than occupied time. Furthermore, bad memories have a more powerful psychological impact on us than do good events. In other words, we are more likely to remember slow queues than times when we have been in faster queues or lanes.

A friend of mine who has a stake in a game farm told me how a naughty troop of baboons has caused havoc regularly at the thatch roofed homestead on the farm. According to him it is almost as if "these baboons have prior knowledge" because its happened more than once that their raiding expeditions seemingly were synchronized with his planned family visits there. "The troop travels around and is usually not seen for weeks, but, oh boy, let me plan a visit there...then it happens, but just prior to my arrival. Its almost as if they want to show us humans how clever baboons can be " No, my friend, this is what's called coincidence! (and opportunism).

Of course, pure coincidence could also have a huge positive effect on your life. Just think about people you have met and the opportunities that have been created if it wasn't for coincidence. What's more..... God controls coincidence.

**"Be kind whenever possible  
It is always possible"**

**-Dalai Lama-**





12



8



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22

### SV4129TH



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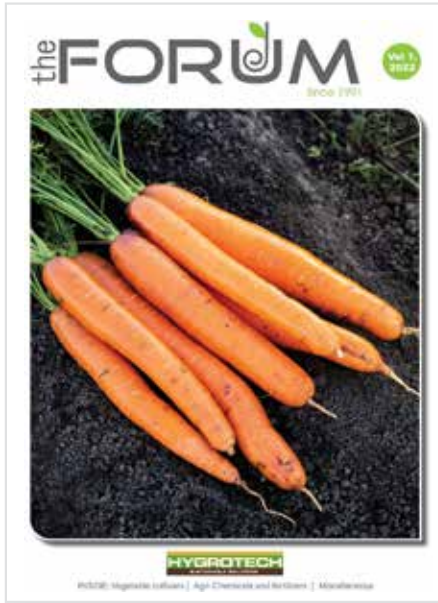


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## FERT-AG-CHEM



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**ON THE COVER**  
 Healthy bunch of  
 Dorado carrots

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.

**G**lobal warming related weather challenges, the ongoing global pandemic and the ongoing war in Ukraine are just some of the uncertainties and items to discuss when in conversation with family, friends, or business partners. This was no more apparent than when I and Henry Coetzer, attended the ISF world seed congress in Barcelona, 16-18 May this year. With participants from over 70 countries, comprising more than 1500 delegates in intense meetings over three days, these topics and their impact on agriculture were part of all discussions.

In South Africa, all role players within the agricultural industry are feeling the impact of the pandemic and the war in Ukraine, and these have already resulted in a rise in food price inflation.

The question on everyone's lips is, "when will this end" and "what can we expect in the next 3-6 months?"

There are no definite answers to these questions. Amongst seed producers and suppliers, the consensus is that seed prices will rise between 15-25%, with some estimates being even higher. This is all due to the disruptions in the seed supply chain and the influences of higher input costs. The war in Ukraine is complicating matters and the immediate and long-

term effects of this will be food shortages and higher price for all food sorts. According to those involved in international agriculture, these conditions will worsen before they improve. The unpredictability of the future path of the covid pandemic, where a new mutation can be identified at any moment and the uncertainty regarding the current war in Ukraine, resulting sanctions applied against Russia, against the backdrop of a nuclear threat, all indicate that South Africans need to brace themselves for difficult times.

On the positive side, food security is of the uppermost importance internationally and as such Hygrotech and other role players within the South African Agricultural industry have an important role to play in ensuring that enough food is sustainably produced to feed our population. Accurate calculation of production costs will play a major role throughout the food chain, from seed production to produce production, to ensure the survivability of the growers.

Furthermore, the transport companies and supermarkets will have their part to play in a dual role, one being to ensure their own sustainability, but also to ensure that the prices they supplied to growers are reasonable enabling them to continue growing food, earning a living for themselves and their employees while at same time feeding all South Africans.



**“Climate change is sometimes misunderstood as being about changes in the weather. In reality, it is about changes in our very way of life.”**

**Paul Polman**

# IN MEMORIAM

## — Robert Young —

It is with a heavy heart that I write to inform readers that an old stalwart of Hygrotech, Robert Young passed away on the 5th of February 2022, after losing his battle against cancer. Robert started his Hygrotech journey in June 1991 and initially worked from his home in George. He very quickly established himself as a strong technical marketeer and his success led him to be promoted to Area Manager. In addition, Robert functioned as National Product Manager for brassica crops. Robert purchased a farm close to Blanco in the mid-nineties and from those premises, managed the Southern and Eastern Cape regions with great success. Robert always had a passion for farming, so it was no surprise that Robert trialled many varieties on the trial grounds which he developed on his farm. The yearly trials, which included vegetable and pasture crops, were always a highlight on the George calendar, which even drew international visitors.

Robert was to me personally much more than just a colleague. Being a couple years older than me and much more knowledgeable regarding agriculture, I learnt a lot from Robert in my early years and this resulted in a 31-year friendship, which lasted until his death. Even after his retirement in 2020, Robert and I would talk frequently about the business and our respective families, as friends often do. Robert enjoyed debating a marketing strategy and I always admired his willingness to speak his mind when he felt sure that his opinion was correct, which he often was. Robert also had a much more relaxed side to his personality when not talking business, for example a braai with friends, which would include a dart and pool competition, was a favourite of Roberts', a passion his family shared. Robert's dedication and love towards his wife and three daughters was exemplary. This love of course spilled over to the grandchildren of which Robert was extremely proud.

Robert attributes are numerous, amongst which, loyalty to family, Hygrotech, friends and clients stand out. Robert was disciplined in his approach to life, and he would plan and execute a business plan or a braai for his friends with the same eye for detail. You just knew that if Robert oversaw the organizing committee, all would be as it should be.

Robert will be sorely missed by his old colleagues in Hygrotech, none more than by myself, his family, and clients and by many of those lives he touched over the years. Robert is survived by his wife Christa, Chrizelda, Roelien and Nicole and grandchildren.



Henry van der Voort





# Cabbage

# Defender F1

Written by Francois Mostert– Nelspruit

Hygrotech had a successful farmers day in Lydenburg, where we had **Defender F1** cabbage (Planted 01/12/2021 to 02/22/2022) standing out and attracting a lot of attention. **Defender F1** stood out from other cabbages from participating companies. Amongst the trials with 7 different companies, **Defender F1** drew most attention and out performing standard varieties.

Christo Viljoen and his brother Jaco Viljoen made this day possible by giving all farmers top quality plants to have a look at. We had a lot of farmers asking questions about **Defender F1** and they were very impressed with the variety.

One of Defender's best qualities is that you can plant it all year round and still produce a top quality product. Defender's unique leaf formation allows the excess water to drain away from the plant which means good field tolerance against black rot.

In this picture Christo Viljoen on the left, Reinhart Viljoen in the middle and Francois Mostert on the right at the Defender F1 Cabbage.





## Defender F1 (planted 04/01/2022 to 05/04/2022)



**4,8KG Without frame  
90 Days  
Summer planting**

In this picture you can see that the core is about one third of the cabbage head which indicates that a producer will get a long held storage time of about 100 - 120 days on the field without the cabbage bursting. The result is that the grower has more time to wait for the right price and marketing slot.

This picture was taken at 90 days as you can see that the head is still soft and already 4,8kg but already marketable, ideal would be to start cutting Defender F1 at a 100 days in summer.





**DEFENDER F1**

**Defender F1 Cabbage**

**SPECIFICATIONS**

- Maturity 110 - 120 days after transplant
- Avg. head weight 4,5 - 6.5kg
- Excellent quality fruits
- Fresh market
- All year round, with shoulder sowing the best option
- Good frame
- Good firmness



**Defender F1 versus Standard**





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## GROWERS OF SEEDLINGS

Vegetables



Forestry



Avocado



Kiwi



Citrus



Macadamia



## CABBAGE FARMER'S DAY

Recently, the Ezigro team hosted Cabbage Farmer's Day in Lydenburg on the 22nd of February. We shared the networking and training event with six well-known seed companies in South Africa.

The day was a great success showcasing **27 different** cabbage varieties.

Please keep a lookout on our website [ezigro.co.za](http://ezigro.co.za) for future farmer's days

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# NEW EXCITING CARROTS FROM BAKKER BROTHERS **STURGEON** STOOD OUT IN TRIALS

Written by Theo Scholtz – Senior Field Officer, Stellenbosch, Western Cape

**A**fter the success of carrot Dorado, new trial varieties from Bakker have been planted by Stiaan Terblanche in Phillipi, Western Cape. The original trials of Dorado were also planted by Stiaan Terblanche.

From the latest trials, carrot Sturgeon stood out from the rest. Dorado came in at a close second. The two varieties complement each other excellently.

Carrots Cod and Neva, sown on both sides of the Sturgeon, were shorter and the leafage not so strong. Cod is a good looking carrot, cylindrical, but a number of carrots were shorter than the rest (clearly visible on the photograph) Sturgeon and Dorado’s leafage are very similar although the attachment of the Sturgeon leaf is much stronger.

Sturgeon is beautifully cylindrical with round points, great taste and colour. The trial was sown on 28 January 2022 and was harvested on 28 May although it could have been harvested in mid-May already. On the photograph where Stiaan Terblanche is seen handling Sturgeon, it was in the soil for 140 days already, The size is clearly visible.

The yield potential of Sturgeon is very high. According to our calculations, 90 tons can be harvested at a plant density of 1.2 million per hectare. Yield is determined though, by cultivation practices and climatic conditions.



Farmer Stiaan Terblanche with a bunch of Sturgeon carrots

## TRIALS



Dorado



Cod

# CARROTS

- 1 Dorado
- 2 Cod
- 3 Neva
- 4 Sturgeon



Neva

Sturgeon



“Sturgeon is beautifully cylindrical with round points, great taste and colour”



Cod

Neva

Sturgeon

## Hybrid Habanero hits South African market

Compiled by Christo Le Grange

### Hybrid Power

#### The latest updates

Hygrotech has just screened the first hybrid Habanero cultivars. In these trials all three cultivars stood out regarding their plant sizes and fruit quality. Slightly bigger fruits than the old fashioned open pollinated. We are very excited to introduce something that will benefit all parties involved. Nurseries can now produce seedlings of high standard due to the vigour of hybrid potential. Due to quicker nursery turnaround, growers will receive strong and healthy plants with exceptional disease resistances. These plants grow stronger and almost as quick as normal hot peppers.



These impressive plants stood out in the Komatipoort area. Strong healthy struture insure top yields and protection agaisnt sunburn.

### The Cultivars

#### Hygrotech R & D

*First on the List is Habanero Green to Red.*

#### Brenna F1

Strong, compact plant. Outstanding leave cover. Fruits turn from green to red. Average fruit size of 5x3cm can be produced. *Disease tolerance: L4, CMV, CVMV, N, TSWV, PMMoV*

#### Ember F1

Another superior product. Fruits turn from green to orange. Fruit sizes reaching 5x3cm. Strong plant with excellent fruit setting capacity. *Disease tolerances: CVMV, N, TSWV, PVY*

*Finally, the green to yellow cultivar.*

#### Arati F1

This cultivar has a strong and tall plant. Massive yield potential. Like the other two, bigger fruit sizes compared to open pollinated ranges. *Disease tolerance: CVMV, N, TSWV, PVY*

The above mentioned range is ideal for the serious Habanero grower. Higher seed prices can be expected, but with quicker, stronger and healthier plants one can recover the difference easily. If everything goes to to plan, Hygrotech hopes to have seed available this coming season. Don't be left behind, make sure your order is placed.



#### Brassica Defender F1

R & D

All year-round Cabbage making its mark. 5 – 10kg heads with outstanding frame. Give it a change.

#### Carrots Dorado F1 & Sturgeon F1

Bakker

These two boys hit the market running. Both cultivars have huge potential in the Nantes class.

#### Tomato 1722 F1

R & D

Under protection cultivar of choice. Indeterminate round truss tomato with outstanding disease tolerances and fruit quality of the highest degree.

# Choice is everything when deciding which Butternut variety to plant

Written by Henry van der Voort & Hugo Burger

There are currently many varieties on offer for the South African producer to choose from. Growers base their choice on the specifications of the end user, which could be for export, chopping and dicing, or whole, etc. Shape, disease resistance, yield and weight are also factors which the grower must consider when choosing a suitable variety for the market he wants to produce for. The added challenge for suppliers worldwide is to produce seed to mobilize it on time to distribute this seed to countries across the globe. Since the onset of the global Covid 19 pandemic, this has been extremely difficult with seeds often getting bogged down in the country of origin due to Covid related lockdowns, flights being grounded and many other issues further complicating the movement of seed across international borders.

Hygrotech has been very pro-active during the latter stages of 2021 ensuring that it has forecasted good amounts of seeds to be produced to ensure that South African growers will have seed available for planting early spring 2022 through to winter 2023! Part of the good governance to ensure supply has been to ensure that Hygrotech's suppliers are producing seed globally in different hemispheres as well as in countries where political and climate security is more predictable and stable.

The following varieties will be available for export and supermarkets alike: Pilgrim, HSC 173, and Geneva Maxi. These varieties will produce most of its fruit in sizes ranging from 0.8kg-1.2kg. The NPK-fertilizer requirements are respectively 150kg N; 80kg P and 250kg K, where it is recommended to apply within

80 days as the growing period for these varieties is 90 days from plant to harvest under normal circumstances.

For the processing and fresh markets, the reference is larger fruited varieties with weights ranging from 1.5kg-3kg. Hygrotech offers Canesi, HSC 155, and Ultra. This grouping of varieties has a slightly longer growing period, 100days, and thus has a higher NPK- fertilizer requirement at 170kg N; 100kg P and 280kg K. These quantities must be applied before 90 days as they normally grow from planting to harvest within 100 days.

As with all other agricultural related products, it is much more important to plan ahead of time than what it was in the pre-pandemic era and thus it is important that growers secure their seed now by contacting their local Hygrotech technical representative to pre-order seed well before the butternut planting season kicks in!



# CANESI F1



**CANESI F1** butternut variety has uniform fruit and medium to large, blocky fruit shape. Great-tasting, bright orange sweet interior, fine-textured and smooth. Strong medium vine.

## SPECIFICATIONS

**Fruit Colour:** Tan  
**Maturity:** 85 - 90 days  
**Fruit Shape:** Thick neck  
**Fruit Mass:** 1.2 - 2.5 kg  
**Fruit length:** 33 - 38 cm  
**Plant Type:** Medium - Large

## FEATURES

Bright orange interior  
Medium to large, blocky fruit shape  
Strong medium vine  
Uniform fruit with thick necks

\* 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



## ULTRA F1



**ULTRA F1** butternut variety has uniform fruit and medium to large, Elongated fruit shape. Ivory coloured exterior and bright yellow interior, Good vigour. Strong medium vine. Flesh is fine grained and sweet

### SPECIFICATIONS

<b>Fruit Colour:</b>	Ivory
<b>Maturity:</b>	85 - 90 days
<b>Fruit Shape:</b>	Elongated
<b>Fruit Mass:</b>	2 - 4 kg
<b>Fruit length:</b>	35 - 38 cm
<b>Plant Type:</b>	Large

### FEATURES

- Good vigour
- Very uniform shape and size
- High yielder
- Vines provide a strong, long lasting canopy
- Stores well
- Flesh is fine grained and sweet

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



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## Geneva Maxi PMR F1\*



### Specifications

**Type:** Fresh & Export  
**Days to Maturity:** 85 - 90 Days  
**Fruit Mass:** 0.8 - 1.4 kg  
**Fruit Shape:** Typical Waltham

### Disease Resistance

Powdery Mildew

### Features

- Very good field tolerance to Powdery Mildew.
- Semi-Bush growth habit.
- Medium early cultivar.
- High yield potential.
- Only for main season production.



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

## PILGRIM F1\*



### Specifications

**Number of seeds per kg:** 9 000

**Sowing depth:** 2-3 cm

**Temperature range:** 20-24°C

**Days to maturity:** 85-90 Days

**Fruit mass:** Between 1 - 1.5kg

**Fruit size:** 30 x 13 cm.

### Disease Resistance

Powdery Mildew

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

### Features

- Hybrid butternut for fresh market and export
- 85 - 90 Days to maturity.
- Typical butternut shape.
- Light tan skin colour.
- Uniform fruit with thick neck.
- Small, compact vine.
- Has exhibited superior crack tolerance and storage qualities.



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# TECHNICAL INFORMATION

## BUTTERNUT

## HSC 155 F1\*



**Hybrid Butternut Squash with a thick blocky shape. Sweet deep orange flesh. Fruits are uniform in size and shape. Medium length vine growth habit.**

VARIETY	HSC 155 F1(*)
DAYS TO MATURITY	85-90 Days
FRUIT MASS	1.8-2.5kg
DISEASE RESISTANCE	Powdery Mildew
TYPE	Fresh & Processing

SEEDCOR carries out stringent trialing throughout South Africa prior to releasing varieties into the market place. SEEDCOR strongly recommends that all the varieties be trialed under your growing conditions prior to commercial sowings taking place. Cultural and descriptive information is supplied in good faith, as a guide only. Varietal performance is influenced by many variables, namely climatic soil conditions, cultural and management practices. No liability will be accepted by SEEDCOR or its representatives/distributors as to final performance based on this information.



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\*This variety is not on the official variety list yet, but an application has been lodged.

# TECHNICAL INFORMATION

**Butternut**

**HSC173 F1\***



- **Medium sized hybrid butternut squash.**
- **Uniform blocky shape.**
- **Mid season maturity in comparison to other varieties.**
- **Deep orange flesh and excellent eating quality.**
- **Medium length vine growth habit.**
- **Fruit size - 900g to 1.1kg .**

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final performance based on this information.

**\*This variety is not on the official variety list yet, but an application has been lodged.**

# STELLENBOSCH FARMERS' DAYS

March 2022

Compiled by Hugo Burger – Technical Manager, Western Cape.

**H**ygrotech held their annual farmers days during the 10<sup>th</sup> and 12<sup>th</sup> March at our Stellenbosch trial farm. The format was different this year in that 'outside' businesses were invited to display their products like tractors, gin, wine and boutique beer. Clients and producers of various vegetable crops attended the two days to scrutinize the latest cultivars.

Various cultivars caught the eye, none more so than melon Flavor Time which is destined to bring a new dimension to the melon industry. Flavor Time is a yellow Eastern Shipper with a long shelf life. This cultivar is the first of its kind and will enter the market in the coming season to the benefit of the producer and end-user alike.

A new summer broccoli Spectre withstood the very warm conditions extremely well and produced head sizes of 400 grams.

Other new material / varieties to look-out for in the coming days, are tomatoes, peppers, chilli's, sweet corn and watermelons. Hygrotech will therefore continue the tradition next year and strive to improve even further on our already very successful and sought-after farmers days in the Western Cape.



**1** Hugo Burger and the Bayer Team putting in the hard yards evaluating new material

**2** Guests were welcomed with quality gift packs upon arrival!

**3** Tomato HY2495 performed well enough to progress to phase two trials next season

4

Amongst the new Bayer material, a new saladette type tomato, attracted the attention of growers and the Bayer Team alike.

5

Mahindra exhibit of it's new range of vehicles and tractors

6

Riaan Smit and team from the farm enjoying a sumptuous lunch after walking the trials



4



5



6



Broccoli Spectre handled advers heat conditions with ease



HY243, also a Bayer saladette tomato, caught the eye due to exceptional plant and fruit quality



Hygrotech's Lodewyk van Staden (above left) and Christo Le Grange (bottom row center) sharing a pleasant moment after a productive day's work with the Bayer team.

SPECIAL  
ANNOUNCEMENT!

**HYGROTECH**  
SUSTAINABLE SOLUTIONS



# HYGROTECH & MAY SEED = QUALITY SWEETCORN

Written by Henry van der Voort

**H**ygrotech is very proud to announce that it will be introducing, marketing, and selling the May Seed sweetcorn programme in Southern Africa. We are very excited by this opportunity and the fact that May Seed is a sister company within the Zaad Holdings group of companies makes good business sense.

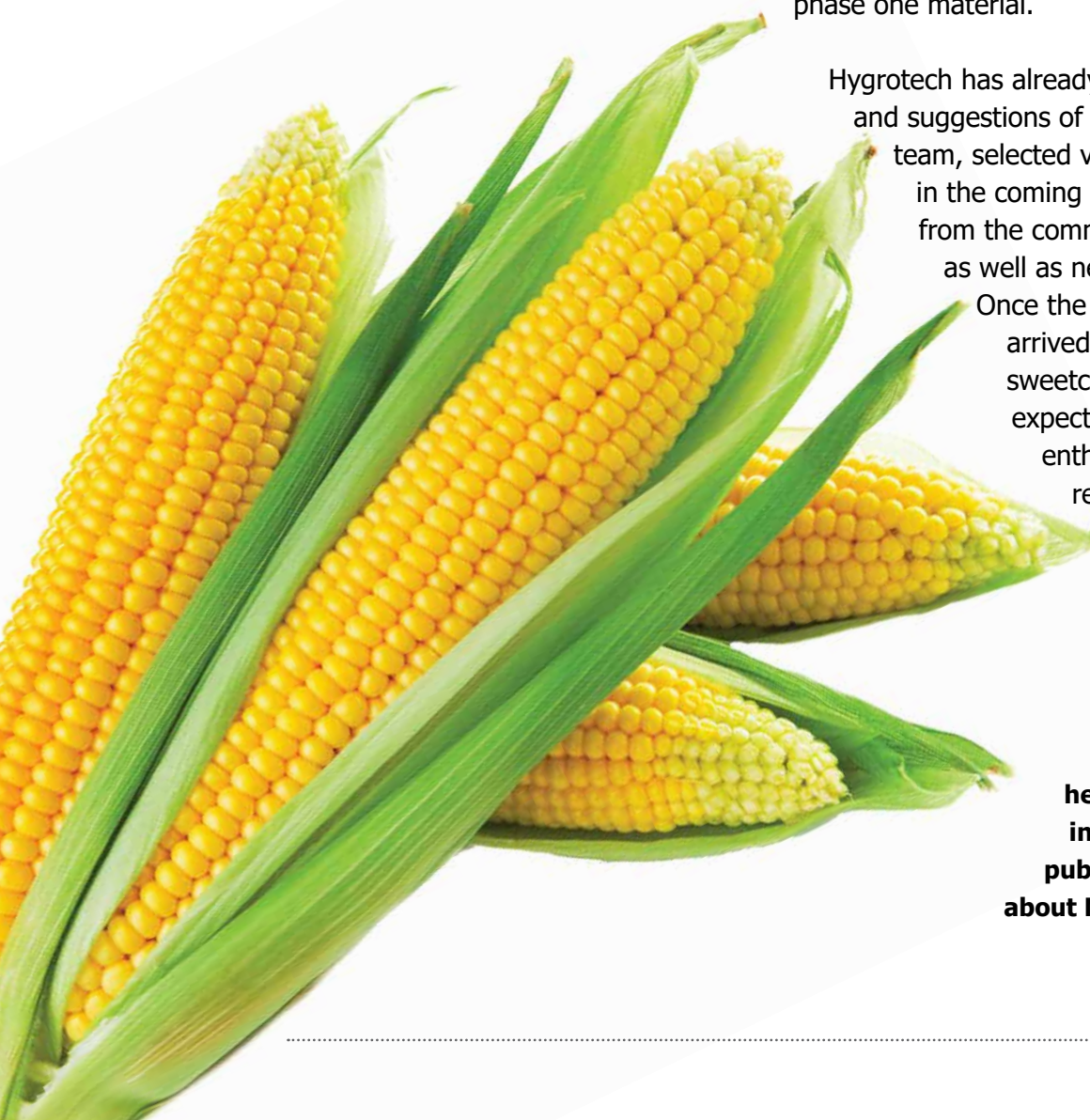
The sweetcorn programme is well known around the world with large volumes of sales being done globally. Their varieties thus also compete globally with the material from all breeding programmes from all the players in the global sweetcorn market.

Their knowledge of what the market requirements are for material for both the processing-and fresh market is unparalleled and as most of their varieties are already commercial, introducing the varieties to the South African grower should be a quicker strategy than what is the norm with phase one material.

Hygrotech has already, with the help and suggestions of the May technical team, selected varieties to trial in the coming months, both from the commercial material as well as newer selections.

Once the material has arrived in South Africa, sweetcorn growers can expect a visit from a very enthusiastic Hygrotech representative with seed to trial against the current standard varieties.

**Please see  
herewith more  
information from a  
published press release  
about May Seed.**







# The seed company that makes the highest investments in R&D in Turkish agriculture sector - May Seed



**A**ctive in R&D, production, marketing, and sales of vegetable, field, and industrial plant seeds since 1978, **May Seed** continues its intensive R&D activities without slowing down. Thanks to its 'on-site breeding' strategy, **May Seed** develops the seed varieties that are the most compatible with the soil and climate and the most resistant to stress conditions in addition to being the most productive for Turkish farmers and the target geographies globally. **May Seed** develops highly competitive seed crops in the varieties it is active at its 5 R&D Centers in Turkey.

## 9% of Revenue Is Spared to R&D

Making the highest investment in R&D activities in the Turkish seed and plant breeding sector, the seed company **May Seed** continues its globally competitive investments without slowing down, allocating 9% of its revenues to R&D studies. **May Seed** invests in R&D studies on hybrid sunflower, hybrid corn and cotton crops among agronomic crops. In the vegetable group, the company develops competitive varieties with investments in Sweet Corn, Bean and Industrial Tomato crops and presents them to the market under the **May** brand.

**May Seed** has R&D Centers in 5 regions of Turkey with different climatic conditions. The company continues its seed breeding activities focusing on hybrid corn and cotton in its R&D center in the Eastern Mediterranean Region, hybrid sunflowers in Thrace and hybrid corn and cotton varieties in the Aegean region. In the R&D Center in the Marmara Region, the company continues its activities on the reproduction of the related seed variety lines. Thanks to its expert breeder team and using state-of-the-art equipment and fully-controlled greenhouses, **May Seed** conducts R&D activities such as basic breeding activities, variety selection, line improvement, disease testing for up to 3 generations a year.

## Seed and license exports to more than 45 countries

**May Seed** exports the seed varieties it develops to more than 45 countries and made its mark as a highly competitive company in the international seed sector by effectively promoting itself in the broad geography including America, European Union, Middle East, Black Sea, Central Asia, and Africa.

**May Seed** produces the seed varieties it develops with the on-site breeding strategy in Turkey on an area of 12,000 hectares. The company prepares the seeds it produces in its 36,000-ton capacity seed processing and packaging facilities in Bursa and Adana and presents them to the Turkish and global markets. Increasing its market share both at home and abroad with its expert marketing and sales team, **May Seed** exports to more than 45 countries.

## More than 200 varieties licensed and approved abroad

Being the only Turkish seed company that has product expertise and global competitive power to develop and sell license and seed technology in the international market with **May** brand, **May Seed** provides added value to Turkish Seed sector with its over 200 varieties licensed abroad, continuing its stable rise in global markets.





# PRUNING OF TOMATO SCX824

Written / compiled by Hannes van der Merwe - Field Officer, Brits.

**The pruning of indeterminate open field tomato plants is a rather unconventional practice. However, by applying this practice by means of double stem pruning, Tomato SCX824 achieved some excellent results. The best time to start pruning is when the plant has made its first flower truss on the main stem.**

As shown in Picture 2 all suckers are then removed except for the strong sucker on the leaf just below the first flower truss. This sucker will be the second stem. All successive suckers on both stems are then removed as soon as they appear. This forces the plant to better utilise its energy in producing fruit, compared to vegetative growth.

In picture 1 you can see unpruned young plants (Suckers not removed)





In Picture 2 you can see pruned young plants (Suckers removed) – Second stem just below first flower truss.

When SCX824 tomatoes are pruned in double stems, at a height of 1,8-2 meter/s, there are on average 7 fruit bearing trusses on each stem. Each of these trusses bears 5-8 fruits weighing 130-160gram. This makes the potential yield more than 100 tons per hectare! The fruit of SCX824 have very thick walls which results in exceptional fruit quality and thus a very high pack out rate.



**Pruning of SCX824 also have multiple other benefits which include:**

- Ensuring large fruit sizes to the top of the plant.
- Fruits are more exposed which makes the spraying coverage easier especially against Tuta Absoluta.
- Less vegetative growth means less foliar disease.
- Earlier maturity of fruit



# A variety not to be underestimated...

## SV4129TH

Written by: Pieter Jordaan - Market Development Representative

**T**his indeterminate round variety is remarkable in the sense that it is highly adaptable to different growing conditions and growing areas within the Sub-Saharan region. Within South Africa it excels during the "Hot to cold" and "Cold to Hot" times of the year, both in the open field and protected conditions, delivering good quality fruit with good marketable yield potential and average fruit size of 140-160g.



The plant of **SV4129TH** is medium compact with short internodes, but still possesses enough vigor to be utilized in greenhouse or protected conditions. The fruit quality of this variety is of the highest standards, with thick fruit walls and good fruit shape that is well and truly accepted by the South African consumer.

Key advantages of this variety are its earliness to harvest, versatility & adaptability with regards to growing conditions, times and cultivation methods. Of course, within South Africa, large and diverse range of diseases occur, **SV4129TH** is well dressed for these occasions with a good reliable disease resistance package, which aids the grower during difficult times.

All the above, but not only makes **SV4129TH** a true stalwart to use in your tomato growing program, a variety not to be underestimated. "

### Specifications

- Adaptable to different growing conditions
- Early maturing
- Good marketable yield potential
- Fruit size 140 - 160g
- High quality fruits
- Good fruit shape and thick fruit walls
- Fruit are attractive and uniform in size.





## SV4129TH\*

HR ToMV:0-2/Ff:A-E/Fol:0,1/For/Va:0/Vd:0  
IR TYLCV

Early maturing indeterminate round hybrid tomato with the potential for a high yield and quality medium to large fruit.

SV4129TH\* is an early medium to large indeterminate round hybrid tomato with a high yield potential.

Fruit are attractive and uniform in size. The plant is vigorous with good leaf cover and short internodes.

SV4129TH\* has a good diseases package which includes intermediate resistance against TYLCV.

### FEATURES

// Early maturing

### ADVANTAGES

// Good disease package

### BENEFITS

// Vigorous plant with short internodes

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# Laeveld Agrochem focus on **Tuta absoluta**

Written by Henry van der Voort

## Introduction

Tuta absoluta has been a constant thorn in the side of many growers across South Africa, costing them millions of Rands worth of revenue. One of the crops affected, is tomatoes. In the Brits-area, Anna van der Merwe, from Laeveld Agrochem, Brits was supported by a team of experts that undertook to design a spray programme to control the Tuta absoluta to the advantage of the grower. The past season they achieved success with this programme amongst many growers in Gauteng.

Hygrotech is honoured to have permission and support from Anna to publish this programme in the Hygrotech Forum, as it can benefit everybody in the tomato industry. We are also very proud that we could contribute in a small way and have one of our flag ship products playing an integral part in the programme. Nu Film P® is synonymous with Hygrotech the past 50 years and once again this product has delivered on what it was designed to do.

Written by Anna van der Merwe, BSc Agric ( Hons ) Horticulture.

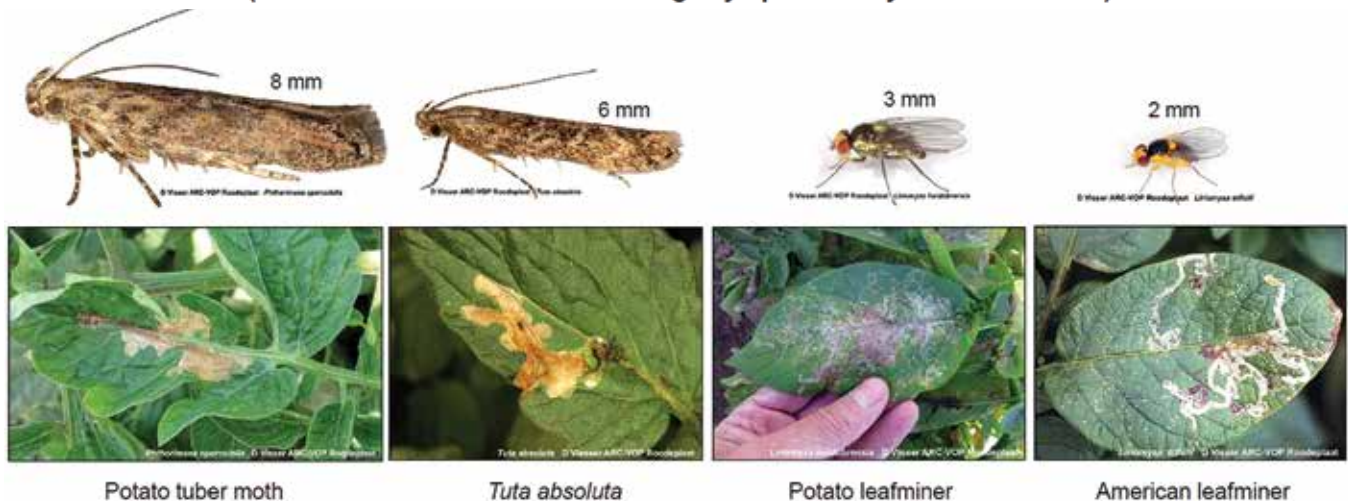
**T**uta absoluta has caused serious damage and economic losses since 2016, particularly on tomatoes. The plague has since also been observed on other crops of the Solanaceae like brinjals, potatoes and tobacco. The insect is a moth and resorts under the order: Lepidoptera. After the moth has laid her eggs, it takes 3 to 5 days to hatch. The wandering phase of the newly hatched larva? takes 10 – 30 minutes before they start to gorge through the cuticula to tunnel into the leaf. Fruit and stems are also prone for the same damage. The larva stage is usually completed in 8 -14 days, whilst all the larva-instars enjoy the security of a leaf cuticula or fruit mesocarp. This impedes the control of Tuta absoluta.

It is further important to take note of the specific process of nutrition of the insect, as the time of exposure to any chemical product on the leaf surface, is very short. As a consequence, it is therefore essential to deposit as much as possible of any registered Tuta-chemical product for as long as possible and on the biggest surface area of the plant possible.

The use of a wetting-, sticking- and spreading product like Nu Film P® is recommended for this purpose in conjunction with an insecticide. Nu Film P® also protects the insecticide against UV degradation and enhances rain fastness. Lengthened control is therefore obtained and the effectiveness of all the so-called 'worm' remedies is promoted.

## Leafminers that attack solanaceous crops

(note: limitless variations of damage symptoms may be encountered)



# Anti Resistance Management Programme for the control of Tuta Absoluta in Tomatoes ( 2nd edition February 2022 )

WEEK	PRODUCT	ACTIVE INGREDIENT	DESCRIPTION	IRAC GROUP	PESTICIDES	PHI	REMARKS
1		LUFENURON	IGR	15			Potato moth registration, spray with plant broadcast over ground. Also apply with drip under plastic for soil activity ( every 14 days )
2		CHLORANTRANILIPROLE, FLUBENDIAMIDE, CYANTRANILIPROLE	DIAMIEDE	28	Bacillus thuringiensis		2 consecutive sprayings, 60 days window
3		CHLORANTRANILIPROLE, FLUBENDIAMIDE, CYANTRANILIPROLE	DIAMIEDE	28	Bacillus thuringiensis		2 consecutive sprayings, 60 days window
4		SPINOSAD, SPINETORAM	SPINOSAD/SPINETORAM	5A			2 consecutive sprayings, 21 days window
5		SPINOSAD, SPINETORAM	SPINOSAD/SPINETORAM	5A			2 consecutive sprayings, 21 days window
6		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN			2 - 4 applications per season
7		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN			2 - 4 applications per season
8		EMAMECTIN BENZOATE	EMAMECTIN BENZOATE	6	LUFENURON		2 applications per season, not within 3 weeks before/after ABAMECTIN
9		EMAMECTIN BENZOATE	EMAMECTIN BENZOATE	6	LUFENURON		2 applications per season, not within 3 weeks before/after ABAMECTIN
10		INDOXACARB	INDOXACARB	22A	Bacillus thuringiensis		block spraying of 2, 30 days window
11		INDOXACARB	INDOXACARB	22A	Bacillus thuringiensis		block spraying of 2, 30 days window
12		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN			2 - 4 applications per season
13		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN			2 - 4 applications per season
14		SPINOSAD, SPINETORAM	SPINOSAD/SPINETORAM	5A			2 consecutive sprayings, 21 days window
15		SPINOSAD, SPINETORAM	SPINOSAD/SPINETORAM	5A			2 consecutive sprayings, 21 days window
16		EMAMECTIN BENZOATE	EMAMECTIN BENZOATE	6	LUFENURON		2 applications per season, not within 3 weeks before/after ABAMECTIN
17		EMAMECTIN BENZOATE	EMAMECTIN BENZOATE	6	LUFENURON		2 applications per season, not within 3 weeks before/after ABAMECTIN
18		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN	CARTAP HYDROCHLORIDE		2 - 4 applications per season
19		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN	CARTAP HYDROCHLORIDE		2 - 4 applications per season
20		CARTAP HYDROCHLORIDE	CARTAP HYDROCHLORIDE	14	Bacillus thuringiensis		repeat every 7 days





21		CARTAP HYDROCHLORIDE	CARTAP HYDROCHLORIDE	14	Bacillus thuringiensis	repeat every 7 days
22		LUFENURON	IGR	15		Potato moth registration, spray with plant broadcast over ground. Also apply with drip under plastic for soil activity ( every 14 days )
23		CHLORANTRANILIPROLE, FLUBENDIAMIDE, CYANTRANILIPROLE	DIAMIEDE	28	Bacillus thuringiensis	2 consecutive sprayings, 60 days window
24		CHLORANTRANILIPROLE, FLUBENDIAMIDE, CYANTRANILIPROLE	DIAMIEDE	28	Bacillus thuringiensis	2 consecutive sprayings, 60 days window
25		SPINOSAD, SPINETORAM	SPINOSAD/SPINETORAM	5A		2 consecutive sprayings, 21 days window
26		SPINOSAD, SPINETORAM	SPINOSAD/SPINETORAM	5A		2 consecutive sprayings, 21 days window
27		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN		2 - 4 applications per season
28		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN		2 - 4 applications per season
29		EMAMECTIN BENZOATE	EMAMECTIN BENZOATE	6	LUFENURON	2 applications per season, not within 3 weeks before/after ABAMECTIN
30		EMAMECTIN BENZOATE	EMAMECTIN BENZOATE	6	LUFENURON	2 applications per season, not within 3 weeks before/after ABAMECTIN
31		INDOXACARB	INDOXACARB	22A	Bacillus thuringiensis	block spraying of 2, 30 days window
32		INDOXACARB	INDOXACARB	22A	Bacillus thuringiensis	block spraying of 2, 30 days window
33		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN		2 - 4 applications per season
34		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN		2 - 4 applications per season
35		SPINOSAD, SPINETORAM	SPINOSAD/SPINETORAM	5A		2 consecutive sprayings. 21 days window
36		SPINOSAD, SPINETORAM	SPINOSAD/SPINETORAM	5A		2 consecutive sprayings. 21 days window
37		EMAMECTIN BENZOATE	EMAMECTIN BENZOATE	6	LUFENURON	2 applications per season, not within 3 weeks before/after ABAMECTIN
38		EMAMECTIN BENZOATE	EMAMECTIN BENZOATE	6	LUFENURON	2 applications per season, not within 3 weeks before/after ABAMECTIN
39		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN	CARTAP HYDROCHLORIDE	2 - 4 applications per season
40		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN	CARTAP HYDROCHLORIDE	2 - 4 applications per season
41		CARTAP HYDROCHLORIDE	CARTAP HYDROCHLORIDE	14	Bacillus thuringiensis	repeat every 7 days
42		CARTAP HYDROCHLORIDE	CARTAP HYDROCHLORIDE	14	Bacillus thuringiensis	repeat every 7 days
43		LUFENURON	IGR	15		Potato moth registration, spray with plant broadcast over ground. Also apply with drip under plastic for soil activity ( every 14 days )
44		PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN		2 - 4 applications per season



FULLY GROWN LARVAE

45	PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN		2 - 4 applications per season
46	SPINOSAD, SPINETORAM	SPINOSAD/SPINETORAM	5A		2 consecutive sprayings, 21 days window
47	SPINOSAD, SPINETORAM	SPINOSAD/SPINETORAM	5A		2 consecutive sprayings, 21 days window
48	EMAMECTIN BENZOATE	EMAMECTIN BENZOATE	6	LUFENURON	2 applications per season, not within 3 weeks before/after ABAMECTIN
49	EMAMECTIN BENZOATE	EMAMECTIN BENZOATE	6	LUFENURON	2 applications per season, not within 3 weeks before/after ABAMECTIN
50	PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN	CARTAP HYDROCHLORIDE	2 - 4 applications per season
51	PYRIDALYL DICHLOROPROPENE	PYRIDALYL DICHLOROPROPENE	UN	CARTAP HYDROCHLORIDE	2 - 4 applications per season
52	CARTAP HYDROCHLORIDE	CARTAP HYDROCHLORIDE	14	Bacillus thuringiensis	repeat every 7 days

pH - ≤ 5  
 pH - 4,5 tot 8,5  
 pH - ≥ 7



TUTA ABSOLUTA LEAF MINES



IMAGE REFERENCE: This images (presentation) is an output of the Tuta absoluta task team of the South African Department of Agriculture, Forestry and Fisheries

# ADJUVANTAGE™

AS-SISTANCE

HYGROBUFF 4

SUREBUFF

**Nu-Film® P**

**Sustain®**

**Nu-Film® 17**

**Mist-Control®**

**Entrée™**

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# ADJUVANTAGE™

Advantage of Quality Adjuvants



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# ADJUVANTAGE™

## The Advantage of using Quality Adjuvants during different stages of Agricultural Sprays

Agricultural sprays consist of three stages: tank, air and target. Various factors are present during each of these stages. If not known, acted upon or even avoided (if required), these factors may risk sprays to be less effective, insufficient or even damaging. Below is a condensed summary of examples of these factors and their potential risk during spray activities (based upon the original model from Ebert and Downer).

Managing or reducing spray risk always include Good Agricultural Practices. These practical measures include adequate tractor speed, applicator distance from target,

nozzle types, spray pressure, rates of chemicals used, types of chemicals etc. A Good Agricultural Practice may even be the postponement or avoiding of a spray like during windy conditions.

In addition to Good Agricultural Practices, adjuvants are valuable assets to reduce risk and optimize agricultural sprays. Adjuvants are chemical products used in spraytank water with agricultural remedies/ fertilizers to enhance their efficacy. They are primarily divided into two groups based on whether their effect is towards the agricultural remedy ("Activators") or the carrier, i.e., water ("Water conditioners")

AGRICULTURAL SPRAY STAGE	FACTORS	RISKS
<b>TANK</b> Preparation of the spray mixture in water for application.	<ul style="list-style-type: none"> <li>Water quality.</li> <li>Chemical reactions.</li> <li>Pump shear.</li> </ul>	<ul style="list-style-type: none"> <li>Mixing and compatibility.</li> <li>Agitation.</li> <li>Equipment contamination (tank, line, nozzles etc.)</li> </ul>
<b>AIR</b> Atomization and actual spraying of the spray mixture to reach the target.	<ul style="list-style-type: none"> <li>Equipment/ Application.</li> <li>Physical properties.</li> <li>Atmospheric conditions.</li> <li>Evaporation.</li> <li>Micrometeorological conditions.</li> </ul>	<ul style="list-style-type: none"> <li>Wind/ Drift.</li> <li>Non-target interception.</li> <li>Volatilization.</li> <li>Redistribution.</li> </ul>
<b>TARGET</b> Impact with the target (crop, weed or soil).  Retention and deposit onto the target.	<ul style="list-style-type: none"> <li>Spray and surface properties.</li> <li>Droplet size and kinetic energy.</li> <li>Dynamic spreading.</li> <li>Micrometeorological conditions.</li> <li>Spreading and coalescence.</li> <li>Absorption and translocation.</li> <li>Surface activity.</li> <li>Encounter probability.</li> </ul>	<ul style="list-style-type: none"> <li>Reflection, shatter and splash.</li> <li>Run-off.</li> <li>Volatilization.</li> <li>Weathering (UV, heat, water).</li> </ul>



# ADJUVANTAGE™

The Advantage of using Quality Adjuvants during different stages of Agricultural Sprays

**Hygrotech South Africa (Pty) Ltd and Miller® Chemical & Fertilizer, LLC (USA based) formulates quality activator and water conditioning adjuvants. These adjuvants are suited to optimize agricultural sprays within the various stages of agricultural sprays - the ADJUVANTAGE concept.**

## **AS-sistance ●**

A liquid ammonium sulphate-based adjuvant for use with glyphosate and sulfosate containing herbicides. In the spraytank water sulphate anions (from ammonium sulphate) react with various cations, such as calcium. As a result, calcium sulphate is formed. The cations can thus not react with glyphosate or sulfosate to limit its efficacy.

## **Surebuff ●**

A water-soluble acidifier with buffering properties to be used with alkaline sensitive agricultural chemicals.

## **Hygrobuff 4 ●**

An adjuvant for optimizing spraytank water pH and increasing the compatibility of various agricultural products in a tank mixture. Also acts as a wetting agent with tank cleaning capabilities.

## **Mist Control® ●**

An adjuvant for drift retarding and improving deposition of agricultural crop sprays. Ideally suited to be used with herbicide applications, reducing the risk of spray drifting away from the intended target. The latter can result in reduced weed control or damage to other crops not earmarked for the herbicide application.

## **Nu-Film® P, Sustain® and Nu-Film 17 ●●**

These adjuvants are part of the Pinolene® product range, originating from pine resin. The products are designed to control the lifespan of agricultural chemicals on the target. This happens by means of benefits during application, as well as benefits after application (over time). Benefits during application may include reduction of volatility, improved adhering and deposition on the target, as well as spreading of spray droplets on the plant surface. Contributing thus to more agricultural chemical on the target during application. Benefits favoring the agricultural product on the target after application may include improved rain fastness, reduced UV and heat degradation, improved absorption ability and redistribution. Nu-Film P and Sustain are very similar products. However, Sustain's formulation is more focused on soil applied products. Nu-Film 17's formulation is more suited for crop applications with longer spray intervals such as subtropical fruit and citrus.

## **Entrée™ ●**

Improves adhering and spreading of spray droplets on the plant surface but is especially formulated to improve the movement of systemic products into plant tissue. The latter include water or oil soluble products.

The colour of the ● following the adjuvant name represents what stage of agricultural spraying the adjuvant is suited for.

● = tank | ● = air | ● = target



# NEW TRIAL RESULTS: ASCO-GRO ON CITRUS

By Johann van der Vyver (Miller™ Technical Sales Director: Africa Region)

Recent editions of Hygrotech Forum (Volume 1 2019 and Volume 2 2020) reported on the successful inclusion of Asco-Gro (Reg. no. K6714 of Act 36 of 1947) during the reproductive growth stage of soybean production. Asco-Gro consists of kelp extracts (with amino acids and carbohydrates) which is combined with macro nutrients (N, P and K) as well as chelated secondary nutrients (Mn, Ca, Mo, Ca and Fe). The product is manufactured in the USA by **Miller™ Chemical & Fertilizer, LLC** and has been reported to have the following benefits:

- **Enhancing fruit set.**
- **Increasing fruit size.**
- **Enhancing plant physiological activities.**
- **Assisting plant against environmental stress factors.**



Figure 1: Location of orchard used for trial

In recent years South African citrus producers also reported the successful inclusion of Asco-Gro as part of their total fertigation practices during production. Due to these various successful commentaries **Miller and Hygrotech decided to investigate the use of Asco-Gro** during citrus production and especially during growth stages known to be physiologically challenging, namely flowering and fruit drop. This research is report upon below.



## TRIAL INFORMATION

### Location

The trial was conducted during the 2020 – 2021 citrus production season on the Karino Citrus Estate near Nelspruit in the Mpumalanga Province of South Africa. A Midnight Valencia orange (on Swingle citrumelo rootstock) orchard was used (planted November 2014). Trees are spaced 2.5 m within the rows and 6 m between rows. The orchard is micro irrigated.

### Treatments

The trial consisted of 4 treatments (Table 1). The control treatment refers to commercial fertilization of the grower. The other 3 treatments are in addition to the commercial fertilization.

Each treatment had 10 replicated plots. A replicated plot consisted of 3 adjacent trees. The middle tree was used as data tree, with a buffer tree on each side. Applications were conducted with a trailer-mounted, high-volume, high-pressure (2500 – 3000 kPa) sprayer with a hand-held spray gun (Figure 2). The application volume was the equivalent of 5000 L water/ ha.

Table 1: Treatments used the time applied (see Figure 2 as well).

TREATMENT	RATE	TIME OF APPLICATION	DATE
1. Untreated control	-	-	-
2. Asco-Gro	2 L/ ha	14 days before first flowers open	28 August 2020
3. Asco-Gro	4 L/ ha	14 days after first application	11 September 2020
4. Standard	2 L/ ha	14 days before November drop	30 October 2020



# STRESS LESS ABOUT AGRI-SPRAYS

**Nu-Film® P**

**Nu-Film® 17**

**Sustain®**

**Entrée™**

**Mist-Control®**

## BENEFITS FROM MILLER ADJUVANTS IN SPRAY PROGRAMMES:

**IMPROVE:** DEPOSITION, COVERAGE, RAIN FASTNESS, UPTAKE

**REDUCE:** VOLATILITY, SPRAY DRIFT, UV DEGRADATION, HEAT DEGRADATION

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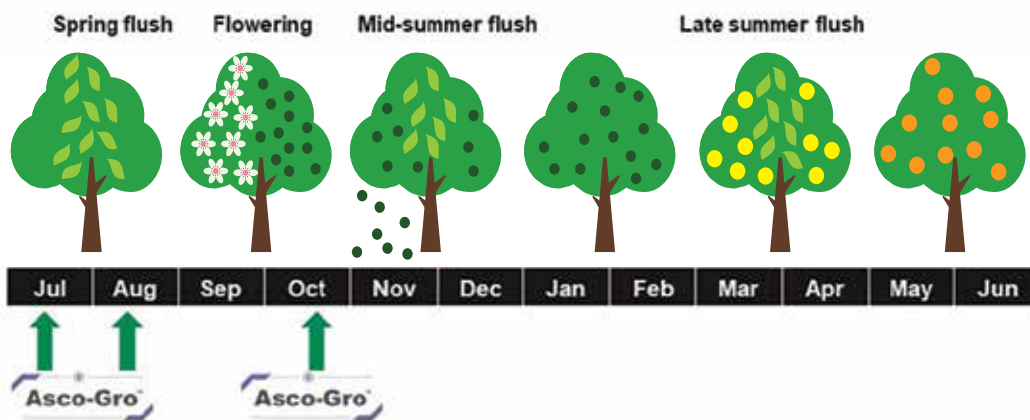
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Figure 2: Application conducted onto Midnight Valencia trees.

Figure 3: Schematic indication of when Asco-Gro was applied during the trial.



### Assessments

At commercial maturity (3 August 2021), all fruit from each data tree from each treatment was harvested and counted. A mechanical trailer mounted fruit sizer (Figure 4; supplied by Citrus Research International) was used to divide the fruit from each tree into the following size categories: less than 48, 48, 56, 72, 88 and 105. Size categories represent the average number of fruit to fill a 15 kg export carton. Thus, the lower the number of the size category, the bigger the fruit.

Average yield per tree (for each treatment) was calculated by multiplying standardized weight factors (in kilogram) with each of the fruit within the various size categories per tree (Table 2). The calculated average yield per tree was multiplied with 349 (trees per hectare) to calculate the average yield per hectare for each treatment.



Figure 4: Trailer mounted fruit sizer.

Table 2: Standardized weight factors in kilogram for various fruit size categories.

FRUIT SIZE CATEGORY	Less than 48	48	56	72	88	105
FACTOR (kg)	0.4	0.33	0.29	0.23	0.19	0.16



## RESULTS AND DISCUSSION

The average number of fruit per tree per treatment is presented in Figure 5. On average the 2 L/ ha and 4 L/ ha Asco-Gro treatments had more fruit per tree than the control and the standard treatment. The Asco-Gro treatments appeared to have a dose response since the average number of fruit per tree of the trees treated with 4 L/ ha Asco-Gro treatment was more than that of the trees treated with 2 L/ ha Asco-Gro. Figure 6 indicates the average number of fruit per fruit size category per tree. It appears that the increased average number of fruit per tree from both the Asco-Gro treatments was due

Table 3: Average percentage distribution amongst fruit size categories for various treatments.

TREATMENT	FRUIT SIZE CATEGORIES					
	Less than 48	48	56	72	88	105
1. Untreated control	1.1	14.6	30.6	28.2	24.2	1.3
2. Asco-Gro @ 2 L/ ha	1.4	15.0	30.3	28.7	23.2	1.4
3. Asco-Gro @ 4 L/ ha	1.2	16.9	30.7	28.4	21.7	1.1
4. Standard @ 2 L/ ha	1.0	21.5	32.5	25.8	18.5	0.7

to more fruit throughout each of the fruit size categories rather than more fruit within one particular fruit size or a so-called shift among the fruit size categories. This is confirmed by the average percentage distribution amongst the fruit size categories (Table 3). As expected, Figure 7 indicates that the increased number of fruit across the various fruit size categories calculated to an increase in the average yield per hectare for both the Asco-Gro treatments. The average yield was 20.3 T/ ha and 24.7 T/ ha for the 2 L/ ha and 4 L/ ha Asco-Gro treatments respectively. In comparison the yield of the control was 18.6 T/ ha.

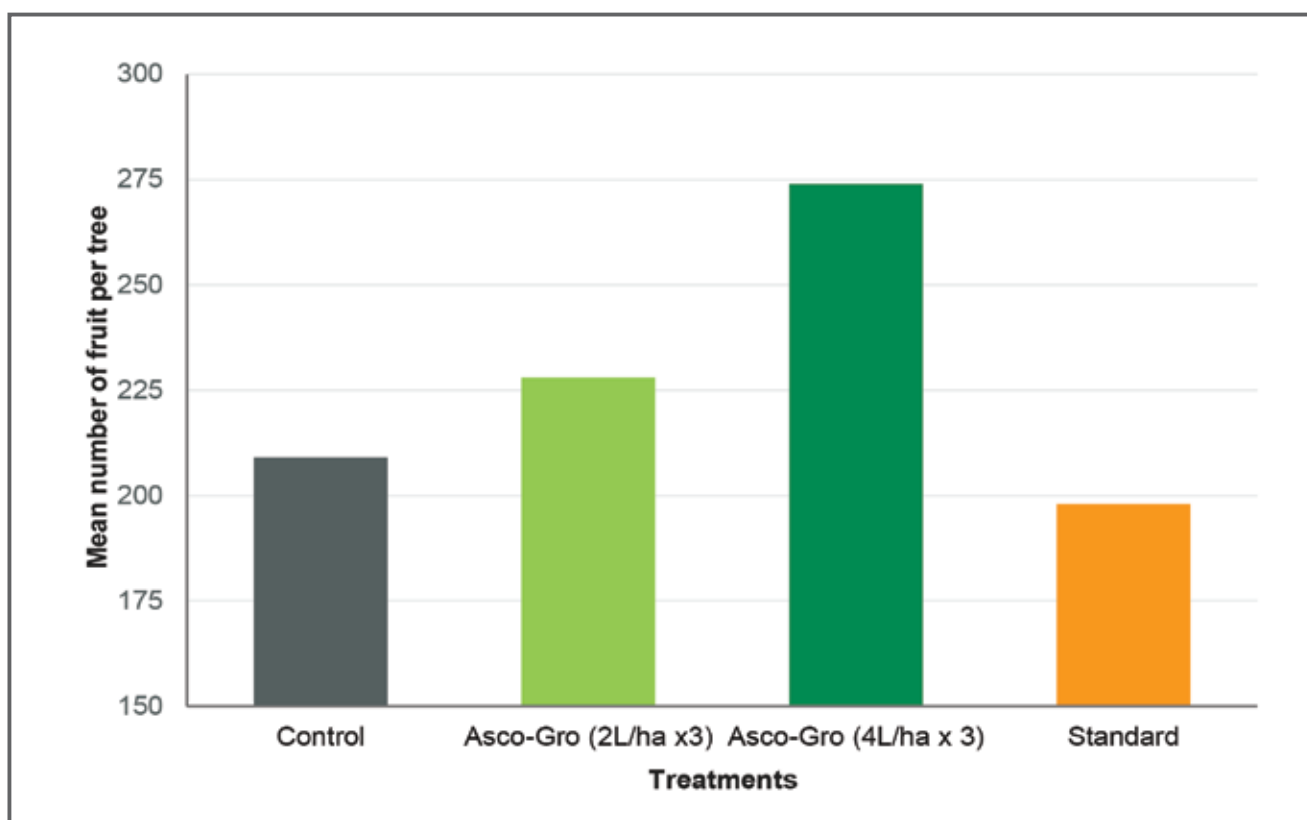


Figure 5: Average number fruit per treatment per tree.



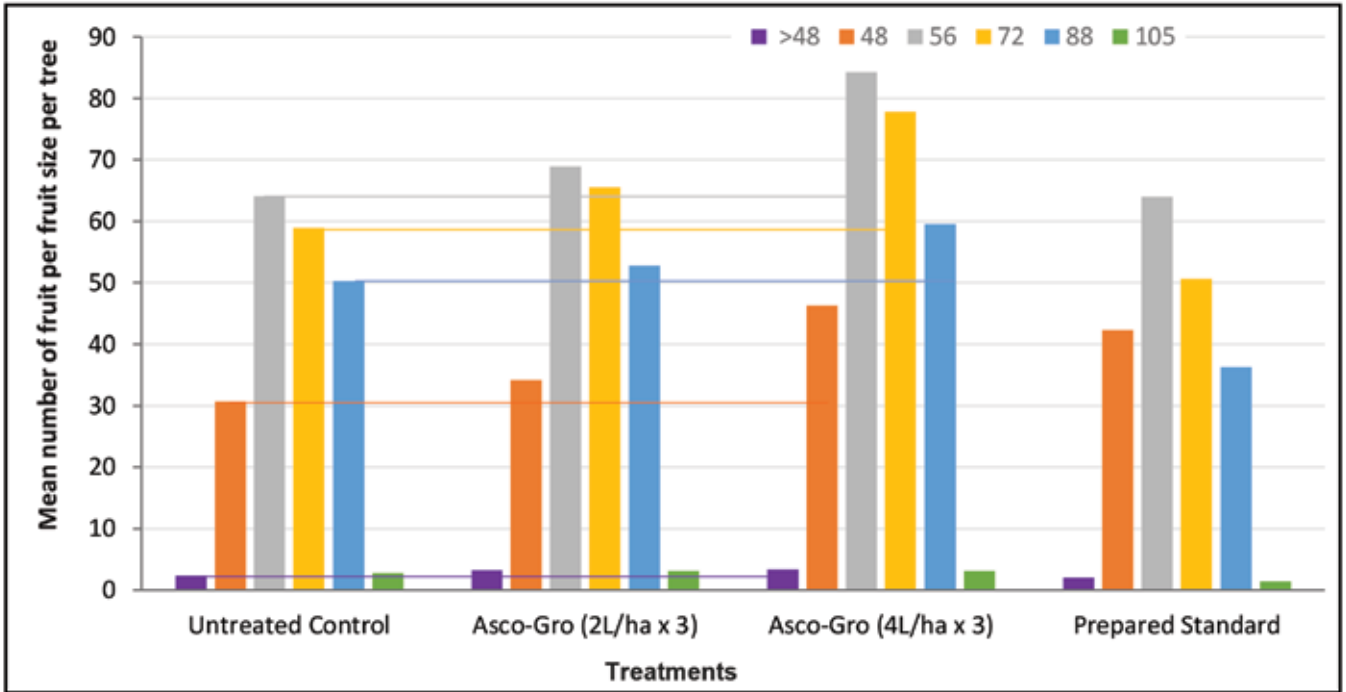


Figure 6: Average number fruit of various fruit size categories per treatment per tree.

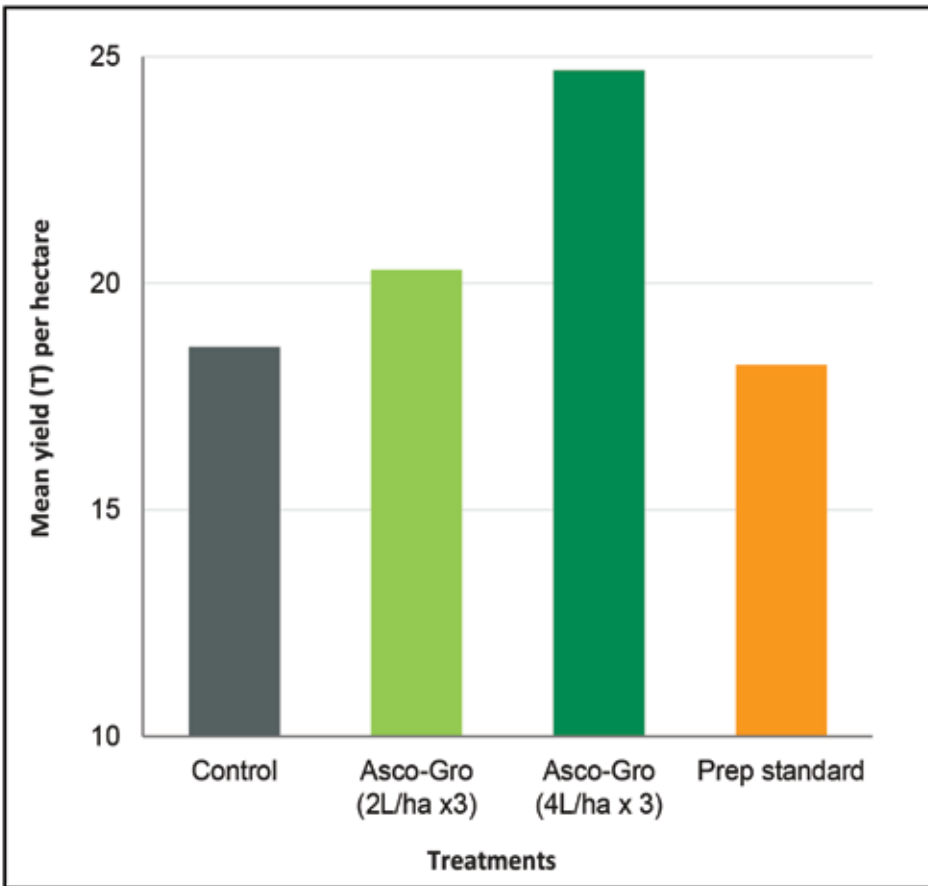


Figure 7: Calculated average yield per hectare for various treatments.



**Conclusion**

The results from this trial indicate that the Asco-Gro treatments applied contributed to an increase in the average number of fruit per tree by increasing the number of fruit within the various fruit size categories. The increased average number of fruit calculated to an increased average yield per hectare where the Asco-Gro treatments were applied.

**For more information on Asco-Gro and the use thereof, contact your nearest Hygrotech branch of [info@millerchemical.com](mailto:info@millerchemical.com)**

# Agrisprays: Nu-Film® P for improved chemical deposition on onion leaves.

By Charl Kotze

## Introduction

Onions (*Allium cepa*) are herbaceous biennial plants and can be propagated anywhere in South Africa. However, the main production areas are located in the Northern and Western Cape, Free State, North West, Limpopo and Mpumalanga Provinces mostly under pivot irrigation. An annual watering requirement of about 400 – 600 mm is needed during the growing season. Due to this type of irrigation, coverage and retention of the agricultural chemicals during spray application are of the utmost importance.

The moist conditions not only make the plants susceptible to fungal and bacterial infections, but harder to cover the plant surface as well. In relation to the latter the trial was conducted to confirm the ability of Nu-Film P to improve the deposition of agri-chemicals during sprays on onion leaves. For evaluation purposes a fluorescent pigment and a newly developed mobile phone application called Dropsight ([www.dropsight.ag](http://www.dropsight.ag)) was used.



## Materials and Methods

### Application

The site used during the trial is located in the Swartwater area of Limpopo. It consisted of a 10 ha onion field at three leaf developmental stage propagated under pivot irrigation. A boom sprayer with a 2000 L tank was calibrated to 500 L water/ha and used to apply the spray mixture. The spray mixture consisted of 1 L iprodione fungicide/ ha iprodione and 4 L foliar feed/ ha. To determine deposition, a fluorescent pigment (UView) was added to the spray mixture at a rate of 2%. The untreated control consisted of the spray mixture and fluorescent pigment without Nu-Film P and was applied first (Figure 1). Thereafter, 300 ml Nu-Film P/ ha was added to the spray mixture and fluorescent pigment and applied (Figure 2). The untreated and Nu-Film P treated plot consisted of approximately 2 ha each.



Figure 1. Spraying of the standard onion plot with a boom sprayer calibrated to 500l/ha during April 2022 near Swartwater, Limpopo province.



Figure 2. Spraying of the Nu-Film P added onion plot with a boom sprayer calibrated to 500l/ha during April 2022 near Swartwater, Limpopo province.

### Evaluation

After the sprays dried off, 15 onion plants were randomly sampled from each plot and the middle leaf of each plant used for analysis. The analysis consisted of placing each leaf in a black photographic box (LeafLab) lined with UV lights. Using a cell phone, images were taken of the fluorescence on the onion leaves in the photographic box (Image 3A & B). Each of the 15 leaves per treatment were pictured separately and using the DropSight mobile application the %FPC was determined for each leaf. The %FPC relates to the amount of leaf surface covered with fluorescent pigment.

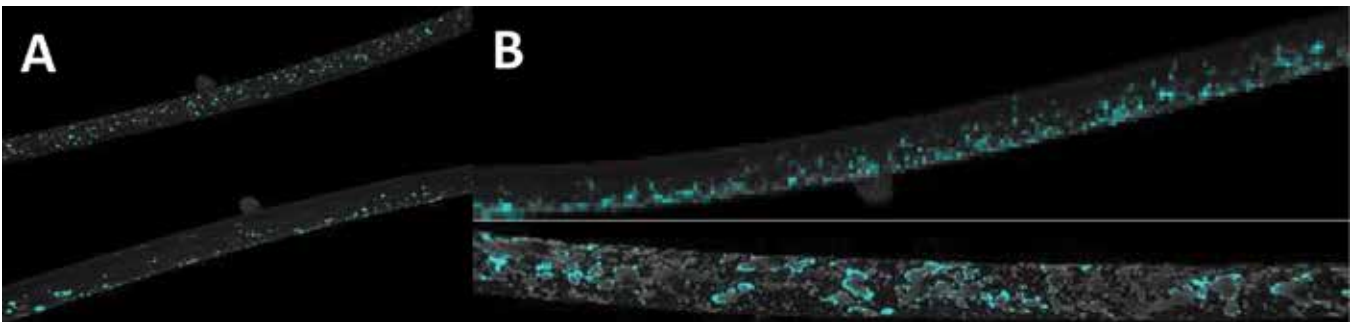


Figure 3. Fluorescent pigment observed after images were taken of onion leaves placed in the photographic box (LeafLab), A) Leaves from onion plants removed from the standard treated plot and B) Leaves from onion leaves retained from the plot containing Nu-Film P sprayed during April 2022 near Swartwater, Limpopo province.

### Results and Discussion

The results received from the DropSight application indicated that when Nu-Film P was added to the spraying mix the average %FPC was 1.86% compared to 0.95% of the standard treatment without Nu-Film P. This either suggests a higher retention of active due to the waxy nature of onion leaves or a better deposition of active. Either way, the results do show that when Nu-Film P is added to a spraying mix there is almost a doubling of active available on each leaf, when you accept that the pigment observed relates to the amount of active deposited.

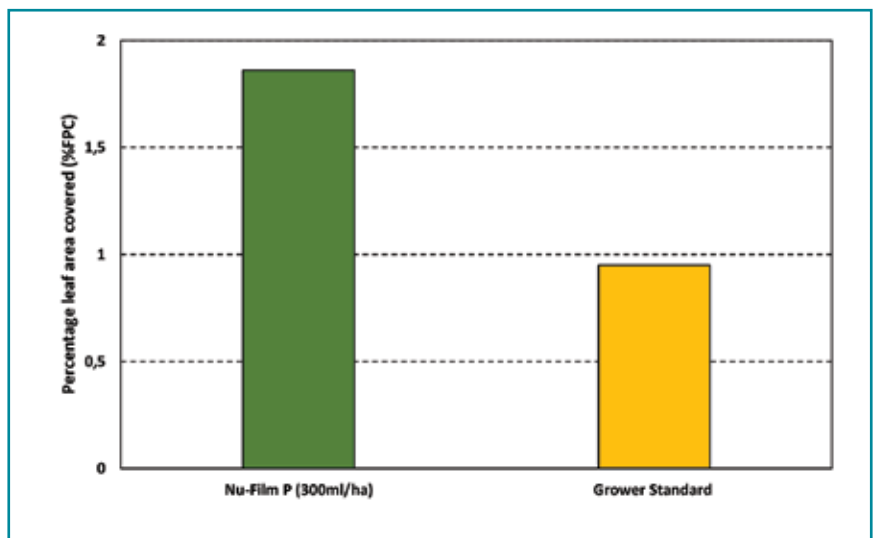


Figure 4: The average %FPC data received from the DropSight application after images were downloaded of leaves collected from the standard and Nu-Film P treated plots respectively and subjected to analysis.



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# Digging into SA's soaring FOOD PRICES

Author: Melissa Moore, Investment Analyst

Published: August 2022

**It will come as no surprise to most readers that the economy has, in recent months, been ravaged by rising food prices off the back of various drivers including climatic factors, geopolitical factors and, in the local context, South African-specific structural weaknesses, to name a few.**

Inflation generally (and food inflation specifically) has seen a sharp increase over the past 12 to 18 months. South Africa's overall rate of inflation (headline CPI) in June 2022 (compared to June 2021) was 7,4%. The rate of increase in the prices of food and non-alcoholic beverages was higher – at 8,6% over the same period. Interestingly, South Africa is not among the worst affected countries globally, nor is this the highest level of food inflation seen by the country in recent years (see graphs below). However, the effects can be directly felt by consumers, with the most vulnerable members of society being hardest hit as they typically spend a higher portion of their income on food. Food inflation has consequently been attracting a lot of media attention locally and beyond, as concerns grow about people's ability to afford basic foodstuffs.

In this article, we unpack the themes driving the agriculture, agro-processing, and food production sector ("Agri and Food sector"), delving into some of the headwinds that triggered the recent inflationary

environment, and considering the outlook for the sector, for food inflation, and for South African food security.

### Global and geopolitical factors

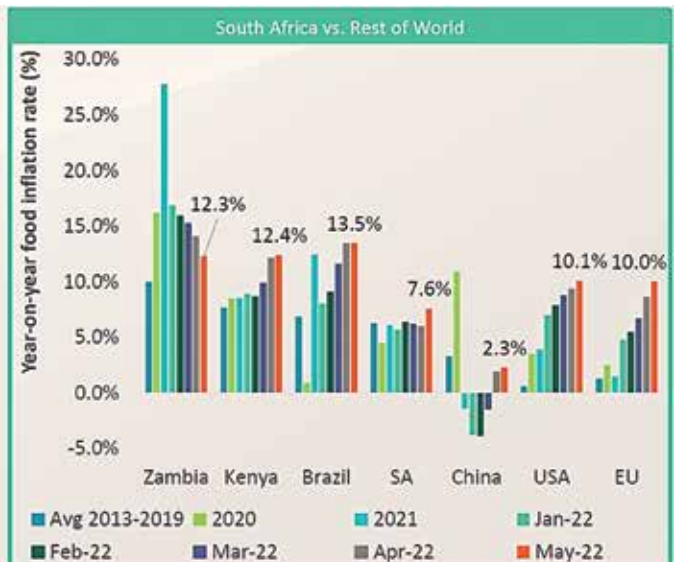
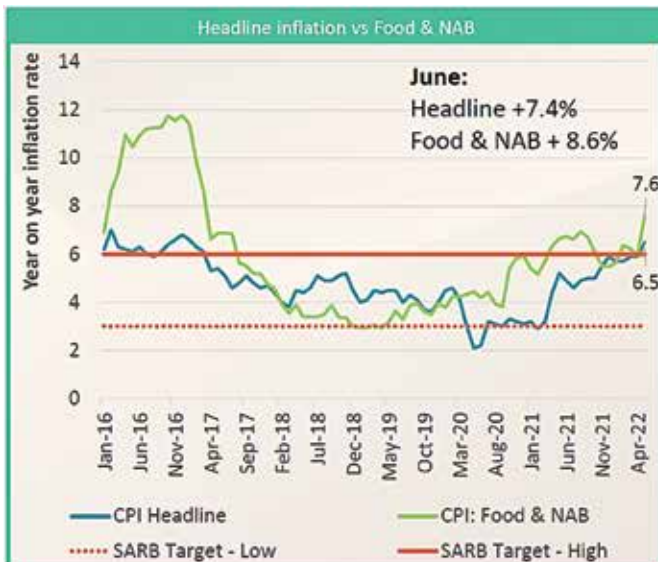
The past couple of years have seen a perfect storm, in that the global economy has been hit by two significant humanitarian and geopolitical events directly following one another. These are the COVID-19 pandemic and then the Russian invasion of Ukraine. Both events weighed negatively on global economic growth, created logistics and supply-chain issues, and drove up the cost of transport and the direct prices of certain key agricultural commodities - with the downstream effects being complex and interconnected.

### Coronavirus pandemic

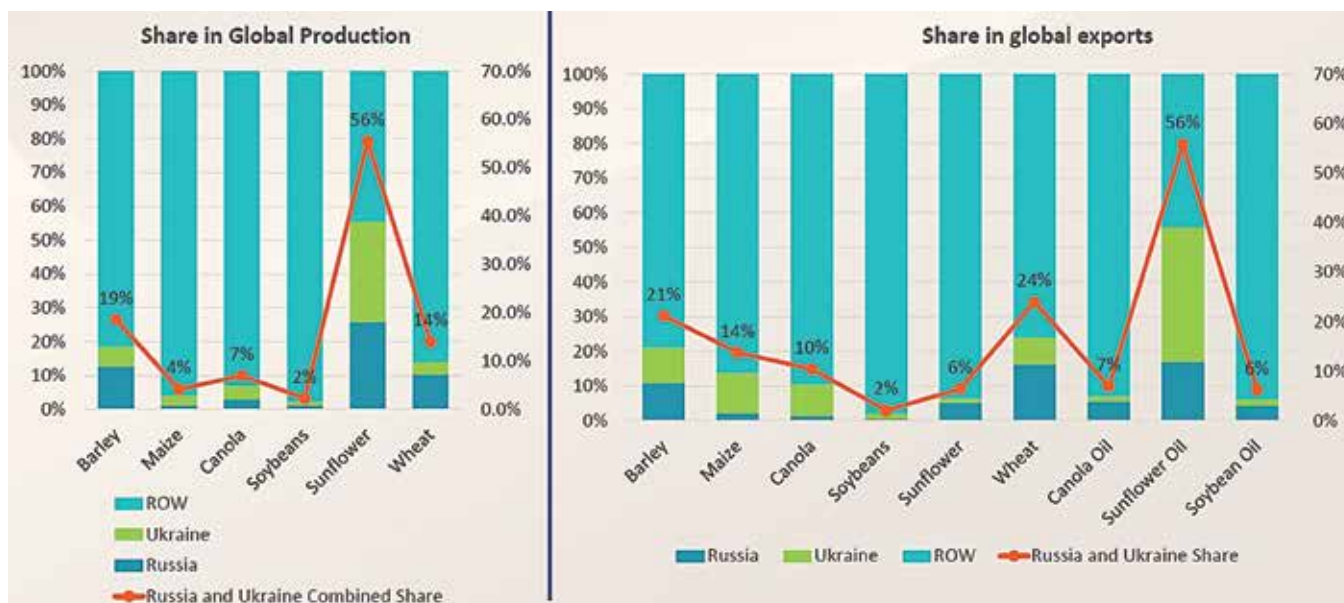
- The pandemic and associated lockdowns around the globe resulted in substantial supply chain and logistics disruptions and delays, and drove up the cost of transport for various agricultural commodities.
- The supply chain challenges caused by COVID also created a pent-up demand in certain products, thereby driving their prices up even after lockdowns ceased and borders reopened.

### Russian invasion of Ukraine

- Russia is a major supplier of gas to the EU, and a major exporter of petroleum oils. The ongoing war and sanctions against Russia drove up energy and fuel prices. According to Statistics South Africa, fuel prices were up 45.3% in June, the largest annual



Source: Bureau for Food and Agricultural Policy ("BFAP") presentation titled "Food inflation in South Africa", July 2022 ([www.bfap.co.za](http://www.bfap.co.za))



Source: BFAP compiled from USDA & ITC Trademap, 2022 (www.bfap.co.za)

increase for fuel since the agency's consumer price index series began in 2009.

- Both Russia and Ukraine are major suppliers of key agricultural commodities (see graphs below). The conflict has therefore adversely affected international supply and consequently the prices of various commodities, including wheat, as an example, which is a staple food in many countries.
- Russia is a leading exporter of chemical fertiliser. South Africa is a net importer of fertiliser, so we are heavily impacted by global pricing pressures. SA has seen a roughly 60% increase in fertiliser prices this year to date (on top of a roughly 50% increase that had already been absorbed in 2021 due to COVID-related factors). The war has affected shipping routes as many major shipping lines stopped routing produce to Russia, furthering supply chain and logistics issues and disrupting international trade. Some trade to Russia has since resumed, including from SA, but significantly reduced volumes are expected.

#### Shipping and logistics costs and reliability:

- Overall, shipping and logistics costs have increased exponentially in recent years, with the global container freight rate index having increased by more than 100% in 2021. Although we seem to have seen the peak, prices remain far above historical levels.
- Logistical challenges such as container shortages, port inefficiencies and congestion have also characterised the past few months, with delays and weak global schedule reliability continuing to plague agricultural producers who need to transport agricultural commodities to key markets.

#### Other factors

In addition to the devastating effects of the geopolitical events discussed above, the global agricultural sector has also been affected by other headwinds.

- There have been multiple regional livestock disease

outbreaks in recent years, including foot-and-mouth disease and bird flu, amongst others. Notably, China's recovery from African Swine Flu materially impacted global pork supply. China supplies roughly 50% of the world's pork.

- This increased global demand for other protein (substitution effect), pushing up the prices of other meat products.
- This is also said to have driven investment in intensive meat production facilities (in other words, large industrial scale feedlots replacing smaller, more dispersed farming operations). These change the rate at which animal feed is consumed, and we can expect animal feed prices to increase in response to this higher overall demand.

**“ The risk of extreme weather events around the world will persist as the world battles the ever-increasing effects of climate change. This will continue to impact the supply of key agricultural products, and consequently the price of food in years to come. ”**

- Globally, we have also seen severe cooking oil shortages, and a consequent spike in prices. Palm oil supply has been hugely constrained, with Indonesia having banned all exports of a range of palm oil products. Palm oil is the most highly used edible oil in the world, and Indonesia is by far the world's



biggest palm oil producer, generating about 60% and exporting more than 50% of the world's supply. This shortage compounds a global sunflower and canola oil shortage due to the Ukraine war and earlier droughts in some oilseed producing regions (e.g., Canada and Argentina), as well as a surge in demand due to increasing biofuel operations worldwide.

### Climatic factors

Extreme weather events have exacerbated the challenges posed by the pandemic and the Ukraine war. Globally, these events were multiple: the Derecho Storm in Iowa in 2020; flooding in China in 2020; Hurricane Ida in Louisiana in 2021; a drought in South America and Canada in 2021; flooding in Malaysia in 2021; and, more recently, the heat waves in the Northern Hemisphere this year (2022). Weather-related USA planting delays in 2022 also meant that the

USA could not pick up some of the demand created by the Ukraine war, exacerbating supply-demand mismatches for certain key commodities.

Some of the above weather events may be linked to the La Niña weather pattern that occurred between 2020 and 2021, causing varying weather patterns across the world. South Africa typically benefits from La Niña weather patterns due to good rainfall, whereas other regions such as South America and North America suffer weaker rainfall. A challenge our producers faced with this occurrence, however, is that in recent seasons it led to excessive rainfall which persisted during harvesting and planting times. Rainfall during a harvesting period makes it difficult to harvest, causing delays and, in some instances, in lower quality produce being harvested.

There are predictions that another La Niña is forming towards the end of this year. Whilst this may bode well for South African producers (assuming the rainfall is not too excessive or prolonged), it could have adverse effects on the global supply of various agricultural commodities produced elsewhere in the world, and therefore on global food prices.

### South African-specific factors

In South Africa, there is added uncertainty and upside risk to other input costs, including energy and labour costs. We recently saw Eskom applying to increase their tariffs by as much as 34% in April next year. NERSA is due to rule on this in November. SA also suffers particularly weak transport and logistics infrastructure, including our rail networks and ports. Our ports reflect productivity levels that are far below international benchmarks due to weak and ageing port infrastructure and equipment. The recent floods in parts of the country (notably in KwaZulu Natal) also damaged key infrastructure, and there is the added challenge of vandalism and theft destroying the rest.

In the wake of the Land Bank saga - which in April 2020 saw the biggest agricultural funder in the country default on its debt, precipitating a severe liquidity challenge –

South African agricultural producers also face difficulties in obtaining the necessary funding to support their ongoing working capital and capital expenditure needs. Land Bank once funded close to 30% of agricultural debt

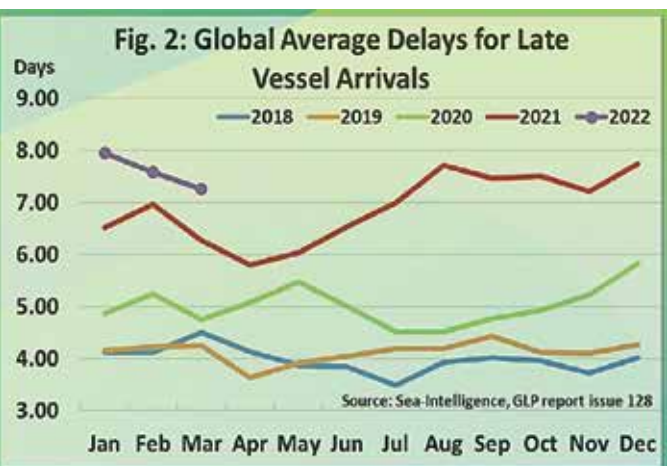
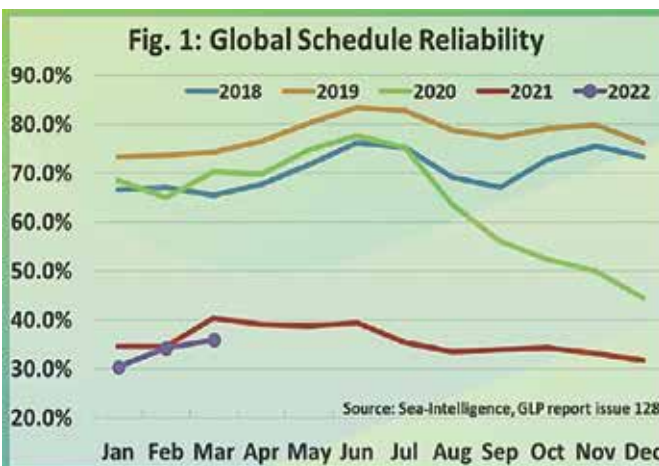
in the country. Whilst the large, commercial agricultural operations are easily able to obtain alternative funding from commercial banks, the smaller agricultural producers will struggle.

### Outlook

If anything is certain, it is that we are living in very uncertain times. Agricultural producers face an array of challenges, including an ongoing war and the ripple effect that various governments' policies will have on the global and local economy.

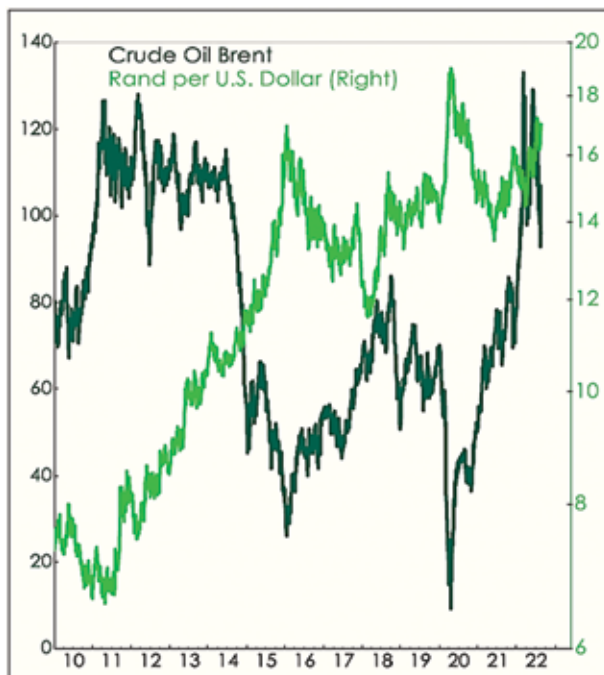
The economic damage from the war poses a material risk to global growth projections, with the IMF, World Bank and OECD all recently having revised their global growth forecasts for 2022 sharply downwards. Elevated inflation in this low growth environment complicates the tradeoffs to be managed by central banks, who must balance the risks to growth and inflation, creating a material risk of entering a cycle of stagflation. We have seen most central

“ Russia is a leading exporter of chemical fertiliser. South Africa is a net importer of fertiliser, so we are heavily impacted by global pricing pressures ”



Source: BFAP compiled from Sea-Intelligence (www.bfap.co.za)





Source: Old Mutual Investment Group compiled, Factset data, August 2022

banks tighten monetary policy by increasing interest rates, which, in turn, places pressure on emerging markets and developing economies like South Africa. A weaker Rand makes agricultural imports more expensive in Rand terms, which could place upward pressure on local food prices. Encouragingly, crude oil and natural gas prices seem to have stabilised, albeit at levels higher than the historical average. According to Bloomberg consensus estimates, energy prices are expected to remain elevated in the near term but are expected to normalise by late 2023. Linked to this, fertiliser costs are also expected to ease over the next 12 to 24 months, but at levels higher than the historical norms. In other words, when it comes to these key input costs (being fuel and fertiliser), although we seem to have seen the peak, we are not expected to be back at pre-2020 levels any time soon.

The risk of extreme weather events around the world will persist as the world battles the ever-increasing effects of climate change. This will continue to impact the supply of key agricultural products, and consequently the price of food in years to come.

Positively, in the short term, agricultural producers should respond to higher agricultural commodity prices, hopefully leading to increased production. According to data released in August 2022 by the Crop Estimates Committee, South African producers have increased their plantings of winter crops (notably wheat, barley, and canola) for the 2022/2023 season, to take advantage

of higher prices. Production conditions will be critical, and stocks must replenish, but we could expect to see higher supply leading to normalisation in prices in the medium term.

Notwithstanding the various complexities and headwinds, agriculture is widely accepted to be a key engine of economic growth both locally and internationally. Within a troubled global economy, the agriculture and food value chain sectors will continue to be driven by population growth, urbanisation, and the rise of the middle class. The demand for food will continue to grow over the next decade and this growing need must be met by supportive government policy, decisive action, and continued investment in the sector, to ensure that the country avoids an emerging food crisis.

The Agri and Food sector is one that we, at Futuregrowth, are eager to support through responsible investments that yield appropriate risk-adjusted returns. We continue to pursue a strategic initiative of growing our presence in the sector from both a debt and an equity perspective, as part of a broader strategy to support infrastructure investment across various critical sectors of the economy.



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# BUTTERNUT Squash Fritters

Serves 2 to 3

## Ingredients

- 2 cups peeled and shredded butternut squash
- 1/4 cup All-purpose flour
- 1 egg
- 1 tbsp fresh sage, finely chopped
- 1/4 tsp salt
- Black pepper to taste
- 1-2 tbsp oil of choice, for frying

## To serve optional

- 1/2 cup yogurt or cream cheese
- Microgreens or chopped mixed herbs

## Method

In a large bowl, toss the butternut squash, flour, sage, and salt until the squash is well coated. Beat the egg in a separate bowl, then add to squash mixture and stir until the mixture is moistened throughout.

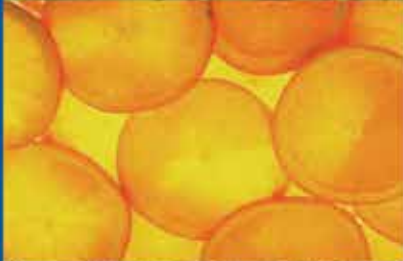
Line a plate with paper towels and set aside. Heat 1 tbsp oil in a skillet over medium heat until hot, and a small amount of mixture dropped into the oil sizzles.

Using a 1/4 cup measure, scoop small mounds of the squash mixture into the skillet, using the back of the measuring cup to press the mounds into circle shapes and spacing them 3-4 cm apart. Cook the fritters for about 3 minutes on each side, or until golden brown and crispy on the edges. Transfer them to the paper-towel-lined plate, and repeat until all of the squash mixture has been cooked.

Serve warm with a dollop of yogurt, or cream cheese, a sprinkling of microgreens or herbs, and salt and pepper to taste.



Image Credit: <https://www.brunchographers.com/blog/simple-butternut-squash-fritters>



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## Do's

- ✓ Always follow the label instructions and pay special attention to pollinator warnings or precautions.
- ✓ Interrogate Agri-Intel ([www.agri-intel.com](http://www.agri-intel.com)) for pesticides that are registered for the purposes required; the labels are, however, the final port of call for safety and use instructions.
- ✓ Apply directly to the target plant and ensure minimal spray drift.
- ✓ Apply early evening when bees have returned to their hives.
- ✓ Communicate with all beekeepers in the area and inform them of planned spray programmes.
- ✓ Scout the area for pollinators before applying.
- ✓ Be aware of spray residues and the amount of time they may still be toxic to bees.
- ✓ Remember that systemic insecticides have long periods of residual activity.
- ✓ Ensure that flowering plants or weeds that are attractive to bees are not in the area of application.
- ✓ Familiarise yourself with the product. Insecticides are the most hazardous to bees while fungicides and plant growth regulators have less impact.
- ✓ Ensure that equipment has been correctly calibrated for the application.
- ✓ Ensure to practise integrated pest management and only apply pesticides when absolutely necessary.

## Don'ts

- ✗ Apply directly onto flowers. If no other option exists but to apply pesticides in bloom, do not apply directly onto the flowers.
- ✗ Apply while pollinators are active in the area that needs to be treated.
- ✗ Apply at night because inversion can prevent successful deposition of pesticides onto the target and cause serious drift.
- ✗ Apply any product that is not registered for the specific crop or application method.
- ✗ Apply during windy conditions, especially if foliar application is the only available option.
- ✗ Mix pesticides with substances that could be a lure for pollinators.
- ✗ Apply pesticides to standing water bodies.

## Recommended

Plant bee attractive indigenous flora like aloes and fynbos to lure bees away from crop areas where they may be at risk.