

# INSIGHTS

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## Agrochemical Supply Constraints 'The Perfect Storm'

Cullen Botes



**B**y now I am sure we all would have experienced, in one way or another, the agrochemical product shortages as well as the associated price increases brought about by a severe imbalance between supply and demand of these products.

Challenges associated with the logistics of the products have not only resulted in increased shipping costs but also in delivery delays. A trend that has been contributing to these increased shipping prices, is the fact that ship operators have been putting more ships into the trans-Pacific trade route. This has resulted in a significant increase in congestion on this route, only to be further compounded by the COVID-19 pandemic and associated procedural delays, resulting in shipping lines fetching premiums to operate in this route. Because of the good prices, ships are being drawn from other trade routes (i.e. Asia-Africa) to serve as "extra loaders" in the trans-Pacific. This has lead to significantly fewer ships available to service and fulfil supply needs.

Year to date there have been various events that contributed to the availability (or lack) of agrochemicals, starting with the re-emergence of COVID-19 in various provinces of China (i.e. Hebei) and more recently the strict enforcement of various environmental clean-up campaigns. As part of the 'environmental clean-up campaigns', the central Chinese government have committed before the United Nations that they would reach carbon neutrality by 2060. Due to the Winter Olympic Games being held in Beijing early in 2022, enforcement of these

carbon emission targets has taken centre stage and is going to be strictly policed. This has negatively affected all supply chains, with high value consumer goods being prioritised over agrochemicals.

The global agrochemical industry is highly reliant on production out of China, with South Africa being no exception. The 'dual control of energy consumption and intensity policy' has forced factories operating in areas with high energy consumption, to be throttled/restricted to operating at 40% (or lower) of full capacity. With the limited supply and increased demand of these raw materials, prices have exponentially increased. The best example of a key raw material used in the production of a number of agrochemicals (including glyphosate) is yellow phosphorus. Yellow phosphorus is produced from phosphate ore with the conversion process being extremely energy intensive. Due to the reduction of power, the production of yellow phosphorus in certain provinces (i.e. Yunnan) was forced to decrease by up to 90%, resulting in glyphosate prices going through the roof.

The energy crisis in China has been further compounded by the upcoming Chinese winter season which will further impact production as certain provinces in the southwestern parts of the China have adopted a certain level of hydropower as an alternative energy source. However, during the winter months, China does not receive as much rainfall to allow for effective hydropower generation. This, coupled with a low supply of domestic coal, reduced coal imports

as well as the significant coal price increase (\$31.36/Mt on 1st of May 2020, \$269.1/Mt on 1 October 2021 to \$163/Mt on 9 November 2021) have all contributed to production cost increases and delays as well as heavier enforcement of curtailment programmes in China.

Most suppliers predict that the current market situation will not improve before March 2022. This prediction is again based on the fact that local government is going to strictly monitor the carbon emissions between now and the Winter Olympic Games to be held in February 2022. Combined with annual festival holidays during the first week of February, production and logistics will be negatively affected between mid-January and mid-February.

### What does this mean for the next few months?

Since the current demand for agrochemicals far outweighs the current supply, significant price increases as well as product shortages are expected at least until March 2022. As a result of this products prices are predicted to increase as much as 40 – 70% by January 2022 (product specific).

All the aforementioned factors have resulted in the agrochemical industry experiencing its greatest product shortages and associated price rise in the past decade. The key for this season will be to secure stock as early as possible to ensure that you have product available for the season. Late purchasing could result in stock shortages or product price increases due to the limited supply.



Nuwe 10ℓ verpakking!



### Introducing DropSight!

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**villa**

## EDITOR'S NOTE



We live in a world that is marked by constant unpredictability and we've come to the end of what has been a year filled with quite a few bumps in the road along the way. Covid-19, working from home challenges, rising input costs and supply issues have truly tested our ability to adapt and innovate to overcome these obstacles. Our industry has been extremely resilient despite these challenges and performed better than we could have anticipated at the beginning of 2021.

At Villa, our teams have been working extremely hard to secure product to ensure that we can deliver to our customers. Without our employees' dedication and support, it would not have been possible to reach the goals that we set out to achieve and we thank them for their hard work and can-do attitudes through it all. Thank you also to our customers for your ongoing support of our business.

In this edition you can read on pages 4 and 5 about some of the exciting new Precision Ag projects we launched this year as well as innovation in our packaging on page 3. There is also a section to learn more about a few of the industry partners we work with on page 14. We also looked at water quality on pages 8 and 9, solutions for Alternaria alternata in potatoes on page 6 and fusarium in apples on page 7. Furthermore, we spent some time in the Northern Cape – read more about it on page 12 and 13.

We really hope that the festive season ahead will be filled with quality time with family and friends as well as some well deserved time to relax and recharge for 2022.

I would like to leave you with this quote from Joshua J Marine "Challenges are what make life interesting and overcoming them is what makes life meaningful."

It's an honour to work in an industry that faces challenges head on and making the best of any situation thrown at it.

All the best for New Year ahead!

Noeline Mostert



# Welcoming a new member to the Marketing Communications Team!

**R**ené de Klerk joined the Villa Communications team in November and will be assisting with the publication of this newspaper going forward. She loves writing and storytelling, so studied BA Languages (specialising in Journalism) at the University of Pretoria. After graduating, her first position was as Athletics South Africa's media coordinator where she oversaw media relations and had to attend official events all over the country. After two years in this position, she left to be a journalist for the SANParks Times. This quarterly print publication involved travelling to the various parks across the country to search for stories to fill the publication, take stock photos, and provide content for the magazines at Caxton. René wrote extensively about conservation and travel and covered various topics which included things like invasive species management. The publication came to an end after five years. She then became part of the team that started a new publication – Safari News. She wrote about conservation and travel, focussing on the many protected areas in South Africa and beyond. Unfortunately, the publication closed due to Covid-19 which led René to Villa. We are looking forward to working with her and trust that she will make a meaningful contribution to the company.



## Jong manne vat voor in die Kaap



### Reinhardt Wessels

Reinhardt het sy BSc by die Universiteit van Stellenbosch voltooi met spesialisasie in Agronomie, Plantpatalogie en Entomologie. Drie maande nadat hy sy studies voltooi het, sowat twee jaar gelede, begin hy sy internskap by Villa. Vandag is hy bemarkingsgenoot in presisie landbou en bied daagliks tegniese bemarkingshulp in die lande aan. Bykomend is hy ook met die Metos weerstasies betrokke.

Reinhardt stel al van sy kinderdeae af belang in landbou. Hy het gedurende skoolvakansies op plase in die Swartland gewerk waar hy grootgeword het. Terselfdetyd is sy familie in die industrie, so 'n loopbaan in landbou was onvermydelik.

Die dele van sy werk wat hy die meeste geniet is die oplossing van probleme en die tevredenhed wat daarmee gepaard gaan nadat hy wel 'n problem opgelos het. Reinhardt meen dit is baie lekker om onkruid in lande baas te raak, verskillende mense deur die werk te ontmoet en nuwe plekke te sien. Vir hom is dit tweede natuur om in die buitelug te wees en sy hande vuil te maak.

Reinhardt se grootste doelwit is om behoorlik kennis van gewasbeserkning op te bou. "Indien jy 'n goeie naam daar buite het en jou kennis behoorlik opbou dan kom al die ander dinge vanself," meen hy. "Mens dink jy weet iets wanneer jy uit die Universiteit uitkom, maar dan besef jy dat jy eintlik niets weet nie." Hy wil dus so veel as moontlik leer en sien.



### De Wet du Toit

De Wet het in Februarie 2020 by die Villa span aangesluit en werk tans as in die bemarkingsafdeling as sleutelrekeningbestuurder vir Wenkem. Hy het ook die Universiteit van Stellenbosch bygewoon waar by 'n BSc-graad voltooi het met spesialisering in wingerdbou. Selfs in sy jonger dae het hy gedurende skoolvakansies by uitvoermaatskappye en in die tafeldruive industrie gewerk. Sy gunstellingwyn is 'n Shiraz.

Die passie vir landbou was maar nog altyd in sy bloed omdat hy uit 'n landbou familie kom. Sy oupa het met wingerd in die Paarl geboer en sy pa was ook in die landbouchemiese bedryf. De Wet was self op landbouskool in die Boland.

Sy grootste doelwit by Villa is om sterk te wees in die wingerdbou industrie. "Ek wil die person wees wat mense bel as hulle hulp soek," vertel hy. Hy is tans besig om sy ondervinding en kennis op te bou aan die boerdery kant ook.

Vir hom is die lekkerste deel van die werk om saam met agente die boere te besoek, self tussen die gewasse te kan rondbeweeg en te kyk wat in die areas aangaan. Hy geniet dit om te sien hoe die seisoene verander en die gewasse groei, te leer oor hoe sekere stadiums sekere behandelings en produkte nodig het. Vir hom is dit die lekkerste is om 'n produk aan te bevel en dan 'n paar weke later te sien dat dit werklik 'n verskil gemaak het.

The advertisement features the Villa logo at the top left. Below the logo is a vibrant image of a sunflower field under a blue sky with white clouds. Along the bottom of the image is a red banner containing the website address [www.villacrop.co.za](http://www.villacrop.co.za) on the left and the words "PRODUCTS • INSIGHT • EXPERTISE" on the right. Above the sunflowers, there are six circular icons representing different agricultural concepts: a water drop, a leaf with soil, a small plant, a spider, a molecular structure, and a ruler with a plant.

## FOKUS OP VERPAKKING

# Villa dink weer “uit die boks”



Charla Meyer

**C**harles Darwin se bekende woorde “*It is not the strongest of species, nor the most intelligent that survives. It is the one most adaptable to change.*” was lanklaas in die geskiedenis so van toepassing soos die laaste jaar of twee. Landbou beleef eerstehands menige gevolge van die Covid-pandemie, ‘n wankelrig ekonomiese situasie, gebrek aan dienslewering, produktekorte, prysverhogings en arbeidsuitdagings. Gooi daarby nog die toenemende druk van omgewingsinstansies rondom “groen” beginsels en dan is dit geen wonder dat ons soms totaal oorweldig voel nie.

As verkaffer van landbouchemikalieë, is Villa ‘n toonbeeld van innovasie en aanpasbaarheid.

Ons nuwe 10ℓ kanne is ‘n sprekende voorbeeld hiervan. Met nuwe multilaag neerleggingstegnologie kan ons nou kanne vervaardig uit herwinde materiaal met wande wat sterk genoeg is om meer gewig per pallet te kan hanteer.

In die verlede kon ons in 20ℓ kanne net 640ℓ produk op ‘n pallet pak. Met die nuwe 10ℓ kannetjies, kan ons nou 960ℓ produk per pallet pak. Met brandstofpryse wat die hoogte inskiet, spaar jy dus heelwat op vervoerkoste. Jy het ook minder stoorspasie nodig op die plaas. Die kannetjies se stapelvermoë is heelwat beter – dit is ontwerp om soos boublomme in mekaar te pas wat die pallet meer stabiel maak vir veilige vervoer oor ver afstande en slegte paaie.

Produkte wat tradisioneel in 10ℓ kanne verpak is, is twee-twee in

‘n boks verpak. Die bokse moes uiteraard ook produktikette opkry. Met die nuwe kannetjies, word die sekondêre verpakkingsmateriaal heeltemal uitgeskakel. Selfs die heel beste kwaliteit kartonbokse is nie bestand teen omgewingsfaktore soos vog en knaagdiere nie – nog ‘n probleem wat uitgeskakel word met die nuwe kanne.

Die kannetjies se nekke en proppe is ook herdink. Die versterkte, bietjie langer nek voorkom ‘n terugsluk-aksie wanneer produk uitgegooi word en gee ‘n beter, meer eenvormige vloeい. Proppe kan lekker styf vasgedraai word sonder dat die nek verwring.

Fluoried en fluorineringsbehandelings is wêreldwyd onder die vergrootglas om verskeie gesondheidsredes. Chemiese kanne is in die verlede aan die binnekant verseël met ‘n dun lagie fluoried om te verhoed dat produkte soos EC-formulasies deur die wande migreer. Die nuwe kanne word verseël met plasma tegnologie wat die fluoriedbehandelings uitskakel.

‘n Groot verskeidenheid van Villa se produkte sal voortaan beskikbaar wees in ons nuwe 10ℓ kannetjies. Die frase “Villa dink UIT DIE BOKS” is voorwaar gepaste woordspeling.



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die verpakking vertel!



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## FOCUS ON PRECISION AG

# Introducing the Climate Smart Agriculture project



Carina Olivier

**A**rticles of climate change and how the weather will impact the coming season are doing their rounds. Experts predict that the summer rainfall areas in South Africa will experience wet weather for the next three months, with a high chance of a dry spell afterwards. Although the wet weather is generally good news, it can also present producers with challenges. Extended wet and overcast weather makes it difficult to plant and spray, and may also affect yield due to reduced photosynthesis.

Having accurate, reliable weather data is therefore crucial to a producer to plan for the season. Unfortunately, the weather station network in South Africa is not up to the standard necessary for this data to be freely and easily accessible.

**Metos SA** partnered with Pessl Instruments, TerraClim, GeoSmart and the Centre for Geographical Analysis to develop and improve the weather station network in the Western Cape as part of the Eureka Climate Smart Agriculture project. For this project, 200 weather stations will be installed across the province to collect data which can be sent to TerraClim. TerraClim is a web application which combines climate and terrain data, showing weather data in a map view.

To get the highest quality data for the TerraClim app, the weather stations should be installed at pre-defined points which meet a certain criteria. In total, 200 GPS locations were identified, but contact had to be made with the land owners for permission to install the weather stations on their farms. With their direct link to the producer, retailers were able to bring **Metos SA** closer to the farmer. At the date of writing, 40



weather stations have already been installed in the Western Cape.

The short-term benefits of these weather stations include providing the agronomist and his producer with insights to the weather conditions on the farm and the surrounding area. The weather station is also capable of calculating disease risk based on environmental factors, equipping the producer to act in a timely manner. The farmer can now make informed decisions on when to plant and spray, based on data.

Looking at the bigger picture, however, the data collected by these stations will enable **Metos SA** to conduct research and analysis to better understand the impact of the weather on the agricultural landscape. This will allow Winfield United SA to better serve the South African farmer who will increasingly face the effects of climate change.

The success of this project is dependent on the collaboration of various parties, internal as well as external. Over and above for

the ones who physically install the weather stations and coordinate the process, thank you to all staff that has contributed by means of invoicing, arranging deliveries, human resource management and marketing. Additionally, a big thanks to all individuals hosting our weather stations on your farms. We would not have been able to get this far without your support.

We're in it together for the future of REAL Ag.





## climate smart

agriculture




SCAN ME

## FOCUS ON PRECISION AG

# DropSight - The must-have in agriculture is now available!

**A**n easy-to-use, scientifically developed tool to for measuring spray deposition has just been launched in South Africa.

Billions are spent annually on agricultural products, applied by spray machinery onto the crop to protect trillions in crops from pests and diseases, but nobody knows whether the formulation reaches and settles on the intended target area. *DropSight* was developed to do just that, putting the quantitative measuring power of spray deposition in the producer's hand.

A team of spray deposition specialists from the agricultural consulting company ProCrop, Bekker Wessels, Dr Gideon van Zyl and Philip Rebel, collaborated with Marius Ras, an engineer specializing in Application Technology, who has over 40 years' experience in agricultural spraying technology. This formidable team of experts determined the problem areas in agricultural spray deposition and together with the Electronic Engineering team from



ARCi Technologies designed the in-field solution to benefit the industry.

Through the specially designed photographic box (*LeafLab*), UV fluid (*UView*) and the *DropSight* app for a smartphone, the farmer of today can stop guessing and make informed decisions based on quantitative measurements of spray deposition.

*LeafLab* is a portable, on-site laboratory, purpose developed for plant leaf UV photography with *DropSight* to quantify the deposition efficiency onto a crop within minutes

of application. UV led lightning with wavelength, intensity and uniformity to optimise fluorescence for smartphone photography when using *UView* tracer, completes the technical specification. The *UView* fluorescent fluid is recognised by *DropSight* software when the sprayed sample is placed in *LeafLab*.

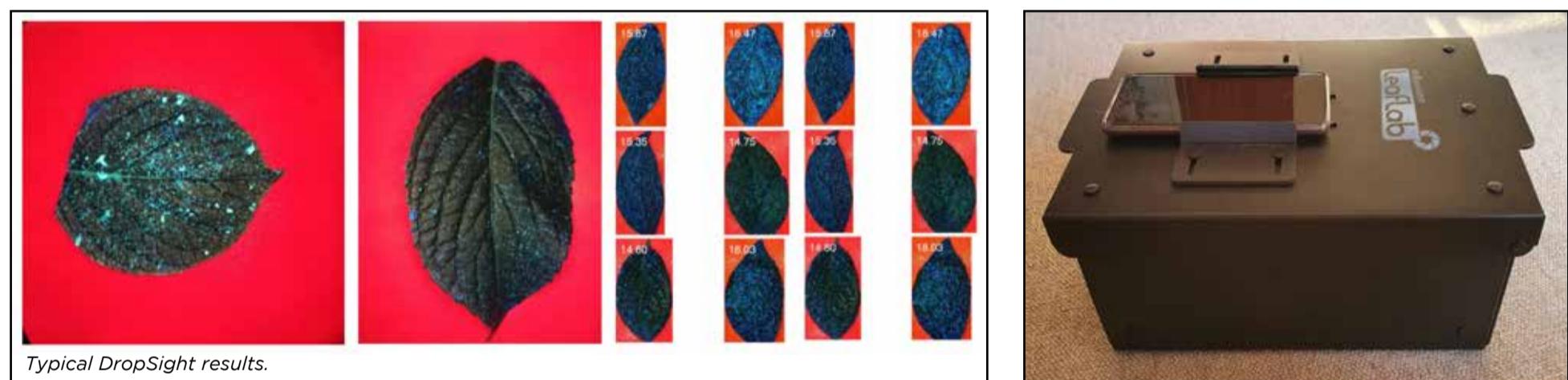
The *DropSight* app offers multiple solutions, including taking photos, comparing spray depositions, store and download past and present batches to enable the producer to

compare improvement. The app was designed with ease-of-use in mind and is a handy and user-friendly tool to assist users in bettering crop protection.

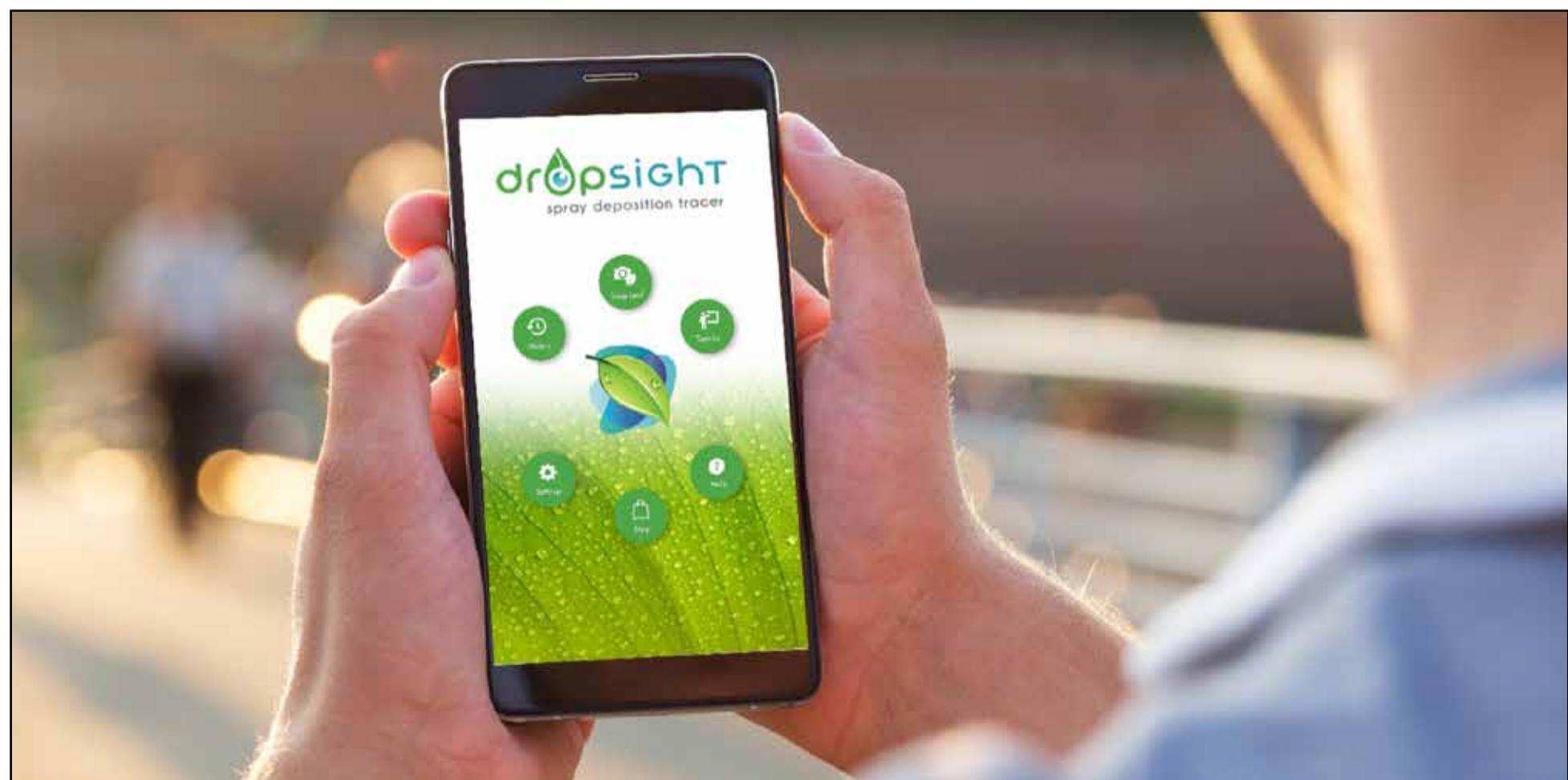
#### What are the advantages of using *DropSight*?

- For the first time the producer can now know how effective the deposition of spray material is on the target.
- "Do it yourself" – use in the orchard or on the land - and get the answers immediately.
- Make adjustments, re-evaluate, and improve the effectiveness of your pest / disease / weed control.
- Optimise the use of agrochemicals and thereby reduce input costs.
- Reduce the polluting of natural resources.

*LeafLab* and *UView* will be distributed via the leaders in Agrochemical industry. Visit [www.dropsight.ag](http://www.dropsight.ag) for information, prices and step-by-step instructions, or to find a distributor near you.



Typical *DropSight* results.



## FOKUS OP MALROES

# Malroes hoeft jou nie langer gek te maak nie



Juta Mentz

**D**ie swam *Alternaria alternata* is die eerste keer deur navorsers in die aartappelpatologieprogram aan die Universiteit van Pretoria as die organisme verantwoordelik vir malroes geïdentifiseer.

*Alternaria alternata*, in die volksmond beter bekend as malroes, maak al vir meer as 10 jaar boere gek met die vinnige vermeerdering en moeilik bekamping van dié swam, asook die ernstige oesverliese wat dit tot gevolg kan hê.

Malroes kom regoor al die aartappelaanplantingsgebiede van Suid-Afrika voor. Dit word gewoonlik vanaf dag 50 (of soms selfs vroeër) ná opkoms by aartappels waargeneem.

Malroes verskyn as klein, ronde, waterdeurdrenkte letsels aan die onderkant van die blare. Ná 'n paar dae vergroot die letsels en kan dan ook aan die bokant van die blare gesien word.

**GUNSTIGE TOESTANDE**

Malroes floreer in warm, vogtige toestande waar blare vir lang tye nat bly. 'n Groot aantal spore word gewoonlik geproduseer, veral waar afwisselende dae van nat toestande voorkom. Malroesspore kan vir baie lang tye in reste in die grond oorleef, en word gewoonlik deur wind of water versprei. Mikrowonde op die aartappelplant maak dit vir malroes moontlik om die plant te besmet.

**VERDRAAGSAAMHEID**

Malroes se vermoë om verdraagsaamheid teenoor sekere swamdoders op te bou, is wêreldwyd bekend.

In Noord-Amerika en Europa is artikels gepubliseer wat verdraagsaamheid teen die kinoon-buiteinhieberder (QoI) en die suksinatdehidrogenaseinhieberder (SDHI) bevestig.

Verlaagde gevoeligheid vir die bovenoemde swamdoders is reeds in 2013 in Suid-Afrika aangemeld. Verlaagde gevoeligheid vir QoI (asoksistrobien) is bevestig in die meeste van die aartappelaanplantingsgebiede van Suid-Afrika, asook 'n verlies aan gevoeligheid vir die SDHI-swamddoder (fluopiram) in sekere aanplantingsgebiede van Suid-Afrika.

**MALROESBESTUUR**

Die beste manier om malroes te bestuur, is deur 'n geïntegreerde program, waarin die eerste stap is om die swam te identifiseer. Dit is ook baie belangrik om al die simptome op die plant vroeëtydig waar te neem sodat stappe betyds gedoen kan word.

Verligting van strestoestande by die aartappelplant is uiters belangrik. Probeer om enige mikrowonde deur insekte en chemikalieë te minimaliseer. Die bestuur van versuip en droogtetoestande met 'n gebalanseerde bemestingsprogram is belangrik.

Plaas die swamddoder wat vir beheer gebruik word waar die malroes floreer,



Malroes wat reeds aan die bokant van blare sigbaar is.



Vroë roes



Malroes

met ander woorde in die middel tot aan die onderkant van die blaardak van die aartappelplant. Dit is belangrik om die ongunstige effek van blaardakafskerming van chemikalieë te voorkom deur die gebruik van 'n geregistreerde byvoegmiddel wat wegdrywing verminder.

Blaardakindringing en -bedekking verbeter met die gebruik van 'n produk soos Interlock, wat die optimale werking van die chemikalieë wat gebruik word, verseker.

Die gebruik van geregistreerde swamddoders vir die bekamping van malroes is noodsaklik. Middels met meer as een metode van werking keer dat verdraagsaamheid van of selfs weerstand teen swamddoders nie 'n nog groter probleem word nie.

**PRODUK**

FILUM 520 SC, wat uit die aktiewe bestanddele pirimetanil (FRAC-swamddoder, groepkode 9) en trifloksistrobien (FRAC-swamddoder, groepkode 11) bestaan, is die enigste geregistreerde malroesprodukt op die mark.

Die aktiewe bestanddele is sistemies en voorkom vermeerdering van die malroesswam deur onder meer die respiratoriese vermoë van die sel te belemmer.

FILUM 520 SC word saam met 'n goeie vroeë roesbekampingsprogram gebruik. FILUM 520 SC word in week vyf, sewe en nege toegedien, en in week ses en agt afgewissel met swamddoders wat mankoseb of chloortalonel (MISSION 720 SC) bevat ten einde optimale werking van die swamddoder te verseker.

FILUM 520 SC is nie net vir malroes geregistreer nie, maar ook vir *Alternaria solani*, wat beteken dat twee swamme gelyktydig bekamp word.

Boere word altyd ten sterkste aangeraai om eers die etikette te lees en met hul naaste landbouverteenvoerdiger te praat voordat middels toegedien word.



Skandeer vir  
onderhoud op  
Landbouweekliks

## FOKUS OP SAGTEVRUGTE

# DETECT 400 SC stuit appelskurf in sy spore



Karla du Preez

**A**ppelskurf (Fusi) is wêreldwyd berug. Dié swamsiekte lei tot erge verliese vanweë letsels wat vrugte onbemarkbaar laat. Fusi word op appels deur die patogeen *Venturia inaequalis* veroorsaak, terwyl *Venturia pirina* pere infekteer.

Fusi oorwinter in dooie, geïnfekteerde blare van die vorige seisoen wat op die boordvloer gevall het. Hier vorm dit mikroskopiese strukture, genaamd pseudothecia. Vroeg in die lente, onder gesikte temperaturen en vogtoestande, vorm en stel hierdie strukture askospore vry.

Hierdie geslagtelike spore versprei deur die wind na nuwe, ontwikkelende blare en vrugte van gesonde bome. Na primêre infeksie, word ongeslagtelike spore (sekondêre konidia) geproduseer.

Indien omgewingstoestande gunstig bly vir swamontwikkeling, kan bome herhaaldelik geïnfekteer word. Die proses word versnel as blare vir 'n tydperk van ses ure of langer nat bly, met optimum temperatuur tussen 20 en 25°C.

Sekondêre spore benodig vogtige toestande en hoë relatiewe humiditeit om te ontkiem. Tydens koeler weer ontwikkel die swam stadiger.

Appelskurf infekteer blare, takke, blomknoppe, blomme en vrugte. Askospore word deur die wind versprei en kleef stewig op die gasheeroppervlak.

Die tydperk van blaarnatheid teen-



Beskerm jou appels teen appelskurf met DETECT 400 SC.

oor temperatuur word gebruik om die voorkoms van infeksies te voorspel. In die lente is daar meer vatbare weefsel beskikbaar vir infeksie en dus 'n hoë risiko vir die siekte.

Jong, aktiegroeende blare is hoogs vatbaar, waar volwasse blare weerstand opbou soos dit verouder. Vroeë letsels vertoon as klein, liggroen onreëlmatige plekkies aan die onderkant van blare. Dit word later sirkelvormig en olyfkleurig met 'n fluweelagtige tekstuur en kan vergroot tot 1cm of meer in deursnee.

Aanvanklike vrugsimptome vertoon as waterdeurdrenkte dele wat vinnig tot fluweelagtige, groen- tot olyf-

bruin letsels ontwikkel. Vroeë infeksies kan vrugte vervorm, namate gesonde weefsel aanhou groei.

Die letsels is skurf en kurkagtig en word met 'n duidelike rand omring. Vruggrootte sowel as -gehalte word ingeboet en ryptering word benadeel. Erg aangetaste blare en vrugte kan lei tot vroeë blaar- en vrugval.

Gereelde ontblaring verswak bome en maak dit meer vatbaar vir insekte en ander plantsiektes. Indien vrugte laatsomer of net voor oes besmet word, verskyn swart, sirkelvormige klein letsels of kolletjies tydens opberging op die vrugte.

Dit is belangrik om 'n omvattende strategie teen appelskurf te implementeer wat bestaan uit boordsanitasie, asook weeklikse toedienings onder hoë sieketedruk.

Swamdoeders word gereeld vroeg in die seisoen toegedien om nuwe weefsel te beskerm. Dit word minder gereeld later in die seisoen gebruik – tensy toestande gunstig is vir sieketeontwikkeling. Kontakswamdoeders wat op verskeie plekke op die swam inwerk, word meestal gebruik. Sistemiese produkte word dan daarby gemeng. Met die gebruik van mankoseb onder die vergrootglas, is dit belangrik om alternatiewe kontakmiddels te oorweeg.

Villa se DETECT 400 SC, met dithianon as aktiewe bestanddeel, is 'n ideale alternatief. As kontakswamdoeder wat op verskillende setels inwerk, is die risiko vir weerstand laag.

Dithianon word voorkomend gespuit en verhoed spoorontkieming. Dit inhibeer ook die groei van die kiembuis voor dit die gesonde weefsel penetreer.

DETECT 400 SC het 'n lang nawerking en word weer op die vrug-en blaaroppervlak geaktiveer deur vogtige toestande.

DETECT 400 SC bied dus beskerming tydens toestande wat ook gunstig is vir die ontwikkeling van Fusi. Met al hierdie voordele is DETECT 400 SC 'n belowende alternatief vir die beheer van Fusi.

**DETECT 400 SC**

Produk. Insig. Bekwaamheid.

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**villa**

## FOCUS ON WATER QUALITY

# Water quality still a huge challenge



Brian de Villiers



**W**ater is used as a carrier to apply crop protection products uniformly over a certain area. However, water has some important physical and chemical limitations. It is important to understand what these limitations are to apply crop protection products effectively.

#### Physical properties

The physical challenge that water presents is surface tension. This is the ability of a water droplet to act as if it were enclosed in an elastic skin. The droplet then behaves like a rubber ball and many droplets are lost due to droplet bounce.

Surface tension also limits droplet spreading on the leaf surface. This

is one of the reasons for using surfactants or oil adjuvants. These adjuvants decrease the surface tension of water and ensure less droplet bounce and more spreading. The more droplets available on the leaf surface, the greater the chance of higher efficacy. Surfactants and oils don't only reduce the surface tension, but also aid in the absorption process.

#### Chemical properties

The chemical challenges include dissolved ions and pH. Dissolved cations like calcium, magnesium, sodium and potassium can be antagonistic to herbicides like glyphosate. In South Africa, sodium (brackish water) is probably the

major antagonist solely because it is found at extremely high levels in certain areas. However, calcium and magnesium (hard water) are also important and can limit the activity of salt-sensitive herbicides, mainly because they are divalent cations (double positive charge). Electrical conductivity is a good indicator of these dissolved antagonistic cations. Please note that soft water (low calcium and magnesium) also has disadvantages like causing excessive foaming with surfactants.

pH antagonizes certain insecticides through a process called alkaline hydrolysis. Alkaline hydrolysis is the degradation of certain insecticides in high pH water. This is the reason

why buffers are commonly used with insecticide applications.

Some water sources have a high buffering capacity (alkalinity), so a higher rate of buffer may be needed to acidify these spray solutions. It is important to note that water with a low buffering capacity also has challenges. One of these challenges is that the pH may decrease too much, causing an extremely acidic environment with its own set of challenges like physical incompatibility.

Water, irrespective of the source or quality, has challenges. A thorough knowledge of water and adjuvants is essential to limit these challenges and to obtain the optimal crop protection products efficacy.



## FOKUS OP WATERKWALITEIT

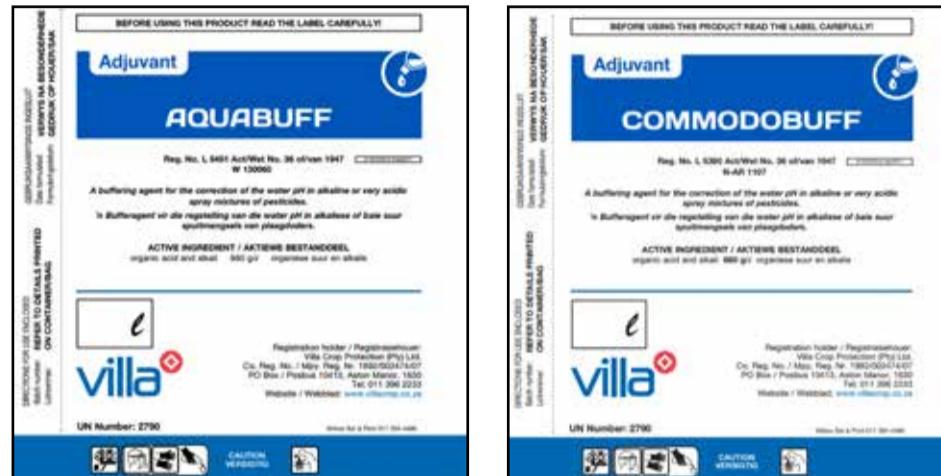
# pH - 'n klein verskil kan 'n groot impak hê

Brian de Villiers

**p**H-verlagende buffers word algemeen in Suid-Afrika gebruik. Die mees algemene gebruik van buffers is om 'n proses bekend as alkalisiese hidrolise (afbraak in hoë pH spuitoplossings) op sekere insekdoders te beperk. Buffers word egter ook gebruik om opname en effektiwiteit van sekere gewasbeskermingsprodukte te verhoog. Die pH skaal kan baie verwarrend wees, en daarom is dit belangrik om te verstaan hoe dit werk, want 'n klein verlaging in pH kan 'n groot impak op die effektiwiteit van gewasbeskermingsprodukte.

#### Hoe die pH skaal werk

Dit is belangrik om te verstaan dat die pH skaal logaritmies is en tussen 0 en 14 genommer is. Waardes onder 7 is suur en waardes bo 7 is alkalies, met 7 wat neutraal is. Wat mense dikwels nie verstaan nie, is dat met elke 1-punt afname in pH, is daar 'n 10-voudige toename in suurheid! Die meeste pH-verlagende buffers verlaag gewoonlik die pH na 'n reeks van tussen 4 en 6 waar alkalisiese hidroliese van die meeste sensitiewe insekdoders beperk word. Die spuitoplossing pH sal dan stabiliseer



en behoort binne hierdie grense te bly.

Sekere produkte het 'n kleur indikator om aan te dui wanneer die korrekte pH vlak bereik is. Wanneer 'n buffer egter gebruik word wat nie die korrekte pH vlak verseker nie, mag die spuitoplossing te suur of selfs te alkalies vir die gewasbeskermingsprodukte wees.

#### Die gevolge van 'n verkeerde pH

Indien die teiken pH 5 is, maar die spuitoplossing na 'n pH van 3 toe

verlaag word, kan daar rampspoedige gevolge wees. Teen 'n pH van 3 is die spuitoplossing 100-voudig meer suur as teen 'n pH van 5!

Eerstens mag die gewasbeskermingsprodukte onstabiel by so 'n lae pH wees of dit kan na 'n oneffektiewe of fitotoksiese vorm toe omgeskakel word. Tweedens sal tenkmensel produkte, wat minder effektiw teen 'n lae pH is, benadeel word. Derdens kan die opname van sekere sistemiese GBP in die spuitmengsel

vertraag word, wat sal veroorsaak dat dit baie langer op die blaar vertoef, wat die kans op blaarskroei sal verhoog. Vierdens word fisiese onmengbare spuitmengsels soms deur uitermatige lae pH veroorsaak. Dit kan flokkulasie, jellie-agtige spuitmengsels en geblokkeerde siwe en spuitpunte veroorsaak. Die teendeel is natuurlik ook waar wanneer 'n buffer nie die pH genoegsaam verlaag nie. Onthou dat net 'n klein verskil op die pH-skaal, 'n groot verskil op die suurheid van die spuitmengsel kan maak.

pH is een van die mees misverstane eienskappe van spuitoplossings en 'n klein fout met pH-regulerende byvoegmiddels kan 'n groot impak op effektiwiteit en fisiese mengbaarheid hê. Maak seker wat die vereistes van die pH-sensitiewe produk is en gebruik net premium kwaliteit byvoegmiddels. Moenie die tenkmengsel produkte vergeet nie en neem al die gewasbeskermingsprodukte in ag wanneer spuitoplossings versuur word. Moet ook nie alle spuitmengsels as 'n standaard praktyk versuur nie maar bly eerder by die etiket aanbevelings.



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PAGE 9

## FOCUS ON THE HEAD OFFICE SALES DEPARTMENT



# VILLA CROP PROTECTION SALES DEPARTMENT

Villa's sales department serves as the engine room of the company. Their hard work and determination ensure that products are available for distribution to farmers across the country. We spoke to Freddie van der Westhuizen, head of sales and logistics, about the Sales Department and their role at Villa.

This Villa department works with various dealerships and agents. The dealerships then ensure that the farmer can order what they need for successful farming. The staff deal with several customers and spends 70-80% of the day on the phone. They need to ensure that incoming orders are processed daily, prices are correct, and stock is available. It is crucial to keep clients up to date about stock shortages and availability.

They also take care of all the processing and logistics to get products to the client. The team work very closely with the Villa marketing team and the other departments. "We work with so many different aspects," explains Freddie. "The technical team assist with the registration of products and more, but the sales department also needs to ensure that the products have the correct labelling, is correctly packed and unloaded, and so much more. Accuracy with this is crucial as we can't have the wrong information on products."

While the work of the sales team remains the same, things have changed somewhat over the years. Years ago, there was more distinction between the busy and quiet seasons. There aren't real quiet periods anymore. In the past, the focus was on major crops such as maize and citrus, but nowadays, Villa sells products for a broad spectrum of crops, including vegetables. The end of the year is still the busiest time as maize is one of the major crops in South Africa.

There are several challenges the department faces, especially when it comes to stock availability. It is partly because of the COVID-19 pandemic, but the timeous arrival and availability have always been challenging. During the pandemic, ships have primarily focussed on the movement of essential goods, which has led to increased prices. Because of potential shortages, some farmers also purchased surplus products.

#### Some interesting statistics from the sales team:

- 22-24 million litre/kilogram of product goes out to clients annually
- Handles approximately 21 000 orders per year
- Sales team spends between 70-80% of their day on the phone
- More than 200 emails per day per person

## FOCUS ON THE HEAD OFFICE SALES DEPARTMENT

*The sales department forms part of a much bigger team and has one goal: business success. Below are some information about some of the team members:*



**Freddie van der Westhuizen**  
- head of sales and logistics

Freddie joined Villa in 1995 and oversees a big team. It includes seven direct employees in the sales department, the logistical leg of Villa with 30 people at the depot in Glen Marais, and ten people at the Olifantsfontein formulation plant.



**Roedolf de Necker**  
- senior sales officer

Roedolf joined Villa a decade ago. He enjoys working with the team because nobody is scared to rise to the challenge. He believes the team can achieve anything.



**Mariska Botha**  
- sales officer

Mariska joined the team in 2017. The fact that her work is not the same from day to day keeps it interesting for her. It has been a challenge to get the orders out throughout the country, but she enjoys challenges and not just standing still.



**Chanel du Rand**  
- sales officer

Chanel enjoys her work and the team she works with at Villa. Her children serve as motivation for her to come to work every day. She has been a part of the Villa team for the last five years.



**Elisma van der Walt**  
- sales officer

Elisma enjoys working at Villa and loves the people she deals with daily. One of her favourite aspects of the job is satisfying clients and assisting where she can. She has been part of the Villa team since February 2015.



**Hlengiwe Dube**  
- sales officer

Hlengiwe joined the team in September. She loves the working environment as the staff are welcoming. She enjoys communicating with outside clients.



**Hennie van Wyk**  
- sales officer

Hennie is one of the newest members of the sales team. He joined Villa in November and is currently gaining product knowledge to become a successful team member.



**Isemari de Brito**  
- sales officer

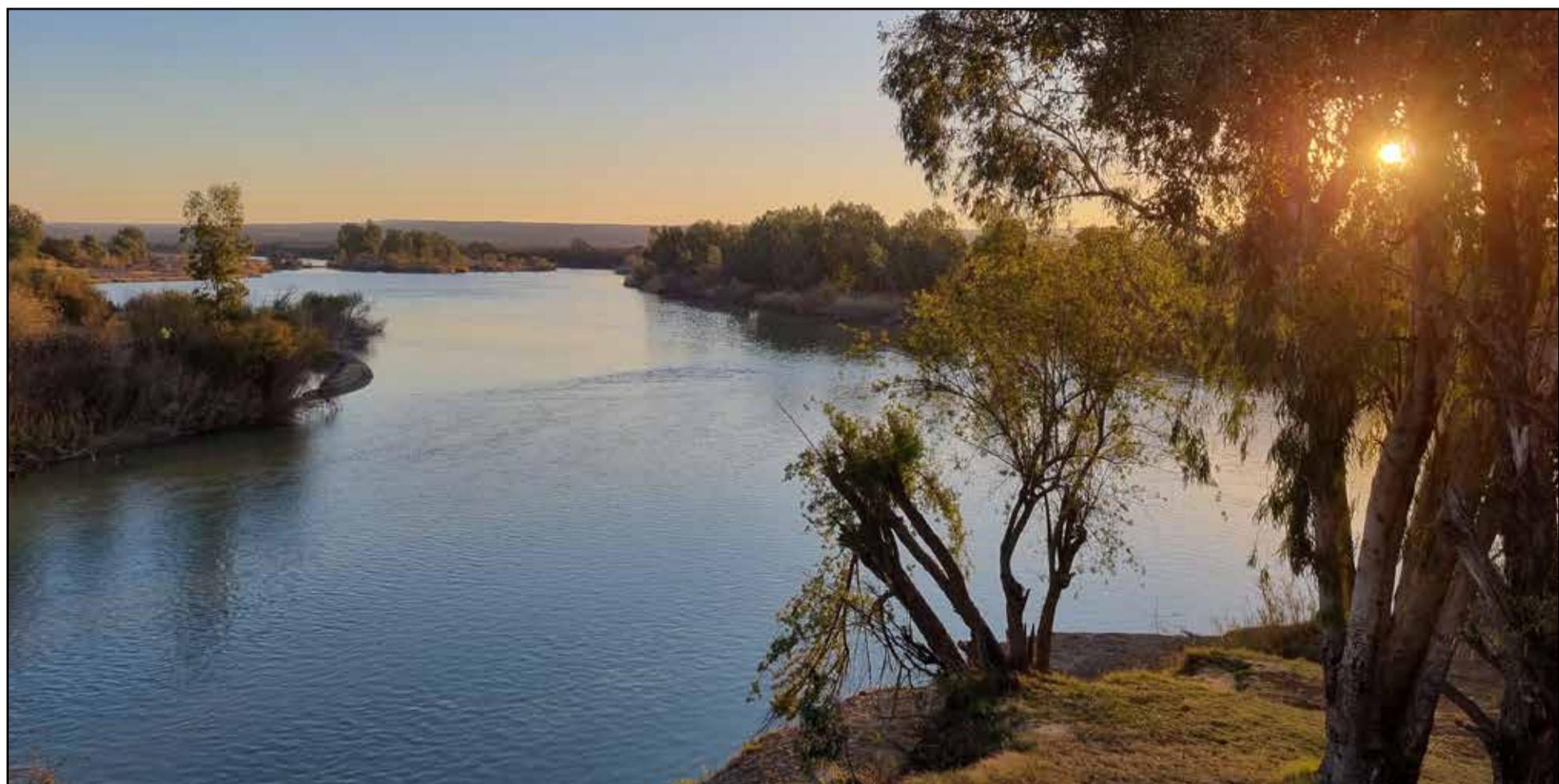
Isemari enjoys working with people, but she also appreciates the busier times as it taught her how to handle pressure. One of her favourite aspects of the job is being able to provide feedback and solve problems. She has been with Villa for 14 years.



## FOKUS OP DIE NOORD KAAP

# “Ons gaan na ‘n beter lewe”

Elandri Jordaan



Net buite Douglas waar die Vaalrivier en Oranje Rivier bymekaar kom.

**V**an diamante na druive, van graniet na neutie, van sout na sitrus, van oorgrensparke na rosytjies, vele sonkragprojekte, dan praat ons nog nie eers oor neutie, skape of wild nie. Die Noord-Kaap is die provinsie met die minste mense maar die mees diverse landboukundige aktiwiteite. Die provinsie is ryk aan minerale soos koper, mangaan en edelstene, met die grootste diamantneerslae in die land. Suid-Afrika se koudste dorp, Sutherland, tot die warmste plek, Vioolsdrift kom daar voor. Hoe kan mens beter die Noord-Kaap oopsom as die provinsiale leuse hierbo deur me Elsie Vaalbooi: “Ons gaan na ‘n beter lewe.”

Die provinsie is geskep in 1994 toe die Kaapprovinsie opgedeel is. Dit is Suid-Afrika se grootste provinsie met ‘n oppervlak van 361 000km<sup>2</sup> met die kleinste bevolking in die land. Die grootste bydrae tot sukses is die Oranjerivier wat deur die provinsie vloei. Die Noord-Kaap grens aan die Atlantiese Oseaan in die weste, Namibië en Botswana in die noorde, en die provinsies Noord-Wes, Vrystaat en Oos-Kaap. Dit is ‘n somerreënvalstreek met ‘n gemiddeld van 250mm reën per jaar. Weggesteek tussen sand, duine en klippe lê die wingerd soos ‘n groen kombers. Dit is eintlik skaapwêreld maar die wynmakers, druifvugters, neutbrekers en sitrusprodusente maak ook hul standpunt. Om al die grond te benut is daar selfs plan gemaak met die eilande. Kanoneiland is die grootste riviernedersetting in die land.

Hoekom stel Villa Crop Protection daarin belang om hierdie provinsie persoonlik te ondersteun?

In 1658 het Jan van Riebeeck 1 200 wingerdstokke geplant, onder

andere Hanepoot. Dit is geplant vir rosytjiedoeleindes. Die eerste rosytjies is in 1833 by die British Empire Exhibition deur JP Jordaan bekendgestel. In 1893 het die Departement van Landbou, Piet Cillie na Kalifornië gestuur waar hy ondervinding opgedoen het oor die verbouing en hantering van droë druive en gedroogde vrugte. Vandag staan hy meer bekend as Piet California. In 1898 het Piet California aanbeveel dat sultanasteggies langs die Oranjerivier geplant word en vandag staan die streek nog steeds bekend as die grootste sultanaproduserende streek in Suid-Afrika.

“Any reason for a raisin.” Raisins South Africa, voorheen bekend as Droëvrugte Tegniese Dienste, het die afgelope vyf jaar herstrukturering ondergaan om hul lede beter te dien. Hulle het in 2018 wegbeweeg van Hortgro Services en die bedryf se eie identiteit en kapasiteit gevestig met die fokus op groei en waardetoevoeging tot die waardeketting en belanghebbendes. Op 1 Januarie 2019 is Raisins South Africa amptelik aanvaar deur die regisseur van Maatskappy in Suid-Afrika. Raisins South Africa verteenwoordig rofweg 1 000 produsente (90% in die Noord-Kaap; 10% in die Wes-Kaap) met die visie om ‘n volhoubare en mededingende Suid-Afrikaanse bedryf te laat groei.

Raisins South Africa is ‘n nie-winsgewende maatskappy. Hulle is afkomstig van statutere heffings, beleggingsinkomste, konsultasieefooie en produkte. Die mandaat is bestuurde bedryfsverwante navorsing en ontwikkeling, om die databasis in stand te hou. Suid-Afrika is gelys



Dekgewas tussen wingerd as poging op biologiese boerdery.

## FOKUS OP DIE NOORD KAAP



Khamkirri, buite Kakamas.

as die vyfde grootste produsent van rosyne wereldwyd. Die Suid-Afrikaanse Roesyntjiebedryf is die nywerheid wat die meeste gedroogde druiewe produseer en sluit Thompsons; Golden's, Flame, Sultana's en Korente in.

Raisins South Africa het in Januarie 2021 die eerste gebiedswye bespuiting gedoen op droog- en wyndruwe. Danksy 'n skenking deur die Departement van Landbou, Grondhervorming en Landelike Ontwikkeling was die roesyntjieboere vir die eerste keer gedoen met twee bespattings en dit het ook die wyndruwe ingesluit. Dit was geklassifiseer as die grootste behandelingsprojek van sy soort in Afrika. Plaagbestrydingsprogramme word wêreldwyd aanvaar as 'n goeie manier om plae te beheer, veral die Mediterreneense vrugtevlieg.

Raisins South Africa se missie is om waarde vir lede en belanghebbendes te genereer. Die totale hektaar roesyntjies in Suid-Afrika is 16 197 hektaar. Daar is 'n verdere 1985 hektaar in Olifantsrivier en 14 215 hektaar in Orange Rivier geleë.

Villa bied al vir meer as 12 maande ondersteuning aan die roesyntjiebedryf met weerstasies en bydrae op inligtingsdae. Raisins South Africa het onlangs ook Hoëskool Martin Oosthuizen in Kakamas se proefplaas oorgeneem. Villa Crop Protection hoop om daar ook insette te lewer en by te dra tot die verkryging van waardevolle inligting vir die industrie.

"Wyn vir die pyn." Dit het die streek ook. Oranjerivier Wyn Kelders het sowat 600 produsentelede en jaarliks 'n produksie van sowat 60 miljoen liter wyn en druiewesapkonstentraat. Hul area strek oor 'n afstand van meer as 300km tussen Groblershoop en Blouputs. Die wynkelder is die naasgrootste kooperatiewe wynkelder in die Suidelike Halfmond en tweede grootste in die wêreld. Oranjerivier Wyn Kelders is op 23 Desember 1965 gestig.

Volgens 2020 statistieke is die totale area wyndruwe in die Noord-Kaap 3 463 hektaar. Die grootste kultivar is Colombar met 'n totaal van 1 692 hektaar, gevvolg deur Chenin Blanc met 'n totaal van 932 hektaar. Die grootste rooidruifkultivar is Cabernet Sauvignon en dan Shiraz. Oranjerivier Wyn Kelders is in

beheer van 'n wye reeks alkoholiese verversings en sap. Dit sluit in Muscadet, Brut, craft bier, gin, whisky en drie verskillende wynrekte.

In die tafeldruifindustrie is Oranjerivier tweede in die land, met 'n groote van 54 145 hektaar. Daar was verlede jaar 'n totaal van 18,5 miljoen x 4,5 kg bokse uitgevoer. Die top agt kultivars is Prime, Early Sweet, Thompson Seedless, Sugraone, Sugrathirteen, Sweet Celebration, Sweet Globe en Ralli Seedless. In totaal word 55,3% van uitvoerdruwe na Europa gestuur.

Mediterreneense vrugtevlieë, 'n fitosanitaire plaag, is maar nog die grootste irritasie teen die Oranje Rivier. Die tafeldruifindustrie het in die 2012 – 2013 produksiejaar begin met die eerste lugbespattings op 2 646 hektaar in die Noord-Kaap. Dit het intussen gegroeï tot 17 495 hektaar. Die omgewing doen sowat vier lugbespattings tussen November en Desember. 'n Gebied van 53 000 hektaar druwe is deur Raisins South Africa se gebiedswye vrugtevlieëbestryding behandel. Dit is heelwat meer as Tzaneen se 45 000 hektaar, die Hexrivier se 40 500 hektaar en Kirkwood se 39 000 hektaar.

Villa bied tans ondersteuning aan die tafeldruifindustrie, met boeredae, weerstasies en residuele proewe. Hopelik kan Villa Crop Protection in die nabye toekoms nog baie ondersteuning bied aan beide die tafel- en wynbedryf.

"Why go nuts, when you have nuts." Die Suid-Afrikaanse Pekanneut Produsente Vereniging (SAPPA) bestaan al sedert 1992. Die maatskappy is in 2015 geregistreer as 'n nie-winsgewende maatskappy. SAPPA is 'n produsentgedrewe organisasie wat die belang van sy lede dien deur 'n omgewing te skep waarin al die rolspelers in die pekanneutbedryf volhoubare voordele kan ontvang. Een van hul doelwitte is om inligting aan die bedryf te verskaf. SAPPA is betrokke by die insameling en verspreiding van inligting, invoer van plantmateriaal, vasstelling van invoerstandaarde, registrasie van chemikalieg, produksie en nuwe aanplantings. Hul ondersteun verskeie bemagtigingsprojekte waar pekanneute by nuwe boere geplant word en tegniese advies gegee word. Vanaf 2010 tot 2020 is daar al meer



Voor blom van rosyne.



Stian Jordaan, een van Villa se jongste ondersteuners in die Noord Kaap.

as 4,5 miljoen pekanneutbome in Suid-Afrika geplant, met die skatting van sowat 70% wat voorkom in die Noord-Kaap en westelike gedeeltes van die Vrystaat. Villa het reeds by die 2021 jaarvergadering en inligtingssessie 'n bydrae gelewer en hoop om die industrie nog baie te ondersteun en 'n bydrae te lewer tot die verbetering van die kommoditeit.

"When life gives you lemons. Hand them back and ask for Northern-Cape oranges." Met Suid-Afrika as die tweede grootste uitvoerder van sitrus ter wêreld en die eerste sitrus geplant in 1654 op 'n plaas in die Wes-Kaap deur Jan van Riebeeck, moes die Noord-Kaap hul sokkies optrek en skoene vol staan. Met slegs 1 956 hektaar sitrus, maak dit die Noord-Kaap sesde grootste bydraer in Suid-Afrika. Die mees aangeplante kultivar op die oomblik is Valencia. Die Noord-Kaap het 'n marktoegang tot die Verenigde State wat 80% van

hul Valencia neem. Die res gaan na die Europese Unie en Rusland.

Die grootste voordeel van sitrus verbou in die area is dat sitrus swartvlek nog nie in die Noord-Kaap voorkom nie.

Villa is reeds betrokke by lusern en hoop om in die toekoms betrokke te raak by uie, katoen en alle ander kontantgewasse in die provinsie en om sodoende 'n verskil te maak in die bedryf.

Villa wil aan elke produsent en industrie in hierdie provinsie hul ondersteuning bied. Dit bly tog die sesde provinsie uit die top tien ter wêreld soos aangewys deur Rough Guides in 2016.

Om dit op te som, die Noord-Kaap se leuse moet eintlik wees: Gaan groot, of gaan na 'n ander provinsie.

"Gee my 'n vlakte ruim en wyd, gee my die veld se oneidigheid – en die lekker geur wat die lug daar dra: Gee my Suid-Afrika." - A.D. Keet

## FOCUS ON INDUSTRY PARTNERS

# Marius Ras – a man behind many inventions



René de Klerk



Marius Ras

**A**s a qualified engineer, Marius Ras is one of the names in the agriculture industry when it comes to inventions to assist farmers. He studied engineering at the University of Stellenbosch and furthered his knowledge on the aerial application of pesticides at the Cranfield Institute of Technology in England.

In 1990 the Cape Pomological Association awarded Brian a Technical Award for developing the TRV model and effectively applying pesticides.

In 1991, he achieved his master's degree at the University of Stellenbosch. He worked as a senior engineer in charge of research and technology at the Directorate of Agricultural Mechanisation in

Stellenbosch. During this period, he developed spray application technology and focussed on conservation tillage.

After a brief stint at Impact Machinery Company in Brackenfell from January 1993 to December 1994, introducing air-assisted boom spraying technology into South Africa, he joined Rovic Leers as the group marketing director. Not only did he take care of the national marketing programme but developed new products with a primary focus on conservation farming solutions and spray machinery development. He registered several patents and trade names, including a variable air momentum model allowing variable

speed orchard spraying (VAM®).

In July 2020, he started RAS Consult. Since its inception, he developed and registered four different patents, which include REDU-DRIFT® and CITRUSFLOW®. The latter assists with optimised air momentum and air velocity profile design for citrus orchards. REDU-DRIFT® reduces drift on boom sprayers during high-speed broadacre crop spraying.

More recently Marius also developed DropSight. Read more about it on pg 5.

We look forward to more great inventions going forward to help contribute to food security in South Africa.

# Getting to the bottom of complaints and disasters



Brian Kerrin

If you need someone to investigate complaints in crop protection, seed, fertiliser, livestock feed, veld fires and general pollution, Brian Kerrin is your go-to person. As a complaint investigator and mediator, with 20 years of experience in the field as an independent claim's assessor, it is his job to get to the bottom of issues and potential disasters farmers face.

The Scottish born Brian came to South Africa at a young age and went to school in Durban. He attended high school in Johannesburg at Roosevelt High and attended the University of KwaZulu-Natal where he graduated in BSc Microbiology and Plant Pathology.

Brian then started his career at

Rennie Murray in 1980, at the time the largest claim mediator in South Africa. He is also a fellow of the Institute of Loss Adjusters in Southern Africa. When the association was first formed in 1960, it was known as the Association of Insurance Assessors of Southern Africa.

But working in the industry comes with its fair share of challenges, especially in more recent years. The crop protection industry became a lot more complicated. Previously, only multinational companies focused on selling chemicals. Most of the time, it was a single supplier with a few products in their arsenal. Today, however, the number of suppliers

increased tremendously. At the same time, there are numerous products and formulations added into a single spray tank.

Brian is extremely passionate about his work, despite the conflict and emotions pertaining to some of the claims. However, he does not regret making this career choice. If he could do it all over again, he would not change anything.

Brian also gives back to the farming community through the training he provides. He is passionate about the expansion of farming knowledge and skills throughout the South African population. We are privileged to work with people like Brian in the industry.

# Prof Charlie Reinhhardt Onkruidwetenskap kenner van formaat



Prof Charlie Reinhhardt

**P**rof Charlie is gebore en getoë in die diamantstad, Kimberley, en bly reeds die afgelope 42 jaar in Pretoria. Hy het die volgende grade verwerf op universiteit: BSc; BSc Hons (Plantfisiologie); BSc Agric Hons (Plantproduksie); MSc Agric Plantproduksie: Onkruidwetenskap; PhD Agronomie (Onkruidwetenskap). Na 'n kort draai in die landbouchemiese industrie, in sy eerste werk by Ciba-Geigy, was hy 28 jaar verbond aan die Universiteit van Pretoria (UP), in 1981 het prof Charlie as navorsingsbeampte begin en in 2008 uit diens getree het as Hoof: Departement Plantproduksie en Grondkunde.

Van begin-tot-einde by Tukkies het hy gespesialiseer in Onkruidwetenskap. Daarna was hy navorsingbestuurder by SASRI (2008/2009). In 2011 sluit hy by Villa aan om die Villa Academy op die been te kry. In 2020 tree hy af as dekaan by Villa Academy waarvan die kort-kursus program na Stellenbosch Universiteit oorgedra word – 'n groot mylpaal vir Villa en opleiding in gewasbeskerming in Suid-Afrika is hiermee behaal.

Hy is tans professor in Agronomie aan Noordwes Universiteit op Potchefstroom kampus waar twee landbouprogramme nuut in 2019 afgeskop het, en wel: BSc

Agric Agronomie/Grondkunde en BSc Agric Agronomie/Landbouekonomie. Prof Charlie is sedert 2012 stigter en projekleier van die SA Herbicide Resistance Initiative (SAHRI) by UP.

Tot dusver het 45 nagraadse studente hul grade onder sy leierskap ontvang, waaronder 32 magistergrade en nege PhD grade. Hy is hoof- en mede-auteur van 75 wetenskaplike artikels, aanbieder van 65 kongresreferate, en auteur van meer as 100 artikels in die populêre pers. Hy tree ook op as privaat-spesialis-konsultant by probleemgevalle rakende onkruiddoders en onkruidbeheer.

## OUT AND ABOUT



Villa Packaging at a customer function



Safe handling training in Pongola



Adjuvant Clinic at Rosetta



Adjuvant Clinic at Vyeboom



Adjuvant Clinic in the Western Cape



Adjuvant Clinic Eastern Cape



Maize Fungicide Training in KZN



Presenting to Hoedspruit Citrus Study Group



Adjuvant Clinic in the North West



Adjuvant Clinic KZN



Spray Operator Training in Upington



Training in Action

## SEASON'S GREETINGS

# Feestelike Groete!

Baie dankie vir jul ondersteuning in 2021.  
Ons wens jul 'n wonderlike Feesseisoen en  
voorspoedige en gelukkige 2022 toe!

# Season's Greetings!

Thank you for your support during 2021.  
We wish you a wonderful Festive Season  
and a very happy and prosperous 2022!

