HOW RESPONSIBLE ARE YOUR SUPPLY CHAINS?

NSF RESPONSIBLE SOURCING: SOLUTIONS AND SERVICES

Agriculture and food face dynamic, complex and interconnected risks that potentially threaten the supply of raw materials and the reputation of brands. NSF’s Responsible Sourcing services assist clients in addressing food security and brand reputation risks by building sustainable, resilient, secure supply chains as well as by demonstrating environmental and socially responsible sourcing practices.

NSF’s responsible sourcing clients move through five stages, and can engage with NSF at any stage:

1. **Understanding & Diagnosis**
   - Planning Facilitation
     Enables intensive discussion and activity regarding a client’s responsible sourcing concerns, including how to ensure the client improves on their performance within manageable levels of risk and resources.
   - Supply Chain Mapping
     Increases supply chain transparency, knowledge and understanding.
   - Gap Analysis
     Compares actual performance in responsible sourcing with potential or desired performance.
   - Trend Impact Analysis for Supply Chains
     Systematically examines the effects of possible future events by extrapolating historical data. The events can include technological, political, social, economic and value-oriented changes with respect to business risk.

2. **Horizon Scan**
   Detects early signs of potentially important developments through systematic examination of potential threats and opportunities. With emphasis on technological developments, unexpected issues as well as changes in past assumptions regarding persistent problems and trends.

3. **P-Value Assessment**
   Assesses probability as a percentage risk of a fault at one end of a supply chain becoming or escalating into a problem at the other.

4. **Design**
   - SWOT Analysis
     Identifies internal and external influences to help organizations develop a full awareness of the factors involved in proposed responsible sourcing initiatives and policies.
   - PEST Analysis
     Focuses on external environmental factors affecting a client by exploring political, economic, social and technological influences on their supply chain.

5. **Opportunity Prioritization**
   Determines the relative opportunity cost, potential impact, and relative importance of a diverse array of options when there are multiple criteria for determining importance to improve supply chain sustainability.

6. **Policy and Strategy Design**
   Provides development of sourcing strategies, policies, and internal governance policies.

7. **Feasibility Studies**
   Analyzes how successfully a proposed project can be completed, accounting for economic, technological, legal and scheduling factors to determine if it is feasible, within estimated costs.

8. **Implementation**
   - Project Management
     Oversees implementation a client’s responsible sourcing strategy, or aspects of that strategy.
   - Authentication and Verification
     Audits recognized sustainable sourcing standards including animal welfare, environmental best practices, and social compliance.
NSF’s responsible sourcing clients move through five stages, and can engage with NSF at any stage: sourcing practices. Risks by building sustainable, resilient, secure supply chains as well as by demonstrating environmental and socially responsible practices. The reputation of brands. NSF’s Responsible Sourcing services assist clients in addressing food security and brand reputation.

Agriculture and food face dynamic, complex and interconnected risks that potentially threaten the supply of raw materials and business risk. Horizon Scan Systematically examines the effects of possible future events by extrapolating historical data. The events can include possible future events by extrapolating historical data. The events can include possible future events by extrapolating historical data. The events can include possible future events by extrapolating historical data.

HOW RESPONSIBLE & DIAGNOSIS
Understanding focuses on external environmental factors affecting a client by exploring political, economic, social and technological developments. With emphasis on examination of potential threats and opportunities. With emphasis on examination of potential threats and opportunities. With emphasis on examination of potential threats and opportunities.

PEST Analysis
Identifies internal and external influences to responsible sourcing initiatives and policies, regarding persistent problems and trends in the industry bests and best practices from other companies. P-value Assessment
Assesses probability as a percentage risk of a desired performance. This analysis examines the effects of possible future events by extrapolating historical data in order to determine if the current system is feasible, within estimated costs. This analysis examines the effects of possible future events by extrapolating historical data in order to determine if the current system is feasible, within estimated costs.

SWOT Analysis
Compares actual performance in managing levels of risk and resources to assess program success and prescribe changes if necessary. SWOT Analysis
Compares actual performance in managing levels of risk and resources to assess program success and prescribe changes if necessary.

Gap Analysis
Detects early signs of potentially important influences on their supply chain. This analysis examines the effects of possible future events by extrapolating historical data in order to determine if the current system is feasible, within estimated costs.

Benchmarking
System Feedback and Enhancement increases supply chain transparency, manages levels of risk and resources to assess program success and prescribe changes if necessary. Gap Analysis
Detects early signs of potentially important influences on their supply chain. This analysis examines the effects of possible future events by extrapolating historical data in order to determine if the current system is feasible, within estimated costs.

Supply Chain Mapping
Identifies internal and external influences to responsible sourcing initiatives and policies, regarding persistent problems and trends in the industry bests and best practices from other companies. P-value Assessment
Assesses probability as a percentage risk of a desired performance. This analysis examines the effects of possible future events by extrapolating historical data in order to determine if the current system is feasible, within estimated costs. This analysis examines the effects of possible future events by extrapolating historical data in order to determine if the current system is feasible, within estimated costs.

Assured Food Safety
NSF provides assurance through independent audits as well as accredited industry-recognized certification, supplemented by approved public training in global food standards. NSF provides assurance through independent audits as well as accredited industry-recognized certification, supplemented by approved public training in global food standards. NSF provides assurance through independent audits as well as accredited industry-recognized certification, supplemented by approved public training in global food standards.

Certification
- GLOBALG.A.P.
- localg.a.p.
- LEAF Marque
- Nurture
- HACCP
- ZIZA Ethical
- BRC Food
- BRC Packaging
- BRC Distribution
- BRC Brokers
- IFS Food
- IFS Broker
- FSSC 22000
- SANBWA
- ISO 22000
- ISO 14000
- ISO 18000
- GFSI MCB

Retail Consulting & Technical Services
- Supply Chain Assurance
- Trading Law
- Retail & QSR Inspections
- Crisis Response
- Specification Management
- Recall Plan Review

Training
We offer training in GLOBALG.A.P., Nurture, HACCP, ISO 22000, FSSC, BRC and Internal Auditing. Visit our 2017 Training Calendar at www.nsfafrica.com/training

For more information, contact: foodafrica@nsf.org or +27 (0) 21 880 2024.
ELKE UITGAWE EVERY ISSUE

Redakteursbrief  4
Voorwoord/Foreword  5
Spoeg ’n Pit  7
SA Fruit Journal Board of Directors  8
Fruitful Ideas  92
Last Word  95

BEDRYFSNUUS INDUSTRY NEWS

The Great Fruit Adventure  9
PG Kriel Workers’ Trust  14
South African BEE Agricultural Project succeeds  16
Water-saving techniques during the 2016 season delivers surplus supply  18
Death by Training  18

HORTGRO

Game of Fruit: The HORTGRO Science Technical Symposium 2017  20
Agri’s got Talent  20
Local market development campaign showcases stone fruit  22
Jobs fund information day  23

SOUTH AFRICAN TABLE GRAPE INDUSTRY (SATI)

Global Trade Gaps: Table Grapes  24

FPEF

Eliminating astringency’s bite  26
Come out, come out, wherever you are!  28
A combination that makes all the difference  30

CITRUS GROWERS’ ASSOCIATION (CGA)

Increased Production of soft citrus varieties requires concise handling to maintain critical cold chain requirements  34
CGA Grower Development Company turns one  35
Analysis of 2016 Orchard Registrations  36
Stories of Mzanzi Citrus Magic  37
Farming with a care for the future  44
Citrus Business Management Programme  45
Phytclean Project update: January 2017  46

Cover: Gerrit van der Merwe and his son Gerrit Junior who is in the process of taking over the reigns of this family-run operation, ALG Estates, going back some 250 years. The estate is the second biggest citrus producer and exporter in the Western Cape region of South Africa… Read more on page 16.
PHOTO: JACO WOLMARANS
RESEARCH & TECHNOLOGY

CITRUS RESEARCH INTERNATIONAL (CRI)
Extension Briefs 50
Soil fumigation in citrus replant situations: making informed decisions 56
Snoei van Sitrus – ‘n Winsgewende praktyk 60

SOUTH AFRICAN TABLE GRAPE INDUSTRY (SATI)
Stamboorders by wingerd 68

HORTGRO SCIENCE
Langkloof seminar tackles climate change 72
Industry layers share concerns in HORTGRO risk assessment 74
Packhouse Action Group (PAG) makes its mark 77
Thrips control: Culmination of a 34 year entomology career for Dr Elleunorah Allsopp 78
Area wide IPM programmes work, analysis shows 79
Interpoma 2016 highlights: The apple in the world 82
Does Foliar Sucrose Application Increase Fruit Set in Packham’s Triumph Pears? 86

ADVERTORIALS PROMOSIE ARTIKELS
Tracking the Vine on Delaire Graff 23
Die wêreld se beste boordstrooier 33
There is more than a FELCO 4 42
First Fruits Consulting 47
NSF: Hex River Valley Table Grape Association Block Competition 2017 59
Provar: The Plum Pollination Predicament 90
Red Ant: More than just Netting! 94
EDITORIAL

Skep nuwe energie vir ‘n hoofletter toekoms

Erekerlik was elkeen van ons al in situasies wat voel na die Wilde, Woeste, Weste. Waar die salpeter-skuimbolle losruk uit jou perd se bek, waar jy kort-kort moet omkyk, oor jou skouer loer, met rooi branderige oe elke graspol en koppie fynkam vir gevaar en waar jou liggaam snaarstyf voortstu na wie weet watter uiteinde. Situasies waar elke greintjie energie net op oorlewing fokus. Of dit nou gaan oor finansies, gesondheid, verhoudings, veiligheid of wat ook al, ek reken baie van ons kom binne ‘n leeftyd wel in so ‘n malspul te lande. Wat as . . . jy met die druk van ‘n skakelaar, alle vrese, onsekerhede en chaos kon wegee? Wat as die antwoord in iets so ‘eenvoudig’ soos ‘n nuwe of ander gesindheid opgesluit le?

Ek lees onlangs ‘n rubriek van Max du Preez waarin hy skryf dat dit in ons almal se belang is dat almal, oor alle kleurgrense heen, bemagtig en selfversekerd voel. “As dit beteken ons moet meer sensitief wees, beter verstaan en soms meer luister as praat, dan is dit wat ons moet doen.” Op bladsy 16 word vertel van ‘n Swart Ekonomiese Bemagtiging suksesverhaal in die Olifantsrivier-vallei wat onderstreep dat selfwaarde en bemagtiging altyd lei tot groter produktiwiteit van en meer suksesse vir alle betrokkenes.


Met die afgelope Citrus Summit wat in Port Elizabeth gehou is, spreek prof. Mohammad Karraan (dekaan van die fakulteit Landbou Wetenskappe aan die Universiteit van Stellenbosch), sy kommer uit oor die gebrek aan geleenthede vir jongmense van vandag. Daar moet meer gefokus word op ons jeug, want hulle is die toekoms. “Hou op kla oor die verlede en fokus op die toekoms.” Lees op bladsy 37 - 41 oor die Citrus Academy en hoe hulle die toekoms omhels deur op ons jeug te fokus. (In ons volgende uitgawe vertel ons van die tweede, suksesvolle Citrus Summit).

Lees op bladsy 26 en die daaropvolgende blaaie van die PHI-bydraes wat navorsing vanuit die Fresh Produce Exporters’ Forum-stal moontlik maak.

Soos altyd is daar ook ander tegniese inligting vir ons leser. Ons onlangse meningspeiling toon dat dit by uitstek ons leser se voorkeur-artikels is. Baie dankie vir elkeen wat tyd afgestaan het om die meningspeiling in te vul en kommentaar te lewer op die SA Vrugte Joernaal/SA Fruit Journal. Meer as tagtig persent van die deelnemers reken dit nie die afsnydatum van die meningspeiling nie. Ons vertel in die volgende uitgawe meer oor wat u, die leser, sê!

Tot volgende keer.

CHRISTA

“So lank as die aarde bly bestaan, sal saaityd en oestyd nie ophou nie, ook nie koue en hitte, somer en winter, dag en nag nie.”

GENESIS 8:22

CHRISTA HAASBROEK

CONTRIBUTORS

CLAUDIA WALKLETT
FPEF 021 526 0379
claudia@fpef.co.za

CLAYTON SWART
SATI 021 863 0366
clayton@satgi.co.za

TIM GROUT
CRI 013 759 8000
TG@cri.co.za

GLORIA WEARE
CGA 031 765 2514
Gloria@cga.co.za

ESTÉ BEERWINKEL
HORTGRO 021 870 2900
este@hortgro.co.za

DANE MCDONALD
HORTGRO SCIENCE 021 870 2900
dane@hortgro.co.za
Wind the clock back fifty years and South Africa was exporting just about all of its export grade fruit to Western Europe and the UK. Agricultural products were regulated under different commodity boards – with the citrus and deciduous boards controlling all export activities. The Cape and Outspan brands were widely recognized in these markets. This reliance on what is now the European Union market has continued in recent times with 50 to 70% of stone fruit, 30 to 50% of pome fruits, 80% of table grapes and over 40% of citrus still ending up in EU markets.

In true pioneering spirit the apple industry has grown the volumes exported into the African continent. Annually the apple industry exports almost 120 000 tons into the Africa. Demand in African countries has increased as they developed a taste for good quality and safe South African apples which have become affordable to the middle and upper income earners – largely driven by increased oil revenues.

This has accounted for most of the increase in Western Africa destinations – in particular Nigeria which receives 34% of this volume. Kenya (receiving 15% of the African apple volumes) has proven to be a gateway into Eastern Africa which has also shown an increasing trend in apple imports. Exports into southern Africa is more difficult to monitor – with considerable volumes purchased in South Africa and transported as personal luggage in buses, cars and trucks moving across the borders. Nevertheless, fruit trade into neighboring countries is significant.

There are challenges in sending fruit into Africa. Even though there should be a logistic advantage given the proximity of these African countries, it is found that in many cases it is more expensive to access ports in these countries than comparable established channels into Europe. Added to this many African ports are terribly inefficient, prone to corruption and have a poorly developed cold chain infrastructure, which is not friendly to perishable cargo.

A further challenge is ensuring payment is made and received – those in the market for some time have developed relationships that ensure ethical business relations; newer entrants face the risk of not getting paid. While payment up front is a solution, this practice does limit volumes given the shortage of foreign currency and credit lines in many African countries.

Those in the market have pointed out that the situation is improving – as more product is shipped to African ports they are becoming more efficient in dealing with perishable products, cold chain infrastructure is being developed and long term relationships are being made leading to reliable trading terms.

The South African government has a political and developmental agenda in Africa. This can be illustrated by the work being done on both the Tripartite and Continental Free Trade Agreements. The South African fruit industries can play an important role in aligning African market access and fruit trade with the government’s developmental and political agendas. Discussions have begun and who knows, in the future we may look back at 2017 as the year that kick started significant increases in all South African fruit flows into Africa.
Maintaining superior quality with superior technology.

The SmartFresh™ Quality System offers a range of benefits, including significant reductions of soft landings and grey pulp, protection against temperature breaks during transport and storage, better shelf life and the choice of successful transport in RA or in combination with CA—all without a significant increase in the number of days required for avocados to ripen upon arrival at destination.
Ek lé rustig op die bank op my stoep, glasie in die hand, aan die afwen na ‘n snikhete dag in die sweet van my aangesig. Twee treë weg lé die windhond met haar lenige ledemate ewe lankuit. Haar bolip pof-pof met elke asemblaas, sommer van pure lekker ledig lé.

Dis ‘n salwende aand hier in die vallei, met ‘n swanger maan wat meeding teen die son se laaste goue gloed. In vrede, tevrede, en dankbaar lê ons, al stry alles wat leef teen die somer se felheid.

Skielik vang iets my oog. Oorkant, doer teen een van die blou reekse wat wagstaan aan die oosterkim, gloei ‘n streep vlamme. Dis daardie tyd van die jaar: Die Boland brand.

Op die nuus het ek gesien dit smeul na vyf dae steeds rondom die Helderbergkom waar ‘n leë, swart landskap getuig van uitgewoede vlamme. Die verwoestende brand is daarna Stellenbosch se kant toe.

Die eerste nag van daardie vuur was chaoties. Mense wat vlug, nooddienste wat aangejaag kom, diere wat gered moet word, en uitheemse denne en bloekoms wat soos reuse vuurwerke ontkneter aan die sommige van die berg. (Ai, wanneer gaan ons leer!). En oral rook. Die verstikkende, vreesaanjaende rook wat jou van rigting ontneem en ‘n oerpaniek in jou aansteek. Vlug! Die instink stu uit jou gebeente uit en laat jou gryp na die selfoon en motorsleutels wat jou moderne reddingstoue is.

‘n Nag van vrees en chaos.

Dis juis dan dat die vuurvegters aanmeld vir werk. Eintlik maar soos enige ander werker wat sy kaart pons, maar met ‘n dramatiese verskil in omstandighede. Daardie natuurmonster wat alles verteer is hulle uitdaging vir die nag. Dis hulle taak om hom te beveg en te probeer tem koudlei.

Laasnag, vroegnag, was dit weer die Paarl se beurt. ‘n Wegholvuur het teen die ribbes van die Drakenstein afgestorm en plaashuise oorval. Dit was ‘n woeste nag. Weereens moes mense vlug, diere moes gered word, en ‘n roetinebestaan is eenklops op sy kop gekeer. ‘n Paar geboue het in die slag geby, onder meer Totius se ouerhuis.

Want wanneer almal ontruim, beman hulle. Hulle word van wyd en syd ingeborg vir so ’n krisis, maar selfs dan is hulle te min om oral te wees waar dit brand. Laasweek het ek op die radio gehoor die Kaapse Metropool het op een dag 105 brande hanteer. Eenhonderd en vyf! En nou sien ek hier van my rusbank af die berge brand Ceres se kant toe ook.

Wie moet dan daar gaan keer, wonder ek. Wie kan keer? Hoe besluit mens, met vuur op soveel fronte, waar die prioriteite lê?

Vergewe en vergeet, het Totius gedig. “Jy het mos doringstruikie my anderdag gekrap; en daarom het my wiele jou kroontjie plat getrap.”

Hoe ontstaan hierdie brande? Wie steek hulle aan? Daar was immers nie weerlig betrokke nie en die ou storie van die bottelglasie wat die son se strale fokus hou nie water nie. Dit kan net mens wees.

Dis die brandslaners self, blaker iemand op Facebook. Want dan kry hulle oortyd. Rêrig? Het jy enige idee hoe dit is om vuur te slaan, lieue Friend? Weet jy van die verstikkende rook, van die skroeiende hitte, die kragtappende steiltes, die disoriëntasie en die uitputting? Weet jy hoe leeg mens raak as jou neus en oë vrylik vloei en elke porie onder jou swaar uniform sweet pomp, uur na uur? Dink jy eerlik sò iemand wat eerstehands kremasie ervaar en die lyding van alle spesies aanskou, sal kans sien om self ‘n vagevuur se vlammetjie aan te steek?

Ek lé en kyk hoe die vlamme hand aan hand teen ‘n bergpiek uit marsjeer. Die wind is stil nou dat dit donker is maar môre gaan die Suidoos weer waai, voorspel YR. Daardie verterende vuurlyn wat ek sien is bloot ‘n rustende monster, môre raak hy weer mal.

Wie sal hom dan hokslaan, daar bo in die berge? Want die reeks strek ver noord, met die Sederberge se wildernis en die Witzenberg en Olifantsrivier se boorde ook wind-af.

Ek lé en dink aan die mense in beheer. Hulle wat die besluite moet neem. Wat lewens moet weeg teen besittings, wat moet kies tussen natuur en mens. Moeg, sonder slaap, in ‘n...

Vuurgees

Hereward Jonker
SPOEG ‘N PIT Rubriek

VERVOLG OP BLADSY 8
Vuurgees
VERVOLG VAN BLADSY 5

adrenaliendraai van koffie en hamburgers en ’n marathon van ekstreme verantwoordelikheid.

Ek dink aan die vlieëniers wat te midde van rukwinde en beperkte sig moet pendel met swaar emmers wat onder hul pense hang, en hoe hulle moet konsentreer om nie oor daardie dun lyn tussen redding en ramp te vlieg nie.

Ek dink aan die mense wat die verkeer beheer, die ambulans beman, aan diere heenkome gee, help besittings uitdra, help veg, huisvesting aanbied en water en kos aflaai.

En veral dink ek aan daardie moeë brandslanger wat dorstig staan en sluk en oë uitspoel by ’n brandweervoertuig terwyl hy bekommerd rapporteer dit lyk lelik daar bo.

Respek is te ’n klein woordjie. Wow klink amper beter. Kep af en voorkop na die stoepvloer vir jullie, eerwaardige vuurvegters!

As die brandstigters se motief sou wees om die Wes-Kaap ‘onregeerbaar’ te maak, faal hulle hopeloos.

Want dis wanneer die Boland brand, fel en vreesaanjend, dat die fynbos se mense se murg werklik na vore kom. Daardie vlamme verdeel nie soos ons politiek nie, hulle smelt eerder alleman saam.

Totius het dit gesê:
*Maar tog het daardie boompie weer stadig reggekom, want oor sy wonde druppel die self van eie gom.*

Ja, ons berge sal weer groen word en gedy. En ons ook, want in die uur van nood blom ons mense.

**SAFJ DIRECTORS**

**KONANANI LIPHADZI**
CEO, Fruit South Africa

**ANTON RABE**
Executive Director, HORTGRO

**ANTON KRUGER**
CEO, FPEF

**WILLEM BESTBIEER**
CEO, SATI

**JUSTIN CHADWICK**
CEO, CGA

**SAFJ SHAREHOLDERS**

**FPEF FRESH PRODUCE EXPORTERS’ FORUM**
Private Bag X5, Century City 7441
Tel: 021 526 0474 • Fax: 021 526 0479
www.fpef.co.za

**CITRUS GROWERS’ ASSOCIATION**
PO Box 461, Hillcrest 3650 • Tel: 031 765 2514
Fax: 031 765 8029 • justchad@iafrica.com
www.cga.co.za

**SOUTH AFRICAN TABLE GRAPE INDUSTRY**
63 Main Street, Paarl 7646 • Tel: 021 863 0366
info@satgi.co.za
www.satgi.co.za

**FRESH PRODUCERS’ ASSOCIATION**
Tel: 021 870 2900 • Fax: 021 870 2915
258 Main Street, Paarl • PO Box 163, Paarl 7620
info@hortgro.co.za • www.hortgro.co.za

**SAAPPLE & PEAR PRODUCERS’ ASSOCIATION**
Tel: 021 870 2900 • Fax: 021 870 2915
258 Main Street, Paarl • PO Box 163, Paarl 7620
info@hortgro.co.za • www.hortgro.co.za
The Great Fruit Adventure
WE ALL GROW SUNSHINE

THE COMPLETION OF THE JOURNEY...

After 18 345 km travelled, passing through 18 countries, 250 000 'hits' on our main website, 105 000 'likes' on the Facebook page, 500 schools actively following us in the UK and Europe and with over 5 000 kids presented to through Africa, the Great Fruit Adventure trip has come to a great end at the South African offices of the Perishable Products Export Control Board (PPECB) on the 1st February 2017 after 3 months on the road.

Fruit South Africa (Fruit SA) partnered with The Great Fruit Adventure to help promote awareness around the consumption of fresh fruit and vegetables, especially amongst children. Two explorers, Max MacGillivray and Gareth Jones, initiated the Great Fruit Adventure when they took their 3-month motorbike trip across Europe and Africa on 8 November 2016. They crossed the Beit Bridge border post from Zimbabwe into South Africa on 11 January 2017. Fruit SA members arranged visits to farms in the following areas in the country: Limpopo Province Tshipise region, Modjadji, Modimolle and Hoedspruit (where they visited schools, farms and packhouses); Nelspruit, Hazyview, and White River; Swaziland; and they continued to Bethlehem and Harrismith, Durban, Sundays River in the Eastern Cape, Misgund and Langkloof, and then to several table grape and other farms in Grabouw, Robertson, Worcester, De Doorns, Ceres and Paarl in the Western Cape.

Upon the arrival of Max and Gareth on their amazing trip Triumph’s (no breakdowns in 18,345km and not even one puncture!) at the welcome function held at the PPECB head office in Plattekloof, Cape Town, the Chief Executive Officer of PPECB – Lucien Jansen, gave a speech congratulating the duo on what they had achieved to date. This was followed by a presentation from Dr Konanani...
Liphadzi, the CEO of Fruit South Africa who thanked them both on what they had already achieved in the way of raising the awareness of South African fresh produce. Dr Liphadzi said as a country, over 4.7 million tonnes of fresh produce is grown and 60% of that is exported to over 93 countries and with the bulk of that going to the likes of the UK and Europe. This is why everyone attending was so pleased for Max and Gareth highlighting the great fresh produce that is grown and exported all over the world from South Africa.

Fruit SA is a non-profit organisation formed by the Citrus Growers’ Association of southern Africa (CGA), HORTGRO (representing pome and stone fruit), the South African Table Grape Industry (SATI), SUBTROP (representing the avocado, litchi, mango and macadamia industries), and the Fresh Produce Exporters’ Forum (FPEF), to address common issues relevant to the fruit industry in South Africa.

Max then took to the “stage” to reiterate the aims of the trip and what will be next from himself and the UK team behind The Great Fruit Adventure. This will include child friendly educational books as to where great fresh produce comes from, video’s on a similar basis and an on-line offering for teachers to be educated on great fresh produce all under the theme of The Great Fruit Adventure. Also discussed was the issue of urbanization of people in Africa when the solution is for them to become more interested in farming and growing and how Max and his team may have a solution.

The conclusion of the event was Max declaring that everyone in Fresh Produce “Grows Sunshine!” and how together we will all make a difference to educate kids, their families and their schools to eat fantastic fresh produce and to have a healthy lifestyle! After lunch the PPECB arranged a Port Tour at Cape Town Harbour and then finished off with Max and Gareth being interviewed for NEWS24 TV in Cape Town about their trip.

A huge thanks goes to all of the sponsors and individuals involved behind the scenes of The Great Fruit Adventure. Especially so to all of the team at Pink Lady® apples (both in the UK and South Africa) and Triumph UK. Without your help none of what has been achieved would have been possible.

And this is very much the start and not the end of The Great Fruit Adventure.

Gareth and Max with their Triumph motor bikes in front of the CGA offices in Hillcrest, KZN.

At Hitgeheim in Sundays River Valley, overlooking the citrus orchards: Max, Adrian Walton, Erik Stroebel, Hannes de Waal, Charles Woolley, Gareth.

January 2017 certainly started with a bang for the CGA. Still recovering from the long Christmas break with most citrus farmers still away, we were told on Monday 9th January that the Great Fruit Adventure motorcyclists, Max MacGillvray and Gareth Jones, who were expected sometime in February, had reached Harare!
Max and Gareth were undertaking a mammoth journey, from Spitalfields Market in London, UK via Spain and North Africa, to Cape Town, SA. They wanted to gather information and anecdotes, photos and insight into fruit and vegetable farming in Africa. Max had been horrified to learn that more than half of the children in schools in London actually didn’t know where their fruit had come from – apart from the local shop. A bit like milk comes from bottles, not cows!

Once back in the UK, the information, photographs and stories will be collated into a production that will be shown at schools country wide. Seeing where the fruit is produced and hearing about the farmers, workers school projects, seeing the enthusiasm of those involved in the farming industry is believed to encourage the young children to be more aware of what they eat. Obesity is a huge problem with children the world over, with fast foods being easier and quicker than fresh veggies and fruit that is so much healthier.

Fruit South Africa’s CEO, Dr Konanani Liphadzi was the person who put the idea to the FSA Board comprising of the CEO’s from Citrus Growers’ Association, Hortgro, SATI, Fresh Producers Exporters’ Forum and Sub Trops, to get involved. A budget for sponsorship was agreed and the show was on the road.

Mad scrabbling ensued in the CGA offices trying to get hold of growers who were still holidaying so that farm visits could be arranged. Staying in most cases just one day ahead of the intrepid bikers, we did however manage to put together a rather impressive itinerary of visits to orchards, farm schools, development projects and also gathered bikers where we could so that Max and Gareth could meet people with similar passions for biking. Amazing how many citrus farmers spend their weekends in their leathers, cut off denim shorts on huge motor bikes!

First citrus stop was Alicedale Estates in Limpopo province, where Peter Nicholson’s son in law, Calvin, showed them true South African hospitality which they really appreciated.

The following day they had a ‘relaxing’ four days being hosted by Westfalia Fruit Estate and it was here that they met many bikers, complete with the Triumph motor bike tattoos! A trip in a helicopter over the orchards was a highlight of this part of the trip.

A fascinating day followed with Jan Louis Pretorius of Groep 91 in Letsitele, visiting farm schools, orchards and the Kaross community project which has the local ladies producing the most amazing embroidery articles which sell world-wide. (Pic right.)
From Nelspruit Max and Gareth motored across to Swaziland where they were met by James Boyd from Ngonini Estates – on his bike! They travelled across to Tambuti where they were hosted by Stuart Geldenhuys and spent hours admiring a colleague’s motor bike collection!

At the CGA offices in Hillcrest they met all the staff and were given a light lunch over discussions on citrus plantings, exports and skills development. Justin Chadwick, CEO, took them down to Durban harbour so they could see where the fruit was received in the container trucks, moved through for inspections and then loaded onto the ships for export. Unfortunately it was too early in the season for there to be any fruit being exported, the earliest varieties only starting in mid to late February.

The weekend was needed to make the long trip down to Eastern Cape, traveling via Elliot, Queenstown and Hogsback. The weather got warmer and warmer as they travelled, and was hitting 40 degrees by the time they reached the Sundays River Valley.

Leandre Jooste sent in her contribution from The Sundays River Citrus Company (SRCC) who thoroughly enjoyed hosting Max & Gareth for the next day or two.

“It was our privilege to have the opportunity to promote our beautiful valley and the projects we are passionate about.”

Arriving on Sunday 22nd January in the sweltering 40°C heat, they were welcomed with ice-cold refreshments and the beautiful view of the Sundays River Valley from Hitgeheim Country Lodge. (After the long trip to the SRV, they declined the offer of visiting any tourist attractions to rather appreciate the tranquillity at Hitgeheim).

Grateful thanks to all who were called on at very short notice to make the trip a memorable one for Max and Gareth. We are all looking forward to hearing more about the outcome and results of this visit. It was an amazing venture and the accolades paid to Max MacGillvray are very deserving – it was great fun but he is still getting his message across in a way that will certainly encourage children to be aware of what they eat and where it comes from.  

GLORIA WEARE
Max MacGillivray and Gareth Jones motorbiked all the way from London, through Spain, Morocco, the Sahara and the rest of Africa to raise awareness about the importance of fresh fruit and vegetables.

HORTGRO joined Max and Gareth on their great fruit adventure towards the end of January when the two ‘fruit knights’ helped to hand out books for HORTGRO’s Help a South African School Book Project.

The 200 children from Arieskraal Primary, near Grabouw, were thrilled when the dusty ‘spacemen’ on their roaring motorbikes drove into the school yard. Max entertained the children with tales about their adventure. “What is your favourite type of fruit?” he asked. “Apples!” everyone shouted out.

Then Thea van Zyl, HORTGRO’s Events Coordinator, drove in with literally a ton of books in the HORTGRO bakkie - and the big pack out began.

Pretty soon all the children were busy reading their new books. “Books are really important and the cornerstone of any education,” said Gareth. “What makes today so extra special is that these books were donated by British school children and today we get to hand it out to South African school children. When I was a kid I used to read books about Africa, and that’s where my adventure seeds were planted.”

Max and Gareth will continue their quest when they go back to the UK to share their experiences with school children and continue their fruit directive.

**FUN FACT:**

HORTGRO handed out 20 tons of books over the past 3 months and in doing so, visited 20 schools in the Western Cape. This is the fifth year that the project has been running with help from Red Communication in the UK.

See more photo’s of the Great Fruit Adventure on the HORTGRO Facebook page.

Watch out for a HORTGRO/Grootplaas insert on kykNET about Max and Gareth which will be aired on 11 April 2017.
This is the first table grape farm of the broader Hex River Valley table grape region that northbound travellers see when approaching the region from Worcester. For nine years its dilapidated, abandoned appearance as the result of a failed BEE project did not do much for the image of this farming community but since the farm changed hands in 2014, this has improved remarkably as the flourishing farm is the pride of its new owners.

The PG Kriel Workers’ Trust bought the farm from its previous owners three years ago (2014) with a 15 year loan from Absa for the establishment of the farm and the running expenses. Buying the property was very complicated as there was a moratorium in place on the repurchase of land by commercial farmers where government had been involved in assisting empowerment projects. The shareholding in the trust is split 66% to Pieter Kriel and 33% to the farm workers in the trust and it was necessary to structure the shareholding in this way as ABSA were not able to approve the loan without security provided by Pieter Kriel in this way. The farm’s total size is 160 ha of which 40 ha is arable and 32 hectares have already been planted under vineyards since 2014.

“Our faith in our workers and the will to provide them with a business opportunity were the motives for us to embark on this empowerment project and from the results to date we are indeed proud of what we have achieved through teamwork and commitment,” says Pieter Kriel. This initiative was started and is being driven by father and son farming partners Pieter Kriel and his father Boetie Kriel, well-established farmers in the Hex River Valley. Boetie has been a proponent and proactive supporter of Black Economic Empower-
ment in the area for over a decade. This has been undertaken with the permanent farm workers from Nil Desperandum, Boetie and Pieter’s farm in the Hex River Valley. The beneficiaries are all still employed at Nil Desperandum and are simultaneously working to establish Uitvlugt.

The Workers’ Trust has received a grant from the Western Cape Department of Agriculture and hopes to receive possible further grants in the future. The grants are in the form of the required input resources for farming such as vines, poles for the vineyard trellising construction, irrigation components and payment of the Eskom electricity account. The farm is truly thriving. The first 12 hectares of vineyard was established in 2014 and the next 20 hectares were planted in 2015 and this year the Workers’ Trust expects to harvest 40 000 cartons of grapes from these young vineyards. All the vines are seedless and the varieties planted on the farm are Crimson, Scarlotta, Adora and Thompson Seedless.

Along with Pieter Kriel, farm workers Jennifer Labaea, Ricardo Goosen and Ida Goosen are the trustees of the PG Kriel Farmworkers’ Trust. They have all grown up on the Kriel owned farms in the Hex River Valley and have been working on the farms since leaving school. For them to be part of the workers’ trust is like a dream come true for them. “We are excited about the ownership that we have in the farm because it provides us and our families with long-term security,” says Ida Goosen. Jennifer Lebaea agrees and says, “I am overjoyed at this opportunity that has come my way and am proud to tell people to look out for our beautiful farm when they travel to Worcester. Even my young son brags to his friends about his mother’s farm.”

“I would encourage other commercial farmers to get involved with empowerment projects along with their workers and if the correct systems are in place both the farm workers and the commercial farmers can benefit from the project,” explains Jennifer. “We have been part of the project since it started in 2014 and we are extremely motivated and excited about our successes. We can tell you that it really can and does work.”

Ricardo Goosen explains that even before the PG Kriel Workers’ Trust project was proposed, he had seen that BEE projects can work when he had temporarily helped out at Osplaas, one of the earlier empowerment projects that in the Hex River valley that Boetie had mentored. “We are united by the common goal of our farm’s success so we work very well together as a team,” explains Ricardo. Boetie’s enthusiasm for the project and ensuring its success is infectious. “Together we are all working hard to build up this farm,” he explained. “We are re-establishing the infrastructure and making use of our own farm builder to fix up the packhouse and houses on the property. I was motivated to become involved in BEE projects because I have great empathy with the position of most farmworkers. Growing up without many privileges taught me at a young age that although hard work and determination are important for success, starting a farming project requires security and operational capital. Without this a BEE project will not succeed.

For a BEE farming initiative to become established and survive financially, there

CONTINUED ON PAGE 16
South African Black Economic Empowerment Agricultural Project Succeeds

The failure rate of Black Economic Empowerment (BEE) projects in the South African agricultural sector is alarmingly high, but a citrus project in the Upper Olifants River Valley near Citrusdal in the Western Cape has proved to be an exception.

Cedar Citrus (Pty) Ltd, a BEE citrus export company established in 1999, started making a profit in 2010, part of its startup loan to the Industrial Development Council in 2012 and is now expanding its operations with the purchase of additional farm land. During 2015 the company exported 1 500 tons of citrus from their production unit of 36 hectares realizing a total turnover of R12 million for the year.

Cedar Citrus is a joint venture between 32 farm-workers and ALG Estates their employer, with each party owning 50 per cent of the company. In their next move towards more financial independence the workers jointly decided to plough back their profits and extended their operations by purchasing additional farmland to plant more citrus for the export market. An additional 92 hectares of adjacent farmland has therefore been purchased on which new citrus orchards will be established.

This of course was only made possible being part of a bigger organization such as ALG Estates their employer who is an established citrus exporter.

“Constant mentorship combined with in-house training and being part of an established value-adding export chain are the necessary ingredients for success in an operation such as this,” says Gerrit van der Merwe, CEO of ALG Estates a family operation of 6 farms producing some 18 000 tons of citrus a year mostly for the export market.

“Cedar Citrus is managed as one of our production units that receives continual expert external advise from professional entomologists and horticulturalists that specialize in citrus management. This is essential for pest and disease control need to be sufficient funds available to complete the task before it can support the beneficiaries. Thus initially beneficiaries must have an income from another source and not be reliant on the project until it has become sustainable.”

“One of the challenges to the development process is that it is unclear if or when grant applications will be successful and this makes it difficult to farm successfully. If our harvest is successful and we receive good market related returns, we hope to have enough funds to finance our running costs and service our debt without requiring further grants in future. Looking ahead, there is a large building on the property which was previously used as a cold storage facility for grapes and although all the cooling machinery and other infrastructure has long since been removed, there is currently a demand for additional cold storage capacity in our immediate area. We are investigating the possibility of refurbishing the facility to possibly establish this as an additional division of the business,” says Boetie. Judging by the big smiles and enthusiasm of the PG Kriel Workers’ Trust members and the diligent custodianship of Pieter and Boetie Kriel, this farm is certainly on the right track to long-term success.

Louise Brodie
as well as general orchard health. We also handle all their admin such as HR, financial administration and record keeping. External chartered accountants audit the company annually.

“All 32 shareholders are furthermore employed in our various operations such as production, processing, packaging, marketing and general administration. Three of the shareholders occupy middle management positions while two are directors with executive powers. This ensures that they grow with our own operation and establish their own independence.

“Over the last few years the Cedar Citrus patch of 36 hectares coincidentally turned out to be the most lucrative of all the production units on our six farms. They produce mostly popular soft citrus varieties such as Morr and Orr as well as navels, which are exported to North America, Europe and sold locally to the Woolworths supermarket chain. We are especially pleased that the 32 shareholders of Cedar Citrus jointly decided to waive their profit payouts from the company and rather re-invest it in the expansion of their own operation,” says Van der Merwe.

The first phase of the company’s extension on the newly acquired land will be to plant 20 hectares of new popular varieties for the export market. This necessitates infrastructure such as a farm shed, farm manager housing on site, electricity, drainage, water supply and a pump house to irrigate the new orchards. It takes five years for a newly established citrus orchard to get into full production and ten years to make a profit on the initial capital outlay. The Western Cape government awarded Cedar Citrus’ good performance over the years with inter alia a sprayer, 4 crate wagons, a trailer and recently a brand new John Deer tractor.

“Cedar Citrus is one of the best performing projects of its kind in South Africa and the envy of many farmers country-wide. Not only is the project a financial success, richly compensating the beneficiaries, but a very good example of how BEE schemes should be implemented and managed in South Africa. Congratulations to Gerrit and his team at ALG Estates on this beautiful project,” says Charl Senekal, the country’s largest private sugar producer and chairman of Pro-Agriforum the exclusive club of former South African winners of the Farmer of the Year Award.
The old Afrikaans adage, “n boer maak ‘n plan”, (a farmer makes a plan), rings true with the successful way that Ceres growers have adjusted farming practices following drought and extremely high summer temperatures during the 2016 season. According to De Kock Hamman, technical advisor to Ceres Fruit Growers, projections are that they will have sufficient water to properly irrigate the 2017 crop despite on-going water shortage conditions.

“A number of water-saving practices were put in place last year which have already demonstrated benefits,” he says, adding that “irrigation has become more scientific than ever before with greater emphasis on measurement before and after watering. We now measure the soil moisture with probes and drills and we use shared satellite-based technology like Fruitlook to better identify dry spots. We also replaced sprinkler systems to water 10 000 m³/ha and a micro system that waters 7 000 m³/ha and checked after watering for optimal irrigation with almost no run-off.”

Hamman explains that the increase in testing of things like soil holding capacity and adjusting watering according to soil type has made a difference as did removing alien invasive species and the mulching of the areas around the trees to trap in moisture and protect the soil from overheating.

“Generally speaking we have improved orchard management practices and are relying on better weather station information to aim for optimal irrigation with minimum waste.”

What can be achieved by a well planned and balanced training program is quite amazing. The Koue Bokkeveld Training Centre is seventeen years old this year. The recommendation has been that member farms spend at least 25% of the training budget on life skills training. That is beside money spent on crèches, community projects, sport and culture. Farms that have applied this formula have every reason to be proud of their achievements.

A number of research reports have pointed out that much more training is happening in export regions. Generally the living standards of the workforce are also better. This is indeed good news. We appreciate this trend and are thrilled to be part of it.

There is however a dark cloud looming. Ironically the dark cloud is training. Compulsory training. Training required by law. Training required by auditors. Training that is certificate driven.

Students arrive at the training centre, confidently come to reception and announce that they are only attending the class today because the farm needs a certificate. Managers phone after a student has failed and plead for a certificate because they need it for an audit. Spray operators come and ask if we can’t please give some other people on the farm “a turn” to come to class because they are continuously called “Witvoet” by the others who also want to be acknowledged, but there are no legal requirements attached to their jobs so they
According to Tru-Cape Fruit Marketing, the company responsible for selling the fruit of Ceres Fruit Growers and of Two-a-Day in Grabouw, growers are also carefully considering their selection of early versus late apple and pear varieties as the late varieties require longer periods of summer-time irrigation. Managing Director Roelf Pienaar says, “Our growers are better planning their crops so that they balance the availability of fruit all year around with the amount of water needed to irrigate for longer periods. Tru-Cape growers are always investigating new varieties that are, for example, scab resistant, a pest that contributes to quality-related claims following packing. We are also very excited about the new red gala apple that we’re calling Bigbucks for now but hope to have a trade name to announce to the public soon.”

Sure the compliance training might encourage people to be safe, but it does not necessarily stimulate their personal growth. It is like the neutral gear of a car. It might prevent the person from sliding backwards into a life threatening situation, but it does very little to create forward movement. That requires student-centered training. Not regulation centered training.

Who can reverse this trend? Can the supermarkets? Can the auditors? Can the laws? Can the farmers? Can the training providers?

Unchecked, the death of training will be training. In fact, on many farms who only spend on that which regulations require, training is already critically ill. There is no culture of learning. A class is attended for the sole purpose of attaining a certificate. Not surprisingly, the student is under no obligation to apply anything he heard in the class. No one enquires what he learnt. He brings no new suggestions. Knowledge and wisdom are not part of this equation. The box has been ticked and next year the cycle will repeat itself. A new beautifully framed audit certificate will be hung in the farm’s entrance hall.

1. FARMERS:
   - Budget for training and development;
   - Draw up a balanced training plan based on production and growth requirements, as well as compliance;
   - Spread the benefit of training as widely as possible in the workforce;
   - Keep good records so that you do not over-train for compliance;
   - Enforce preparatory and follow-up conversations with the student and his/her senior.

2. AUDITORS:
   - Clear up some of the grey areas;
   - Build a relationship with the training and development agents;
   - If you feel a farm requires extra training, spell it out clearly.

3. TRAINING PROVIDERS:
   - Focus on the bigger picture;
   - Discourage over-training (even if it is lucrative).

4. EVERYONE:
   - Let’s be creative! Maybe some system of assessment or recognition of prior learning will be a better model.

POSSIBLE SOLUTIONS
GAME OF FRUIT:
The HORTGRO Science Technical Symposium 2017

With every HORTGRO event we aim to create a platform for the exchange of ideas and expose our growers and other stakeholders to new innovations. Our annual flag-ship event, the HORTGRO Science Technical Symposium is no different! Historically the symposium was attended by progressive growers, and allowed commercial entities to network - which increases co-operation throughout the supply chain. It is estimated that between 250 and 400 delegates (per day) from the industry will be attending the 5 day event this year. The theme is appropriately Game of Fruit: The Survival Guide. Local experts will discuss current challenges and victories within the industry. With three overseas speakers tackling topics like surviving and gaining from existential business threats; how to breed, grow and market fruit with the consumer in mind; future intensification of fruit production; growing growers the nursery trees they need and want.

The symposium will be held at Allée Bleue, Simondium from 5-9 June.

Registrations open on the 3rd of April. Please contact Thea for more information at thea@hortgro.co.za.

ENTRIES OPEN
15 February 2017

GALA EVENT
4 August 2017

AGRI’S GOT TALENT

Agri’s got Talent is a skills development programme and singing competition for agricultural workers in the deciduous fruit and wine industries.

Sponsored by:
HORTGRO
VinPro Foundation
Western Cape Department of Agriculture

agrisgottalent.com

Thea van Zyl is a 26 year old living in Stellenbosch. She has four years work experience in the agricultural sector working as an information officer, serving the pome and stone fruit producers of South Africa. Since November 2016 she is planning exciting industry related events as the new Events Coordinator at HORTGRO.

Sponsored by:
HORTGRO
VinPro Foundation
Western Cape Department of Agriculture

agrisgottalent.com
With ReTain® your apple crop is tip top

ReTain® helps to optimise the potential of your crop by decreasing harvest peaks and enhancing fruit quality. Fruit can be picked later at optimum quality with regard to fruit size, fruit colour and storage quality of the fruit. Furthermore, ReTain® offers you peace of mind when it suddenly rains during picking season. The potential of your crop lies in your hands. Contact us and get ReTain® - the product that pays, time after time.
HORTGRO recently hosted a group of South African journalists on a press trip aimed at raising the profile of stone fruit.

The journalists were taken on a pack house trip and orchard walks to learn more about the different kinds of stone fruit, and how it is packaged and ultimately sold on the various markets.

Jacques du Preez, HORTGRO’s trade and markets manager, explained how the fruit ends up on these markets. “A large amount of South African deciduous fruit is exported and has to comply with strict international standards. In many instances the difference between export fruit and fruit destined for the local market is of a cosmetic nature. For example, the Far East prefers bigger, redder fruit whereas the Europeans are quite discerning regarding the external appearance of the fruit – such as shape, no rub marks, sunspots or wind marks. This while all the fruit is of the same high internal and eating quality because it comes from the same trees.”

Celebrity chefs Jenny Morris and Zola Nene also cooked up a stone fruit storm in the Montpellier de Tulbagh kitchen, where the journalists were hosted. Morris said she hopes to educate South African consumers on the wonders of fruit in recipes. “Fruits like plums and peaches can easily be the star of a main course. Fruits do not have to be reserved for desserts. A dish like plum pieces wrapped in bacon is easy and delicious. Using fruit in the kitchen is about a mind shift, once you get out of a routine you can cook up a range of adventurous and nutritious meals.”

HORTGRO would like to thank Jagerskraal Farm in Ceres (Goosen Boerdery) and Loubser Landgoed in Tulbagh for their time and for supplying fruit during the press trip.

ESTÉ BEERWINKEL

Jacques du Preez (HORTGRO Trade and Markets Manager), Tanya Steenkamp (Sunday Times) and Jenny Morris preparing a salad dressing for their nectarine salad.
JOBS FUND INFORMATION DAY

The Jobs Fund steering committee and beneficiaries recently gathered to discuss the way forward. Joyene Isaacs, Head of Department at the Western Cape Department of Agriculture, said this project has the capability of creating a sustainable and transformed industry country-wide, therefore a lot is riding on the success of the 23 beneficiaries currently aided by this project. These beneficiaries will receive support from the Jobs Fund over a period of four years (with R120 million split between the 23 producers), where after it’s expected that these producers will be able to stand on their own, to make way for new entrants and expand SA’s black producer footprint.

Tracking the Vine on Delaire Graff

Kallie Fernhout, a viticulturist and Estate Manager of Delaire Graff Vineyards, a well-known international destination for wine, art and hospitality in the Stellenbosch valley, needed an effective technology solution to assist in managing this large, award-winning wine estate – and he found it in FarmTrack, a real time tracking device for farmers. Some of Fernhout’s responsibilities include managing the vineyards and sourcing grapes from outside farms for Delaire’s many delightful wines.

“We have so many vineyards, so it was important for us to find an effective GPS monitoring device like FarmTrack. We wanted to ensure that as many rows as possible would be sprayed, and it was essential that the accuracy of the calibrations were correct,” says Fernhout.

Having heard about FarmTrack from distributor, InteliGro, Delaire then started using the device on two tractors over two seasons. Fernhout was immediately able to monitor and manage spray accuracy of the vines as well as measure the speed of - and time spent in - spraying by each row and vineyard block. The results allow Delaire Graff to have accurate farm management reports that help with planning, cost-saving, efficiency and of course properly sprayed crops.

FarmTrack is a great farm management tool that helps farmers monitor not only their vehicle efficiency, but also assists with fuel saving and optimum crop output.

“Our crop spraying efficiency on our farm has really increased, and because of this, so has the quality of our crop yield,” notes Fernhout.

“We are so happy with FarmTrack – and it is so user-friendly and of course the cost savings means that we will be continuing to use this system in the future. I wouldn’t be without it now,” says Fernhout, “and I unreservedly recommend FarmTrack to any wine farmer who seeks to improve their operations.”

For more information please contact 021 880 1163 or visit www.farmtrack.co.za
GLOBAL TRADE GAPS: TABLE GRAPES

This is the third article in the series on market factors impacting on the global trade of Table Grapes. The previous articles dealt with global production, import and export trends and the macro-economic trends determining import opportunities. In this article the global trade gaps for Table Grapes will be explored.

CONTRA-SEASON GAPS

Table Grape production and trade gaps between the Northern and Southern Hemisphere is relatively small in comparison with the gaps for other fruit types due to the relatively high export volumes from the Southern Hemisphere. Based on 2015 trade volumes the following gaps could be calculated:

ANNUAL EXPORTS

• Northern-Hemisphere - 2 568 tons
• Southern-Hemisphere - 1 587 tons

Yielding a contra-season export gap = 801 tons

PRODUCTION VERSUS CONSUMPTION

• Northern-Hemisphere: Production – 12 000 tons minus export 2568 tons = Consumption +/- 9400 tons
• Southern-Hemisphere contra-season exports - 1 568 tons

Yielding a contra-season consumption gap = 6 864 tons (which in turn represents a theoretical 8 300 ton export opportunity for Southern-Hemisphere exports

Unfortunately limited reliable data is available on contra-season consumption trends and volumes and many social and economic factors impact on the theoretical import gaps calculated above.

SUPPLY TRENDS TO THE MAIN IMPORTERS

Total world imports of Table Grapes in 2015 amounted to 4 155 000 tons with the main importers and the suppliers to these importers summarised in Table 1, right.

Table 1: Analysis of the Table Grape suppliers (exporters) to the main importing countries in 2015 (DATA FROM: ITC – TRADemap).
<table>
<thead>
<tr>
<th>Importing region</th>
<th>Importing country</th>
<th>Tons imported in 2015</th>
<th>Main suppliers to importer</th>
<th>Growth in supplies to importer (per annum for the period 2011-15)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Middle-East</strong></td>
<td>UAE</td>
<td>53 000</td>
<td>RSA - 19%</td>
<td>Australia - 64%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>India – 17%</td>
<td>Italy – 29%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>USA – 14%</td>
<td>USA - 17%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Australia – 14%</td>
<td>RSA – 11%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Italy – 11%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Egypt – 11%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Saudi-Arabia</td>
<td>53 000</td>
<td>RSA – 18%</td>
<td>Peru – 191%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>India – 13%</td>
<td>Egypt – 58%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Egypt – 13%</td>
<td>India – 16%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chile – 12%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peru – 9%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pakistan</td>
<td>122 000</td>
<td>Afghanistan - 99%</td>
<td>Afghanistan – 77%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RSA – 70%</td>
</tr>
<tr>
<td><strong>Far-East</strong></td>
<td>China</td>
<td>215 000</td>
<td>Chile – 40%</td>
<td>Australia – 128%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peru – 46%</td>
<td>RSA – 75%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>USA – 10%</td>
<td>Peru – 54%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Australia – 15%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RSA – 8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hong Kong</td>
<td>206 000</td>
<td>Chile – 28%</td>
<td>Peru – 42%</td>
</tr>
<tr>
<td></td>
<td>China</td>
<td></td>
<td>Peru – 24%</td>
<td>Australia – 32%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>USA – 10%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Australia – 15%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RSA – 8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thailand</td>
<td>127 000</td>
<td>China – 54%</td>
<td>Peru – 73%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peru – 26%</td>
<td>India – 21%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>USA – 7%</td>
<td>China – 20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Australia – 6%</td>
<td>Australia – 15%</td>
</tr>
<tr>
<td></td>
<td>Korea (Republic of)</td>
<td>66 000</td>
<td>Chile – 77%</td>
<td>Peru – 132%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peru – 14%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>USA – 9%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indonesia</td>
<td>45 000</td>
<td>USA – 32%</td>
<td>Australia – 22%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Australia – 28%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>China – 19%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peru – 18%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Malaysia</td>
<td>29 000</td>
<td>USA – 40%</td>
<td>Australia – 32%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Australia – 16%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>China – 14%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RSA – 13%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Philippines</td>
<td>24 000</td>
<td>USA – 62%</td>
<td>Australia – 155%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Australia – %</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chile – 15%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Japan</td>
<td>22 000</td>
<td>USA – 42%</td>
<td>Mexico – 50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chile – 40%</td>
<td>Chile – 5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Australia – 13%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mexico – 5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vietnam</td>
<td>18 000</td>
<td>USA – 37%</td>
<td>RSA – 56%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>China – 23%</td>
<td>Peru – 18%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RSA – 16%</td>
<td>Chile -10%</td>
</tr>
</tbody>
</table>
The taste and texture of a perfect pear is one of life’s joys. When consumers bite into a pear expecting that, only to be met with an unpleasant puckering experience, their disenchantment with the fruit can be complete.

Astringency commonly occurs in ‘Forelle’, a bi-colour pear that has a mandatory 12-week cold storage requirement to prevent mealiness from developing. The storage requirement delayed marketing and caused a gap in bi-colour pear availability between the last volumes of ‘Rosemarie’ and ‘Flamingo’, and the onset of ‘Forelle’.

One of the main causes of astringency was the drive to harvest ‘Forelle’ as early as possible to start the required 12-week cold storage period. In an attempt to bridge the bi-colour pear supply gap, a new cultivar, ‘Cheeky®’, was introduced.

However, increasing reports of astringency in ‘Cheeky®’ have been received from overseas supermarkets.

In response, HORTGRO Science, on behalf of the South African Apple and Pear Producers’ Association (SAAPPA), called on Dr Ian Crouch to investigate possible causes and solutions. Ian is the director of research at ExperiCo (Agri-Research Solutions).

“Unless a solution to astringency is found, there is the risk that supermarkets may refuse to stock ‘Cheeky®’,” says Ian.

To find such a solution, Ian designed a two-year study to determine ways in which to predict, and eliminate or control astringency, without compromising the overall quality of the fruit. “Once we know which environmental, pre-harvest and/or post-harvest factors cause astringency in pears, we can put in place protocols to control it,” he says.

The study, which started in February 2012 as a HORTGRO project and continued as a PHI project from 2015, initially set out to assess the impact of five factors on the expression of astringency in the ‘Cheeky®’ and ‘Forelle’ cultivars. These are harvest maturity, storage duration, SmartFresh™, CO2 spiking and storage temperature.

In addition, the research team wanted to develop a biochemical method to measure astringency, and assess its potential as a means of prediction.

However, following the success of the FEMA programme (see text box), the HORTGRO Technical Advisory Committee requested that the study’s scope and objective be revised. As a result, work on ‘Forelle’ was stopped. Resources were instead devoted to understanding the physiological profile of ‘Cheeky®’ with particular reference to the effects of harvest maturity and storage duration on fruit quality, and the expression of astringency and internal browning. Harvest maturity was deemed particularly important, given that orchards are becoming older and producing higher yields.

**Study methods**

‘Cheeky®’ pears from four orchards in two areas – Ceres and Grabouw – were harvested according to specific maturity parameters during the commercial harvest window, and seven to 10 days on either side of it.

The pears were packed into MO7T telescopic cartons with standard non-perforated pear liners. Bags were closed four weeks before the scheduled examination to simulate packing and shipping.

Each harvest was stored for four, eight, 12 and 16 weeks at -0.5°C regular temperature (RA), followed by a shelf-life period of seven days at 20°C.

**THE FEMA SOLUTION**

An innovative solution to market ‘Forelle’ pears earlier, and without the 12-week mandatory cold storage period, has reduced pressure on producers to harvest the fruit as early as possible. The ‘Forelle’ Early Market Access (FEMA) programme allows pears to ripen on the tree and then through the use of SmartFresh™, an ethylene blocker, prevents the expression of mealiness by keeping the fruit sweet and crisp. Fruit is sold within four weeks of harvest. As a result, the marketing gap is filled and bi-colour pear continuity is maintained.
At harvest and after each cold storage period, the fruit was examined and results recorded. In all cases, flesh firmness was measured using a fruit texture analyser (FTA), while skin ground colour was recorded according to the South African industry colour chart for green apples and pears.

Further tests were carried out at harvest to determine the following: percentage of total soluble solids (TSS); titratable acidity, expressed as the percentage of malic acid (MA) equivalents; starch breakdown percentage; and fruit size.

**The following were determined post-harvest:**
- Internal quality, determined on a random sample of 20 fruit per replicate. The fruit was cut in half and visually assessed for mealiness and internal browning.
- Astringency, by tasting five fruit per replicate (%).
- Decay (%) on all fruit in a carton.

In addition to internal quality, astringency and decay, the TTS percentage and titratable acidity of the fruit that had been exposed to the seven-day shelf-life period, were also recorded.

**Key results**

Astringency occurred in later harvests from six weeks in 2012, and 12 weeks in 2013. Incidence declined with storage duration and was no longer evident after 18 weeks of cold storage.

No mealiness occurred in 2012, and only low levels after six week’s storage in 2013 and 2014.

No internal browning and very little astringency were evident in the 2015 season. Astringency was only detected in Ceres fruit of optimal maturity that was cold stored for eight weeks.

Depending on seasonal variations, it is important to monitor skin ground colour, as in some years this may be a limiting factor and result in colour break during extended RA storage. In these instances, fruit should be marketed within eight weeks of harvest.

Fruit stored under RA conditions for up to 14 weeks exhibited acceptable flesh firmness that almost always ripened normally after a shelf-life period. TSS maintained relatively well for 16 weeks across all harvest maturities, but MA declined. There was possibly more decay, shrivel and internal disorders with extended storage and later harvests.

Mealiness occurred in optimum harvested fruit when cold stored for eight weeks, but not before or after this time.

**Recommendations**

Early-optimum fruit should be cold stored for longer than four weeks to ensure normal ripening post shelf-life. Optimum and post-optimum fruit should not be stored for longer than eight weeks RA to prevent skin ground colour break (≥ 3.0).
New findings reveal that early detection and quantification of *Botrytis cinerea* in plums and weeds in the orchard, may be key to optimise decay control.

Species of the genus *Botrytis* are plant pathogens of numerous food and ornamental crops. *Botrytis cinerea*, specifically, is a generalist fungus that infects more than 220 host plants worldwide, among them numerous fruit crops, and also stone fruit such as plums.

The fungus is viewed as an aggressive necrotrophic pathogen. This means it infects fruit by entering through wounds, and then causes decay by killing off cells. However, new discoveries in various crop types have revealed that the life cycle of the fungus includes a period where it lives inside healthy plants, like a welcome visitor, without causing harm.

Due to the commercial importance of this fungus, comprehensive studies have been conducted on the nature of *B. cinerea* over the past few decades. However, it now seems that the interaction between the plant and the fungus is not fully understood, and that there are more pieces to the puzzle than previously accepted. This brings into question what is known about the biology, as well as the life and disease cycle of *B. cinerea*.

Interestingly, the harmless presence of *B. cinerea* has not only been reported in cultivated crops; it has also been found in weeds. This raises further questions with regards to the epidemiology of *B. cinerea*. For example: could inoculum from weeds infect blossoms and fruit? If so, the continuous presence of the fungal inoculum from weeds could mean that once fungicide applied to trees wears off, the infection could continue indefinitely.

**Answering new questions**

Under the leadership of Dr Ida Wilson, a crop protection specialist at ExperiCo, and Dr Stephan Ferreira, research manager at West Cape Biotech in Stellenbosch, a study was launched to clarify whether or not *B. cinerea* could be live harmlessly in plum tissue, and if it is present in weeds in a South African plum orchard.

Execution started with identifying an orchard with a known high incidence of *Botrytis* grey mould and high weed infestation. Twenty-five trees were chosen and samples of blossoms, small fruit, mature fruit at harvest, and fruit after storage were evaluated. Using quantitative real time PCR (qRT-PCR), the researchers wanted to determine the presence of *B. cinerea* DNA, as well as the quantity. The same technique was used to detect the presence and quantity of DNA in weeds. Data was gathered for a two-year period. *B. cinerea* was found in all plum tissue types. *Botrytis* presence in blossoms was particularly with fungus DNA present in at least 95% of the blossoms. Traces of the fungus were also found in more than 14 species of weeds, including both broad-leaved and grass weeds.

![Figure 1: B. cinerea DNA levels in blossoms per single cluster of trees indicating the visual presence of weeds per cluster.](image)

The severity of weed infestation and relative presence of *Botrytis* DNA (the greater the visual weed incidence, the higher the relative *B. cinerea* DNA level from blossoms of that cluster of trees). (Error bars indicate standard error (n=5).)

![Figure 2: Quantity of B. cinerea DNA per time point of analyses measured over 25 trees](image)

Average level of *B. cinerea* DNA, for 250 fruit for each sampling point. (Error bars indicate standard error (n=5–7).)
First year results revealed that greater weed infestation per tree coincided with a higher relative presence of fungus DNA in blossoms. “We don’t know yet if there is a causal relationship,” says Dr Wilson. “Our recommendation is that further studies into how weed infection may influence blossom infection are necessary, given that B. cinerea is vectored by insects, which makes the transferral of B. cinerea from weed flowers to blossoms a possibility.”

Notably, the study found that, given the relative presence of B. cinerea DNA in fruit of different maturities, standard control measures for grey mould control had no influence the presence of the fungal DNA in plums. The amount of B. cinerea DNA increased in a linear relationship with the maturation of the fruit. Thus, despite the application of fungicide to the surface of fruit, B. cinerea remained present inside fruit tissue and the amount of DNA progressed as fruit matured. “Our finding suggests that fungicide cannot abolish B. cinerea present inside plums,” says Dr Ferreira.

During the first year of the study, fruit was stored for up to four weeks. All fruit remained healthy, hence the relation between the presence of B. cinerea DNA and the occurrence of fruit decay could not be ascertained. In the second year of the study, however, fruit was stored for the whole cooling period it would have been exposed to in commercial industry. From cold storage fruit was transferred to higher storage temperatures to simulate shelf life, but also “extended shelf life”, which presented a point in time

“What is the value of quantitative real-time PCR (qPCR)?

Techniques which are able to measure the amount of DNA from a specific pathogen have become the gold standard in disease diagnostics in all life science fields, including medicine, veterinary science and agricultural sciences.

To detect and quantify DNA, quantitative Real-Time PCR (qRT-PCR) has been established as a cost-effective, accurate and sensitive method to routinely detect and quantify pathogens in their hosts. Several studies have shown the validity of using this technique to determine the levels of Botrytis cinerea present in crops.

Moreover, several studies have found a linear correlation between B. cinerea DNA detected by qRT-PCR after artificial inoculation, and observed grey mould symptoms in fruit.

Studies conducted at Westcape Biotech also accurately and sensitively quantified Botrytis cinerea in fruit with natural gray mould infection.

“Results obtained from this study should encourage the further exploration of the life cycles of fruit pathogens in general. The results emphasise the importance of questioning the status quo and it supports the urgent conceptualisation of new, more accurately directed decay control strategies.” Dr Ida Wilson

Although grey mould decay caused by Botrytis cinerea is a disease that manifests post-harvest, plums may be first infected in the orchard during the pollination stage when blossoms are most vulnerable.

At the time of bloom, plum orchards should be kept free of weeds, grasses and other hosts of Botrytis cinerea to keep early infection at bay.
A combination that makes all the difference

Cold protocol treatments and irradiation are recognised phytosanitary treatments in their own right. Combining them, however, can revolutionise South Africa’s citrus export industry.

Small as they are, insect larvae are a massive hurdle in the fresh fruit export industry. Because larvae present the possibility of a quarantine pest establishing a population in the importing country, infested fruit consignments are rejected. Efforts to minimise and control infestations are therefore ongoing.

The cold protocol treatment is the post-harvest treatment most widely used to prevent the export of South African citrus fruit with live false codling moth (FCM) larvae. However, the current protocol of 22 to 24 days at -0.6°C is detrimental to fruit quality and often causes chilling injury.

Ionizing irradiation has long been known to be effective in sterilising and killing pests in fruit. As far back as October 2002, the United States Animal and Plant Health Inspection Service (APHIS) approved irradiation as a quarantine treatment for fruit and vegetables at a generic dose of 150Gy for fruit fly (Tephritidae) and 400Gy for all other pests, including FCM.

Studies by Citrus Research International (CRI), however, have shown that at these doses, irradiation is not an option as a stand-alone treatment as it causes prohibitive external quality losses. South African researchers have therefore joined the ongoing international effort to develop additional phytosanitary irradiation treatments and reduce the generic dose of 400Gy for FCM.

In recent times, new developments in phytosanitary regulations have opened up alternative options for the use of irradiation, namely combination treatments and sterile insect technology. The former combines irradiation and cold treatments, both at reduced doses, and have been proven to suppress larvae and their successive development stages more effectively than the individual treatments alone.

Probit-9 level efficacy was achieved with 60Gy of ionizing radiation followed by cold exposure for 16 days at 2.5°C. Sterile insect technology, or low dose irradiation, affects the fecundity and fertility of pests, also resulting in Probit-9 mortality.

Towards a new protocol

In 2014, Dr Paul Cronjé, a researcher at CRI, initiated a project to establish a new disinfestation protocol for South African citrus, based on the potential of combined treatments.

The first two steps towards this goal had already been completed by CRI entomological researchers, namely determining insect response to the lowest efficacy dose and to the combination of irradiation and cold treatment.

What remained to be determined was the maximum irradiation doses that could be tolerated by the major citrus fruit types exported by South African producers. Given that irradiation is not distributed evenly through a pallet of fruit, some of the fruit is exposed to doses twice or three times the minimum required dosage.

“We need the maximum and minimum values to determine if irradiating a specific cultivar group at a dosage that will be determined by the importing country is actually viable and will not lead to fruit quality losses,” explains Paul. “In addition, we wanted to determine the effect on fruit quality of a combination treatment.”

---

**FAST FACTS**

- Food irradiation is permitted by over 60 countries.
- About 500 000 metric tonnes of food is irradiated annually worldwide.
- NASA astronauts eat meat that has been sterilised by irradiation to avoid getting food-borne illnesses in space.

---

**WHAT IS PROBIT-9?**

Probit-9 mortality is a standard for treatment effectiveness that has its origin in fruit fly research, and has been adopted by the United States Department of Agriculture for fruit flies and several other pests.
Irradiation is a technology that improves the safety and extends the shelf-life of food by reducing or eliminating micro-organisms and insects. Like pasteurising milk and canning fruits and vegetables, irradiation can make food safer for the consumer.

Under the blanket statement of making food safer, irradiation can serve many purposes:

- Prevention of foodborne illness by effectively eliminating organisms such as Salmonella and Escherichia coli (E.coli).
- Preservation by destroying or inactivating organisms that cause spoilage and decomposition, and thereby extending the shelf life of foods.
- Phytosanitary applications, by sterilising insects in or on fresh produce that is exported globally.
- Increase longevity by delaying sprouting (eg, in garlic) and ripening of fruit.
- Sterilisation of food intended for hospital patients with severely impaired immune systems, such as people with Aids or those undergoing chemotherapy. Foods that are sterilised are exposed to substantially higher levels of irradiation than those approved for general use.

Food that has been irradiated carry the Radura logo and/or states on the packaging “Treated with radiation” or “Treated by irradiation” or “Radurised”. Bulk foods, such as fruit and vegetables, must be individually labelled or a label has to be shown next to the container in which they are displayed.

It is important to remember that irradiation is not a replacement for proper food handling practices by producers, processors and consumers. Irradiated foods need to be stored, handled and cooked in the same way as non-irradiated foods, as they could still become contaminated with disease-causing organisms if the rules of basic food safety are not followed.

The safety of food that has been irradiated, is undeniable.

The technology has been endorsed by eminent global bodies, including the World Health Organisation (WHO), the Food and Drug Administration (FDA), the Centre for Disease Control and Prevention (CDC), and the US Department of Agriculture (USDA).

Scientists agree that Irradiation does not make food radioactive, compromise nutritional quality, or noticeably change the taste, texture, or appearance of food. Studies have furthermore shown that there is no significant loss of nutrients after food has been irradiated. Only a small amount of some vitamins are lost, similar to the amounts lost during other food processing methods such as refrigeration, canning and drying.

With this rationale in mind, Paul designed a study with two objectives:

1. Determine the threshold for fruit quality when irradiating various citrus types, namely, Clementine mandarin, lemon, grapefruit, and Navel and Valencia oranges.
2. Determine variation in dose within each carton box (dosimetry study).

Working at the Hepro facility in Cape Town, Paul and Jade North subjected eight pallets of different citrus fruit cultivars to Gamma irradiation.
where fruit decay was inevitable.

Results indicated a direct correlation between the average amounts of relative \( B\ cinerea \) DNA detected in fruit with the average percentage rot that developed during storage. Although the sample size was small (analyses over 6 points in time represented 3 000 fruit in total) a potential relationship between the presence of \( B\ cinerea \) DNA and the development of postharvest decay in plums is evident.

Technical support in the study was rendered by four matriculants who were partaking in the Premier of the Western Cape’s advancement of Youth Programme, an initiative to give youth workplace experience, in order to be taken up in workplaces. The project also formed part of two MSc student’s practical training.

**Recommendations**

“Based on our findings, we recommend that disease control efforts for \( B\ cinerea \) should be revisited,” says Ida. A new strategy could focus on protecting blossoms from primary infection early in the growing season, and eradicating weeds when trees are blooming.

Moreover, results support the development of a decay risk prediction tool. Detection of a high relative \( B\ cinerea \) DNA in blossoms, may predict a high risk for decay in fruit post-harvest. This theory will be tested in follow-up trials in the 2017 and 2018 season.

Arguably, the study’s most significant contribution was pointing out that the biology of pathogens in the field is not necessarily fully understood. Without a clear picture of where the fungus lives, and what it is doing there, control efforts cannot be targeted optimally. Results obtained from this study encourage the further exploration of the lifestyles of fruit pathogens in general, emphasise the importance of questioning the status quo and support the urgent conceptualisation of new, more accurately directed decay control strategies, which could be highly beneficial to the fruit industry.

---

**A combination that makes all the difference**

at 200, 300, 400 and 500Gy. Afterwards the fruit was cold stored at 2°C or 7°C for 40 or 60 days, and evaluated for internal and external quality.

The first group of fruit, harvested from May to early June, consisted of ‘Nules Clementine’ mandarin, ‘Nova’ mandarin, ‘Washington’ Navel, ‘Eureka’ lemon and ‘Star Ruby’ grapefruit. The second group, harvested in August, included ‘Eureka’ lemon, ‘Navelate’ Navel, ‘Nadorcott’ mandarin, and ‘Turkey’ and ‘Midnight’ Valencia orange. For the dosimetry studies, and to confirm treatment levels of irradiation, a dosimeter was placed outside and inside the short wall, inside the long wall, centrally at the top, and at the middle and bottom of each carton.

**Results and recommendations**

In terms of external quality, the researchers found that ‘Nova’ mandarin and ‘Turkey’ Valencia oranges were highly sensitive, only tolerating doses of up to 200Gy. ‘Nadorcott’ mandarins and the lemons could tolerate doses below 300Gy.

‘Nules’ Clementine mandarin and the Navel oranges remained unaffected up to 400Gy, while ‘Star Ruby’ grapefruit and ‘Midnight’ Valencia oranges were the least sensitive, tolerating doses of up to 500Gy.

As far as internal quality is concerned, the expert taste panel could not identify the fruit exposed to 500Gy in any of the cultivars. “We could therefore confidently conclude that taste is not a commercial problem,” says Paul.

The only internal quality parameter that showed any impact was a reduction in citric acid in the highly sensitive ‘Turkey’ Valencia and the ‘Eureka’ lemon, a high acidic cultivar.

The researchers concluded that there was a low incidence of disorders in the 200–300Gy range, combined with cold storage at 2°C.

“We now know that compliance with combination treatments is indeed possible,” says Paul.

“Additional analysis will indicate if our data can be used to motivate a new combined protocol.”
At the time of going to press, the Agri's got Talent winner was not announced yet, but keep an eye out for the full story on the new winner in our October/November edition.

Sedert AIR PRO sowat 20 maande gelede die lig gesien het, het hierdie presissie strooier nie net sy stempel op die mark afgedruk en ‘n merkbare markaandeel verwerf nie, maar ook merkbare veranderinge ondergaan. Alhowel AIR PRO al kan spog met verskeie klënte wat 2 en 3 eenhede aangesaf het, is daar al twee landbou groepe wat spog met 5 elk. Daar was ook hard gewerk aan bemarking en AIR PRO word tans direk en deur 7 agentes wat gesamentlik 18 vrugte verbouings-areas bedien, bemark en ondersteun. Die strooier self is ook geen vordering en ontwikkeling gespaar nie. Die voorheen geverfde trekstang en onderstel word nou uit duursame 3CR12 gemaak. Behalwe dat die bak, deksel en uitaaltelsel nog steeds van tipe 304 vlekvry staal is het die alle boute, moere en wassers ook vlekvry geraak. Skarniere en knippe is ook met die beste vervang en daar is ‘n handige numatiese silinder wat die deksel vashou in sy oop posisie. Aan die tegnologiese kant het AIR PRO ook voorwaarts beweeg. Deur die toevoeging van ‘n tweede stel ratte as addisionele opsie kan AIR PRO nou ook met gemak slakpille vanaf 5 Kg/Ha toedien. Op aanvraag van Sitrus-, Makadamia- en Avokadoboere waar rywydtes dit toelaat het AIR PRO nou ook ‘n 1 Ton ouboet in die mark geplaas.

Verder het ons ‘n vennootskap met EFS, Effective Farming Solutions beklink waardeur AIR PRO nou ook as opsie deur GPS beheer kan word om, of die strooi van kunsmis te monitor of die strooi proses heetemal daardeur te beheer. Dit stel nou die vrugteboer in staat om nie net akkuraat per hektaar of blok te werk nie maar ook om varieerende dosis toedienings inieselde ry te doen volgens die spesifieke grondbehoeftes in daardie blok. Dan is daar ook nou ‘n opsie wat binnekort standaard sal raak om die linker- en regter uitgooi afsonderlik vanaf die trekker te beheer om optimale toediening op dwars aanplantings en buite rye te vergemaklik.

Die wêreld se beste boordstrooier

AIR PRO BARS UIT SY NATE!

MEER AS 160 STROOIERS LANDSWYD VERKOOP IN 24 MAANDE . . .

**AIR PRO BARS**

**AIR PRO 500**

- Kalibreer van die grond af, in die ry toediening is hoër as 98% akkuraat en die links regs uitset ook hoër as 98% akkuraat
- Toediening spoed is dus so vinnig as wat die terrein toelaat;
- Het akkurate, maklik en vinnige slinger verstelling met ‘n aanwysingslyn;
- Het onafhanklike hoër kwaliteit nylotron uitgooiers;
- Het ‘n afsluit sluis om die bemesting van buiterye moontlik te maak sonder vermorsing;
- Koppel en ontkoppel met ‘n hidroliese koppelaar;
- Is die enigste strooier met ‘n vlekvrye staal bak, deksel en uitlaatpype;
- Strooi slegs die wortelgroei area onder die boom;
- Strooi met lugdruk wat ‘n eweredige val van die korrels verseker;
- Het ‘n 500 kg kapasiteit;
- Het ‘n swaardiens raamwerk met 1.6 Ton as;
- Is 100% plaaslik vervaardig met alle parte maklik beskikbaar;
- Is slegs 1 215mm breed en loop in ‘n boord trekker se spoor;
- Is verbind tot uitmuntende naverkoopdiens en gee ‘n 12 maande waarborg op die raam, bak, aste en ratte;
- Bied dus die mees effektiw en koste doeltreffende bankie kunsmis strooi opsie vir wingerde en boorde tans op die mark.

Kontak: Bertus Muller 079 835 1784
Epos: breerivierengineering@gmail.com

**BREÊRIVIER INGENIEURSWERKE**

Sien die videogreep van hierdie briljante strooier in aksie by www.YouTube breerivier engineering strooier
Increased Production of Soft Citrus Varieties Requires Concise Handling to Maintain Critical Cold Chain Requirements

Analysis of the 2017 Tree Census data suggests that the production of Soft Citrus varieties will more than likely double over the period of six years. During the 2012 citrus season, 7.64m cartons (15kg equivalent cartons) were exported while it is anticipated that 15.5m cartons will be exported by the 2018 citrus season (Refer table 1: Historical and Forecasted Production of Soft Citrus Varieties for Export).

Traditionally the volume of Soft Citrus varieties handled at the inland and ports cold stores were insignificant relevant to other citrus types such as Valencia, Navel and Grapefruit varieties. It is clear that this is changing fast. Soft Citrus varieties require strict handling and cold chain management to ensure a good quality product reaches receivers in markets across the globe. The typical handling and cold chain management practices on Hard Citrus varieties cannot be replicated for Soft Citrus varieties, such as breaking the cold chain during storage and the staging of Soft Citrus in ambient during loading of containers etc.

The fundamental rule should be that Soft Citrus should be brought under cooling immediately after production, be transported in refrigerated trucks between the place of production to the cold storage facility or loading point. Once the fruit has been unloaded from the truck it should be...
immediately placed in the cold rooms during storage and should not be intermittently removed from cold storage during order picking. The fruit should remain in cold storage at the required temperature until required to be loaded out, the fruit should be placed into containers immediately after being removed from the chambers for loading and not be staged for long periods of time.

Producers and Exporters of Soft Citrus fruit are encouraged to check the suitability of cold storage depots to handle Soft Citrus in accordance with best practice. Many cold storage facilities are not equipped to suitably handle and store Soft Citrus varieties thus ensuring handling and cold chain management is optimized. Furthermore it is recommended that producers and exporters consider packing Soft Citrus exports in containers directly from packhouses thus circumventing the need for port handling and cold storage altogether. Containers should always be powered by an underslung Genset unit to maintain the cold chain during transit to port. The success of increased Soft Citrus exports will be determined by ensuring a good quality product enters the markets.

### Table 1: Historical and Forecasted Production of Soft Citrus Varieties for Export.

<table>
<thead>
<tr>
<th>% Growth Potential</th>
<th>2014 - 2016 Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>55%</td>
<td>2 261 311</td>
</tr>
<tr>
<td>51%</td>
<td>793 442</td>
</tr>
<tr>
<td>20%</td>
<td>650 311</td>
</tr>
<tr>
<td>59%</td>
<td>13 871</td>
</tr>
<tr>
<td>48%</td>
<td>3 718 934</td>
</tr>
<tr>
<td>69%</td>
<td>1 479 808</td>
</tr>
<tr>
<td>44%</td>
<td>194 047</td>
</tr>
<tr>
<td>11%</td>
<td>135 096</td>
</tr>
<tr>
<td>27%</td>
<td>55 011</td>
</tr>
<tr>
<td>61%</td>
<td>1 863 957</td>
</tr>
<tr>
<td>57%</td>
<td>2 063 829</td>
</tr>
<tr>
<td>29%</td>
<td>2 129 171</td>
</tr>
<tr>
<td>10%</td>
<td>816 117</td>
</tr>
<tr>
<td>82%</td>
<td>55 011</td>
</tr>
<tr>
<td>37%</td>
<td>5 129 313</td>
</tr>
<tr>
<td>59%</td>
<td>5 804 943</td>
</tr>
<tr>
<td>26%</td>
<td>2 914 578</td>
</tr>
<tr>
<td>32%</td>
<td>1 803 605</td>
</tr>
<tr>
<td>55%</td>
<td>123 893</td>
</tr>
<tr>
<td>45%</td>
<td>10 706 205</td>
</tr>
</tbody>
</table>

As we reach the one year milestone of the CGA Grower Development Company’s existence, we raise a glass of orange or lemon juice to all the citrus farmers whom we owe our existence to. Our first year of office coincided with the worst drought ever to be experienced in decades, however, this did not dampen the spirits of all the those involved.

**The company has made progress in the following spheres:**

**Establishment of structures:** A team of experts in various related fields sit on the Board of Directors including two farmers representing the North and South Regions. The Board hit the ground running by setting up the necessary systems for the company. Critical to this was the development of a Corporate Plan which laid out the goals, milestones and desired outcomes for the company. Furthermore, in line with the Corporate Plan, the company filled all critical vacant positions in order to deliver on its mandate.

**Establishing relationships:** The Company is cognisant of the fact that to adequately address the needs of the developing farmer there is a need to bring in multi-disciplinary stakeholders to deal with the complexity of the issues involved. As a vehicle for agrarian transformation in citrus, it is imperative for the company to be the key that unlocks the potential of Growers to become sustainable and profitable. The company has made strides to engage with the various government departments, provincial government departments, parastatals, trade and export representatives, development finance institutions and commercial banks. Some of these engagements have already yielded in signed agreements.

**Linkages with Growers:** The business of farmer development is very much dependent on the cooperation between the Grower and the Company. Thus far, the support that the officials received from the Growers, indicates clearly that our existence is indeed relevant and much needed. This has been experienced during data collection for various purposes e.g. business planning and at the various group sessions with growers like study groups and information days. However, a gap has been identified in communicating with growers and other stakeholders, hence the company has embarked on the development of a communication strategy. At strategic level, the Chamber still remains as a critical link for the company in addressing specific grower development matters.

**Support from the CGA:** The Company operates as an independent entity, however it has received a great deal of support from the CGA and the Citrus Academy in particular in the areas of expert advice and information sharing. At the core of the mandates of all three entities, is to further the interests of the Growers, hence supporting one another remains imperative.

The Board of Directors at the official launch of the Company by the Honourable Minister Senzeni Zokwana.
Analysis of 2016 Orchard Registrations

Every year growers intending to export their citrus to special markets including important destinations such as European Union, USA, China, Japan and Korea are required to register their orchards with the Department of Agriculture Forestry and Fisheries.

Preliminary results including about 2 700 hectares from neighbours Zimbabwe and Swaziland indicate a total area of almost 73 000 hectares of citrus (see table 1 left). Valencia oranges are still very dominant but soft citrus has overtaken grapefruit to be the third biggest area (see table 2 left).

The trend of increased plantings of soft citrus and lemons continues and the relative youth and growth potential of these varieties is illustrated in the chart right with around half of their areas having been planted in the last five years.

Looking at orchards aged five years and less, one can see the activity concentrated on soft citrus and lemons (see graph). Generally this growth potential is likely to be understated as some growers may not have registered their new orchards, particularly where they are new entrants to citrus farming.

The Eastern Cape, Sunday’s River in particular shows up as having the most area planted in 2016 followed by the Western Cape and Limpopo.

2016 hectares planted in selected CGA regions in 2016

Conservative growth projections for these commodities could see lemon exports growing from last year’s 12 million cartons to 19 million cartons in the next three years and soft citrus from 12.2 million cartons to 15.5 million cartons.

Growers have taken note of the trends and are looking at strategies for the future. Promotions are increasing being looked to as an essential tool for stimulating demand of lemons and late mandarins in particular and 2017 promises possible new developments on this front.

JOHN EDMONDS
The Stories of Mzansi Citrus Magic highlights the journey of some Citrus Academy Bursary Fund Students over the years. With more than 500 bursaries awarded over ten years, many students, studying towards a range of qualifications, have moved on and are working within the industry, both locally and abroad. In this issue, we follow the journey of Sonwabo Ncera, Hombisa Timakwe, Kate Hlongo, Adriaan Serfontein and Dr. Nhlanhla Mathaba.

SONWABO NCERA is a graduate trainee in Marketing at the Sundays’ River Citrus Company (SRCC) in the Sundays’ River Valley. Sonwabo grew up in Middledrift between Fort Beaufort and King Williamstown, and finished matric at Ntabenkoyana High School in Middledrift in 2007. He enrolled at Fort Hare University in Alice to do a BSc in Agricultural Economics in 2008, and while studying heard about the Citrus Academy Bursary Fund. He applied for a bursary for his second year, and received funding for the remainder of his undergraduate studies, which he completed at the end of 2011. The following year he did his Honours in Agricultural Economics with assistance from the National Research Foundation.

“After graduating I started looking for a job and the Citrus Academy contacted me and asked if I would like to be part of the CGA internship programme. I jumped at the opportunity and spent 2014 working at the CGA offices in Durban. I worked under the supervision of Paul Hardman, mostly with market access issues. This was a remarkable experience and a great career opportunity. This was the first time the CGA had offered an internship and so I was the first CGA intern.” Sonwabo also attended a number of conferences, including the London Produce Show and Conference in the United Kingdom.

“It was an excellent opportunity to get a global perspective of the fresh produce industry. I was fortunate to receive sponsorship to attend.”

Before his internship at the CGA Sonwabo travelled to citrus production regions in South Africa as part of the CGA situational analysis team, with the aim being to determine where all the country’s emergent citrus farmers were located, and what industry assistance was required by these farmers.

Towards the end of his internship, Sonwabo was a member of the team that implemented the Citrus Emergent Export Excellence Programme, which meant travelling all over South Africa for almost three months with Programme Coordinator, Sam Louw, and Programme Facilitator, Louis Von Broembesen.

“This initiative was in response to the needs identified as a result of the situational analysis. Findings from the situational analysis were presented to the Department of Agriculture which led to these workshops. Louis von Broembesen taught me a great deal and was a strong mentor.”

Sonwabo was also invited by the Citrus Academy to attend the Ready-Steady-Work programme held in KwaZulu-Natal at the end of 2014. In March 2015, at the inaugural CGA Grower Summit, he was asked by CGA management and the Citrus Academy to do a presentation on the Citrus Academy Bursary Fund.

“This was a big moment for me. It was a very special opportunity to stand up and do a presentation in front of the assembled citrus industry. I can say that I truly enjoyed the 14 months I spent with the CGA.”

Sonwabo joined the SRCC in July 2015, and is currently on their graduate trainee programme, with the intention of working as a permanent employee for the company in the future. Working in the marketing department under the guidance of Jacques Victor, a senior accounts manager, Sonwabo assists with exports to the Middle East.

“The opportunities to get where I am today started with the Citrus Academy. They have shown good faith in me and allowed me to be part of their team. I worked closely with Sam Louw, who coached me on the ‘do’s and don’ts’ within the working environment. Thanks also to Justin Chadwick for the opportunity to be the CGA’s first intern. I have learned a great deal from the supervisors and mentors I have worked with these past two years. I was planning to go into the government sector and am very pleased that my path has opened into the private sector. The private sector is more stimulating and interesting, and there seem to be good career possibilities in this industry.”
**HOMBISA TIMAKWE** is a Senior Product Buyer for Volkswagen South Africa. She works at their headquarters in Uitenhage, 30 km west of Port Elizabeth. She lives in Port Elizabeth with her husband and is expecting their second child. Hombisa joined the Citrus Academy Bursary Fund in her second year as an undergraduate student at Nelson Mandela Metropolitan University (NMMU), and was on the fund from 2006 until 2009.

“I applied and had forgotten about the application when the Citrus Academy contacted me to tell me that I had been awarded a bursary! This was wonderful news, and as the fresh produce sector was very different to anything I had had exposure to, I had to read up on the industry.”

In 2008 she spent a year working at the Sundays River Citrus Company (SRCC) as part of her studies. “The time I spent there was a truly remarkable learning curve. Before I went I was apprehensive, but to my surprise they were very understanding and helpful, and the experience turned out to be much better than I expected. It was a life lesson for me to realise that people working in the field have a great deal of knowledge gleaned from experience, and that I could certainly learn a lot from them.”

Following her studies Hombisa began working for Toyota in Durban as a graduate trainee in 2010. She worked here for two years, but resigned when she got married in 2011 and moved back to Port Elizabeth, where she got a job at Lumotech, a lighting company in the motor vehicle industry.

“This job gave me a new love for procurement and logistics.” Hombisa then went on to work for Volkswagen South Africa in 2014, as a Senior Production Buyer in the production plant, where she is today. Her position involves global sourcing working with trees but realised that I did not know anything about the production process. While helping him at Mariveni I heard about the Citrus Academy bursaries.”

Kate applied for a bursary, which she received, and completed her National Diploma in Plant Production at the Lowveld College of Agriculture in Nelspruit at the end of 2008 and is currently doing her BTech degree through UNISA.

Kate grew up in Mariveni village near Letsitele, and after matriculating in 1996 studied Early Childhood Development at Soshanguve College in Pretoria. She was unable to find a job after completing her studies, and thus follow her ambition of opening a crèche. Kate’s brother Joseph, a shareholder in the Mariveni Farmers’ Cooperative, asked her periodically to help him with his citrus trees. Du Roi assisted the Cooperative at the time with technical and management input. “My brother’s involvement in the citrus industry motivated me to find out more about plant production, as I enjoyed

---

**KATE HLONGO** is currently the Audit Compliance Officer for Indigo Farming at Letsitele. She is both a former and current Citrus Academy Bursary Fund student. Kate completed her National Diploma in Plant Production at the Lowveld College of Agriculture in Nelspruit at the end of 2008 and is currently doing her BTech degree through UNISA.

Kate applied for a bursary, which she received, and completed her National Diploma in Plant Production at the Lowveld Agricultural College in Nelspruit. In 2008 she worked as a supervisor at Indigo Fruit Farming as part of her internship, and continued in the same position in 2009 while taking part in DAFF’s Agri-Industry Development Programme. She was employed full-time by Indigo as an Assistant Section Manager in 2010.

In 2014 she began working as an Audit Compliance Administrator, a new position within the company, and is currently responsible for ensuring that the company complies with the set standards, for the annual compliance audits for GlobalGAP, Tesco’s Nature’s Choice, Carbon Calculation, as well as Health and Safety.

“I’m also responsible for making sure that our production units are registered with DAFF. Every year DAFF officials visit the farm before the harvest to do citrus black spot inspections, to ensure that the fruit we export to countries in the EU meet the phytosanitary standards for CBS and false codling
Adriaan Serfontein completed his BSc Agriculture degree at the University of Stellenbosch, and is currently doing research for his MSc with the South African Sugar Research Institute (SASRI) in Mount Edgecombe, KwaZulu-Natal.

Growing up in Tzaneen in Limpopo, and with both parents working as plant pathologists at QMS AgriScience for many years, Adriaan had plenty of exposure to the citrus industry from a young age. Holiday jobs in the QMS laboratories and at packhouses further nurtured his love of agricultural science during high school, and after matriculating from Merensky High School in 2010, he enrolled at the University of Stellenbosch to do a BSc in Agriculture.

“My specific field of interest in agriculture lay in the business side, as I enjoyed the post-harvest part of the supply chain. The knowledge and understanding that I gained about supply chains in the post-harvest sector of the citrus industry helps me today with the supply chain in the motor industry.”

Kate’s message to young people is one of encouragement. “Make sure you take the opportunities that come your way. Be proactive and jump at these opportunities as they will not hang around for you. Stay motivated and keep pushing to get ahead. It is important to have a positive mind-set to get ahead.”

Volkswagen is a global company and Volkswagen South Africa has a mandate to source parts locally and to develop a local supply of parts for the industry. I have always had a passion for developing the supply chain and in this case it involves getting local suppliers up to standard to sell their parts to Volkswagen internationally. I assess suppliers and try to make them quality and price competitive. This is exciting and highly challenging.

“In the future agriculture is likely to become more and more important as one looks at global food security. None of us would be able to live without the agricultural sector. Agriculture has a vast array of opportunities for careers. My advice to young people considering a career in agriculture is to enter the industry with an open mind. Persevere as it is a big and stable industry with a great deal of opportunity, both in South Africa and globally. “I will forever be grateful to the Citrus Academy for their assistance as it was a lifesaver for me. When I started my tertiary education finances were tight. They funded me all the way through my studies. During my Industrial Engineering degree the Academy provided me with remarkable exposure to many aspects of the citrus industry, and taught me the importance of the agricultural sector to the South African economy. “My specific field of interest in agriculture lay in the business side, as I enjoyed the post-harvest part of the supply chain. The knowledge and understanding that I gained about supply chains in the post-harvest sector of the citrus industry helps me today with the supply chain in the motor industry.”
second year I changed my focus to Horticulture and Entomology. I applied for a Citrus Academy bursary during my second year (2012), and did vacation work at QMS AgriScience and Du Roi IPM. I received a Citrus Academy bursary in 2013 during the final year of my BSc, and I completed this at the end of 2014."

In 2015 Adriaan began his MSc as a full-time student with the South African Sugar Research Institute (SASRI) at Mount Edgecombe in KwaZulu-Natal, where he also now stays. "I heard about this opportunity during the final year when my current supervisor, Professor Des Conlong from SASRI, presented a course to our class at Stellenbosch. The project that I am working on is on the development of a handling and transport protocol of Eldana Saccharina Sugar cane borer for the Sterile Insect Technique. This can also be relevant to false codling moth in the citrus industry.

Doing my MSc through SASRI has been a remarkable opportunity for me, as SASRI is a highly respected institute to work for. I am currently completing the second year of my MSc degree, and I hope I have the opportunity to continue studying towards a PhD in the future.

The Citrus Academy bursary has been a huge relief to my family, especially as I have two younger brothers who are also entering tertiary studies in the science field. The Bursary Fund has made it possible for me to study without building up debts. I hope that I can assist the Citrus Academy in some way in the future, possibly through sharing knowledge about the industry and my particular field with other prospective students."
DR. NHLANHLA MATHABA is a Senior Researcher in Post-Harvest Technologies at the Agricultural Research Council (ARC) in Nelspruit. Nhlanhla matriculated from Uyengo High School in Empangeni in 2000 and, after 12 years of study interspersed with teaching, he received his doctorate in Horticultural Science from the University of KwaZulu-Natal.

“When I finished school I did not know what I wanted to do. I was from a rural area so there was not much in the line of career guidance available. I enrolled for the Science Foundation Programme in 2001, a bridging course offered by UKZN, which provides the required bridging between secondary and tertiary education, and began my BSc in Horticulture in 2002, completing at the end of 2006.”

“I did my complex Master’s degree from 2007 to 2009 which resulted in an upgrade to Doctorate. At this point my supervisor left the university, and as I was the only person in the Department that knew the material I was asked to teach for two years and fill these big shoes in his absence. While this slowed down my studies, I persisted and received my Doctorate at the end of 2012.”

During his studies Nhlanhla put a lot of energy into recruiting graduating students to continue studying within the post-graduate arena. He also designed the Master’s degree projects for a number of students during the time he was teaching.

“In 2013 I started my job with the ARC, and have attracted approximately R1 million in funding for various research projects (in citrus and litchis), and 12 students (Master’s and PhD levels from the University of Limpopo, TUT and UK ZN). The students provide capacity in developing the projects, while the industry exposure provides them with invaluable learning experience.”

“The years between matriculating and completing my Doctorate were 12 tough years. Good luck and hard work got me where I am today. When I was doing my undergraduate studies I regularly returned to my high school and surrounding schools to encourage youngsters to continue their studies. While working with the students at ARC I visited the University of Limpopo in Polokwane, and realised that they do not have a specialist in my field in their Agricultural Department, so now I teach postgraduate students about postharvest technology during their holidays. My dream lies in academia and I am passionate about research within the boundaries of teaching. I truly love the classroom!”

“I left school with an open mind and was prepared to see what interested me. My field of studies was quite a surprise to my family but today my mother is proud of me. The exposure to agriculture in my childhood was with my father who has since passed away. He worked for a forestry company and had his own vegetable garden and grew vegetables and sugar cane. I come from a big family and my dad used to tell us: ‘If you want me to buy meat for the family, sell some of the vegetables and then we can do that!’ My interest in agriculture is in the scientific side of farming.”

Nhlanhla applied for a Citrus Academy bursary in 2007 and studied with support from the fund until 2011, when he was able to pay for his continued studies with the income from teaching.

“If you look into my career life you will see that it is owed to nobody else but the Citrus Academy. My story is evidence that providing resources to empower keen young people within agriculture can be very successful. I am passionate about applying my knowledge to assist the industry and I love what I do! To kindle and sharpen passion requires resources to empower young people to follow this route.”

“The science of agriculture supports agriculture and agriculture supports human health and thus agricultural science is as important as medical science. Agriculture is fundamental to human health.”
There is more than a FELCO 4 . . .

Since 1946, the stalwart FELCO Popular, later renamed the FELCO 4, has been the most well-known and popular pruning shear, used by South Africans. However, FELCO has developed and added numerous innovative, purpose built tools, to their range over the years.

**New - FELCO 811**

This is the latest Electro portable pruning shears. Designed and manufactured in Switzerland with a 35 mm cutting capacity, a robust single-piece cast aluminium body with a lifelong guarantee and redesigned cutting heads, the FELCO 811 is a powerful, compact and efficient tool. It offers superior cutting quality over a long period of time. Lightweight and with an unobstructed cutting head, the FELCO 811 easily navigates through branches to prune. Effortless cuts up to 35 mm Ø and fast. A 3 year guarantee on battery, motor, electronics and lifetime on aluminium body.

**FELCO 820**

This FELCOtronic caters to requirements and expectations of pruning professionals, the FELCO 820 offers comfort and excellent performance. Effortlessly cuts up to 45 mm Ø, fast, ergonomic, efficient and reliable. A 3 years guarantee is offered on battery, motor, electronics and lifetime on aluminium body.

**New - FELCO 32**

Anvil model shear for harder woods. Easier wood penetration requires less hand-strength and cuts up to 25 mm Ø. Lifetime guarantee on any handle breakages.

**FELCO 231**

The best Anvil lopper for intensive pruning of large branches that you can possibly buy. Try and prove us wrong! 800 mm long, ultra light and cuts up to 40 mm Ø.

**New - FELCO 630 & 640 pruning saw**

Solid blade in chrome-plated steel, corrosion resistant and teeth hardened by pulse treatment. Clean, precise cut and curved blade for efficient cutting. One of the best pruning saws on the market. Money back if proven wrong.

We carry an extensive range of spare parts and are able to supply parts for manufactured models from 1946. All aluminum parts carry a lifetime guarantee with the use of original parts.

www.felco.co.za  Tel:021 9051890
Swiss Precision. Made to Last.

FELCO 811B
FELCO 820
FELCO 31
FELCO 32

www.felco.co.za  |  021 905 1890  |  082 458 6847  |  082 868 5008
The opening of The Junction Primary School at The Junction, one of Mahela’s farms, located in Letsitele, is a success story of the cooperation between Mahela Boerdery and the Department of Education. The idea has emerged in the early 1980s due to the need of Mahela employees. Mahela, together with the Department of Education, joined forces, and where the Department provides the school with teachers, Mahela maintains the school and grounds. Mahela and the children from nearby farms benefit from the school. That was the idea behind the school so that there is no need to travel to remote areas to attend school. Currently there are 104 pupils in The Junction school. There is also a vegetable garden from which fresh meals are prepared daily for the children.

The PPO Foundation, a company based in Switzerland, sponsored two sets of school uniforms and a pair of school shoes for each child in 2016. Similarly, there are sponsors for sports equipment and new mattresses for the Foundation Phase classes. The other grades each received a diary in which the children are requested to pencil their dreams.

This is the aim of the Mahela Group to help its employees to equip their children for a better future.

SUBMITTED BY
ALEXAN COETZER
CGA Regional Representative, Letsitele

---

**Rise and Shine**

(A POEM AND LETTER OF THANKS BY ONE OF THE STUDENTS)

You are the brightest shining star of Mafarana Circuit.

Yesterday you were walking bare footed, but today will get brand new shoes. They say you are number last but tomorrow you will be number one.

You welcome all of us honoured guests.

You prepare a table in front of our enemies.

When mam Khombos says I am old, you say she will ran a marathon at Rio and bring back to South Africa a gold medal.

You have bred Managers

Oh today you are pregnant with doctors and engineers.

Rise and Shine they say you are a farm school, but we know you are a school of excellence.

You are on the shoulders of a giant

Mr Nonsense Mahahela Vorsetter.

Rise and Shine. You are the Junction of Excellence.

Yes Rise and Shine
Following the successful launch of the Citrus Business Management Programme in the Kat River Valley during 2014 – 2015, the second round of programme commenced on 16 January 2017 in the Letsitele / Hoedspruit area.

The programme was developed in response to a need identified after a situational analysis was conducted amongst emergent citrus growers. One of the findings of the analysis was the need for developing the internal capacity of emergent grower enterprises to manage their businesses. At a time when large amounts of funding are being made available through various government programmes, which brought with it opportunities for accelerated development for many farms, it has become even more important to enable sound financial management. Turning capital investment into profitability is a priority for all farmers.

In response to this need, the Citrus Academy identified the New Venture Creation NQF 4 qualification, registered with the Services SETA, as the most appropriate basis for the programme. It was contextualised for the citrus industry by Citrus Academy and is presented by Zama Madikizela and Mpho Mazubane from Scientific Roets, an accredited service provider from Kokstad.

The programme takes place over a period of eight months and consists of the following modules:

- Learner Induction and Orientation
- Think Like an Entrepreneur
- Plan Your Business: Financial Aspects
- Launch and Grow Your Business
- Manage Your Business: The Basics
- Manage Your Business: Finance for Agri-business Managers
- Manage Your Business: Human Resources
- Manage Your Business: Sales and Marketing
- Improve Your Business Performance
- Present Your Competence

Eighteen emergent farmers from Mabunda, Mariveni and Masungi Family Trusts enrolled for the programme, as well as two farm managers from Bosveld Citrus (Pty) Ltd. The emergent growers are sponsored by AgriSETA discretionary grants for learnerships implementation.
The PhytClean Project is a specific joint cooperation between DAFF and FSA to build a central data hub to manage the data on which the system is built. This central data hub will then be a reference point for all industry stakeholders to check the suitability of orchards, consignments and pallets for specific markets. By having one live “truth” it is anticipated that better and faster decision-making can take place, thus improving South Africa’s overall performance at managing phytosanitary compliance.

Within FSA, Citrus Growers Association of Southern Africa (CGA) has been driving the project and essentially acting as secretariat. Overall project management structures are also coordinated by DAFF and CGA but it is anticipated that DAFF will be taking more leadership of the project in 2017.

Current Status of PhytClean Project

Online phytosanitary information management and exchange has been taking place in the citrus industry since 2015. This was primarily focused on the Citrus Black Spot (CBS) problem to the European Union market and specifically designed in order to support the CBS Risk Management System. There were approximately 1400 users of the system in 2016 and a considerable number of data files passed between machines automatically.

The actual building of a new PhytClean platform began in May 2016. This new platform is designed to cater for all fruit kinds under FSA and is much more flexible. As new rules or requirements are introduced they can be added to the system easily. Although conceptually this may sound rather simple, at a coding and practical level it is extremely tricky as one has to plan for all types of real-life issues while also taking into account the pressure on IT systems and resources. It was for this reason that the system did take longer to go live.

Going Live

In the first week of February the new data platform was turned on. A phased approach was adopted to switching on functionality allowing each step to be tested in a live environment (despite ongoing testing in the development environment!). The initial focus was on getting DAFF and PPECB users up and running with the system before making it available to a larger number of stakeholder users. It has also been further agreed to make the transition with the citrus-industry CBS Risk Management System functions first and put users in the same position as they were with the previous version of the platform.

Users of the new platform will have noticed greater opportunities to filter, sort and arrange the data to make capturing and viewing simpler and easier. Some immediate challenges included the running speed of the system and various ways of improving and optimizing the platform to reduce user delays.

Update on EDI Standards Authority for the Fruit Industry (ESAFI)

ESAFI is a separate entity to the PhytClean project and whose purpose is to establish and manage electronic standards needed for data to be successfully shared and interpreted between machines. Without consistent use of terms for cultivars, food business operators, orchards, consignments, etc. it is impossible to operate an official phytosanitary certification process. Seven ESAFI meetings took place in the latter part of 2016. These engagements focused on: aligning the cultivars indications in the Agricultural Products Standards Act (Act 119 of 1990), the PPECB 3-digit codes and the codes used for phytosanitary registration (currently on Version 6); the definition of Food Business Operators and orchards; port and vessel indications (currently on version 3); and country and region indications (currently on Version 1). Copies of the Standards are available from the author.

Considerable more work needs to take place...
in 2017 within ESAFI to get these standards published and known among users.

PhytClean Project Plans for 2017
In broad terms there are three main goals for 2017 for the PhytClean project team:

1. **Stabilize the new data platform**: It is critical the new data platform delivers equivalent or better functionality over the older version and runs smoothly. This will be the number one priority for 2017. There has never before been a system built like this in SA, or in the rest of the world, and all learning has to be done “on the fly”. The PhytClean team are anticipating that there will be challenges – and are prepared to take them on! In 2017 a shift in how the Phytosanitary Certificates are issued will also add some additional opportunities for efficiency with PPECB likely to play a significant role here. This will mean PPECB systems will need to integrate with the PhytClean system at different levels.

2. **Adding other fruit industry onto the system**: As mandated it is important that the other fruit industries be added to the system. An engagement and planning process will be embarked upon in the first quarter of the year so that during the second half of the year more users from other fruit industries will be able to make use of the system.

3. **Adding functionality**: The next goal will be to widen the scope of the project beyond just the CBS Risk Management System requirements in the citrus industry and focus on the Japan and South Korean market for citrus. Both these markets have processes that are very manual and lend themselves to much efficiency gains by moving these processes onto an electronic platform. The idea would be to pilot these concepts in the first few months of the year.

**Conclusion**
The PhytClean Project finds itself at a very exciting time as much planning and preparation is finally being converted into real-life functionality for users in the fruit industry. However, there is still a long way to go before the wider objectives of the platform are met. But as one exporter put it: “We now have a bicycle, let’s ride it!”

---

First Fruits Consulting verwelkom graag die volgende personeel wat pas by die span aangesluit het:

Danie de Villiers; BSc Aardwetenskappe, US. Danie is verantwoordelik vir presisie landbou dienste.

Jacobus Swanepoel; BSc (Grond/Hort) ingeskrywe student, US. Tegnikus, Presiese landbou dienste; Plant voedingskundige, sitrus.

Karin Shehab; EBM N4,5, Northlink College. Administratiewe assistant.

Linelle Schlott; BCompt, UNISA. Interne finansiële dienste.

First Fruits se tegniese advies en dienste aan sitrus produsente sluit in:

BESPROEIING SKEUDELERING | GESPECIALISEERDE PLANTVOEDING
PRESISIE LANDBOU DIENSTE | VRUGSET & VRUGKWALITEIT MANIPULASIES
SNOEI | NUWE BOORD ONTWIKKELING

www.1stfruits.co.za  |  Tel: 021 001 3134
INTEGRATED PEST MANAGEMENT
T G GROUT, S D MOORE & A MANRAKHAN

Phytosanitary pests
All the recommendations made in the Extension Briefs for February and March also apply to this period. Fruit fly control in citrus areas is critical due to phytosanitary concern associated with fruit fly pests. Fruit fly control should be initiated in mid to late summer. In areas with historically high fruit fly numbers, control should have been initiated as early as December, particularly in those areas with mixed deciduous and citrus cultivation. Monitoring numbers of fruit flies and false codling moth (FCM) is also critical. Remember that for Medfly, the threshold in a Capilure baited trap is 4 males per week whilst for Natal fly, the threshold in a Capilure baited trap is 2 males per week. The Oriental fruit fly (OFF), Bactrocera dorsalis, is now considered present in Limpopo province and in a number of areas in Mpumalanga, North-West, KwaZulu-Natal and Gauteng provinces. Surveillance monitoring of OFF using methyl eugenol baited traps is a requirement for phytosanitary registration of citrus for export to special markets. Trap details and trap servicing should be recorded as per trapping guidelines (http://www.citrusres.com/market-access). In areas where OFF is absent, growers should continue monitoring and if suspect specimens are found, this should be reported immediately to the relevant authorities. In areas where OFF is present, the threshold in a methyl eugenol baited trap is 3 flies per trap per week. When using Questlure in a Sensus trap, the threshold is one female fly per trap per week, irrespective of fly species. If thresholds are exceeded, control actions must be increased. Control actions for fruit flies include the use of protein bait sprays or and bait stations and orchard sanitation. Where OFF is present, growers should also apply registered methyl eugenol-based Male Annihilation Technique (MAT) (e.g. Invader-b-Lok, a block impregnated with Chempac ME lure and malathion, or Static Spinosad ME). Surveillance monitoring of OFF provides the grower with an evaluation in commercial terms, of all control programmes implemented during the season and also assists with pest management decisions for the season to follow. With the trend towards selective picking and a variable degree of culling occurring in the orchard, it is more accurate to conduct the final analysis of fruit blemish factors after picking starts. Care must be taken to include fruit from inside the trees and all blemish factors or pest infestations should be recorded, whether they are sufficient to cull the fruit from export quality or not. Having taken the sample, it is important to record separately each pest or other blemish factor that is severe enough to downgrade a fruit in its own right. With this procedure a particular fruit in the sample may be shown to have more than one factor that can cause it to be culled from export.

Blemish factor analysis
The analysis of fruit blemish factors on the tree just prior to harvest or once fruit have been harvested, provides the grower with an evaluation in commercial terms, of all control programmes implemented during the season and also assists with pest management decisions for the season to follow. With the trend towards selective picking and a variable degree of culling occurring in the orchard, it is more accurate to conduct the final analysis of fruit blemish factors after picking starts. Care must be taken to include fruit from inside the trees and all blemish factors or pest infestations should be recorded, whether they are sufficient to cull the fruit from export quality or not. Having taken the sample, it is important to record separately each pest or other blemish factor that is severe enough to downgrade a fruit in its own right. With this procedure a particular fruit in the sample may be shown to have more than one factor that can cause it to be culled from export.

CROP AND FRUIT QUALITY MANAGEMENT
P.J.R CRONJE & O.P.J. STANDER

General Stage II of fruit development is ending, with stage III commencing with little or no increase in fruit size as the fruit mature, i.e. increase in juice content, total soluble solids (Brix°) and reduction of titratable acidity (TA). Lower autumn temperatures will affect rind colour but GA3 (Progibb®) and Nitrogen applications later than 5 months prior to harvest, would have resulted in retarded colour development.

Maturity indexing: Commence maturity index-
ing on early and mid-season cultivars in order to harvest at optimal maturity and facilitate an adequate shelf life. Weekly samples from 10 representative trees should start 4 to 6 weeks before the expected harvest date. Titratable acidity is determined by titration with sodium hydroxide, sugar content (Brix°) is determined by a refractometer, the sugar:acid ratio calculated and fruit colour should be read from a colour chart. Results should be recorded and used in comparison with previous seasons in order to identify and manipulate possible problems with internal and external quality parameters.

Pickers training and monitoring: Training of pickers is important and the workers should be familiarised with important protocols during picking and handling of fruit. Picking bags should always be carried on the side of the waist to avoid crushing of fruit between the body and the ladders, bins or trees. Picking bags must be free of leaves, shoots or sand and kept dry throughout. To avoid lesions on fruit, finger nails of pickers should be short and clippers and ladders handled correctly, i.e. no long stems and limited contact between ladders and fruit. Low-hanging fruit very close to the ground, or touching the ground, or dropped fruit should be removed a day or two prior to harvesting an orchard, to lower the risk of sour rot development in export cartons. At each bin, sorters wearing gloves should be stationed to monitor fruit quality.

Pruning of early cultivars (Satsuma, Clementine) should be done during this period as soon as possible after harvest. Prune more heavily after a light crop and if a heavy crop is expected, and when the orchard has a history of alternate bearing. Old twigs and dead shoots should also be removed to limit wind damage of the next season’s crop. Pruning should be effective to ensure sufficient light distribution and spray penetration into the centre of the canopy.

Postharvest foliar urea application: A foliar application (low biuret urea at 1%) can be applied on early cultivars (Satsuma, Clementine) as soon after harvest as possible.

CITRUS BLACK SPOT DISEASE MANAGEMENT
P.H. FOURIE & M. KELLERMAN

General: At this stage, most growers should have completed all their scheduled preharvest sprays for Citrus Black Spot. Since CBS symptoms only appear on mature fruit, absence of preharvest symptoms is not necessarily indicative of successful CBS control. It is advisable to assess the CBS risk of orchards to exclude export from high-risk orchards to CBS sensitive markets. Here are some suggested criteria that can be used:

• CBS history of orchard: older orchards tend to have more CBS, but various factors (such as cultivar susceptibility, topography, orchard condition, canopy density and efficacy of spray deposition, etc.) can influence the disease pressure. If monitoring records were kept, growers will be able to identify orchards with a higher CBS incidence. Orchards where CBS disease incidence was high in the previous two seasons can expect a higher inoculum pressure in the past season.

• Inoculum management: monthly removal of all fallen leaves from late winter through the fruit susceptibility period was shown to be as effective as full CBS spray programmes. Conversely, pruning debris that is left in the orchard will contribute to the inoculum pressure. In is unclear to what extent shredding of pruning debris will limit ascospore production on leaves, but growers are advised to at least shred their pruning to a very fine particle size (< 5 cm2); the smaller, the better! Likewise, removal of all out-of-season fruit is important to limit pycnidiospore inoculum.

• Prevailing weather conditions: the CBS pathogen can only infect fruit if warm and wet conditions were experienced during the fruit susceptibility period (4 to 5 months after fruit set). A comparison of suitability of weather conditions for CBS experienced in the past season with previous seasons will be indicative of the relative risk. Growers are also encouraged to register on CRI-PhytRisk (www.cri-phytrisk.co.za) to compare the CBS infection forecasts for the season with the spray programme that they followed. If all infection periods were protected, the CBS risk should be lower; assuming that sprays were effectively applied during weather conditions suitable for spraying (this can also be observed from CRI-PhytRisk), and effective fungicide coverage and deposition was achieved.

GRONDEGODRAAGDE SIEKTES
M C PRETORIUS & JAN VAN NIEKERK

Phytophthora en aalwurmbeheer Winterreënval gebiede soos die Wes-Kaap moet nou Phytoph-
**Thura** and aluwurmontledings laat doen. Beheerprogramme moet begin na die eerste goeie winterreëns. Beheermaatreëls moet ’n program van twee maar verkiezlik drie toedienings (twee maande uitmekaar) insluit. Let op residu-weerhoudingstydperke van aluwurmdoders en lees die ETIKETTE van die verskillende produkte!!

**Wortel en kraagvrot Phytophthora** wortel en kraagvrot beheerprogramme in die Wes-Kaap kan in die herfs begin. Ridomil wortelsone behandeling (2.1 mℓ/m²) en fosfonaat blaarspuitings kan gebruik word. Drie fosfonaat, toedienings twee maande uitmekaar, behoort gedoen te word. Let op weerhoudingstydperke.

**Waterbestuur / Water management**

**J T Vaehmeijer**

Besproeiingskedulering / Irrigation scheduling

Mature citrus trees require between 7 000 and 10 000 m³ water per hectare per year. Water is lost through evaporation, run-off, leaching and transpiration. Transpiration and in some instances leaching are beneficial to the trees and therefore not viewed as a loss. However, non-beneficial losses should be kept to a minimum. Evaporation is largely determined by climatic factors such as radiation, temperature, relative humidity and wind. Run-off is determined by infiltration rate, slope and application rate. Non-beneficial leaching occurs when water penetrates to below the root zone.

Evaporasie kan verminder word deur te verseker dat druplyne bo-op riwwe vasgemaak is om te verhoed dat water teen die kante van riwwe afloop. Sodoende word die oppervlakte vermindere waarvan water kan verdamp. Die grondoppervlak kan ook met organiese materiaal bedek word om verdamping te verminder. Afloop kan verder beperk word deur sekere te maak dat die toedieningstempo van die besproeiingswater nie hoër is as die infiltrasiestempo van die grond nie. Die periode van besproeiing moet genoegsaam wees om die wortelsone tot veldkapaiteit te benad en sodoende oormaat dreinering of afloop te veroorsaak. Die instandhouding van besproei-
ingstoerusting is belangrik om te verseker dat die toerusting in 'n goeie toestand is en dat daar geen lekkasies, is nie.

The difference between field capacity and the actual soil water content is called the “soil water depletion”. Irrigation timing and the amount of water to be applied are determined by monitoring or estimating soil water depletion and applying water when the depletion reaches a pre-selected level, called the management allowable depletion.

Grondvogensors wat die grondwaterinhoud meet, is 'n beter aanduiding vir “wanneer” en “hoeveel” besproei moet word as die gebruik van gewasfakte of die sogenaamde kalendermetode, waar besproeiing op 'n voorafgepaalde tyd plaasvind, bv. elke Dinsdag en Vrydag.

**Tensiometers**

Tensiometers are installed in pairs. The ceramic cup of the first tensiometer must be in the root zone and the second cup should be below the root zone. For most soils the reading should be between -5 to -20 kPa at field water capacity. No tensiometer should remain on zero or even at -5 kPa for too long as this is an indication of water-saturated conditions. As the soil dries out, the tension slowly increases (readings become more negative) until a certain inflection point is reached. This point is characteristic of the soil and lies between -30 and -70 kPa. The tension increases rapidly after the inflection point has been reached.

For sandy soils, irrigation should probably commence at a tension of -30 kPa and in a clay soil at -40 to -50 kPa. However, it is important to note that these values are characteristic of the soil and should be determined for each irrigation block.

Irrigation is scheduled according to the readings of the shallow tensiometer. The deeper placed tensiometer monitors over and under-irrigation. If the deeper placed tensiometer continuously gives a low reading then over-irrigation is indicated. However, if it gives increasingly higher readings, in spite of irrigation, it indicates under-irrigation.

**Kapasitans “probes”**

Kapasitans “probes” meet op verskillende dieptes die relatiewe waterinhoud van die grond. Hierdie metings geskied op 'n kontinue basis (elke 30 of 60 min). Die sagteware maak voorsiening dat

**Profielput**

'n Profielput in die wortelzone van die bome kan weeklikse of selfs twee-weeklikse gegrawe word. Die waterinhoud van die grond word dan visueel waargeneem en die besproeingskedulering word daarvolgens beplan. Die voordeel van hierdie metode is dat probleemareas geidentifiseer en geïnspekteer kan word.

**POSTHARVEST PATHOLOGY- WASTE PREVENTION CHECKLIST**

K H LESAR, W DU PLOOY & P H FOURIE

The origin of decay

All the postharvest citrus diseases are present in the orchard. Around 1% of the fruit harvested will have established green mould infections; this needs to be dealt with swiftly by the packhouse. The packhouse needs to convey the importance of the following practices to the orchard management.

- Sanitation to minimise the inoculum (spore) load in the orchard
- Establish protocols to minimise wounding of fruit during harvesting. Prevention of wounds will dramatically reduce the incidence of infections.
- Optimise FCM and fruit fly control to minimise wounds and risk of decay.
- Treat the fruit within 24 hours of harvesting. This will enable the postharvest fungicide/s to curatively control established infections.

**The packhouse can make or break it**

The time taken from the tipping of fruit to wax application is short and every single process must be managed diligently to reduce the risk of waste.

**Chlorine treatment**

- Measure ORP – it should be ±800 mV
- If ORP is too low, measure pH and concentration
- pH should be 6.5 – 7.5
- Concentration should be 75 – 100 ppm (active chlorine) or 100 – 200 ppm (total chlorine)
- The concentration needs to be monitored continuously and an automatic dosing system is highly recommended
Pre-packhouse drench

- The CRI factsheets list all the possible options for the pre-packhouse drench and need to be consulted.
- It is imperative to have adequate water flow in order to have all the fruit in all the bins drenched thoroughly – drenches must deliver at least 500 L drench mixture/bin/min.
- Pre-suspend fungicides in warm water and add to tank while agitating, remember to use the order SC > EC > SL, then fill tank to correct level.
- Exposure time 1 to 3 min.
- Replace mixture after 150 bins (1000 L tank), or 200 bins (2000 L tank), or 300 bins (3000 L tank).
- Constant agitation – the system must be in operation for at least 15 min before use.

Fungicide dip tank and In-line drench

- The imazalil concentration should be managed continuously by means of titration and maintained at 500 ppm.
- The pH level of imazalil sulphate solution should be kept stable to ensure consistency in terms of residue loading. An automatic dosing system for pH is recommended.
- pH 3 will result in lower residue levels (around 0.5 ppm), but can still give excellent curative control if exposure time is 60 – 90 seconds and fruit is treated within 24 hours of infection.
- pH 6 will result in higher residue levels (around 1-2 ppm), but the exposure time needs to be limited to 45 seconds to prevent MRL exceedance.
- The CRI factsheets list all possible options for the fungicide tank in-line drench, and need to be consulted.
- If not replaced on a daily basis, the fungicide solution should be pasteurised every evening by increasing the temperature to 60°C and then letting the solution cool down overnight.

Wax application

- Fruit should be dry before entering the wax applicator – wet fruit will hamper the efficacy of this treatment.
- It is highly recommended to apply imazalil in the dip tank and thereafter in the wax. The wax application will ensure good protective control and sporulation inhibition of green mould, while the dip application provides excellent curative control.
- Wax containers / tanks should be agitated continuously (i.e. 24 hours a day) to ensure that thiabendazole and imazalil stay in solution and do not precipitate; if not, they will precipitate and lead to MRL exceedance. Containers should also be tightly sealed to prevent the wax formulation from deteriorating.
- Do not use air bubbles as an agitation measure for this reason as it breaks the wax formulation down.
- Ensure that fruit is totally and uniformly covered in wax; if not, contact your wax suppliers for support.
- Ensure that wind from the drying tunnel is not blowing back onto the wax applicator. This will cause wax to dry on the last brushes and could cause injury to the fruit rind.

Cold chain

- Fruit should be placed under cold storage as soon as possible.
- Maintaining the cold chain will reduce the incidence of green mould infections and physiological rind disorders.
- Never break the cold chain.

Sanitation

- Packhouse sanitation is all about keeping inoculum (spore) levels as close to zero as possible.
- No sporulating green or blue mould fruit should be visibly present anywhere near the packhouse.
- Remove and discard any waste fruit in closed containers from the packhouse as soon as possible.
- Do not allow fruit destined for the juice factory to be anywhere near your packhouse.
- Sanitation is an effective way of preventing fungicide resistance from developing.

Remember

Fresh citrus fruit is a high-risk, perishable commodity. The fruit is alive, therefore respiring, and the shelf life and quality need to be maintained.

The packed export crop must be moved from the packhouse into the cold chain as soon as possible, thereby reducing the risk of loss of quality and waste. Always handle fruit postharvest according to the Time and Temperature Protocols for Citrus: refer to Cutting Edge No. 99.
Monitor and manage your farm with GPS precision

- RECEIVE DAILY REPORTS OF YOUR SPRAYING ACTIVITIES
- MONITOR DRIVING HABITS OF TRACTOR DRIVERS
- CALCULATE PRODUCTIVITY OF DRIVERS DURING SPRAYING
- DETECT MISSED ROWS DURING SPRAYING
- TRACK ALL YOUR TRACTORS ON YOUR FARM

Contact Farmtrack on 021 880 1163

www.farmtrack.co.za
Introduction

The growth of citrus production in South Africa has necessitated that growers establish new orchards on sites where citrus has been cultivated previously for many years (Burger & Small, 1983). Replanting on old sites has led to replant disease occurring like in many other parts of the world (Le Roux et al., 1998). This phenomenon is observed where young, healthy nursery trees are planted on old orchard sites. It is characterized by the young trees being stunted with small leaves and showing low vigour (Derrick & Timmer, 2000).

The causal agents associated with replant disease in South African citrus orchards are regarded as the citrus nematode, *Tylenchulus semipenetrans* and the soilborne pathogens, *Phytophthora nicotianae* and *P. citrophthora* (Le Roux et al. 1998). These organisms build up in orchard soil during the lifetime of the orchard. Once the orchard is removed, pathogen inoculum remains in the soil and infests the newly planted trees (Matheron & Porchas, 2009). Soil fumigation is the only proven method to reduce the levels of the abovementioned organisms in the soil.

Le Roux et al. (1998) found that if soil fumigation with methyl bromide was done prior to replanting, the net income would be significantly higher compared to replant sites where no pre-plant fumigation was done. However, the use of methyl bromide to treat citrus replant soils is no longer an option due to the phasing out of methyl bromide in South Africa. Selecting the correct fumigation compound or active ingredient is therefore important to get the desired effect as the currently available actives do not have the broad spectrum activity that methyl bromide had.

Le Roux et al. (1998) furthermore noted in his study that there could be differences in the soilborne pathogen and plant parasitic nematode populations between replant soils. When making decisions about preplant soil fumigation, the following points should be considered.

1. What is the current pathogenic organism status in the soil? Is it predominantly soilborne pathogens such as *Phytophthora nicotianae* or is it predominantly citrus nematodes?

2. What fumigation product or active ingredient is the most suited to control the pathogenic organisms present in my replant soil?

3. How do I select the correct service provider to apply the soil fumigation?

This article aims to provide some guidelines to growers as to how to go about answering the abovementioned questions, thereby ensuring that the fumigation that is done is effective, preventing serious citrus replant problems.

Determining the pathogenic organism status of replant soil

Representative soil and root samples must be taken in the orchard identified for replanting in order to determine the status of soilborne pathogens and nematodes in the soil. Before cutting the irrigation to the orchard, in preparation of tree removal, sampling must be done. The following points outline the procedures to follow to take representative soil samples in the orchard.

- When taking samples, the soil in the orchard must be moist (not excessively wet or dry).
- Select 20 trees randomly for every 1 000 trees in such a way that the trees are representative of the 1 000 trees. In large orchards, more samples...
must be taken with a minimum of 20 trees per 1 000. If different rootstocks or soil types are present in the orchard, separate samples must be taken from these.

• From each of the selected trees a subsample of soil and roots must be taken from beneath the tree, halfway between the trunk and dripline of the tree (Figure 1).

• Before taking the subsample, weeds and plant debris and the top 2 cm of soil should be removed from the sampling area. Using a spade, take a subsample from the top 15 cm of soil (Figure 1).

• For Phytophthora analysis, each subsample should consist of approximately 20 g of soil. Combine the subsamples, mix them thoroughly, and from this take a composite sample of 200 g (two large double handfuls) of soil (Figure 2).

• For nematode analysis, 40 g (one large double handful, Figure 3) of feeder roots should be included in the composite sample. Here again it is best to mix the roots from abovementioned subsamples and take a 40 g composite sample from this. Roots sampled must not be thicker than 1-2 mm.

• The root and soil sample must be put in the same bag to prevent the roots from drying out (Figure 4).

• Sample bags must be clearly marked with the relevant information that must include farm name, orchard number and sample number (Figure 4). Do not put the label inside the bag as the paper will disintegrate during transit.

• All samples must be kept in a cool place, out of the sun until dispatch to a suitable diagnostic laboratory.

**Deciding on the fumigation chemical to use**

Results from soil and root analysis will indicate which fumigation chemical to use. In the case of citrus nematode females, the threshold value is 1000 females per 10 g of roots. If this threshold is exceeded in most of the samples, without testing positive for Phytophthora, then the fumigation agent used must be an active ingredient that will target nematodes. If the majority of the samples show that there are very low levels of nematodes present, but they test positive for Phytophthora, then the fumigation should target Phytophthora. If samples test positive for Phytophthora and the nematode threshold is exceeded, then the fumigation agent must be a mixture of active ingredients.

In South Africa chloropicrin (CP) and 1,3-dichloropropene (1,3-D) are mostly used for soil fumigation. Many products contain mixtures of these active ingredients in different ratios. Depending on the status of pathogenic organisms in the soil, one of the two actives or a specific mixture should be applied.

CP has strong fungicidal activity but is less effective against nematodes and weed propagules (Ruzo, 2006). Therefore it is often used in combination with other fumigants, such as 1,3-D, to broaden its efficacy of pest control (Duniway, 2002; Martin, 2003). Duniway (2002) reported very good activity of CP in controlling Phytophthora spp. in strawberry fields. Therefore, in cases where citrus replant soils contain high levels of Phytophthora with little or no citrus nematodes, chloropicrin or a mixture with high chloropicrin content will be the best option as fumigation agent.

1,3-D was developed to be a nematicide (Duniway 2002; Ruzo, 2006) but also has fungicidal properties which causes it to be used as a preplant fumigant (Martin, 2003; Ruzo, 2006). It is applied on its own or in a mixture with chloropicrin (Duniway, 2002; Martin 2003). In trials done for the control of citrus nematode it was found that a preplant soil fumigation with 1,3-D gave prolonged control of the citrus nematode. The effect observed in these trials was comparable to methyl bromide.

**Figure 3.** A double handful of feeder roots makes up one representative sample for nematode analysis.

**Figure 4.** Soil and root samples must be combined in one bag that is clearly marked with relevant information.
control treatments (Jhala et al., 2011; Schneider et al., 2003). Therefore, if citrus nematode is the main replant problem, then fumigation with 1,3-D or a mixture with a large component of 1,3-D is the option to use.

Selecting a capable service provider
Getting the right service provider to apply the soil fumigation is almost the most important step in the whole soil fumigation process because if the application is not done properly, then it is a wasted exercise.

There are certain minimum legal and regulatory requirements that a pest control operator (PCO) must fulfil. These are that he/she must be registered as a PCO according to the regulations set out in Act 36 of 1947. If your selected PCO is registered then you know that he/she fulfils the following:

1. was trained in the application of fumigants and first aid,
2. has at least 12 months’ practical experience in the application of fumigants under the direct supervision of a registered PCO,

Although 12 months’ experience is according to the law the minimum requirement for a PCO to be able to apply soil fumigation, it is always better to contract a PCO that has as much experience as possible, especially in the fumigation of replant soils of tree crops. Experienced PCOs will give correct advice on the soil preparation before fumigation, apply the fumigant in the correct way and under optimal conditions and will follow the correct safety procedures.

Conclusion
Soil fumigation in a citrus replant situation can significantly contribute to the long-term profitability of the replanted orchard. However, if done incorrectly it will be a wasted exercise.

References cited
The Hex River Valley table grape block competition has been successfully completed and the much anticipated announcement of the winners was made at the annual gala evening at the Hex River Valley members’ club at De Doorns on the 27th of January. The competition and function are hosted by the HTA (Hex Valley Table Grape Association) and NSF International is one of the main sponsors. NSF has a long standing relationship with the table grape producers in the Hex River Valley providing GLOBALG.A.P. certification and training to the area.

Prior to the announcement of the winners one of the panel of judges Chris Potgieter of Dole explained to the audience what the criteria for selection were. This year’s overall winner was Paul Joubert from Cape Orchard Company - Idlewinds production unit with a block of Crimson Seedless. In second place was Jacques de Kock of De Vlei Boerdery’s - Mooiuitsig production unit with a block of Sweet Sapphire. In third place was Marno Bothma of De Vlei Boerdery’s - Matrooskloof production unit with a block of Sweet Joy. In fourth place was Pieter Joubert of Buffelskraal with a block of Sugraone and in fifth place was WJ van Wyk with a block of Melody.

The winner in the Young Vineyard Block division of the competition was Marno Bothma of De Vlei Boerdery’s - Matrooskloof unit. This was for a block of Sweet Sapphire. This is the second year in a row that Marno Bothma has won the first prize in the Young vineyard block division. In second place was Jacques de Kock from De Vlei Boerdery’s – Mooiuitsig unit with a block of Melody. In the third place was Philip Lourens of Villian Farms - Grand View production unit with a block of Melody. The prizes were presented by HTA Chairman Fanie Naudé.

The gala event held annually to announce the winners of the Block competition is the highlight of the local social calendar. The function is always well attended and this year was no exception with 340 guests in attendance. The evening was a great success and was made possible by the generous sponsorship of service providers to the local table grape industry.

The annual vineyard block competition was established in the Hex River Valley in 1976 and is the oldest competition of its kind in the South African grape industry. The purpose of the competition is to give producers the chance to show optimum production methods and the resulting crop yields. Producers enter their best vineyard blocks and these are judged by a selected group of independent table grape experts. The competition provides the occasion for producers and managers their managers to show their production skills and to share the technical knowledge necessary for successful production. Competition and friendly rivalry between entrants is evident as producers compete for this honour the attractive prizes on offer for the winners generally act as further encouragement.
Vroeër jare en selfs tot onlangs was die algemene siening in die Sitrusbedryf dat ‘n snoeiskêr nie naby ‘n sitrusboom gebring moet word nie. Verskeie faktore het egter daartoe geleë dat snoei in hierdie gevorderde era ononderhandelbaar geword het. Gevorderde produksiepraktyke is oor die jare gedryf deur markvereistes, vereistes tov marktoegang en volhoubare sitrusboerdery. Produksiepraktyke moes oor die jare aangepas word om winsmarges te optimaliseer. Die mikpunt is nou om dmv snoei genoeg sonlig in die boom te kry sodat die totale dra-area benut word, met n egale sonligset regdeur die boom.

Wanneer al die verskillende produksiepraktyke in aanmerking geneem word, kan snoei uitgesonder word as die enkele praktyk waarmee die meeste produksiefaktore gemanipuleer of beïnvloed kan word, gesien vanuit ‘n tuinboukundige-, siektebestuur- en plaagbestuur oogpunt.

Om al die voordele van snoei te benut is dit belangrik om die beginsels van snoei te verstaan. Elke produsent moet weet wat hy wil bereik en verstaan hoe hy wil snoei om sy doelwitte te bereik. Hoewel die basiese beginsels van snoei vir al die verskillende sitrustipes dieselfde is, moet snoeipraktyke aangepas word om die verskille in groeiwyses tussen die verskillende sitrustipes te akkommodeer. Met die regte gesindheid word snoei nie as ‘n koste-item gesien nie, maar as ‘n winstgewende praktyk.

**Effek van snoei op tuinboukundige faktore**

---

**Lighuishouding:** Sonlig is krities belangrik vir die proses van fotosintese om koolhیدrate te vorm, wat onontbeerlik is vir vrugset en vruggroei. Namate ligintensiteit afneem, neem fotosintese af tot by die punt waar dit so laag is dat die blare ophou fotosinteer, afval en takkies begin terugsterf. Takterugsterwing binne-in die blaardak is die eerste simptome van ‘n tekort aan voldoende sonlig. Daarom is dit so belangrik om sonlig, wat gratis verskaf word, doeltreffend te bestuur. Die beginsel strek verder dat ogies wat nie aan voldoende ligintensiteit blootgestel word nie, nie sal bot en blom en enigsins vrugte dra nie.

**Onvoldoende sonlig**

Hierin is twee faktore belangrik, nl ligonderskepping en ligverspreiding. Ligonderskepping is die hoeveelheid sonlig wat per oppervlak deur blare onderskeip. Ligverspreiding is die hoeveelheid sonlig wat binne-in die blaardak versprei word en wat hoofsaaklik deur snoei beïnvloed kan word. Indien dit nie bestuur word nie, verdig bome tot so ‘n mate dat daar mettertyd ‘n dooie area reg in die middel van die blaardak ontwikkel wat geen blare of vrugte dra nie. Indien daar wel enkele vrugte set, is die brix gewoonlik laag en die sure hoog met ‘n swak suiker:suur verhouding en bleek vrugkleur. Dis ook hierdie vrugte wat meer sensitief vir na-oes fisiologiese skildefekte is.

**Boomhoogte en boomvorm:** By lighuishouding speel boomhoogte en boomvorm ‘n belangrike rol en beide moet as ‘n funksie van plantdigtheid bestuur word. Hoe hoër bome teogelaat word om te groei, hoe meer beskadu die boom homself en hoe meer beskadu die aangrensende rye mekaar. Dit lei uiteindelik daartoe dat bloem en vrugset hoër op in die bome en meerendeels aan die buitekant plaasvind waar daar voldoende ligintensiteit is. Boomhoogte moet dus volgens rywydte bestuur word.
Bome moet so gevorm word dat ligonderskepping en ligverspreiding optimaal benut word. Hoe hoër die plantdigtetheid hoe meer intensief moet gesnoei word om sonlig optimaal te benut. Bome moet so gesnoei word dat dit deurentyd goed deurlig is. Dooie takkies binne die boom is die eerste teken van onvoldoende lig, tensy dit deur ernstige plae of siektes veroorsaak word.

Snoei met die doel om bome reg te vorm, behoort vroeër in die boord se leeftyd reeds te begin. Hoe langer getal is om te snoei, hoe meer kompleks raak die bome en hoe gouer begin dooie hout in die bome te vorm. Dit maak snoei in die later jare van moeilik en duurder. Hoe gouer die boord in sy leeftyd lig gesnoei word, hoe maklik sal die opeenvolgende jare se snoei wees en hoe gouer sal die bome kwaliteit vrugte produseer.

**Produksie:** Met die regte snoeipraktyke word gepoog om swak drapunte te verwyder en die regte balans tussen nuwe groei en drag te verkry. Die kwaliteit blom en hoeveelheid vrugte wat set word beïnvloed deur die intensiteit van snoei. Goie snoeipraktyke lei tot meer groenblom (goeie blaar:blom verhouding) en minder witblom (swak blaar:blom verhouding). Hoe meer die groenblom, hoe beter is die kwaliteit van die vrugset en vruggrootte. Die verlangde vruggrootte, tesame met die prijs wat vir die vrugte onderhandel word, is een van die grootste drywers wat wins bepaal. Snoei is een van die heel beste praktyke om vruggrootte te manipuleer. Hoe meer vrugte set, hoe hoër is die kwaliteit van die vrug. Omdat die hoogste fotosintese aktiwiteit aan die buitekant van die boom voorkom, moet daar effens ligter snoei word om meer vrugte te behou met beter vrugset en vruggrootte as die verwagte laer oes met groot vrugte in die afjaar.

**Vrugkwaliteit:** Sonlig speel 'n integrale rol in die vorming van suikers, vrugkleur en skil-integriteit. Vrugte aan die buitekant en hoër op in die boom het normaalweg hoër brix en laer suur as dié binne en laer in die boom. Daar is dus 'n gradiënt van suiker en suiker:suur verhouding van laag binne die boom, na hoog aan die buitekant. Hierdie gradiënt is beduidend groter by ongesnoeide, dikte bome as goedgesnoeide bome. Met snoei word gepoog om eenvormige gehalte van binne na buite die boom te verkry.

Die skil is 'n gemodifiseerde blaar en fotosinteer ook. Hoe beter die fotosintese aktiwiteit, hoe dieper die kleur-intensiteit van die vrug. Omdat die hoogste fotosintese aktiwiteit aan die buitekant van die boom voorkom, kom die vrugte met die diepste kleur-intensiteit buite voor, behalwe
in die geval van rooi pomelo's waar die diepste kleur in die skadu ontwikkel en snoeipraktyke dus sodanig vir rooi pomelo's aangepas moet word.

Fisologiese skildefekte kom ook meer voor in gevalle van bleker vrugkleur, dus veral op vrugte wat diep binne die boom voorkom, weereens met die uitsondering van rooi pomelo's waar die vrugte aan die buitekant die bleek vrugte is. Navorsing deur CRI op sagtesitrus het getoon dat die vlakke van magnesium, kalsium en tot 'n mindere mate kalium in die skille laer was op die bleker vrugte wat binne die boom voorkom en wat meer geneig is tot sekere skildefekte. Hierdie elemente speel 'n rol om skille sterk te maak en agv die feit dat die fotosintese-aktiwiteit hoër is aan die buitekant van die boom waar die ligintensiteit en hitte hoër is, was die vlakke van hierdie elemente ook hoër.

Oes: Bome wat jaarliks goed gesnoei word, is minder dooie hout in die boom en produseer vrugte met minder windletseis en hoër uitpakke. Plukbeserings en wonde wat tydens oes deur dooie hout veroorsaak word, is betekenisvol minder. Bome wat goed gesnoei is, is makliker om mortsel in die boom en produseer vrugte met minder vlek en hoër uitpakke. Plukbeserings en wonde wat tydens oes deur dooie hout veroorsaak word, is betekenisvol minder. Bome wat goed gesnoei is, is makliker om mortsel in die boom en produseer vrugte met minder vlek en hoër uitpakke.

Marktoegang: Effektiwheid van bespuiting het net 'n ekonomiese impak nie, maar is ook van kritieke belang by marktoegang, waar fitsosanitêre siektes en plae met 'n zero-toleransie vir uitvoer na fitsosanitêre markte ten alle koste beheer moet word. Hier is dit veral die beheer van sitrusswartvlek en valskodlingmot wat ter sprake is, en witluis tot 'n mindere mate. Dieselfde beginsels geld egter ook vir ander siektes en plae wat voldiekbespuiting vereis. Weereens kom boomhoogte in spel, aangesien dit moeiliker is om vrugte in die toppe van rooi houte beheer as laer af in die boom. Daarom moet produsente dit goed in oorweging bring tydens boomgrootte-beheer.

**Bedreigings: Plukbeserings is een van die grootste oorsake van na-oes bederf. Hoe meer droë hout in uitzending om lighuishouding sodanig deur middel van snoei te bestuur dat die oorwegende volume vrugte van die grond af gepluk kan word.

**Effek van snoei op siekte- en plaagbeheer**

**Bespuiting en beheer:** In die geval van siekte- en plaagbeheer speel die effektiviteit van bespuiting 'n kardinaal rol in die sukses om die siekte of plaag te beheer. Enige plaagbeheermiddel is net so goed soos die aanwending daarvan. Hoe digter die blaredak van die boom, hoe moeilik vind penetrasie van die spuitmengsel in die binnekant van boom in plaas. Bome wat oop gesnoei is vir goeie deurligting kan baie makliker tot heel binne die boom bespuit word as digte bome waar meeste van die produk mengsel teen die buitenste blare vasgespuit word en op die grond afloopt. By oopgesnoeide bome kan die produk tot binne-in die boom penetreer en goeie deurligting van produk verskaf. Dit was ook die gevalle waar voldekbespuitings vereis word. Sodoende kan siekte- en plaagbeheer baie meer doeltreffend en koste-effektief gedaan word as gevolg van laer spuitvolume en beter effektiviteit, met minder grondkontaminasie en verlies van produk. Waar vergroening voorkom, moet snoei met groot omsigtigheid gedaan word, sodat die siekte nie buite beheer raak nie. Hier moet spesialis kennis ingewen word.

**Marktoegang:** Effektiwheid van bespuiting het net 'n ekonomiese impak nie, maar is ook van kritieke belang by marktoegang, waar fitsosanitêre siektes en plae met 'n zero-toleransie vir uitvoer na fitsosanitêre markte ten alle koste beheer moet word. Hier is dit veral die beheer van sitrusswartvlek en valskodlingmot wat ter sprake is, en witluis tot 'n mindere mate. Dieselfde beginsels geld egter ook vir ander siektes en plae wat voldiekbespuiting vereis. Weereens kom boomhoogte in spel, aangesien dit moeiliker is om vrugte in die toppe van rooi houte beheer as laer af in die boom. Daarom moet produsente dit goed in oorweging bring tydens boomgrootte-beheer.

**Bederf:** Plukbeserings is een van die grootste oorsake van na-oes bederf. Hoe meer droë hout in
die bome voorkom, hoe groter die risiko vir plukbeserings. Latente patogene soos Antraknose, Diplodia en Phomopsis oorleef op droë hout, was gedurende reënbuie af op die vrugte en bly latent totdat omstandighede gunstig is om bederf te veroorsak, soos bv tydens ontgroening. Daarom is dit belangrik dat alle dooie hout uit die bome verwyder word om die risiko vir plukbeserings en bederf betekenisvol te verlaag. Die verwydering van dooie hout is nie net 'n snoei-aksie nie, dit maak ook deel uit van boordsanitasie.

Bome moet ook hoog genoeg afgerand word sodat laaghanginge vrugte nie op die grond lê of tydens reën met Phytophthora besmet word en bruinvrot ontwikkel nie. Laaghanginge vrugte, en vrugte wat aan die grond raak, behoort vooraf afgepluk te word sodat dit nie saam met uitvoerbare vrugte in uitvoerkartonne beland nie.

**Praktiese snoei**

Watter boorde: Vir alle praktiese doeleindes behoort alle boorde gesnoei te word. In die geval van klein boompies moet slegs snitte gemaak word om die struktuur of raamwerk van die boompie reg te vorm. Soos bome ouer word, verander die snoeistrategie toenemend om voorstiening te maak vir voldoende ligonderskapping en ligverspreiding in die boom. Indien snoei vroeër in die boord se leeftyd begin word, maak dit snoeiwerk in die later jare makliker en kan jaarliks meesal onderhoudsnoei toegepas word, andersins moet regstellende snoei toegepas word wat moeilik en tydsam is.

**Wanneer deur die seisoen:** Uit 'n praktiese oogpunt word alle boorde en variëteite hoofsaaklik direk na die oes gesnoei. Tydens hierdie snoei word die meeste hout verwyder, daarna is dit van die uiterste belang om die hertogroei deurentyd te bestuur, veral gedurende mid-somer, om die voordele van die wintersnoei te benut. In die geval van sekere sagesitrus variëteite, val laag manderyne, word minder drasties direk na oes gesnoei, maar meer drasties deur die somermaande en die res van die seisoen. Nie-draende bome kan gedurende die koudste tye van die winter gesnoei word, sodat minder aggressiewe hertogroei verkry word. Produsente word aangeraai om h Snoeikultuur op hul plaas te kweek waar veral hertogroei deurlopend bestuur en gemanipuleer word.

**Snoeistrategie:** Verskillende sitrustipes en variëteite het verskillende groeiwyses en reageer verskillend op snoeisnitte. Dit moet in ag geneem word wanneer op h snoeistrategie besluit word. Daar moet vir elke boord ’n snoeistrategie bepaal word op grond van die variëteit, boom ouderdom, opbrengs, vruggrootte, boomhoogte, boomvorm, alternatiewe drag, ens. Die strategie verander van jaar tot jaar vir elke boord, na gelang van bogenoemde faktore.

**Hoe om te snoei:** Boorde kan mekanies gesnoei word, wat op groot oppervlaktes handig is om boomhoogte te beheer (“topping”) en kante tussen die rye terug te saag (“hedging”). Meganiese snoei kan egter nie sonder selektiewe snoei met die hand gebruik word om ligverspreiding binne die blaarkap te verbeter nie. Selektiewe snoei met die hand is die enigste manier om dooie hout te verwyder, ongewensde takke uit te saag, swak en gebreekte drahout te verwyder, en veral waterlote en hertogroei te bestuur. Meganiese snoei, sonder voldoende selektiewe snoei, is geneig om bome oor tyd te verdig en die probleme wat met swak lighuishouding gepaard gaan te vererger. Kortom, boorde kan gemaklik net met selektiewe snoei bestuur word, maar nooit net
met meganiese snoei nie. Snoeisnitte moet gelyk teen die stam gemaak word, om nie onnodige hergroei tot gevolg te hê nie.

Dis van die grootste belang om te verseker dat alle snoeitoerusting te alle tye met 'n 10% Jik-wapensoplossing gesteriliseer is om die verspreiding van virussiektes tussen bome en boorde te voorkom. Maak seker dat snoeiers deurentyd skerp snoeitoerusting beskikbaar het om vinnig en effektief te kan snoei.

Tydens snoei moet alle dooie hout, gebreekte takke, ekstra raam- en gekruisde takke, swak drahout, takke wat vergroening het, en takkies wat hoofsaaklik witblom dra, verwyder word. By volwasse bome kan die snoeiwond met NAA (Naftalienasynsuur ) aangeverf word.

Opvolgwerk na snoei: Na snoei kan die snoeisels opgekap en as 'n deklaag onder die bome gegooi word, wat menige voordele vir grondgesondheid inhou. Andersins kan dit uit die boord verwyder word, veral dik takke wat moeilik is om fyn te kap. Die groot takke wat uitgesaag word, moet mede as "silo" funksie serveer om die boord en die boom op te pak en verwyder word. Waterlote wat saam met die takke uitgesaag word, moet uit die boord verwys word om die voordele van sonlig optimaal te benut.

**Voordele van snoei**

Snoei is 'n uitstekende praktyk om verskeie produksiefaktore te bestuur of te manipuleer. Opvolgende kan die voordele wat deur effektiewe snoei behaal word, kortliks as volg gelys word:

- Boomgrootte en boomvorm kan bestuur word om die voordele van sonlig optimaal te benut
- Snoei is een van die beste praktyke om vruggroottes te manipuleer
- Vruggehalte en vrugkleur word verbeter deur hoër fotosintese aktiwiteit binne-in die blaarlaag te skep
- Die risiko van fysiologiese skildefekte word verlaag agv beter kleur-ontwikkeling
- Uitpakpersentasie word verhoog agv minder letseis en beter vruggroottes
- Bederf word verlaag agv minder plukbeters en latente patogene
- Vergemaklik die oesproses en verlaag oesskostes agv beter toeganklikheid in die blaarlaag
- Meer effektiewe plaag- en siektebeheer, agv beter penetrasie en verspreiding van die spuit-mengsel in die boom
- Meer effektiewe en goedkoper bespuiting

**Summary**

Pruning of citrus can be singled out as the single practice that has the greatest effect on most other production practices. It is an excellent means to manipulate fruit size, tree height and shape for optimal use of sunlight, improve fruit quality and fruit colour, reduce the incidence of picking injuries and blemishes and associated postharvest decay and lower the risk of physiological rind defects. Pruning results in better spray penetration into the canopy, thereby increasing the efficacy of pest and disease control, with less soil and water contamination. Well-pruned trees are also much easier to pick. Each of these advantages has an economic gain, and for this reason, pruning should no longer be viewed as a cost factor in citrus production, but should be seen as a profit item. Therefore, pruning of citrus as a standard production practice is not negotiable for sustainable and progressive citrus production.
Kiwi is an exotic fruit that originated in China, with a fuzzy outer skin and juicy flesh. Rich in trace elements, minerals and vitamins, the kiwi quickly conquered the global market with its unique, exceptional sweet and sour taste!

Why introduce kiwi into our daily diet?
It is rich in vitamin C. Consumption of a single kiwifruit can cover the human organism’s daily requirement in this vitamin. It is also an excellent source of vitamins A, E and B complex, and it contains potassium, phosphorus, and magnesium.

European kiwis conquer the global market!
European kiwi stands out for its quality, both in taste and in nutritional value, because it is harvested by hand. Kiwis are placed in suitable refrigerated storage areas within 24 hours from harvesting, thus guaranteeing that all of the fruit’s nutrients are preserved.

European kiwis stand out and are sought after in many international markets, and are exported to over 51 countries in Europe, Africa, Asia and America.

How to enjoy kiwis
There are several different ways to incorporate kiwis into your daily diet:
• Serve your friends a refreshing fruit drink made with kiwi and melon.
• Make delicious and healthy kiwi-based smoothies.
• Enrich your breakfast by adding freshly cut slices of kiwi to yoghurt or to your cereal.
• Enjoy chocolate kiwis! Cut the kiwis in slices and dip them in melted chocolate. The taste is a revelation!
• Simply add kiwi to your favourite green salad.

So let your imagination run free and pleasantly surprise your friends and family, by using kiwi in various recipes. The results will amaze you!
From Factory to Field

Providing agriculture and forestry with more than just a good boot

Our range of gumboots have been engineered for the varying hazards of these industries. With such a wide selection of gumboots for diverse environments, Wayne provides the appropriate protection for wet and muddy conditions.

Our comfortable gumboots are designed to tolerate the dangers workers face everyday. At Wayne, we go the extra mile to deliver world-class service and exceptional quality products, because your safety is at the heart of everything we do.

www.wayne-safety.com
From Factory to Field
Providing agriculture and forestry with more than just a good boot
Our range of gumboots have been engineered for the varying hazards of these industries. With such a wide selection of gumboots for diverse environments, Wayne provides the appropriate protection for wet and muddy conditions.
Our comfortable gumboots are designed to tolerate the dangers workers face everyday. At Wayne, we go the extra mile to deliver world-class service and exceptional quality products, because your safety is at the heart of everything we do.
www.wayne-safety.com
1. KWEPERSTAMBOORDER

Kweperstamboorder, ook bekend as die appelstamboorder, is ’n mot genaamd *Coryphodema tristis* wat endemies is tot Suider-Afrika (Fig. 1). Inheemse gasheerplante sluit in rooi boswilg (*Combretum apiculatum*) en buffeldoring (*Ziziphus mucronata*). Uitheemse bome wat ook as gasheerplante dien, sluit in treurwilger, akkerbome, seringbome, manitoka en sekere bloekomspesies (*veral Eucalyptus nitens*). Vrugte wat aangeval word, sluit in druiwe, olywe, lukwarte, kwepers, pere, appels en avokado.

Motte lê groepies eiers onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember). Motte lê groepies eiers onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember). Larwes wat uitbroei voed op die oppervlak van die hout onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember). Larwes wat uitbroei voed op die oppervlak van die hout onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember). Larwes wat uitbroei voed op die oppervlak van die hout onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember). Larwes wat uitbroei voed op die oppervlak van die hout onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember). Larwes wat uitbroei voed op die oppervlak van die hout onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember). Larwes wat uitbroei voed op die oppervlak van die hout onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember). Larwes wat uitbroei voed op die oppervlak van die hout onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember).

Larwes wat uitbroei voed op die oppervlak van die hout onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember). Larwes wat uitbroei voed op die oppervlak van die hout onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember).

Larwes wat uitbroei voed op die oppervlak van die hout onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember).

Larwes wat uitbroei voed op die oppervlak van die hout onder los bas en in krake in die stamme en takke van gasheerplante (gewoonlik November/Desember).

Volwasse motte is omtrent 20 mm lank met ’n vlerkspan van 40-44 mm en grys-bruin van kleur. Hulle monddele is nie ontwikkel nie, dus voed die motte nie. Hulle leef slegs 4 tot 6 dage en vrek sodra hulle gepaar en eiers gelê het. Dit neem tussen 1 en 3 jaar om die lewensiklus te voltooi, afhankende van die kwaliteit van die gasheerplant.

Skade: Larwes wat in die takke en stamme boor, veroorsaak ‘n geleidelike afname in die groeikrag van die gasheer en stokke/bome kan selfs vrek. Die larwes leef in simbiose met sekere houtverrottingswamme wat die hout uitdroog om ideale toestande vir die larwes te skep. Selfs al word die larwes doodgemaak, kan hierdie swamme steeds versprei en die gasheer beskadig. Alhoewel dit meestal ’n sporadiese plaag is, kan dit ernstige ekonomiese skade in geïsoleerde gevalle aanrig.

Beheer: Geen chemiese beheer is beskikbaar nie. Besmette plante moet verwyder en vernietig word.
2. HOUTBOORDER KEWERS BY WINGERD

Simptome: Klein gaatjies wat in wingerdstokke geboor word en ’n jellie-agtige afskeiding wat dikwels daar uitgestoot word (Fig. 4).

Klein houtboorder kewertjies van die genus *Xyloperthodes* (familie Bostrichidae) veroorsaak hierdie verskynsel. Hierdie houtboorders is inheemse kewertjies wat hul hele lewensiklus in hout voltooi. Die larwes verkies dooie of sterwende hout, maar die volwasse kewertjies val ook lewende hout aan. Slegs die volwasse kewertjies kan vlieg en verlaat die hout om na ander gashere te versprei. Die kewertjies tunnel in hout, lê eiers en die larwes wat uitbroei, tunnel dan verder in die hout totdat hulle pupeer.

Indien die kewertjie ’n stok aanval wat nog sterk en gesond is, begin die stok om die jellie-agtige stof af te skei sodra die kewertjie in die stam of loot begin boor (Fig. 4). Hierdie jellie verswelg die kewertjie en stoot dit dikwels heeltemal uit die gaatjie. Die jellie versëel ook die gaatjie sodat houtverrottingswamme nie die stok kan binnedring nie. Hierdie afskeiding, wat harsagtig voorkom wanneer dit droog en hard geword het, is die stok se eie verdedigingsmeganisme wat hulself reeds beskerm. Solank die stok nog hierdie jellie afskei, hou die houtboorder geen gevaar vir die stok nie.

Indien die stok egter reeds onder soveel stres verkeer dat dit nie meer in staat is om die jellie af te skei wanneer dit aangeval word nie. Dit sluit in grondfisiese probleme soos ’n ondeurdringbare laag wat swak wortelontwikkeling tot gevolg het, aalwurmbesmetting wat veroorsaak dat die wortelstelsel minder effektiewe word omdat die wortels onvoldoende water voorsiening aan die bogrondse dele belemmer.

Die houtboorderkewertjies is dus nie die primêre oorsaak van stokke wat doodgaan nie – dis eerder die simptoom van ’n onderliggende probleem.

BEHEER

• Daar is tans geen chemiese beheer beskikbaar nie.
• Moenie die jellie van stokke verwyder nie. Hierdie stokke is gesond en het hulself reeds beskerm.

Waar die jellie verwyder

VERVOLG OP BLADSY 70
word, kan houtverrottings-
swamme toegang tot die stok kry.
• Waar lote aangeval en geringeleer is, moet hulle
teruggesny word tot by lewende hout. Besmette
hout moet verbrand word.
• Maak seker of daar nie ander probleme in die
wingerd is nie en probeer dit regstel.

3. TAPPIEBOORDER
Die tappieboorder, *Allodape ceratinoides*, is 'n
wespe (Familie: Anthophoridae) wat donker
swart-bruin van kleur en ongeveer 5-10 mm
lank is. Die wespe hol die sagte murg by die
snoeipunt van lote (tappies) uit en lê 'n eiertjie in
die tunnel. Die wit maaier (larwe) wat uitbroei,
vreet die uitdrogende murg en hol die loot tot
by die eerste node uit. Die hele lewensiklus van
die wespe (eier, larwe/maaier, papie tot volwasse
wesp) word in hierdie stukkie van die loot voltooi.
Aangesien slegs die dooie hout op die eindpunt
van gesnoeide lote aangetas word, word dit nie as
'n ekonomiese plaag beskou nie.

4. BOOMKRIEKE
Boomkrieke van die genus *Oecanthus* (Orthoptera:
Gryllidae) se wyfies maak 'n diep snit in jong,
groen lote en lê dan hul eiers in 'n ry daarin (Fig.
1). Dit kan veroorsaak dat die lote verwelk en
selfs terugsterf. Een spesie, *Oecanthus pellucens*,
is bekend as 'n plaag by swartbessies, maar lê ook
eiers in wingerd, akkerbome, sigorei en ander
soorte bessies. Boomkrieke is omnivore wat
meestal blare, blomblare en stuifmeel vreet, maar
hulle vreet ook sagte geleedpotigde organismes
soos plantluise, spinnekoppe en inseklarwes.

• Verwyder alle snoeilote en ou stokke uit win-
gerde. Moeie dooie hout laat rondlê waarin die
houtboorders kan vermeerder nie. Kap snoeilote
fyn indien dit in wingerde gelos word om 'n
deklaag te vorm.
RIVER BIOSCIENCE OFFERS THESE PRODUCTS FOR EFFECTIVE BIOLOGICAL CONTROL OF FCM AND BOLLWORM

CRYPTOGRAN  Local isolate to perform even better. Effective control of FCM on citrus | avos | grapes | nuts | stone fruit peppers | pomegranates | litchis | persimmons

HELCOVIR  Environmentally friendly bollworm control for your peace of mind. Effective control of bollworm on citrus | pome fruits berries | grains | pulses | lucerne | oilseeds | potatoes | brassica vegetables | fruiting vegetables | leafy vegetables | cucurbits | ornamentals

For more information visit our website or contact us:

Keith Danckwerts  Chris Hendriks
General Manager  Marketing Manager
+27 (0)83 633 2336  +27 (0)79 858 3233
keith@riverbio.com  chris@riverbio.com

RIVER BIOSCIENCE (PTY) LTD
PO Box 20388 | Humewood | Port Elizabeth | 6013 | South Africa

PROVEN QUALITY BIOLOGICAL CONTROL AT AFFORDABLE PRICES
Deciduous fruit producers in the Langkloof are at the forefront of the shift to fruit production under hail nets.

Climate Change researcher, Prof Stephanie Midgely, shared with growers her projections for climate in the Langkloof towards the year 2050. “The Langkloof will see an increase in extreme weather events including amongst others flash floods, hailstorms, droughts, and fires,” she told 70 producers at the rustic Kontrei Kombuis in Louterwater.

Midgley flagged the following projections with producers:

- Warming between 1°C - 2°C
- More hot days, more heat waves
- Fewer cold and frost days
- More intense rainfall events punctuated by hailstorms

According to Midgley the Langkloof was situated within a high risk area for hailstorms.

Hailnets

HORTGRO Science Crop Production Manager Prof Wiehann Steyn presented a talk on hailnets and their impacts on orchard trees.

According to Prof Steyn the interplay between orchard microclimate and hailnet structures were complex and depended on net properties, region, cultivar, and orchard.

For example, the effects on bud break was unknown while there could be a decrease in fruit set and return bloom if nets are kept closed and depending on orchard vigour and rootstock. Effects on yield can be variable while, decreased water use, increased shoot growth, decreased sunburn, decreased heat stress and decreased red colour are some of the more consistent effects.

Prof Steyn said studies were ongoing but quoted Dutoit Agri Research and Development manager, Willie Kotze, who advises producers on the issue of net structure to “rather over invest than underinvest”.

Crucial information

Marius van der Westhuizen, producer and HORTGRO representative in the Langkloof, said that the information covered at the seminar was crucial. “With the issue of hailnets; there are so many opinions and so many methodologies so nobody is certain. Why make a mistake if somebody has already tried something,” he said.

According to Van der Westhuizen the seminar and orchard walk also had an element of “fun” but its biggest advantage is that “we can learn from each other”.

BEE groupings benefit from Langkloof seminar

Jobs Fund beneficiary Piet Janse who farms at Oudrif Trust 2 in the Langkloof said that the event was “interesting and informative” and that learning opportunities for emerging growers were not always easy to come by.

Despite attending many orchard walks in the past
Janse says the Langkloof seminar was different in that HORTGRO Science hosted the event together with most of the growers irrespective of production output.

“Now we can see what is going on and we ourselves can ask what would happen … if we notice something etc. So, like with pruning and certain pruning cuts, what the results will be if certain actions are taken. Why do you bend the tree? Why do you do certain things with the trees?” he explained.

Field visits
The event also included orchard walks where Langkloof producers at the forefront of production under hailnets showcased their operations. These included: Oudrif Estate’s Rosy Glow and Cripps Pink under gabled net; Giraffe Brand and Tulpieskraal Fuji under net.

Producers exploited the opportunity to ask tough questions on aspects like financial viability, different designs, orchard management under net, production forecasts, and productivity comparisons with conventional orchards.

Producers also visited a rootstock evaluation trial at Du Toit Agri’s Helderwater commercial orchard. HORTGRO Science Fruit Production Researcher Dr Xolani Siboza said that the SA apple industry had a challenge to select precocious, productive, efficient and replant disease tolerant rootstocks.

He introduced the site planted with Fuji Suprema apple trees, “trained to the solax system and uniformly managed according to industry recommendations”. The more dwarfing planting is under net cover while the adjacent more vigorous planting is uncovered. The trees, planted September 2013, were harvested for the first time during the 2016 season.

“Based on preliminary results, the dwarfing rootstocks, M9 EMLA, G778 with M9 interstem, MM109 with M9 interstem and M9 Nic29 were precocious and efficient. However, it is early days; three years is too short a time to evaluate and draw conclusive information,” said Siboza.

DANE MCDONALD
Industry players share concerns in HORTGRO risk assessment

Deciduous fruit industry players have placed their marks on the greatest risks they believe face the industry at the most recent HORTGRO Science Technical Symposium.

The symposium is regarded as a key industry event and annually sees the gathering of hundreds of players both big and small in scale of production and service provision.

Crop Production Programme Manager Prof Wiehann Steyn said the risk assessment was conducted to determine whether HORTGRO Science is on the right track in terms of future research focus areas.

"Since funds for research are limited, it is better to focus on a few key issues than to try to cover the whole, wide field across the entire fruit value chain – covering all basis inadequately is often referred to as an “equal misery” strategy,” he said.

Inputs for analysis were received on 250 feedback forms and comprised 120 commercial growers, 18 new growers, 30 service providers, 28 researchers, 25 technical advisors, 11 industry research focus areas.

"The number in brackets in the top row indicate the number of completed questionnaires on which the data is based.

**Table:** Summary findings of a risk assessment for the South African Deciduous Fruit industry. Role players were asked to rate the factors that pose the greatest risk to the industry over the next 20 years on a scale of 0-10 where 0 = no risk and 10 = Armageddon. Yellow blocks indicate risk that scored above 6.5 on average while red blocks indicate risks scored below 5.

<table>
<thead>
<tr>
<th>FUTURE RISKS</th>
<th>Ceres (48)</th>
<th>EGGV (39)</th>
<th>Langkloof (9)</th>
<th>Free State (4)</th>
<th>Berg&amp;Breede (8)</th>
<th>Wolseley&amp;Tulbagh (9)</th>
<th>Producers (120)</th>
<th>New growers (18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Policies and Implementation</td>
<td>7.3</td>
<td>7.5</td>
<td>6.9</td>
<td>7.5</td>
<td>7.6</td>
<td>6.9</td>
<td>7.3</td>
<td>7.6</td>
</tr>
<tr>
<td>Infrastructure (incl. energy, harbours, roads, toll, research infrastructure etc.)</td>
<td>6.2</td>
<td>6.0</td>
<td>5.8</td>
<td>7.3</td>
<td>4.6</td>
<td>4.4</td>
<td>5.9</td>
<td>6.3</td>
</tr>
<tr>
<td>Macro-Economy (Exchange rate, GDP, Markets, Capital etc.)</td>
<td>6.4</td>
<td>7.3</td>
<td>5.6</td>
<td>6.3</td>
<td>5.6</td>
<td>5.8</td>
<td>6.6</td>
<td>7.0</td>
</tr>
<tr>
<td>Social Unrest</td>
<td>6.4</td>
<td>7.3</td>
<td>5.3</td>
<td>7.0</td>
<td>5.6</td>
<td>6.0</td>
<td>6.6</td>
<td>6.4</td>
</tr>
<tr>
<td>Well Trained Labour on Farm and within Agriculture Industry</td>
<td>5.8</td>
<td>5.5</td>
<td>6.5</td>
<td>7.3</td>
<td>6.5</td>
<td>5.6</td>
<td>5.8</td>
<td>7.0</td>
</tr>
<tr>
<td>Good People in Key Positions (Training/ Research/ Industry org/ Management)</td>
<td>6.0</td>
<td>5.5</td>
<td>5.4</td>
<td>6.5</td>
<td>5.8</td>
<td>4.9</td>
<td>5.7</td>
<td>6.1</td>
</tr>
<tr>
<td>Planting Material Quality and Health</td>
<td>6.3</td>
<td>6.1</td>
<td>5.0</td>
<td>5.8</td>
<td>5.3</td>
<td>4.4</td>
<td>5.9</td>
<td>6.2</td>
</tr>
<tr>
<td>Access to Plant Material and Reliable Data on Plant Material</td>
<td>5.6</td>
<td>5.9</td>
<td>5.9</td>
<td>5.8</td>
<td>5.9</td>
<td>3.9</td>
<td>5.6</td>
<td>5.9</td>
</tr>
<tr>
<td>Water Availability and Quality</td>
<td>7.8</td>
<td>7.0</td>
<td>7.0</td>
<td>8.3</td>
<td>6.4</td>
<td>7.1</td>
<td>7.3</td>
<td>8.6</td>
</tr>
<tr>
<td>Extreme Weather Conditions e.g. Hail, Floods, Drought</td>
<td>7.1</td>
<td>6.8</td>
<td>8.4</td>
<td>7.3</td>
<td>5.4</td>
<td>6.1</td>
<td>6.9</td>
<td>7.6</td>
</tr>
<tr>
<td>Climate Change – Warm Winters and Summer Heat Waves</td>
<td>7.2</td>
<td>7.4</td>
<td>6.3</td>
<td>7.8</td>
<td>6.3</td>
<td>6.6</td>
<td>7.1</td>
<td>7.9</td>
</tr>
<tr>
<td>Crop Protection (Direct Damage and Cost of Management)</td>
<td>5.5</td>
<td>6.1</td>
<td>6.5</td>
<td>6.3</td>
<td>5.3</td>
<td>5.0</td>
<td>5.7</td>
<td>6.8</td>
</tr>
<tr>
<td>Loss of Pre- and Postharvest Pest- and Fungicides/ Resistance</td>
<td>5.7</td>
<td>6.3</td>
<td>3.9</td>
<td>5.0</td>
<td>5.8</td>
<td>5.6</td>
<td>5.6</td>
<td>6.7</td>
</tr>
<tr>
<td>Invasive Pests and Diseases (Bio-Security)</td>
<td>5.2</td>
<td>6.0</td>
<td>4.4</td>
<td>6.8</td>
<td>6.1</td>
<td>5.1</td>
<td>5.4</td>
<td>6.4</td>
</tr>
<tr>
<td>Postharvest Pathogens/ Decay</td>
<td>5.2</td>
<td>5.4</td>
<td>4.3</td>
<td>4.5</td>
<td>4.0</td>
<td>4.3</td>
<td>4.9</td>
<td>5.6</td>
</tr>
<tr>
<td>Market Access - Phytosanitary Risks such as False Codlingmoth</td>
<td>5.4</td>
<td>5.6</td>
<td>4.3</td>
<td>4.3</td>
<td>6.6</td>
<td>4.8</td>
<td>5.3</td>
<td>6.4</td>
</tr>
<tr>
<td>Decline &amp; Loss of Key Markets (Trade Barriers, Increased Competition)</td>
<td>5.3</td>
<td>5.7</td>
<td>4.0</td>
<td>5.5</td>
<td>6.0</td>
<td>5.1</td>
<td>5.4</td>
<td>6.4</td>
</tr>
<tr>
<td>Impact of Food Safety Scares on Markets e.g. Glass, E coli.</td>
<td>5.0</td>
<td>5.7</td>
<td>4.1</td>
<td>4.0</td>
<td>5.9</td>
<td>5.0</td>
<td>5.1</td>
<td>5.4</td>
</tr>
<tr>
<td>Increasing Non-Regulatory Market Demands (Residue and Quality Demands)</td>
<td>5.3</td>
<td>6.0</td>
<td>4.4</td>
<td>5.5</td>
<td>5.7</td>
<td>5.1</td>
<td>5.5</td>
<td>6.1</td>
</tr>
<tr>
<td>Agriculture Impact on Environment (Liability)</td>
<td>5.0</td>
<td>5.4</td>
<td>3.7</td>
<td>4.8</td>
<td>5.4</td>
<td>5.1</td>
<td>5.0</td>
<td>5.9</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>6.0</td>
<td>6.2</td>
<td>5.4</td>
<td>6.2</td>
<td>5.8</td>
<td>5.4</td>
<td>5.9</td>
<td>6.6</td>
</tr>
</tbody>
</table>
people, 9 students, and 9 exporters. Risk categories were identified prior to the symposium by HORTGRO Science Crop Protection, Crop Production and Postharvest groupings. The highest risks on average identified by industry players were issues relating to governance in South Africa, water availability, climate change/climate extremes, social unrest, and macro-economy.

In terms of scoring risks there was no statistical difference between stone and pome growers, although stone growers generally scored risks lower. This could be ascribed to stone fruit crops being climatically better adapted, according to Steyn.

New growers and technical advisors generally assigned higher risks to categories. The latter also appreciated post-harvest/market risks and also gave high scores to plant material-related risks.

Interesting regional differences emerged from the assessment which included the following grower numbers: 48 from Ceres, 39 from EGVV, 8 from the Langkloof, 4 from the Highveld, 9 from Wolseley/Tulbagh, and 8 from the Breede and Berg Valleys.

The following became apparent:
• Ceres and EGVV growers scored higher while Langkloof and Wolseley/Tulbagh growers scored lower.
• Langkloof growers scored postharvest/market access issues low.
• All growers were concerned about climate change, climate extremes and water availability, but Breede and Berg Valleys growers were less concerned – possibly due to better adapted crops and access to water.
• Langkloof, Highveld and Breede/Berg growers were more concerned about availability of quality labour.
• Wolseley/Tulbagh growers were not very concerned about plant material and good people in key positions.
• Highveld growers were concerned about invasive pests – maybe because Bactocera dorsalis has been found in Ermelo.
• Breede and Berg Valleys growers were concerned about market access – false codling moth and water quality may be the driving issues in this instance.

When looking at the responses by technical experts, those dealing with ‘fruit production’ scored risks higher than ‘pest management’, while both groupings scored water availability, climate change, and climate extremes high.

Pest management experts also scored risks related to ‘labour’ and ‘plant material’ lower, while scoring ‘post-harvest’ and ‘market-related’ risks higher.

Said Steyn: “Judging by the generally high scores, the Crop Production, Crop Protection and Postharvest workgroups have identified the most important risks. Research strategy can now be drafted accordingly”.

“In addition, the assessment indicates where greater communication efforts might be needed, for example, communicating to regions that have scored market access and pest-related aspects lower, the overriding importance of these issues in terms of industry sustainability. Finally, the assessment also revealed how growers in different regions as well as people involved at different points in the value chain differentially perceive risks. Research, technology transfer and communication efforts can be directed accordingly.”
SUKSES WORD GEKWEEN

dit kom nie vanself nie

Voor-Groenberg Kwekerye het die kennis, integriteit en ondersteuning wat verseker dat jou belegging in die beste plantmateriaal vir wyn-, droog en tafeldruïwe, ruim dividende sal betaal.
Those of you who came from the regulated era prior to 1997 may remember that a PAG group was facilitated by Anton Rabe under the auspices of SAAPPA. Following deregulation, the group evaporated as everyone pursued their individual interests. It took until 2009 for people to realise that there were bigger issues to be addressed on an industry level, and the PAG was reconstituted. By this time, everyone wanted to be part of the group. A steering committee can only be effective if it is not too large, and specialists were incorporated, covering the disciplines:

- Engineering
- Packaging
- Environmental footprint
- Packhouse
- Post-harvest
- Logistics
- Communication

A PAG Fresh Notes, incorporating the highlights of the meeting, is circulated to pome pack houses after every meeting, to keep all pome packhouses in the loop.

The objectives of the PAG are:

- Stimulate innovation/testing and introduction of new technologies/adoption of proven technologies
- Identify issues to make industry more competitive – world leaders
- Identify priorities/address industry needs through research
- Address availability of capacity/skills/education/information dissemination
- Serve as an industry communication forum to producers and stakeholders, including Department of Agriculture, Forestry and Fisheries (DAFF)
- Market/logistics intelligence

SAAPPA allocated funding to the PAG for the purpose of funding projects and using consultants to drive these projects. Achievements to date include:

- Energy benchmarking study for packhouses
  A survey on energy efficiency showed a wide variance in equivalent electricity unit cost of up to 33%. An energy efficiency management training course is planned for later this year.

- Packhouse productivity benchmarking exercise
  A number of packhouses are involved in benchmarking their operations, with the assistance of Productivity SA.

- Reviving of the CA Storage and Post-harvest group annual meeting
  As with the PAG, this group fell by the wayside when deregulation came. The group has met for the last two years, and it is a forum for researchers to give feedback to Industry, and suppliers can showcase the technologies.

- CA Research Facilities
  The PAG Initiated a process of investigating CA research requirements in the industry. This involved sending an ARC researcher, Kobus van der Merwe (now retired) and consulting engineer, Jeff Wedgwood, to investigate CA research facilities in Europe and USA. This was followed by the scoping of the various researcher’s requirements and consolidated by Jeff into a blueprint for a future facility. Dr Martin Taylor, former CEO and current Chairperson of Experico, developed a business plan for operating the facility. Not long thereafter, the National Research Foundation put out a funding call for high-end capital research facilities, and both ARC and Stellenbosch University applied, using the business plan as the basis. We are currently still awaiting the outcome of these applications.

- Container scheduling survey (published on HORTGRO web)
- Container scheduling recommendations (published on HORTGRO web)
- Updating of CA Manual – electronic version (published on HORTGRO web)

The following conferences/seminars have flowed from the group:

- Post Harvest Disease Management – 28 September 2010
- Energy Efficiency Conference – 21 October 2010
- Post-Harvest Seminar – 22 January 2015
As one enters Dr Elleunorah Allsopp’s office one enters a space which manages to find a balance between a busy energy and a systematic neatness. She is on the phone speaking to a farmer or it could be a fellow researcher, and I can make out that the person on the other end is describing an insect, which Allsopp, 57, is trying hard to identify despite the limitations of no visual clues. It seems not giving up is a trait she has honed over her three decades as an entomologist.

“I guess we grew up in a generation where there was still an old fashion word in play, it’s called perseverance,” says Allsopp when asked about where she found the grit to tackle a PhD amid a busy work schedule.

Allsopp’s recent milestone achievement of a doctorate in entomology at Stellenbosch University is in many ways the culmination of a career of 34 years devoted to addressing and fighting agricultural pests in vineyards and on deciduous fruit farms.

She has been working as an entomologist at the Agricultural Research Council’s Infruitec-Nietvoorbij since 1982 and has experienced all its transformations since the organisation’s affiliation with the Department of Agriculture.

In 2008, at the age of 48, Allsopp started working on a project which had the potential “to accommodate” a PhD. While she always had plans to take her MSc to the next level, her research project developed organically within a busy fruit industry, a dynamic work environment at the ARC, and as she says “life also just happens and work happens”.

**Western flower thrips** (Frankliniella occidentalis), commonly known as ‘blaaspootjies’

In 2008, at the age of 48, Allsopp started working on a project which had the potential “to accommodate” a PhD. While she always had plans to take her MSc to the next level, her research project developed organically within a busy fruit industry, a dynamic work environment at the ARC, and as she says “life also just happens and work happens”.

Commonly known in Afrikaans as ‘blaaspootjies’, after the tiny bladders on their feet, thrips use the latter to cling to vegetables, flower, or fruit.

More specifically Allsopp explored natural alternatives to toxic chemicals which can be used to limit the economic damage caused by the harmful western flower thrips (Frankliniella occidentalis) in plums. She found that these tiny insects enter plum blossoms before the petals open, and then proceed to lay their eggs in the flower parts. In the process, superficial lesions or so-called pansy spots form on the developing plums. This can cause the fruit to receive a lower grading when exported, or to be rejected.

The early stage at which the insect enters the blossom means that normal spraying during flowering cannot really prevent damage. Chemicals must thus be applied even before the blossom reaches balloon stage, to prevent egg-laying damage.

According to Allsopp, cover crops or weeds in the orchard which flower at the same time as plums must be retained. “If you cut down the weeds, it’s as good as if you are chasing the thrips into the plum trees,” she contends.

As part of her PhD, Allsopp also investigated the feasibility of a so-called push-pull system to decrease the egg-laying damage by thrips in plum orchards.

Her experiments showed that the essential plant oils thymol, methyl salicylate and carvacrol had a deterrent effect on the thrips, and that fewer eggs were laid in the blossoms when the oils were sprayed on them.

White clover was found to be highly attractive to the western flower thrips and is a good prospect for planting as a trap crop next to orchards to lure the insects away (the “pull” part of the strategy). The exact formulation of the essential oils must still be ascertained through further research, so that the strategy can be tested in practice.

**THRIPS CONTROL:** Culmination of a 34 year entomology career for Dr Elleunorah Allsopp

Elleunorah Allsopp has recently graduated with a doctorate in entomology at Stellenbosch University, after a career devoted to fighting agricultural pests.
During 2015/16 FruitFly Africa commissioned an independent Benefit/Cost Analysis (BCA) of the programme using three different areas as case studies for the various fruit producing areas under the programme. The analysis was conducted by OABS (Optimal Agricultural Business Systems). The study was commissioned for two main reasons. Firstly, the industry needed to be sure that the continuation of area wide integrated pest management (AW IPM) programmes in fresh fruit producing regions was not only an efficient means of minimizing crop damage and mitigating phytosanitary risks associated with these pests, but also a cost effective way of reaching these goals. Secondly, it was envisaged that sterile insect releases would be conducted from the air (using chilled release technology) in the near future and the cost/benefit ratio of this move also needed to be calculated.

The areas that were used as case studies were the Hex River Valley (Table grape production area), Warm Bokkeveld (Relatively homogeneous crop distribution pome fruit production area) and Villiersdorp/Vyeboom (Heterogeneous pome- and stone fruit production area). The hectares included in the case study amount to 1 569 ha for the Hex, 6 442 ha for EGVV and 1977 ha for the Warm Bokkeveld. This equates to 24%, 33% and 24% of the estimated hectares under various deciduous fruit in the Hex, Warm Bokkeveld and Villiersdorp/Vyeboom areas respectively.

Costs incorporated into the BCA model include all direct costs associated with the control of fruit flies in the area. These include both the costs of the area wide integrated pest management (AW IPM) programme as well as costs incurred by individual producers at their own discretion. All costs are presumed to be direct costs. Benefits associated with control measures include:

- Reduced fruit damage (Direct Benefit)
- Reduced need for cold treatment (Cold Steri) (Indirect Benefit)
- Market access (Indirect Benefit)
- Less use of chemical control measures (Direct Benefit)

The monetary value of both costs and benefits used in the model vary between the different scenarios given below:

**Base Analysis - Business as Usual**
Volume of cold steri requirement increases from the current volumes by 5% per annum over a 10 year period to 45% of current volumes. It is assumed that current export market access losses related to fruit fly issues is 15% of the value of current production volumes. In the base it is assumed that with no AW-IPM this loss will increase with 3% per annum.

**Scenario 1 - AW-IPM with SIT - Low road**
AW IPM programme is run as is in each area. Levels of crop damage decrease as time goes by. Cold Steri requirement and market access losses are 90% of those in the base analysis.

**Scenario 2 - AW-IPM with SIT - Medium road**
- programme is run in each area. All aspects of the programme remain the same, except that air spray insecticide increase and ground sprays decrease. Levels of crop damage decrease as time goes by. Cold Steri requirement and market access losses are 85% of those in the base analysis.

**Scenario 3 - AW-IPM with SIT - High Road**
programme is run in each area. Releases occur from the air. Baiting (ground and/or air) is decreased. Levels of crop damage decrease as time goes by. Cold Steri requirement and market access losses are 85% of those in the base analysis.

A 10 year timeline was used as the return period for the model and all monetary values of both costs and benefits were discounted to the Net Present Value for a comparison. The benefit to cost ratios (BCR) for the areas under scrutiny were as follows:

*CONTINUED ON PAGE 80*
Given that a ratio of larger than 1 indicates that the benefits of the programme outweigh the costs, it is plain to see that even if only the direct costs and benefits are taken into consideration most areas would be better off running some kind of AW IPM programme for fruit flies.

Indirect costs and –benefits are easily overlooked, but are equally as important as their direct counterparts when it comes to decision making. Column 2 in the table above thus gives a much more meaningful B/C ratio when it comes to whether or not the continuation of the programme is justified or even if adjustments to the programme are preferable to the status quo. In the case of this study almost all scenarios are preferable to the base analysis and all areas have the largest returns for the “High Road – AW IPM” option. Scenario 3 has a BCR of more than 2 for all areas where the study was conducted, thereby indicating that the value of benefits is more than twice that of the costs.

The fact that the average fruit fly populations during the harvesting season in most of the areas under AW IPM programmes have steadily declined over the last couple of seasons is proof that the AW IPM programme in the area is yielding positive results.

This study shows that not only are positive results being achieved, but that the continuation of the programme (with a couple of adjustments) will also lead to sustainable, cost effective control of fruit flies in the long run.

It would seem that most producers agree with the results of the study, since the vast majority voted for the continuation or even expansion of the AW IPM programme during the referendum on statutory measures for the control of fruit fly populations during April 2016. According to the measures announced in Government Gazette no. 40294 (published 23 September 2016), two new areas have voted for statutory monitoring to take place in their region for the first time since the inception of the programme.

A further 4 areas voted to move from ground releases of sterile flies to a chilled aerial release technique. In another 2 regions the programme strategy will remain unchanged, but will continue for the next four year cycle. One area opted out of AW IPM, but some 50% of this area has already indicated that they would like to receive at least some fruit fly control services on a contract basis for the coming seasons.

The Cost Benefit Analysis has highlighted large potential gains to the industry by using AW IPM programmes for the control of pest populations and producer support for these programmes has steadily grown during the past couple of seasons. It is for this reason that these programmes are put in place by the industry to reduce the risks that are associated with fruit flies.

FruitFly Africa is looking forward to realizing these gains and achieving even better population control results over the next 4 years by refining existing techniques, applying new technologies and continuously adapting to changing environments.

NANDO BAARD
Multicote® Agri (8) Juvenile: The solution for growing new orchards

A single application of Multicote® Agri controlled-release fertilizer provides your young trees with a balanced nutrition over months, supporting establishment and enhancing growth.

1. Moisture penetrates the polymer capsule.
2. The moisture dissolves the nutrients in the capsule.
3. Nutrients are released into the soil by diffusion. Soil temperature controls the rate of release.

Nutrition matches growth needs • Better nutrient use efficiency
Labor saving • Nutrient availability independent of irrigation
BOLZANO, ITALY
Over twenty international speakers addressed topical issues regarding the apple growing sector in Bolzano, Italy in November 2016. Topics ranged broadly across innovation, consumer behaviour, new applications in the field of science, technology, and research.

HORTGRO Science would like to thank the Trade Desk of the Italian Embassy in Johannesburg, especially Anna Minucci, who made this trip possible.

INTERPOMA 2016 HIGHLIGHTS:
The Apple in the World

DAY ONE: The apple market in transition
Joan Bonany, agricultural engineer and director of IRTA, addressed the theme of “intensification and sustainability” in apple growing, or how to produce more with fewer resources. The idea is that technology can help minimise the impact on the environment, for example through techniques for the interception of light or for robotic picking.

Siegfried Rinner of the South Tyrol Farmers’ Union provided a picture of fruit production in South Tyrol. “Apple-growing in South Tyrol represents 55% of the area’s agricultural wealth, 67% of farms have between 2 and 10 hectares of cultivable land and the yield per hectare has increased by 63% over the past twenty years, reaching the upper limits of productivity.

“In addition to the producers many other parties are involved in the production of the South Tyrolean apple,” he said. These included producer organisations, insurance associations, nurseries, experimental and research centres, and Fiera: a system made up of many small but important players. Parties who work with, and not against, each other. It is a truly unique phenomenon.”

German market analyst, Helwig Schwartau, provided a demographic analysis of apple consumption data in Europe and the world: “We live in an age when consumers are increasingly seeking quality, taste and assurance and are prepared to pay more for these elements of distinctiveness.”

Schwartau said that Europe was undergoing a return of nationalism where consumers showed preference for eating “local” produce. He later told HORTGRO Science that it was becoming difficult for South Africa to export apples to the European market.

DAY TWO: What consumers have to say?
On the second day, the focus of debate was the consumer, new trends in behaviour, and the importance of sensory attributes in the purchasing decision.

Valerie Lengard Almli of Nofima illustrated the importance of sensory drivers (appearance, texture, fragrance, taste and smell) in defining a preference, and the correlation between these and the sociodemographic characteristics of consumers. “Culture, lifestyle or previous consumption experience influence the consumer’s perception” – she said – “Therefore it is not only the intrinsic elements of the product that are important in a purchasing decision.”

Alessandra Castellini, Professor at the University of Bologna’s Department of Agricultural Sciences, continued by presenting a recent research project carried out on a sample of 301 apple consumers and aimed at knowing the buying habits and variables that determine an increased WTP (Willingness to Pay), or the willingness of consumers to pay a higher price in exchange for a certain perceived characteristics. “Research, conducted in five stores in Bologna, northern Italy, showed that consumers often buy apples because they regard them as beneficial to health and prefer the local product, thereby significantly increasing WTP.”

According to the report by Roger Harker of Plant&Food Research on the relationship between...
genetics, ethnicity and consumer perception: “It is interesting how a product relates to the world’s various cultures and how people relate to food, and what are the emotional factors that lead to the choice of a product and the qualities that influence a purchase and repurchase.”

Day two ended with a talk by Klaus Glasser, CEO of Vog Products, who said he was optimistic about the future of apple-based products. Superfresh, sustainability and certification: these are what that the new consumer wants, and taste becomes increasingly central. “Millennials are informed. They are curious and want to try new things. They are health-conscious, shun the traditional and seek quality, paying even more for it. Convenience food, smoothies and single-packs. The added value is much higher for these products, and here the apple has a new market to be discovered.”

**DAY THREE: News from science, research and technology**

The third day touched on themes of innovation in the field of science, research and technology in the apple industry.

Dr. Dieter Bologna, South Tyrol Nursery and Fruit Growers’ Consortium - KSB Cooperative, started the last day by dwelling upon the production numbers of vegetative material from 1981 (the year the Consortium was created) to date, focusing on important changes that have occurred. Production is regularly growing, but the market composition has changed: today there is a high concentration, with more than 60% of the plants produced by just a few large concerns. Even the varietal assortment has favoured the cultivation of so-called “unstable” varieties, such as the Gala and its variations, which are much liked by consumers.

For South Tyrol nurseries, the correct forecasting of demand is essential, given the long storage period for plants in the nursery (2/3 years) and the wide range of available varieties. “South Tyrol is famous for a high quality level based on the expertise of its individual nurseries, which ensures an excellent starting product for fruit growers in the area,” said Bologna.

Josef Osterreicher and Jürgen Christanell - Consulting Centre for fruit and wine growing in South Tyrol - discussed the different pruning systems and types of apple farming.

The primary objective is to obtain high, constant and good quality yields. This is possible through a careful analysis of the climatic and geological conditions of the respective territory. Light interception and the type of pruning implemented are important: the main trend is to streamline the shapes of trees so as to increase the exploitation of sunlight on the fruit-bearing wall and avoid the problem of apical dominance, resulting in advantages also for automated picking. “The morphology of the systems is very important in South Tyrol, as it makes it possible to exploit the limited available space,” said Christanell.

Closely related to this issue was the talk given by Robert Wiedmer, who discussed the management of irrigation of South Tyrolean apple-growing systems. In South Tyrol, irrigation management does not only regard the dry periods during summer, but is all-important also in spring as frost protection for the buds. Human intervention thus
BEST PORTFOLIO OF POST-HARVEST TECHNOLOGIES

CONTROL-TEC® CAM
Fruit degreening, ripening, storage and elimination of astringency

CONTROL-TEC® DOS
Dosage and application

CONTROL-TEC® ECO
Water reduction, reuse and purification

TECNIDEX: Specialists in Fruit and Vegetables’ Health and Quality in Post-harvest, with the best Products, Technologies and Consultancy and After-sales Services.

Always with you

www.tecnidex.com

Health and Quality of Fruit and Vegetables
proves to be fundamental also to avoid over-watering, which would cause a too high yield, at the expense of the quality of apples, the potential proliferation of pathogens, and dilution of the soil’s nutrients. To support this, the MONALISA platform is available for fruit growers.

The second part of the morning began with technological innovations on which the Laimburg Research Centre for Agriculture and Forestry is working in order to improve the quality of South Tyrol’s production. In the first talk, Jennifer Brenner presented EUFRUIT, the platform prepared and implemented by the centre in order to link know-how stemming from practical work in the field to the theory work of laboratory studies, to convey the information and make it accessible for sharing. Within the projects created to increase collaboration between research and industry, Dr. Angelo Zanella continued by further illustrating MONALISA, the project in collaboration with EURAC and UniBz and focused on environmental monitoring of the South Tyrol area. The collection of physical data on the ecosystem is made possible by measurement stations and probes placed in individual orchards, with the aim of creating a system able to provide fruit growers with forecast information.

Finally, the topic of technological innovation in the machinery used in fruit growing concluded the conference. Michael Stauder of IDM-Suedtirol offered an insight into trends linked to connectivity, and the intelligent coordination of human-human, man-machine and machine-machine activities. Thanks to the ever greater awareness regarding neo-ecology, shown by producers and consumers and by the globalisation of traditional farming techniques, innovation plays an increasingly important role. According to Stauder “the future of agriculture, in the South Tyrol and elsewhere, lies in factors such as electric motors and environmentally sustainable paints, greater use of mechatronics, the digitisation of machinery and the use of automatically controlled equipment.”

The new kneading era is called Protoreattore® Pieralisi

With Protoreattore®, Pieralisi Group achieves a new record in the olive oil extraction machine industry. It is a disruptive innovation in the worldwide olive oil market that revolutionizes the traditional kneading process granting important advantages in the batch and industrial processing.

Higher quality and quality of the processed product due to the sensible reduction of the kneading time and the automatic management of the capacity, time and temperature. Energy savings thanks to the reduction of the processing time and heat losses.

Lower costs in the investment with the same processing capacity thanks to the evident elimination of the kneading basins. The extracted oil results contain more polyphenols and better organoleptic profile. This is a technological revolution that leads Pieralisi’s customers in the new kneading era.

OFFICIAL SOUTH AFRICA AGENT
Morgenster - Box 1616 - Somerset West - 7129 Vergelegen Ave
Off Lourensford Ave - Somerset West
Mobile 0833201123 - Phone 021 852 1738
Contact: Gerrie Duvenage - gerrie@morgenster.co.za

Pieralisi

Via Don Battistoni, 1
60035 Jesi (AN) Italy
Phone +39 0731.2311
Fax +39 0731.231239
info@pieralisi.com
www.pieralisi.com
Does Foliar Sucrose Application Increase Fruit Set in Packham’s Triumph Pears?

WILLIE KOTZE1, WIEHANN STEYN2,3 AND XOLANI SIBOZA2

1 Dutoit Agri, PO Box 236, Ceres 68351 | 2 HORTGRO Science, PO Box 12789, Die Boord 7613
3 Dept. of Horticultural Science, Stellenbosch University, Private Bag X1, Matieland 7602

WHAT WE KNOW

Packham’s Triumph is the most exported pear cultivar in South Africa. About 5 574 599 cartons of Packham’s Triumph were passed for export during the 2014 season. Like many other pears, Packham’s Triumph faces challenges such as alternate bearing and poor fruit set. The profitable commercial production of these pears has become increasingly difficult due to inconsistent yields (Webster, 2002). It has been reported that fruit precocity and sustainability of commercial production may be improved by sufficient flower bud formation, high flower induction and fruit set (Hudina and Stampar, 2010). Fruit set can be improved by controlling a series of sequential processes (Webster, 2002):

• Pollination, floral induction,
• Flower development and fruitlet retention

Despite these, fruit set may still be affected by tree juvenility, low flower bud formation and fruit abortion (Silva et al., 2010). Another challenge is that not all flowers set and retain fruit (Webster, 2002). Research has been done to increase fruit set of pear trees using various chemicals (Dussi et al., 2011; Dussi et al., 2002). Foliar application of sucrose has also been reported to increase fruit set in mango trees (Ebeed and Abd El-Migeed, 2005; Jarande et al., 2013). As a naturally occurring carbohydrate, sucrose is produced during photosynthesis in leaves and transported to reproductive and vegetative storage organs to provide plants with carbon and energy needed for growth (Tauzin and Giardina, 2014). Sucrose affects plant growth and regulation of flowering as well as differentiation of vascular tissue and development of fruit (Tauzin and Giardina, 2014; Tognetti et al., 2013).

WHAT WE THOUGHT WAS BENEFICIAL TO OUR TREES

Sucrose foliar application sprays are (or were) frequently used by our growers to increase fruit set. These seasonal sprays are believed to increase fruit set even without any scientific evidence to support this. The effectiveness of these sprays still remains unknown.

OUR MAIN OBJECTIVE

Our main objective was to investigate the effectiveness of sucrose foliar application on improving fruit set and quality of ‘Packham’s Triumph’ pears. We also wanted to find out if the sucrose sprays are benefiting our growers, taking into considerations the “sticky” issue of dissolving the sugar and cleaning the spray equipment afterwards.

OUR APPROACH

Plant material

This study was carried out during three successive seasons on mature commercial trees of Packham’s Triumph planted at 4 × 2 m in the Elgin Valley, Western Cape. Trees of uniform vigour and bloom density were selected and allocated to sucrose treatments using a randomised complete block design with five treatments per 10 replicates of one tree per plot. Guard trees and guard rows were left between treatment plots and rows, respectively. Two branches on each selected tree were tagged. Selected trees were sprayed using a motorised backpack sprayer to drip point with different concentrations of sucrose (Table 1). At the time of application, the leaves on the spurs were fully developed and the terminal shoots had extended by about 3 to 5 cm. All experimental trees were subjected to the normal commercial orchard management practices such as irrigation and fertilisation.
Table 1 Treatments were applied on selected trees at full bloom during the three seasons.

<table>
<thead>
<tr>
<th>Sprayed in 2011/12</th>
<th>Sprayed in 2012/13</th>
<th>Sprayed in 2013/14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (no spray)</td>
<td>Control (no spray)</td>
<td>Control (no spray)</td>
</tr>
<tr>
<td>Sucrose at 1% plus Goemar at 30%</td>
<td>Sucrose at 1%</td>
<td>Sucrose at 1%</td>
</tr>
<tr>
<td>Sucrose at 1%</td>
<td>Sucrose at 5%</td>
<td>Sucrose at 5%</td>
</tr>
<tr>
<td>Sucrose at 5%</td>
<td>Sucrose at 10%</td>
<td>Sucrose at 10%</td>
</tr>
<tr>
<td>Sucrose at 10%</td>
<td>Sucrose at 20%</td>
<td>Sucrose at 20%</td>
</tr>
</tbody>
</table>

Environmental conditions
The environmental conditions during treatment applications were recorded (Figure 1). The trees flowered over a period of about two weeks. Rain and spikes in the daily temperatures occurred over this period. However, conditions during and after sucrose application were adequate for fruit set (Figure 1).

Fruit set
Inflorescences and flowers were counted at full bloom on the two tagged branches of each selected tree while fruit set was counted in November after the fruit drop period.

Fruit yield and fruit quality (size, firmness and soluble sugars)
At harvest, all fruit from each tree were harvested and weighed per tree for yield determination. Samples of 40 fruit per tree were randomly harvested and transported to the Stellenbosch University laboratory for the determination of fruit quality. Fruit quality parameters included size, firmness and sweetness. Fruit size was determined by measuring fruit mass, while fruit diameter was determined with a digital calliper. Flesh firmness was determined on two sides of each fruit using an electronic penetrometer equipped with an 8 mm probe. Soluble solids percentage was determined in a fruit composite juice sample using a digital refractometer.

Statistical analysis
Statistical analysis was done using one-way analysis of variance (ANOVA) and the mean values were compared by using LSD at 5% level of probability.

RESULTS AND DISCUSSION
During the 2011/12 season, foliar application of 10% sucrose at full bloom significantly improved fruit yield per tree (Table 2). There were no statistically significant differences between the treated and untreated trees with regards to fruit set and fruit quality (firmness, mass, diameter and height). During the 2012/13 season, neither fruit set nor fruit quality was affected by the foliar application of sucrose despite the use of various
concentrations (1, 5, 10, and 20%; Table 3). During the 2013/14 season, the trial was relocated to another commercial farm to confirm the findings. Foliar application of sucrose either at 1, 5, 10 and 20% did not have any significant effect on enhancing flower clusters, fruit set, yield efficiency, and fruit quality (size, firmness and soluble sugars; Table 4). The effectiveness of sucrose foliar application may have been affected by a series of factors including orchard management and environmental factors.

Based on the results of the first season, it did seem that sucrose may have some, undetermined effect on fruit set, but the effect was not consistent and achievable over the duration of the trial. Considering the hassle involved in applying the sucrose and the inconsistency of results, growers need to think carefully before applying something that may generally have little benefit.

### ACKNOWLEDGEMENTS

This study was supported by the South African Apple and Pear Producers’ Association. We thank the Crop Production Technical Advisory Committee for technical support.

---

**Table 2. Effect of sucrose application at full bloom on fruit set and fruit yield during the 2011/12 harvest season in Elgin.**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Fruit set / cluster</th>
<th>Yield (kg/tree)</th>
<th>Estimated yield (t/ha)</th>
<th>Fruit firmness (kg)</th>
<th>Fruit mass (g)</th>
<th>Fruit diameter (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>0.38</td>
<td>53.4 bz</td>
<td>66.8</td>
<td>8.2</td>
<td>144.8</td>
<td>65.5</td>
</tr>
<tr>
<td>1% sucrose &amp; Goemar at 30% bloom and FB</td>
<td>0.63</td>
<td>54.5 b</td>
<td>68.1</td>
<td>8.1</td>
<td>148.3</td>
<td>65.6</td>
</tr>
<tr>
<td>1% sucrose at FB</td>
<td>0.66</td>
<td>63.7 ab</td>
<td>79.6</td>
<td>8.1</td>
<td>150.6</td>
<td>66.2</td>
</tr>
<tr>
<td>5% sucrose at FB</td>
<td>0.76</td>
<td>56.2 b</td>
<td>70.3</td>
<td>8.2</td>
<td>153.3</td>
<td>66.6</td>
</tr>
<tr>
<td>10% sucrose at FB</td>
<td>0.93</td>
<td>75.2 a</td>
<td>94.0</td>
<td>8.1</td>
<td>149.1</td>
<td>65.9</td>
</tr>
<tr>
<td>p-Value</td>
<td>0.2284</td>
<td>0.0094</td>
<td>0.965</td>
<td>0.6526</td>
<td>0.765</td>
<td></td>
</tr>
</tbody>
</table>

*z Means followed by different letters on the column are significantly different at P ≤0.05.

---

**LITERATURE CITED**


Table 3. Sucrose application at full bloom on fruit set during the 2012/13 season.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Fruit set / cluster</th>
<th>Yield (kg/tree)</th>
<th>Estimated yield (t/ha)</th>
<th>Yield eff. (kg.cm²)</th>
<th>Est. fruit no. (plot)</th>
<th>Est. fruit no. (cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>0.57</td>
<td>46.9</td>
<td>52.1</td>
<td>0.19</td>
<td>534</td>
<td>1.06</td>
</tr>
<tr>
<td>1% sucrose</td>
<td>0.71</td>
<td>46.3</td>
<td>51.4</td>
<td>0.19</td>
<td>559</td>
<td>1.13</td>
</tr>
<tr>
<td>5% sucrose</td>
<td>0.76</td>
<td>50.2</td>
<td>55.8</td>
<td>0.18</td>
<td>583</td>
<td>1.03</td>
</tr>
<tr>
<td>10% sucrose</td>
<td>0.74</td>
<td>56.5</td>
<td>62.8</td>
<td>0.2</td>
<td>648</td>
<td>1.16</td>
</tr>
<tr>
<td>20% sucrose</td>
<td>0.56</td>
<td>52.8</td>
<td>58.6</td>
<td>0.2</td>
<td>588</td>
<td>1.09</td>
</tr>
<tr>
<td>p-Value</td>
<td>0.506</td>
<td>0.664</td>
<td>0.913</td>
<td>0.829</td>
<td>0.931</td>
<td></td>
</tr>
</tbody>
</table>

Table 4. The effect of sucrose application at full bloom on fruit set, yield and fruit size during the 2013/14 season.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Flower clusters (%)</th>
<th>Fruit set / cluster</th>
<th>Yield (kg/tree)</th>
<th>Estimated yield (t/ha)</th>
<th>Yield eff. (°Brix)</th>
<th>TSS Fruit diam. (mm)</th>
<th>Fruit firm (kg)</th>
<th>Fruit mass (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>6.3 ns</td>
<td>0.8</td>
<td>25.8</td>
<td>32.3</td>
<td>11.2</td>
<td>75.2</td>
<td>7.9</td>
<td>212.4</td>
</tr>
<tr>
<td>1% Sucrose</td>
<td>5.9</td>
<td>0.9</td>
<td>33.3</td>
<td>41.6</td>
<td>11.5</td>
<td>74</td>
<td>7.9</td>
<td>205.8</td>
</tr>
<tr>
<td>5% Sucrose</td>
<td>7.7</td>
<td>0.9</td>
<td>28.7</td>
<td>35.9</td>
<td>11.2</td>
<td>75.8</td>
<td>7.9</td>
<td>215.2</td>
</tr>
<tr>
<td>10% Sucrose</td>
<td>8.1</td>
<td>0.9</td>
<td>22.1</td>
<td>27.6</td>
<td>11.4</td>
<td>76</td>
<td>8.2</td>
<td>219.4</td>
</tr>
<tr>
<td>20% Sucrose</td>
<td>9</td>
<td>0.8</td>
<td>29.4</td>
<td>36.8</td>
<td>11.5</td>
<td>75.4</td>
<td>7.8</td>
<td>213</td>
</tr>
<tr>
<td>p-Value</td>
<td>0.883</td>
<td>0.991</td>
<td>0.258</td>
<td>0.126</td>
<td>0.868</td>
<td>0.615</td>
<td>0.409</td>
<td>0.776</td>
</tr>
</tbody>
</table>


Japanese plums are a significant export crop in South Africa. Prunus salicina, originated in China, before it was introduced in Japan, and later introduced to the USA where it was interbred with indigenous diploid plums to improve important fruit and tree qualities. What is therefore commonly referred to as Japanese plums (or locally simply as plums), is actually a heterogeneous group derived from various species. Most, however, share the trait of not being able to self-pollinate inhibiting self-fertilisation, and requiring a pollinator to set fruit, and indeed the best possible cross-pollinator in a commercial environment to produce profitable yields.

A PROVAR INITIATIVE

Provar an independent fruit cultivar and rootstock evaluation company, provides services that support the client’s product development activities. Provar is constantly looking for means to apply fresh technology and the latest techniques to generate and distribute valuable information with regards to new cultivars. Near the end of last year Provar endeavoured to provide some clarity to the question of cross pollinators for clients in the plum industry, focusing on newly released cultivars under evaluation.

WHY DID PROVAR GET INVOLVED?

In recent decades, the bulk of the plums produced locally have been from locally bred cultivars, however, plum breeding is progressing at a fast pace and the local cultivars now compete with a multitude of imported varieties. With the wide host of new cultivars on offer to the market, many producers are opting to diversify their product ranges.

With the roll out of new plum cultivars, poor fruit set has occurred in many orchards, in many cases presumed to be due to a poor choice of cross pollinator. A problem that has been exacerbated, and indeed echoed in more traditional plantings by shifts in climate that have led to flowering times of the main cultivar and the cross pollinator being out of sync. The determination of cross pollinators in the past have been more of a hit-and-miss strategy, relying on flower time overlaps and then seeing if it actually affects fertilisation and fruit set.

Today we have a better understanding of the molecular and biochemical mechanisms involved, and can test for genetically compatible pollinators, before going to the field. The mechanism of incompatibility is an outcome of the S-locus within the plum genome that encodes two linked genes. Because plums are diploid, each cultivar carries two versions of the linked genes called alleles. Cloning and characterising these alleles have led to the development of molecular methods that enable S-allele typing of Japanese plum cultivars. Although many cultivars have been genotyped during the development of these molecular tools, the South African industry have not yet reaped the benefits of this technology.

PROVAR’S CHOICE TO ACTION

During the past season Provar tested over 30 cultivars from various local IP managers against a panel of common cross pollinators and commercial cultivars, enabling them to refine their recommendations of suitable cross pollinators for their producers.

To determine the S-alleles in the tested cultivars, consensus primers that were designed for automated detection (Guerra et al., 2012; Vaughan et al., 2006; Sonneveld et al., 2006) were used. Leaf
samples were collected or received from October 2016, processed, and submitted for PCR amplification with the chosen primer sets and according to the conditions described in Guerra et al. (2012). The data was analysed, and genotypes assigned, and subsequent genetic compatibility determined.

A simplified view of some of the results can be seen in Table 1. For a cultivar to successfully act as a cross pollinator, it needs to carry at least one different S-allele to the main variety (semi-compatible), or preferably two different S-alleles (fully-compatible). If two cultivars both carry the same two S-alleles, they are incapable of fertilising each other.

WHAT CLIENTS LEARNED

The data shared with clients were extremely well received. In subsequent discussions where flowering times were taken into account for different climatic regions, recommendations could be generated for suitable cross pollinators or pollinator combinations for cultivars by Provar.

The benefits of this initiative can now be filtered through to the producers, raising the potential of success of new plantings, and new cultivars.

PROVAR’S OFFER

Provar offers a range of evaluation services as well as supplementary services, for example, on the molecular front, in addition to the S-allele testing we have started work on genetic fingerprinting to establish trueness-to-type where questions of authenticity have arisen.

We see our clients as “Evaluation Partners”, complementing their in-house evaluation and product development through a set of services that verifies the commercial potential of new cultivars and minimises planting risk for producers.

If the adage stands, that knowledge is power, then the Provar initiative aims to improve the collective knowledge on new cultivars, and empower better decision making around plantings throughout the SA fruit industry.

Visit Provar at their fruit evaluation laboratory in Zandwyk Park, Paarl and visit us at provar.co.za.

For more information, contact Carl Hörstmann 083 3007800, or carl@provar.co.za

REFERENCES


Table 1. An example table indicating the genetic compatibility relationships within an average flowering window of selected cultivars. A ✓ indicates full compatibility, a □ indicates semi-compatibility, and a ✗ indicates non-compatibility. *‘African Rose’, ‘Harry Pickstone’, and ‘Pioneer’ all carry a self-compatible mechanism and is theoretically at least semi-compatible with most plum cultivars.
I was going to share my favourite indigenous oils this time but I got side-tracked with our lavender harvest. Few are so fortunate to have a field of lavender and to make oil, but almost everybody can nurture a few lavender bushes and dry the fragrant flowers.

Depending on the use of the dried lavender, the best by far is L. angustifolia, but L. x intermedia will suffice. Most of the other lavenders with high camphor can be bitter in food if not used in small quantities and have an inferior fragrance.

The easiest ways to know if it is one of the above species are simple: the bush will only flower once a year in mid-summer and it will not grow higher than 80 cm.

For food: the corollas have the sweetest flavour - and for real delicate dishes it could be worth your while to separate them from the stems and the calyces. Normally one will just use the total spike for cooking. The leaves could be used for more robust dishes and the stalks to smoke braai-dishes on the coals or as fire-starters in winter.

Cutting & Drying

I love the smell of lavender drying around the house - it is so soothing and calming.

It is best to pick your lavender before it is in full bloom, i.e. before the little florets are completely open. This ensures that the dried buds will retain their fragrance for longer, and it also means that they won’t fall apart as they dry. As with most herbs, the best time to pick is in the mid-morning after the dew has evaporated. If you would like to dry lavender bunches, make sure you cut nice long stems of lavender. Secure the stems of lavender together with a rubber band, because the lavender will shrink as it dries. Hang your bunch of lavender upside-down to dry in a well-aired area of your house or your garage.

The lavender drying time will depend upon the
level of humidity and temperature, so check on your bundles periodically to assess their dryness. It can be anywhere from two to four weeks.

Check that the buds and stalks are completely dry (they should feel dry and a bit brittle or crunchy to touch) before you use them, otherwise they might grow mould, fungus, or even rot.

Once dried, remove the rubber band from around the stems, and use the dried lavender to make fragrant flower arrangements. Alternatively, collect the lavender buds and use them in pot-pourri, lavender sachets or food.

Make sure you store dried lavender out of direct sunlight, heat, and humid conditions to prolong the fragrance of your dried lavender.

USING LAVENDER RICE
DUTCH POFFERTJIES

In my Grandmother’s recipe book of 1940, I found a recipe for Hollandse poffertjies. I changed it a bit to use our dried lavender.

1 cup warm milk
1/4 cup warm water
1 egg
2 tablespoons of brown sugar
infused with dried lavender
2 1/4 cups cake flour: (I used stone-ground cake flour)
10 g dried yeast
pinch salt

To serve:
butter and icing/castor sugar
(infused with dried lavender)

Combine sugar, yeast and liquid and allow to stand for a few minutes. Whisk in the egg. Add slowly to flour and salt in a separate bowl. Whisk until smooth and allow to rise for at least an hour.

Bake small spoonfuls in a frying pan until golden. Keep warm and serve with a bit of butter and the lavender icing sugar!

INFUSED SUGAR

Assemble in an air-tight flask: 3 parts sugar of your choice – use coarse grained, fine, even icing sugar.

Allow to infuse for 3 weeks. Use in recipes or garnish. Alternately, place three parts sugar and one part lavender flowers in a grinder . . . and use as above.

LAVENDER VINEGAR

Hot sterile bottle with screw top
Good quality grape or apple vinegar – 500 ml
3 lavender spikes

Fit the lavender spikes upright into your bottle – warm your vinegar and fill the bottle. Seal and allow to steep for 2 weeks before use. You may shake the bottle occasionally.

LAVENDER BUTTER

250 g unsalted butter
30 ml lemon juice
60 ml lavender flowers

Mix the ingredients well, shape into a roll and refrigerate. Use your imagination!
More than just Netting

REIDS ENGINEERING (Ceres, South Africa) is proud to announce a partnership with world renowned orchard and vineyard netting specialists: Comavit (Italy) and Artes (Italy).

This partnership will offer:
• An holistic approach for best possible orchard/vineyard solutions.
• Professional netting and trellising solutions.
• Advanced technologies from Europe ensuring reliable and cost effective crop protection.

Research has proven that for many crops it is essential that nets be opened and closed at different times of the year for pollination and to regulate growth in the orchard or vineyard.

The 'flat top system' allows just that. Specialized clips and fasteners with netting that is specially woven to support these systems is what makes the difference. The 'clip system' is specifically designed to open under snow or hail loads that could otherwise destroy the entire netting structure.

Netting structures are custom designed based on specific requirements. Structural considerations include wind speed and direction, hail or snow conditions, orchard layout and soil types for anchoring requirements. Shading requirements, UV indexes and the type of crop being covered are considered.

ARTES POLITECNICA

From its beginnings in 1966, Artes has established itself as a worldwide market leader in the design and fabrication of a variety of anti-hail, shade and anti-insect nets. The production facility in Italy houses:
• an efficient weaving/warpage department
• a packaging/sewing department
• wide areas for warehousing

Artes has recently perfected the first pure grey netting in the world. This netting provides excellent cover particularly for deciduous fruit crops in Southern Africa. The UV protection ensures less sunburn and extends the life of the nets under the harsh African sun. A high level of versatility and competent technical staff, sets Artes apart in offering the best possible ‘netting solution.’

COMAVIT is world renowned for the production and supply of structural components and accessories for netted and trellised orchards and vineyards. This product range includes specially formulated pre-stressed concrete poles. Concrete poles provide:
• Uniformity in construction.
• Excellent ‘weathering’ properties.
• A superior end product built to last. (Poles can also be re-used).
• Resistance to shocks, wind gusts, atmospheric agents, aggressive substances contained in chemical products and fertilizers.

Comavit’s product line extends to a broader range of systems and accessories including galvanized steel attachments, anchoring systems and a variety of plastic fittings for topping poles and securing nets.

Comavit’s services include customer consulting, planning, logistics facilitation (nationally and abroad) and technical training for installation purposes.

SO – WHAT ARE THE REAL BENEFITS OF ORCHARD AND VINEYARD NETTING SOLUTIONS:
• Save Water.
• Improve Fruit Quality and particularly 1st class pack outs.
• Crop Protection from wind, hail, insects, birds and even rain.

For more information or to receive a quote, contact REIDS ENGINEERING on 023 312 2055 or james@redantagri.co.za.
ADOLF KIEVIET is the current chairman of the South African Fresh Produce Exporters’ Forum (FPEF), the official representative body for South African fresh produce exporters. FPEF is a voluntary, non-profit organisation and over 90% of fresh fruit exported from South Africa is exported by FPEF members. Adolf is also a director of Freshworld Holdings, one of South Africa’s larger fruit export companies exporting to the Far East. The SA Fruit Journal spoke to Adolf to find out more about his industry involvement and contribution to FPEF.

What is your background and how did you become involved in the Fresh Produce Export Industry?

“As my father was involved in the fresh produce retail sector, I grew up in a home where we were exposed to the world of fresh produce from an early age. During school holidays my brothers and I worked for Freshmark, often for the night shift when we sorted through rejected fresh produce. After school I studied Business Management at the University of Pretoria. Following graduation in 1998 I worked for Checkers as a store manager for a year and then joined Freshmark in Johannesburg as a production assistant where I was mostly involved with packing onions, garlic and bananas. In 2001 I moved to Cape Town and worked in logistics for an agricultural commodities company that had started a fruit division focused on trade.
into Africa. After four years with them I joined my father’s Fruit Export company Freshworld in 2005 and have been with Freshworld since then.

“In the fresh produce sector every year and season are unique and one is confronted with different challenges. What this has highlighted for me is to remember that these could re-occur again in the future and to remain prepared to deal with them again in this event.”

How and why did you become involved with Fresh Produce Exporters’ Forum and what have been the results of that involvement, both for FPEF and your business?

“I was nominated to become a director of FPEF in late 2013 and then become a director in 2014. Many of the other older exporters on the board were very tied up in their businesses so I agreed to be the chairman and I am probably the youngest chairman of the FPEF board so far! I receive incredible support from my fellow board members who are knowledgeable, experienced exporters, many of whom have been in the industry since the time of deregulation.”

What advantages and services does FPEF offer its members and the broader International fresh produce industry?

“FPEF is the voice for our exporters and represents the interests of the South African fresh produce exporters locally and internationally. This includes communication and cooperation with the South African government, informing government of the challenges that the South African fresh produce export community faces in the global market and cooperating with them on issues such as phytosanitary challenges and trade agreements. This is done by cooperation with government bodies such as the Perishable Products Export and Control Board (PPECB) and the Departments of Agriculture, Fisheries and Forestry (DAFF) and of Trade and Industry (DTI).

“To prevent duplication between the functions of FPEF and the commodity organisations, Fruit South Africa (whose members are Citrus Growers’ Association, Hortgro, South African Table Grapes Industry Subtrop and FPEF) has been strengthened with further capacity and has been tasked with addressing domestic and international issues that are common to the member associations. Through FPEF’s membership of Fruit South Africa, we also represent our members on international fresh produce organisations such as Produce Market Association (PMA), Southern Hemisphere Association of Fresh Fruit Exporters (SHAFFE) and European Fresh Produce Association (Freshfel). Locally FPEF is also a member of the Agricultural Business Chamber (Agbiz).

“Membership of FPEF is voluntary and in order to set a standard for ethical and sustained business practices, the Forum requires members to meet strict accreditation criteria and to adhere to the code of conduct. We are a small group of fleet-footed people and work proactively to add value for our members. Although we are competitors in the marketplace, we are able to discuss and cooperate on issues that are common to our industry as it is our responsibility to collectively do the best for our growers and our markets. Previously FPEF represented only the fruit export sector but this has also been extended to represent vegetable exporters as well.”

Do you have a comment regarding the current and future prospects of the South African fresh produce export industry?

“One of the biggest challenges facing our exporter industry over the next few years will be our country’s infrastructural capacity to serve growing fruit production. Production trends for most fruit kinds are set to increase sharply during the next few years and South Africa’s current infrastructure will not have the capacity to store, transport and ship these additional volumes of fruit. In order to achieve government cooperation and assistance with this big impending challenge, we have to rapidly and proactively transform our industry.”

Have you had any amusing anecdotes you would like to share?

“I love this industry as every day is truly different. In our business we work closely with our international clients and it is often interesting to hear their take on business. A few years ago one of my clients from Thailand commented as follows on the fruit trade: “If you lose money don’t cry and if you make money don’t laugh!” So, this is quite amusing but I can’t fault this advice.”
Opal®, with its sunny golden skin and orange blush, is an exciting breath of fresh air in the apple category for both growers and retailers.

The new variety, UEB 32642, a cross between Golden Delicious and Topaz, is sold under the registered trademark Opal® by licenced marketers. It has a golden yellow skin with up to one third covered in an orange blush and a great taste that conjures up memories of quince and mango with a touch of pear.

Its susceptibility to mildew is low and the apple is Vf resistant against apple scab. Further natural genetic advantage is the non-browning gene which make it ideal for salads and pre-cut meals. The tree is a regular cropper, thus supporting the idea of growing these apples in an environmentally friendly way, as naturally and sustainably as possible. With grower friendly attributes of precociousness, good cropping, high levels of set and naturally giving many branches it does not require high levels of inputs. It is ready for picking when the background colour turns a golden yellow. This fruit does not go soft.

Characteristics:
- Golden yellow skin with up to one third of an orange blush on its cheek
- Crisp and juicy with high sugars and a surprising crunch
- Less labour intensive and handles well
- An exceptional shelf life
- Harvest starts with last week of Golden Delicious, before Braeburn. Multiple picks (up to 3 times) especially on young trees
- Fruit size ranges between 65 and 80 mm

Initial marketing as OPAL® in the United States and Europe showed excellent demand for this exceptionally good eating quality apple. Now is the time to be part of establishing the new “Gold” apple category.

The world’s most sought after cultivars come from TopFruit

Please contact Peter Allderman from TopFruit for further information
T 021 874 1033  F 021 874 2110  E peteria@topfruit.co.za
W www.topfruit.co.za   PO Box 73 Simondium 7670 South Africa

Opal® is a registered trademark of fruit select GmbH, Germany and reserved for the exclusive use of licensees. Managed and marketed by TopFruit in South Africa.
15 Years ago we founded GoReefers and specialised in perishable agriculture freight and logistics. And not just specialising, we have been at the spearhead of industry innovation right from the very beginning.

We have now expanded into GoGlobal - the umbrella ‘tree’ that contains a modular combination of departments all working together, creating freight logistical wonders to get your produce from the soil and into your customers hands without hassle and on time.

Our latest, cutting edge innovation is our GoReefers App - a mobile tool that will allow you to stay up to date with everything to do with your in transit freight and give you an insight into the daily operations of your shipments.

For more info, call us on:

Cape Town Head Office
+27 21 912 5900
gobeyond@goglobal.group

Or visit us at:

www.goglobal.group