Mondstuk van die Suid-Afrikaanse aartappelbedryf • Mouthpiece of the South African potato industry

CHIPS

VOL 38 NO 2 • MARCH / APRIL 2024

WES-VRYSTAATSE KULTIVARPROEWE BY BULTFONTEIN EN KROONSTAD IN 2023

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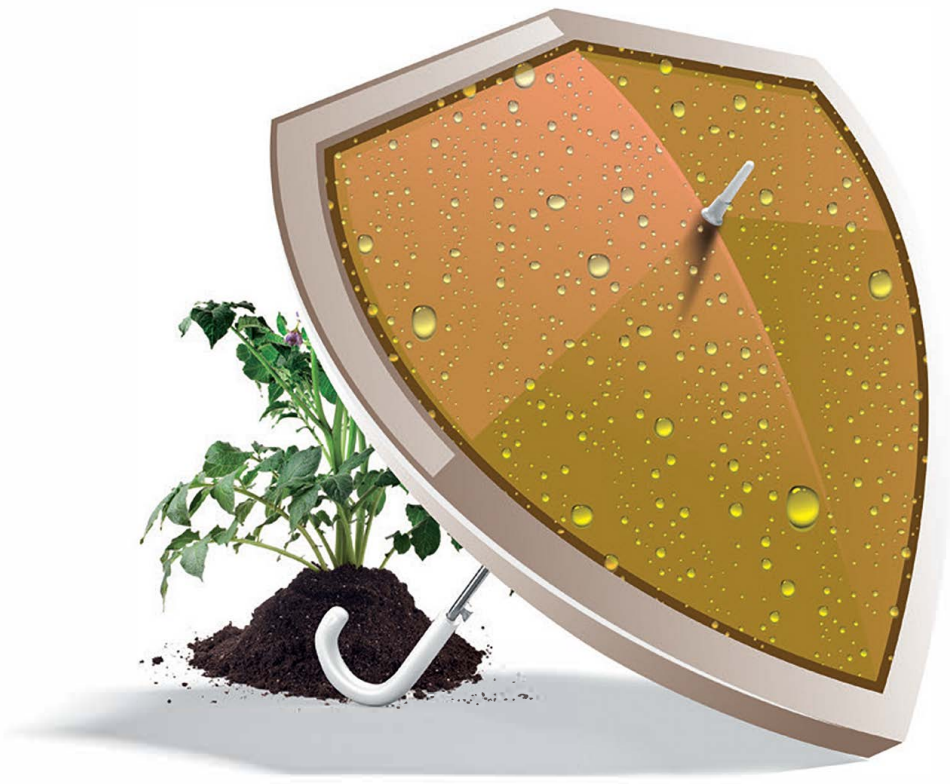
betroubare beskerming, kom reën of son



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The potato hive is buzzing

By Willie Jacobs, CEO, Potatoes SA

In the previous issue of *CHIPS* I tried to emphasise the need to slow down and celebrate life a little more. I am a little disappointed (tongue in cheek) to say that we at Potatoes SA did not manage to adhere to the first suggestion at all. However, we have certainly achieved the second goal and we are going for it with all that we have!

To kick off this year, we held an extremely well attended transformation symposium, with attendees and speakers contributing constructive inputs that will take the industry to new heights. Read more about it in this issue of *CHIPS*.

Not only did we crown our latest transformation farmer of the year, but we also managed to acknowledge those role-players who have contributed significantly to the development and growth of the potato industry.

Hold on to your hat!

If the first two months of 2024 are anything to go by, then the rest of this year is certainly going to be a busy one. We look forward to a hive of activity, and as we speak are preparing for yet another amazing event, our biennial congress to be held on 16 and 17 July this year in the good old Cape.

But, before we get there, we are first going to represent South Africa at the World Potato Congress which takes place in Adelaide, Australia. In doing so, we will be able to bring back information to enhance our own congress including the latest trends and shared knowledge picked up in the land down under.

As can be expected, and given our experience of the previous Potatoes SA congress, this year's instalment will significantly enrich the lives and activities of all participants. We look forward to digging deep into the potato value chain and squeezing out the essence of solutions and opportunities that will not only enhance the longevity of the industry, but reduce risk for all stakeholders. We truly hope that the content and knowledge shared at this auspicious event will offer solutions for stimulating investment and growing prosperity as we are in dire need of increased profitability all round.

The congress will be characterised by critical conversations between all the links in the value chain, with specific insight into consumers and the stakeholders representing them. Our expectation is that we will find alignment, not only in what matters in terms of the value of a potato, but also how we interpret it from different angles.

As usual, the congress will provide new insights into the use of current technology, new technology and a general understanding of how quickly technology not only changes, but is adopted. Dreams and aspirations regarding 2050 space age technology are swiftly becoming current, and the unfortunate truth is that those who insist on sticking to the old ways are going to miss out.

And then …

This year's congress will be presented in a completely new setting, and will be introducing the country to South Africa's 2024 top seed grower as well as commercial potato producer. This will be done in the form of a combined event that promises to move horizons, break down walls, and build strong unity by exhibiting our pride in the history of the potato industry! See you all there!

To subscribe
CHIPS is the official magazine of Potatoes SA. It aims to address issues that are relevant to the potato industry.
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Potatoes Aartappels SA

POTATOES SA CONGRESS & SEED POTATO GROWERS' FORUM

The 2024 Potatoes SA Congress & Seed Potato Growers' Forum promises to be an engaging and informative event for potato growers, industry experts and stakeholders. This year's theme is '2050 is Now' and promises content and discussions aimed at successful potato production, today and tomorrow.

The event aims to foster collaboration, knowledge sharing, and innovation within the potato industry. Attendees can look forward to meaningful discussions, networking opportunities, and actionable takeaways.

16 and 17 July 2024

Century City, Cape Town

Numerous sponsor opportunities available.

2050 IS NOW!

Contact Potatoes SA for more information at sheila@potatoes.co.za.

Day 1 programme

The formalities of both the Seed Potato Growers' Forum and Potatoes SA Congress will be conducted on Day 1. Feedback reports will provide insights into the state of the potato industry, including recent developments and successes, as well as challenges and opportunities. While delegates attend to reporting and other formalities such as the election and appointment of representatives and chairpersons, a parallel industry session delving into issues such as finances and audit reports, pepper ringspot virus, the Potatoes SA industry app, resource efficiencies and much more will be presented to other industry stakeholders.

Once the formalities have been concluded, it is time for action! In the afternoon, the keynote address by the main Sponsor will be followed by the first Industry Matters Session on Technology & Risk Management. Day 1 will conclude with a networking evening – the long awaited opportunity for producers and industry stakeholders to engage informally!

Day 2 programme

The second day of the Seed Potato Growers' Forum and Congress will tackle issues of a more technical nature, with themes such as:

- Technology and risk management.
- Production efficiency.
- Logistics and supply chain.
- Policy and sustainability.
- Customer focus.

The events will be rounded off with a prestige gala awards ceremony during which the national commercial potato producer of the year and seed potato grower of the year will be announced.

What is filling up your plate?

This year kicked off at breakneck speed and everyone I talk to seems to be out of breath and is just as weary as they were before we knocked off for our well-deserved December break in 2023. That got me wondering: What drives us to often take on more than we should?

In South Africa, there are numerous factors driving our sense of urgency and they tend to make for a full plate:

- On the other side of our borders, countries are waging war.
- Back home, the elections are looming and are fraught with uncertainty.
- Profitability is nosediving and investors are distancing themselves from us.
- Businesses are closing at an alarming rate and the unemployment rate keeps rising.
- Lawlessness seems to be the order of the day and a simple drive to work has become a challenge in itself.
- The fuel price, cost of living, rising food prices – the pressure of balancing income against expenses is growing by the day.

To run or not to run

There are many other factors that can be listed here, but let's stick to this for now and accept that the picture is bleak and that our urgency is based on fear and the need to simply survive. It is difficult to put a positive spin on these problems but every time I find myself wondering to which hills we should run when things finally go south. There really is only one place – the south.

We are already there. I am staying, come hell or high water.

The average South African's plate is full yes, and it doesn't look very appetising right now but we do love our food and unwittingly we also tend to fill our plates with ingredients that look more or less like this:

- Massive amounts of tolerance and giving each other the time of day.
- Greeting strangers and dishing out a smile. Try doing this abroad.
- The sun. A recent article on the local property market cited numbers showing how many expats are returning to South Africa, mostly because of the weather and better cost of living. Indeed many are leaving, but many are also returning.
- Potatoes. We've got excellent producers who don't depend on subsidies and keep on producing, come rain or shine, come government or not.
- Agriculture. This sector remains a creator of jobs, a supplier of nutrition, a source of security. While the rest of the world's producers are protesting, ours are doing what South Africans do best – getting on with the work at hand.

So when my mind wanders and tilts over to the negative side, it is always good to take stock of what makes us a great nation. It is certainly not the government or the economy – it is us. Let's take a deep breath, stop running for one second, and say cheers to that.

Lynette Louw, redakteur
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Potato NEWS

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New local leader for IFPA

The International Fresh Produce Association (IFPA) appointed Jane Strijdom as the new manager for the South African IFPA branch. Said Strijdom: "I hope to leverage the success of IFPA's past to enable our current and future members to build strategic local and international relationships within the fresh produce industry going forward."

Strijdom said IFPA welcomes anyone who is involved in the fresh produce industry, since it is the only association that caters to the entire fresh produce supply chain. IFPA's mission is to deliver value to its members and connect them with the industry.

Even though IFPA is based in the United States (US), the association strives to be an organisation that represents members internationally. "We operate in China, Chile, Brazil, Australia, New Zealand, Mexico, Europe and South Africa. Therefore, we can help local companies with queries surrounding market access, protocols, retail information, international trends and much more in any of our operational countries," Strijdom said.

The association invested additional resources to provide comprehensive support to the local IFPA team. The goal is to develop marketing and communications resources, which will in turn meet the needs of members. – *Susan Marais, Plaas Media*

New nematode species discovered

The University of California Riverside's (UCR) scientists have discovered a nematode that infects and kills insects. The new species is a member of a family of nematodes called *Steinernema* that have long been used in agriculture to control insect parasites without pesticides. *Steinernema* are not harmful to humans or other mammals and were first discovered in the 1920s.

"We spray trillions of them on crops every year, and they are easy to buy," said UCR nematology professor, Adler Dillman, whose laboratory made the discovery. "Though there are more than 100 species of *Steinernema*, we are always on the lookout for new ones because each has unique features. Some might be better in certain climates or with certain insects."

They have named the new species *Steinernema adamsi* in recognition of the American biologist, Byron Adams, who is the chair of the Biology Department at Brigham Young University. – *Phys.org*

InteliGro leadership changes

WinField United South Africa (WUSA) and InteliGro jointly announced that Gideon Hefer, managing director of InteliGro, has decided to step down from his position effective 1 April 2024.

Hefer, a qualified chartered accountant from the University of Johannesburg, joined the then Terason in 2001 and was part of the team that established InteliChem in 2012. He played a key role in the merger of Terason and TechniChem, forming the well-known industry leader, InteliGro, in 2016. Being appointed as chief executive officer (CEO) of InteliChem in 2017, he joined the WUSA executive management team as managing director of retail in 2021.

Jan Vermaak, CEO of WUSA, confirmed that Hefer will remain within the group, taking on a different role to support strategic initiatives. – *Winfield United*

PepRSV: Kwarantynmaatreëls gelig

Aartappels SA het ongeveer 'n jaar gelede die pepper ringspot-virus (PepRSV) by aartappels in Suid-Afrika waargeneem. Aangesien dit die eerste keer is wat die virus in Suid-Afrika opgemerk word, is dit as 'n kwarantynsiekte geklassifiseer en produsente mag nie aartappels met tekens van PepRSV bemark nie.

Opnames deur die Landbounavorsingsraad het egter getoon dat die virus wydverspreid was, veral op tafelaartappels. Na gesprekke met die Departement van Landbou, Grondhervorming en Landelike Ontwikkeling (DALRRD) is besluit om die kwarantynmaatreëls op tafelaartappels op te hef. DALRRD sal voortgaan om PepRSV ingevolge die *Wet op Landbouplae, 1983 (Wet 36 van 1983)* te reguleer. – *Elmarie Helberg, Plaas Media*

North America's ammonia plans

North America is set to lead the global ammonia industry capacity additions with a share of 44% by 2028, by gaining capacities from new build and expansion projects between 2024 and 2028, according to GlobalData, a leading data and analytics company.

GlobalData's latest report, *Ammonia industry capacity and capital expenditure forecasts with details of active and planned plants to 2028*, reveals that the total ammonia capacity of new build and expansion projects in North America is expected to be 31.19 million tonnes per annum by 2028.

Ammonia is a widely used chemical in various end-use industries. The demand for ammonia in North America is driven by the growing use of nitrogen-based fertilisers in the agricultural industry in North America. The other factors contributing to the growth of ammonia are the low-cost feedstock and the emergence of end-users with decarbonisation goals. – *GlobalData*

Meshack Ndongeni (middle) from KwaZulu-Natal was named Potatoes SA's third Enterprise Development Farmer of the Year. With him is (left) Rendani Murovhi, Potatoes SA's transformation manager, and Thandi Moyo, deputy director-general of rural development at DALRRD.

Development farmer dreams big

Meshack Ndongeni, a potato farmer from KwaZulu-Natal, has been crowned the third Enterprise Development Farmer of the Year during the seventh Potatoes SA Transformation Symposium held on 15 February this year. Ndongeni dreams of expanding his potato farming operation to another region, which would enable him to deliver potatoes to market for more months of the year. Currently, he is only able to supply the market with potatoes for six months of the year. – *Susan Marais, Plaas Media*

Read our complete report on the Transformation Symposium elsewhere in this issue.

North American production in 2023

The United States Department of Agriculture, in collaboration with Statistics Canada and Servicio de Información Agroalimentaria y Pesquera, has released a comprehensive report detailing the potato production figures for the US, Canada and Mexico. The 2023 combined production for the US and Canada is estimated at 570 million cwt (hundredweight), showcasing an 8% increase from the 2022 estimate.

Breaking down the figures, the US alone has achieved a 10% increase in potato production, with an estimated output of 441 million cwt. Meanwhile, Canadian potato growers have also contributed notably to this increase, with a harvest of 129 million cwt, marking a 4% rise from the previous year.

In contrast, the 2022 potato production for the US, Canada and Mexico combined had seen a decline, totalling 567 million cwt, which was 2% lower than the 2021 estimates. During that year, the US experienced a 3% decrease in production, with an output of 402 million cwt. However, Canadian growers had a slight increase of 2%, harvesting 124 million cwt. Mexico's production faced a downturn, with a 4% decrease, resulting in a harvest of 41.4 million cwt. – *Potato News Today*

European Union scraps pesticide proposal

The head of the European Commission, Ursula von der Leyen, has announced plans to scrap a proposal halving pesticide use across the European Union (EU). The move is an apparent concession to producers who have been protesting in many EU countries against regulations, including the planned reduction in pesticide use.

Von der Leyen said the proposal had become a "symbol of polarisation". The reversal still needs to be formally approved. Pesticide reduction is among a number of grievances that producers in countries including France, Belgium and the Netherlands have been demonstrating against.

They argue that reducing the amount of pesticide they are allowed to use, will negatively impact their crops and therefore put food production in the EU at risk. "Our producers deserve to be listened to, Von der Leyen told the European Parliament recently. "I know that they are worried about the future of agriculture and their future as producers."

Von der Leyen also said the issue of pesticide use has not gone away and that further conversations would be needed before a new proposal to reduce them could be put forward. The EU aims to halve the use of the chemicals by 2030 as part of its Green Deal, which is aimed at tackling climate change. – *BBC*

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Moerkwekers inspireer: 2024 se top tien aangewys

Deur André Wessels, tegniese bestuurder, Aartappelsertifiseringsdiens

Bayer is al sedert 2005 die trotse borg van die Moerkweker van die Jaar-toekenning. Dit is vir ons 'n groot voorreg om met hierdie gesogte toekenning geassosieer te wees en 'n pad te stap met hierdie groep uitsoekboere. Elke jaar bring sy eie geleenthede en uitdagings, en 'n 'goeie', 'slegte' of selfs 'normale' jaar kan nie met sekerheid gedefinieer word nie.

Eksterne faktore sal altyd die lewe interessant hou – ons werk immers binne 'n biologiese sisteem met 'n magdom veranderlikes wat meestal buite ons beheer is. Ons kan egter sekere faktore tot die beste van ons vermoë bestuur. In die aartappelbedryf sluit dit die keuse van insette soos aartappelmoere, toerusting, kunsmis en gewasbeskermingsprodukte in.

Bayer streef daarna om innoverende, nuttige, hoë-gehalte produkte na die bedryf te bring en so ons produsente te help om tot hul volle potensiaal te presteer. Die gehalte en uitnemendheid van Suid-Afrikaanse moerkwekers is vir ons by Bayer 'n inspirasie en in lyn met ons maatskappy se eerste doelwit: Science for a better life. Ons sien uit om saam met hierdie bedryf nuwe hoogtes te bereik
– *Wilbri Vorster, Bayer Horticulture Go-to-Market lead, Afrika*

Figure 1: Criteria.

30 hectares	**3** consecutive seasons	**Zero** regulated pests
53 certification aspects	**5 300** maximum points	**Independent** auditors

**Information supplied is the total performance on G0 to G7 material planted during the review.*

Top ten seed potato growers

The Potato Certification Service (PCS or ASD) plays a crucial role in enabling growers to ensure a sustained supply of good quality planting material. Through certification of seed potatoes, planting material complies with the requirements of the South African Seed Potato Certification Scheme (Scheme).

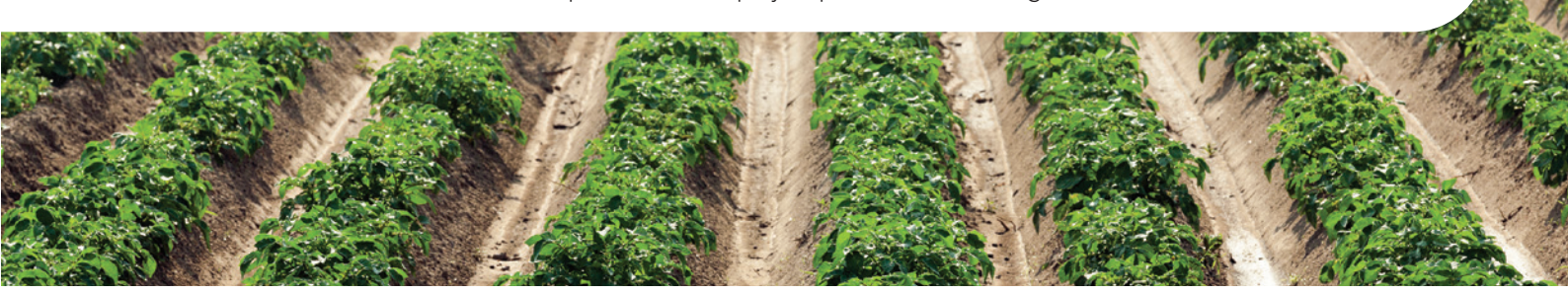
However, it is these growers, the producers of this critical crop, who truly deserve commendation. With this in mind, it is time for the Bayer Top Seed Potato Grower of the Year Award. The eligibility criteria for the award necessitate a consistent contribution, requiring seed potato growers to register a minimum of 30 ha for three consecutive seasons during the period 1 July 2020 to 30 June 2023.

Grower performance is determined through analysis of data recorded by certification officials during the certification process, which plays a pivotal role in determining the top seed potato grower. All findings made by the certification officials are scrutinised against the tolerances outlined in the Scheme and, as such, each deviation counts.

All qualifying seed potato growers are ranked according to points earned, leading to the determination of the top ten and identification of the finalists. These growers serve as exemplary ambassadors for the seed potato industry.

Based on the outcome of the evaluation done by industry leaders during farm visits to the finalists, the Bayer Top Seed Potato Grower 2024 will be crowned. This announcement is scheduled to take place at the Seed Potato Growers' Forum, to be held at Century City in Cape Town on 16 and 17 July 2024.

It gives us great pleasure to announce the top ten seed potato growers. The top ten are listed in alpha-numerical order as per the grower code.



185 ha registered
212 808 x 25 kg bags certified
33 varieties planted

B 008 | Potato Seed Production (PSP)

Jakkie Mellet, Lydenburg, Mpumalanga, individual grower

PSP se aartappelmoerproduksiesukses is eerstens te danke aan genade van ons liewe Vader. Ons het 'n jong span, maar ons glo die mens maak die moer. Tweedens glo ons dat die unieke ligging van ons plaas vir ons 'n omgewing bied wat hom perfek tot moerproduksie leen. Plant in droë grond terwyl jy bid vir reën en maak betyds dood om plantluise vry te spring. Derdens glo ons daarin om 'n pad met die regte kliënt te stap. Alles wat ons doen rakende moerproduksie, word gedoen met die kliënt se behoefte in gedagte.

Johandré Breitenbach, ASD-streeksbestuurder, Lydenburg

Jakkie Mellet, eienaar van PSP, is nie net 'n produsent nie, maar ook 'n besigheidsman. Dit dra by tot die sukses van PSP.

PSP wil 'n landbou-onderneming wees wat die sukses van hul werknemers en kliënte ondersteun, volhoubaar in landbou groei deur hulle toewyding aan werknemer-ontwikkeling, en die verskaffing van die beste produk op die regte tyd aan die kliënt. Die lewering van gehalte aartappelmoere is vir hulle van uiterse belang.

Jakkie en sy plaasbestuurder, Werner Schutte, bou deurentyd aan hulle span se kennis en handhaaf 'n goeie verhouding met elke werknemer. Hulle is ook toegewy aan innovasie deur 'n wetenskaplike en datagedrewe plaas te bou om sodoende nuwe hoogtes te bereik.

Wanneer afsprake gereël is vir sertifiseringsaktiwiteite, is hulle altyd stiptelik en georganiseerd. Welgedaan, Jakkie en span.

304 ha registered
253 261 x 25 kg bags certified
5 varieties planted

B 054 | Sirkel-N-Landgoed

Rudi Heinlein, Baltimore, Limpopo, Wesgrow Potatoes

Die keuse van aartappelmoere is 'n fundamentele aspek van aartappelproduksie. Deur in gehalte aartappelmoere te belê, word die kanse op 'n suksesvolle aartappelseisoen verhoog. Dit is Sirkel-N-Landgoed se doel om die beste gehalte aartappelmoere binne ons vermoë te produseer en om die koper te verseker van waarde vir sy geld.

Daar is baie uitdagings rondom klimaatsverandering, droogte en peste en plae wat toenemend weerstand bied teen die beskikbare landbouchemiese middels. Ons glo dat 'n positiewe aanslag tot groot sukses in ons boerdery lei. Passie maak 'n verskil en goeie beplanning is baie belangrik om vorentoe te beweeg. Langtermyn-beplanning is noodsaaklik om die regte besluite te neem en risiko's te bestuur.

Om die beste moontlike gehalte gesertifiseerde moere te produseer, geniet die volgende bestuursmaatreëls veral baie aandag:

- Ons het 'n kernspan verkenners wat deeglike skoonmaakwerk ten opsigte van virusse en problematiese plante uitvoer.
- Die verkoeling van die aartappelmoere op die plaas word baie streng en noukeurig gemonitor.

Die kennis, eerlikheid en integriteit van die sertifiseringsbeamptes dra by tot konstante gehaltebeheer. Hul insette en behulpsaamheid tydens land- en knolinspeksies is vir seker 'n aanwins.

Die besluit om in gehalte moere te belê, is 'n deurslaggewende keuse wat elke aartappelboer moet maak om goeie opbrengs, gehalte en weerstand teen plae en siektes te verseker.

Johandré Breitenbach, ASD-streeksbestuurder, Lydenburg

Sirkel-N-Landgoed is tussen Baltimore en Tolwe in Limpopo geleë. In 'n moeilike produksiegebied soos Limpopo, is Rudi Heinlein en sy span uitblinkers. Hulle streef daarna om topgehalte aartappelmoere te produseer.

Ek glo hulle wenresep is dat almal, van die topbestuur tot die personeel op grondvlak, toegewyd is aan die boerdery en dat hulle alle aspekte van moerproduksie met passie aanpak.

Met Abrie van Schalkwyk aan die stuur by die aartappels, word alle aspekte van moerproduksie met 'n valkoog dopgehou. Hulle suiweringsproses word met militêre presisie uitgevoer en daar word boekgehou van elke plant wat uit die lande verwyder word.

Dit is altyd lekker om met Rudi en sy span te werk. Van my en Michael Schultze se kant af wil ons net sê: Welgedaan, Sirkel N!

D 204 | Henbrie Boerdery

227 ha registered
152 907 x 25 kg bags certified
4 varieties planted

Wynand Human, Douglas, Noord-Kaap, GWK Bpk
Ons sukses lê daarin dat ons op nuut-ontwikkelde grond plant waarop daar nog geen aanplantings was nie. Aangesien dit nuwe grond is, doen ons kartering en maak die nodige regstellings sodat daar nie voedingstekorte is wat die gehalte van die moere beïnvloed nie.

Ons spandeer baie tyd en aandag aan die sorteringsproses sodat ons 'n hoë-gehalte aartappelmoer in die sak gooi. Ons werk saam met ASD om betyds enige foute uit te skakel. Hierdie prestasie is alles te danke aan baie genade van bo en 'n goeie bestuurspan.

Leon Zietsman, ASD-streeksbestuurder, Douglas
Vanuit 'n sertifiseringsoogpunt verg dit baie harde werk om onder die top tien in die Moerkweker van die Jaar-kompetisie te wees en in hierdie opsig het Henbrie Boerdery hulself goed bewys.

Dit is deurentyd duidelik, al van landinspeksies af, dat Henbrie Boerdery met alles op hoogte wil bly. Hulle bestuurspan maak altyd so gou as moontlik werk daarvan om risiko's te beperk. Dit sluit deeglike virus- en onkruidbeheer in.

Groot naamborde wat deur Henbrie Boerdery voorsien en aangebring word, help die ASD Douglas-span baie en verseker dat sertifisering vinnig en doeltreffend gedoen word.

Henbrie Boerdery weet dat beplanning en spoedige optrede nodig is vir sukses.

Vanaf ASD Douglas: Ons is baie trots op Wynand Human en sy hele bestuurspan.

L 002 | Firna (Edms) Bpk

805 ha registered
1 770 915 x 25 kg bags certified
64 varieties planted

Frans Engelbrecht, Tosca, Noordwes, Wesgrow Potatoes
Die beste kunsmis vir 'n aartappelprodusent, veral vir 'n produsent wat aartappelmoere produseer, is sy voetspore in die lande.

Pieter Leibbrandt, ASD-sertifiseringsbeampte, Christiana
Hierdie is nie die eerste jaar dat Firna in die top tien is nie en sal beslis ook nie die laaste wees nie. Met twee Moerkweker van die Jaar-toekennings reeds in hulle sak, verg dit baie werk en tyd om so 'n rekord op te bou en te behou. Firna kyk gedurigdeur na nuwer en beter boerderypraktyke, volhoubaarheid en deeglike toepassing van alle aspekte van moerproduksie, asook algemene boerderypraktyke. Dit verseker sukses sonder om die wiel te probeer herontwerp.

Meer as 20 jaar gelede het hierdie droom en proses begin met een Engelbrecht se visie en insig. Die tweede geslag sit nou stewig in die saal en 'n derde geslag is sterk op pad.

From left to right are Frans Engelbrecht, Patricia van der Westhuizen, and Carel and Rob Carroll.

526 ha registered
1 201 328 x 25 kg bags certified
15 varieties planted

L 026 | Carbrecht (Pty) Ltd

Rob Carroll, Tosca, North West, Wesgrow Potatoes
People are the most important asset in any business. Relationships, leadership, and our organisation's culture are very important to us. We have a great responsibility towards our clients and the industry as a whole and set an extremely high standard for ourselves to deliver the best quality seed potatoes. This requires great dedication, hard work, discipline, determination and a positive attitude from everyone involved.

The most important aspect of seed potato production is the health of the seed, particularly virus management. This includes everything from biosecurity and disease control to soil management – stretching from the day the soil

For the Love of Potatoes

Obstructo Prime 325C
FRAC: 3 & 11
Dosage rate: 375 mℓ/ha
Disease:
Early blight

Spiromat 240 SC
IRAC: 23
Dosage rate: 150 mℓ/ha
Pest:
Green peach aphid

InFluanz 500 SC
FRAC: 29
Dosage rate: 400 mℓ/ha
4000 mℓ/ha prior to planting
Diseases:
Early blight
Late blight
Powdery scab

InCide 300 WG
IRAC: 22
Dosage rate: 125 g/ha
Pests:
Potato tuber moth
Fall armyworm
African/American bollworm
Potato leaf miner

Bostrin 380 WG
FRAC: 7 & 11
Ground and Aerial application: 300 g/ha
Ground application: 600 g/ha
Disease:
Early blight

TebuCure 250 EW
FRAC: 3
Dosage rate: 75 mℓ/ 100 ℓ water
Minimum of 375 mℓ/ha
Disease:
Early blight

Tutor 500 SC
FRAC: 9 & 12
Dosage rate: 150 mℓ/ 100 ℓ water
Minimum of 750 mℓ/ha
Diseases:
Early blight
Grey mould

Sporekill®
FRAC: NC
Dosage rate: 100 mℓ/100 ℓ
Minimum of 500 mℓ/ha
Seed tubers 150 mℓ/100 ℓ
Diseases:
Grey mould
Pectobacterium (*Erwinia*) spp.

IproFlo
FRAC: 2
Dosage rate: 200 mℓ/100 ℓ water
Disease:
Grey mould

Protector 400 SC
FRAC: 9
Dosage rate: 150 mℓ/ 100 ℓ water
Minimum of 750 mℓ/ha
Disease:
Grey mould

CopperKill SC
FRAC: M01
Dosage rate: 150 mℓ/ 100 ℓ water
Diseases:
Early blight
Late blight

Obstructo 250 SC
FRAC: 11
Dosage rate: 300 mℓ/ha
In-furrow 20 mℓ/100 m row
Diseases:
Early blight
Black dot
Black scurf
Silver scurf

HyperCide
FRAC: NC
Postharvest rate:
200 – 400 mℓ/100 ℓ
Diseases:
Bacterial soft rot (Pectobacterium) in water

ICA Thiabendazole 500 SC
FRAC: 1
Application on tubers as indicated on label for seed and table potatoes
Diseases:
Fusarium dry rot
Gangrene
Black scurf (suppression)
Rhizoctonia stem canker

Bostrin 380 WG (boscalid 252 g/kg & pyraclostrobin 128 g/kg) Reg. No. L11445 (Act 36/1947) Danger. H315, H318, H332, H410. **Copperkill SC (copper hydroxide 538 g/ℓ)** Reg. No. L10999 (Act 36/1947) Danger. H302, H318, H332, H410. **HyperCide (peracetic acid 145 g/ℓ & hydrogen peroxide 228 g/ℓ)** Reg. No. L11483 (Act 36/1947) NRCS Reg. No NRCS/8054/243642/532 (Act 5/2008) Danger. H242, H303, H312, H314, H332, H335, H400. **InCide 300 WG (indoxacarb 300 g/kg)** Reg. No. L10524 (Act 36/1947) Danger. H302, H315, H317, H318, H332, H372, H410. **InFluanz 500 SC (fluazinam 500 g/ℓ)** Reg. No. L11437 (Act 36/1947) Danger. H332, H317, H318, H361, H410. **IproFlo 500 SC (iprodione 500 g/ℓ)** Reg. No. L8213 (Act 36/1947) Warning. H317, H351, H410. **Obstructo 250 SC (azoxystrobin 250 g/ℓ)** Reg. No. L9323 (Act 36/1947) Warning. H332, H317, H410. **Obstructo Prime 325 SC (azoxystrobin 200 g/ℓ & difenoconazole 125 g/ℓ) Reg. No. L11505 (Act 36/1947) Warning. H317, H319, H332, H410.Protector 400 SC (pyrimethanil 400 g/ℓ)** Reg. No. L8606 (Act 36/1947) Warning. H303, H313, H316, H320, H332, H411. **Spiromat 240 SC (spirotetramat 240 g/ℓ)** Reg. No. L11092 (Act 36/1947) Warning. H317, H319, H335, H361, H400, H411. **Sporekill® (didecyldimethylammonium chloride 120 g/ℓ)** Reg. No. L7115 (Act 36/1947) NRCS Reg. No NRCS/8054/243642/713 (Act 5/2008) Danger. H227, H303, H313, H315, H318, H332, H410. **TebuCure 250 EW (tebuconazole 250 g/ℓ)** Reg. No. L7992 (Act 36/1947) Danger. H314, H318, H361, H410. **ICA Thiabendazole 500 SC (thiabendazole 500 g/ℓ)** Reg. No. L7784 (Act 36/1947) Warning. H303, H313, H410. **Tutor 500 SC (pyrimethanil 400 g/ℓ & fludioxonil 100 g/ℓ)** Reg. No. L9948 (Act 36/1947) Warning. H303, H313, H332, H410. **Hazard phrases**: H227 Combustible liquid, H242 Heating may cause fire, H302 Harmful if swallowed, H303 May be harmful if swallowed, H312 Harmful in contact with skin, H313 May be harmful in contact with skin, H314 Causes severe skin burns and eye damage, H315 Causes skin irritation, H316 Causes mild skin irritation, H317 May cause an allergic skin reaction, H318 Causes serious eye damage, H319 Causes serious eye irritation, H320 Causes eye irritation, H332 Harmful if inhaled, H335 May cause respiratory irritation, H351 Suspected of causing cancer, H361 Suspected of damaging fertility or the unborn child, H372 Cause damage to organs, H400 Very toxic to aquatic life, H410 Very toxic to aquatic life with long lasting effects, H411 Toxic to aquatic life with long lasting effects.

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ALWAYS REFER AND ADHERE TO LABEL AND DIRECTIONS FOR USE

is first prepared to the day the last volunteer potato is removed.

Pieter Leibbrandt, ASD-sertifiseringsbeampte, Christiana
By die Carrols werk die familie nou saam. Alhoewel Rob die gesig van Carbrecht is, glo ek deel van die wenresep hier is onder andere die ondersteuning van sy suster, Patricia, tydens planttyd en by die bestuur van die pakstoor. Al die ondervinding en kennis van hulle pa, Carel, rakende besproeiings-boerdery in die Molopo, is van onskatbare waarde.

Carbrecht streef daarna om altyd die beste gehalte aartappelmoere te produseer deur op fundamentele boerderypraktyke te konsentreer. Hulle het 'n werksmag opgebou wat jaarliks meer en meer eienaarskap van hulle verantwoordelikhede neem. Dit opsigself is van groot waarde.

N 029 | GA Vorster Farming (Pty) Ltd

Gary Vorster, Elliot, North-Eastern Cape, Wesgrow Potatoes
Thank you to PCS for the support given to me over the years as a seed grower. No producer can be a successful seed grower on their own.

510 ha registered
373 084 x 25 kg bags certified
9 varieties planted

To produce quality seed potatoes, I concentrate on controlling volunteer seed potatoes and implementing a good crop rotation programme with cover crops. We are virtually surrounded by forestry, so virus infections mostly come from on-farm infections via volunteer seed potatoes. These are controlled by using Roundup. My crop rotation has been expanded to once every six years with maize, soya and cover crops planted in between.

These crop rotations have significantly reduced my soilborne diseases and eelworm levels. My committed and enthusiastic team makes seed potato production possible.

Kevin Swiegers, PCS certification official, Christiana
Gary Vorster would no doubt have made it to the top ten seed potato growers, especially with how he handled previous challenges such as the last season's rainfall.

Gary and his team believe in 'quality before quantity'. The precision with which everything on the farm is done is amazing. He says that the personnel on the farm is his biggest asset. One can see that it is true because of the great oversight he has over the staff. He guides his team to do the best they can in the potato industry and be precise in preparing for planting, during planting, throughout the growing season, up to sampling until the end of certification.

Congratulations to you and your team for being one of the top ten seed potato growers of the year. Well done!

N 054 | D1 Farms (Pty) Ltd

Ryan McDonald Underberg, KwaZulu-Natal, Wesgrow Potatoes
As a seed potato grower, we focus on the crucial aspects essential to success. This includes selecting high-quality seed potatoes, addressing soil and climate conditions, rigorous disease management and pest control.

We are fortunate to have put together a strong team who, through training and development, are equipped with the skills and knowledge needed for successful potato cultivation. We strive to be meticulous from the first seed tuber going into the ground, to the last certification label on the bag.

233 ha registered
187 751 x 25 kg bags certified
5 varieties planted

Johan Germishuys, PCS regional manager, Pietermaritzburg
D1 farms perform exceptionally well in producing seed potatoes. The end goal of D1 farms is to set the standard in producing good quality, low virus and low soilborne-disease seed potatoes. Ryan upholds good relationships with the PCS regional office and applies the Scheme and protocol strictly in his farming practices. He also has the agents' and the industry's best interests at heart. This combination makes him worthy of a spot in the top ten.

N 058 | Pidelta (Pty) Ltd

320 ha registered
314 510 x 25 kg bags certified
5 varieties planted

Dean Brown
Greytown, KwaZulu-Natal, individual grower

Pidelta strives to ensure top quality in all the agricultural products we produce. During the last two exceptionally wet seasons, Pidelta has been able to maintain this quality throughout and deliver quality seed to our customers. Attention to detail and catering to our clients' needs remain a focal point to ensure sustainable relationships. We are honoured to be part of this prestigious award again and I would like to thank my team for all their efforts.

Tristan Pillay, PCS certification official, Pietermaritzburg

Pidelta (Pty) Ltd is an innovative and sustainable agribusiness. It has around 350 employees, contributing to job creation. In seed potato certification, we mostly work with around 100 staff members, all of whom work hand in hand with PCS.

The management team is talented and well-versed in the rules and regulations that go along with the Scheme, as well as being attentive to the crop. When unsure of something, they contact PCS for assistance. Seed potatoes at Pidelta are produced under rigid guidelines in collaboration with the erratic weather in their region in KwaZulu-Natal. Seed potatoes are sorted according to high standards in accordance with the Scheme and protocol.

N 226 | Melbrake Farming (Pty) Ltd

Joe and Harry Mandy
Mooi River, KwaZulu-Natal, individual grower

207 ha registered
105 663 x 25 kg bags certified
4 varieties planted

It is an honour to be one of the top ten seed potato growers in South Africa. Our goal is always to supply the best seed potatoes possible.

We control what we can to the best of our ability when it comes to managing our crops. We have excellent support and communication from our chemical advisor, and we are in contact with other successful seed potato growers which has increased our knowledge.

Over the years we have built good working relationships with our employees which adds to our success.

Johan Germishuys, PCS regional manager, Pietermaritzburg

Melbrake Farming deserves to be in the top ten, and in my opinion, should be climbing the ladder each year. They are meticulous when it comes to planning, planting, roguing and sorting their seed potatoes.

They have a strong relationship with PCS and everything is done by the book. They have a good roguing team and only seed potatoes with minimum to no virus results are chosen for the following season's plantings. Producing good quality virus- and disease-free seed is the result of Melbrake Farming's good practices.

W 001 | Agrivan Farming (Pty) Ltd

Werner du Plessis
Christiana, North West,
Wesgrow Potatoes

1 997 ha registered
1 227 334 x 25 kg bags certified
8 varieties planted

Agrivan Farming poog voortdurend om topgehalte aartappelmoere te produseer. Hiervoor word beproefde basiese tegnieke en praktyke gevolg. Ons ondersoek deurentyd innoverende praktyke om ons produk te verbeter. Ons 'geen kortpaaie'-kultuur en korrekte toepassing van alle praktyke is prioriteit in ons boerdery.

Agrivan Farming is bevoorreg om deel van Wesgrow te wees waar duidelike riglyne, uitstekende tegniese bystand en bedryfskennis gedeel word. Landbou bied unieke uitdagings en ons verwelkom dit – ek glo goeie ervaring word onder moeilike omstandighede verkry. Die ou gesegde, 'die beste kunsmis is 'n produsent se voetspore', word steeds gevolg.

Kortom, ons moere is vir ons 'moer'-belangrik, daarom gee ons hulle elke dag al die aandag wat hulle verdien.

Leonard van der Walt,
ASD-streeksbestuurder, Christiana

Agrivan Farming bewys dat waar kundigheid en ervaring hande vat, groot sukses behaal word. Agrivan plant jaarliks 'n groot aantal hektare en lewer uitsonderlike gehalte moere aan die bedryf. Netheid en deeglikheid kan in alle aspekte van die plaas waargeneem word.

Onder leiding van Werner du Plessis en sy bestuurspan, word elke afdeling van die moerproduksieproses noukeurig nagegaan. Agrivan se suiweringspan is van top gehalte en tydens sortering word gereelde gehaltebeheerondersoeke gedoen. Hierdie stappe verseker dat die beste produk tydens inspeksie op die tafel beland. Baie geluk aan die Agrivan-span.

For enquiries regarding the PCS or the 2024 top ten seed potato growers, contact André Wessels at andre@potatocertification.co.za, the PCS at 060 716 2607 or visit *www.potatocertification.co.za*.

INTEGRITY, QUALITY, INNOVATION

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* very strong foliage
* blight resistance

TYSON
* early bulking
* powdery scab resistance
* even tuber set, big sizes

ALLISON
* very high yield
* strong emerge
* drought tolerance

PANAMERA
* high yield
* bright smooth skin
* blight resistance

MONDIAL
* we still aim to supply the best quality seed all year round

SIFRA
* bright smooth skin(prepacker)
* high yield
* high percentage first grade

Revolutionising the potato industry: Transformation Symposium 2024

During the 18th century, a German town decided to build a church. The first thing they did was plant trees around the proposed construction site. The reason was simple – they envisioned that their children could use these trees as rafters to complete the church.

"This is the ultimate definition of vision and that is also what our new potato producers are busy with," Gert Bester, chairperson of Potatoes SA, said during the organisation's 2024 Transformation Symposium held at the Birchwood Hotel in Kempton Park in February.

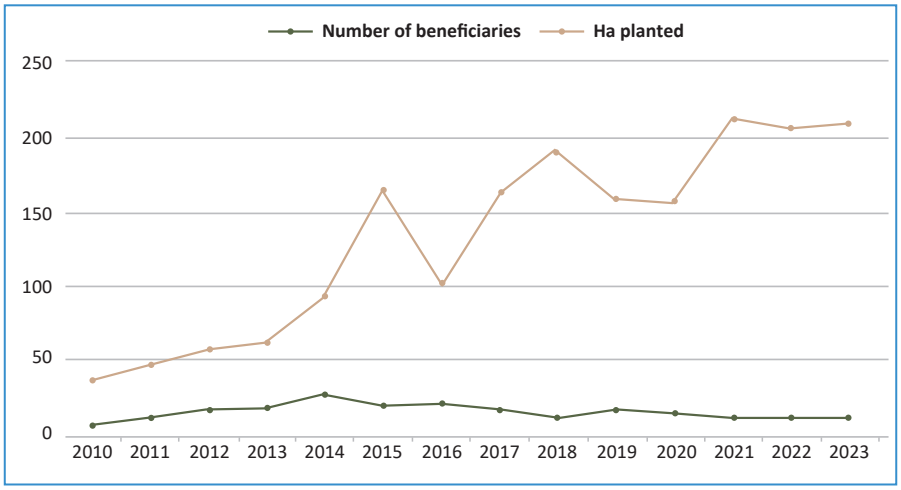
"Our new potato producers are also visionaries. They are first-generation potato producers, and they are building a legacy for their children and our country," Bester said and addressed the producers directly: "You should never underestimate the struggle or value of the work that you are doing."

Meshack Ndongeni (middle) from KwaZulu-Natal was named Potatoes SA's third Enterprise Development Farmer of the Year. With him is (left) Rendani Murovhi, Potatoes SA's transformation manager, and Thandi Moyo, the deputy director-general of rural development at the Department of Agriculture, Land Reform and Rural Development.

Knowledge is power

Meshack Ndongeni, transformation chairperson of Potatoes SA, agreed with Bester that not enough reference is made to the fact that new producers are often first-generation producers. While every achievement deserves recognition, the hardship of first-generation producers should not be forgotten. He added that it is important to honour all those who assist these producers to progress in their journey from emerging to becoming commercialised.

Figure 1: Enterprise development beneficiaries and hectares planted.



"Various Potatoes SA producers are helping our producers to transform, and we are thankful for the vast knowledge within the industry that is shared freely with our new producers."

However, Ndongeni added that Potatoes SA's support is not limited to producers transitioning to commercial status. The organisation also looks out for small-scale producers who cultivated a mere 0.5 to 1 ha of land to ensure food security for their families. "We try to upskill and uplift all new potato producers."

Ndongeni said the growth opportunities in the potato industry are endless. "I do not know why it is not the biggest crop in the country. Potatoes are wonderful and we should continue this drive to ensure that it becomes the biggest crop."

The impact of investment

Rendani Murovhi, transformation manager of Potatoes SA, added that the future of transformation in the potato industry looks brighter than

Gert Bester, chairperson of Potatoes SA.

Angelo Petersen, chairperson of the National Agricultural Marketing Council.

Simone Olifant, transformation manager at Raisins South Africa.

ever before. "The past decade's work has been combined in a portfolio and we use this to attract greater investment."

This investment has significantly empowered black producers, leading to a substantial increase in the total cultivation area under the Enterprise Development Programme (EDP). It has grown from 40 ha of potatoes planted in 2011 to over 350 ha under production in 2024 (*Figure 1*). Lack of funding has limited the intake of new entrants into the programme, but the support provided allows producers to expand their potato production and acquire more external funding.

Although only over 350 ha is reported and recorded under Potatoes SA programmes, there are over 400 ha of potatoes planted by black and commercial producers, including those funded by the Department of Agriculture Land Reform and Rural Development (DALRRD).

However, Murovhi indicated that even more investors were needed to drive transformation within this agricultural subsector. "Because our funding only comes from the statutory levy, we need partners to help us fast-track the pace of transformation within the potato industry."

Presently there are successful partnerships that include DALRRD, Agri SA and other industry role-players. While the wheel seems to be turning slowly, it is turning. She thanked the commercial potato producers who were helping Potatoes SA drive this initiative.

Managing the market

Angelo Petersen, chairperson of the National Agricultural Marketing Council (NAMC), said it is important to keep in mind that the potato industry is operating in a VUCA world (volatile, uncertain, complex, and ambiguous). "Currently it is also violent and chaotic."

Within this context – where geopolitical conflicts are disrupting supply chains and leading to higher input costs – partnerships are crucial to enable transformation in the South African agricultural sector, Petersen said. "We need to understand that transformation goes beyond the planting and harvesting of crops. It needs to look at all aspects of farming, including the successful marketing of produce, for example."

Petersen said transformation is expensive and therefore it is important for parties to work together to find ways to lighten this cost burden. "The culture that we need to encourage is one of innovation and knowledge exchange. This will help us to find collaborative solutions to the challenges we face."

Infrastructure issues, such as road and port infrastructure, including loadshedding, are serious threats to South African agriculture. The latter is especially of grave concern to black producers and agribusinesses, Petersen added. "Our roads need to be fixed. If government is unable to do this, we should do it ourselves. But it must be fixed."

Finally, the dualistic nature of the country's agricultural sector remains concerning. "Despite a considerable investment in transformation, black producers are only producing 10% of agricultural outputs and their income is equal to this. So, we need to ask ourselves whether we are getting the best return on this investment. Should this market share not be at least 20% by now?"

Unemployment challenges

Medupi Shabangu, executive manager of learning programmes and projects at the Agricultural Sector Education Training Authority (AgriSETA), said while all sections of the Sector Education Training Authority (SETA) have spent R9 billion over the past three financial years, it is impossible to 'outskill' unemployment. "We need economic growth and relevant skills to combat this." Relevant skills refer to skills that still matter within an artificial intelligence (AI) work environment.

Shabangu said it is important that newly trained individuals in the agricultural sector regard themselves as their own first employer. "We need to establish producers that will create jobs for the future."

BARRIER 450 SC

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PRODUKBESKRYWING

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- Dit is beide 'n kontak- sistemiese produk wat voorkomende- sowel as genesende siektebeheer bied
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- Bied 'n anti-weerstand strategie deur twee aktiewe bestanddele uit verskillende FRAC *(Fungicide Resistance Action Committee)* groepe te kombineer
- Is 'n oplosbare konsentraat vloeibare formulasie wat veiliger en makliker vermenging verseker
- Bied 'n breë spektrum van siektebeheer - met spesifiek goeie beheer van *Alternaria* ssp
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Barrier 450 SC Reg. Nr. L7604, Wet Nr. 36 van 1947
Bevat: Maneb (ditiokarbamaat) - 325 g/ℓ, Prosimidoon (dikarboksimied) -125 g/ℓ, Sinkoksied - 4.7 g/ℓ

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Mag allergiese velreaksie veroorsaak.
Veroorsaak ernstige oogirritasie.
Vermoede dat dit vrugbaarheid of die ongebore kind beskadig.
Baie giftig vir waterlewende organismes met langdurige gevolge.

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Aldrin Lawrence from Buishoek Boerdery.

Wandile Sihlobo, chief economist at Agbiz.

Karidas Tshintsholo, co-founder of the agricultural financing and input platform, Khula!, said it is important not to generically label primary producers as 'producers'. "We've learned that there are at least five different types of producers." They are:

- C1 – Extremely small-scale, garden producers.
- C2 – Small-scale producers who consume half their produce and sell the other half to market.
- C3– The so-called emerging producers that have not yet fully crossed over to commercial production.
- C4 – Commercial producers.
- C5 – Mega producers.

Tshintsholo said many producers advance from C1 to C2 or C3. However, the transition from C3 to C4 is a hurdle for many. "This means that producers can remain 'emerging' for their entire lives." Usually, these producers might have 100 ha of land available, but they are restricted to only cultivating 10 ha. This limitation is primarily due to their inability to afford a larger crop owing to insufficient access to credit.

"While we often hear of money being set aside, especially for these producers, the reality is that they cannot gain access to the credit, because they do not have a title deed, credit score, or audited financial statements." Hence they cannot access finances that have been ringfenced for them.

Partnership to fuel change

To help emerging potato producers, Khula! and Potatoes SA recently signed a memorandum of co-operation. Absa finances the deal, while Khula! ensures that there will be a buyer for the produce and that a portion of the income is used to service debt. To ensure that the borrowed money is used for the intended purpose, a part of the funding is deployed in terms of vouchers, which can then be used on the Khula! marketplace platform.

Abrie Rautenbach, head of AgriBusiness at Absa, said producers need to keep records of everything they did. By doing this, over time their cashflow model will naturally follow, and this will enable them to make better decisions.

Simone Olifant, transformation manager at Raisins South Africa, said without private sector funding her work would not be possible. "My transformation programme receives between R2 and R4 million annually from levy income, but our projects cost between R20 and R30 million. The shortfall is made up by partnerships."

While it is wonderful to see the impact that Raisins SA could make to help with transformation, the lack of knowledgeable transformation officers is a problem for Olifant. "It is problematic that I know more than our extension officers, and I need to train them. And then, just when I've trained them, the department moves them to a different crop. A lot of money and time are lost in the process."

Mentorship is key

Aldrin Lawrence, a former recipient of the EDP of the Year Award, discussed his road to success. He said mentorship was one of the most important things that every producer needs. "My first potato harvest was a big success because I followed my mentor's instructions. And he was invaluable in introducing me to the open market."

Another important thing is to keep your reputation intact, Lawrence added. "It is important to pay your debts, before doing anything else. Remember, those were the people that were willing to help you when you had nothing. Keep those relationships intact."

Wandile Sihlobo, chief economist at Agbiz, said growth in the agricultural sector is not only important to the sector's economy but to the country's in general, given the high unemployment rate. "No other sector can create jobs such as the agricultural sector. This sector's job multiplier effect is two to three times higher than any other sector's."

However, five issues need to be addressed for the sector to thrive: biosecurity, a broadening of international market offset points, logistics, agricultural finance and land and land release. Willie Jacobs, CEO of Potatoes SA, said ongoing, emotional discussions are crucial to making transformation work. "In the potato industry, we are a family and families work with emotion. The emotions that we need to cultivate are gratitude, kindness, passion, compassion, and love."

For more information on the Potatoes SA Transformation Symposium, visit *www.potatoes.co.za.*

Marble Hall trial and tuber moth workshop

By Damien da Cal, Potatoes SA

The Marble Hall trial planted on Jaco van den Heever's farm included processing varieties. The trial was planted on 15 June 2023 and consisted of three repetitions spaced 1.5 m apart and spanning 10 m.

The cultivars planted included P1 (PepsiCo), P3 (PepsiCo), Cayman (WesGrow), Norman (WesGrow), Moonlight (PSP on behalf of Danie Marais), Satin King (PSP on behalf of Danie Marais), Alverstone Russet (WesGrow), Taurus (WesGrow) and Markies (FPD).

The trial was lifted on 25 October 2023. The previous trial was conducted in 2019 by Enrike Verster of Potatoes SA and the results were published in the May/June 2020 edition of *CHIPS*. The June/July 2024 issue of *CHIPS* will contain the results of the 2023 trial.

Addressing tuber moth issues

The Marble Hall workshop took place on 23 March 2023 at the Raasblaar conference venue. The workshop saw Potatoes SA teaming up with McCain to provide an interesting look at how tuber moths operate. The meeting's highlights included presentations by Des van Heerden and Dr Diedrich Visser on the impact of cultivation practices. Dr Visser listed the similarities between the tuber moth and *Tuta absoluta*. *Tuta* and tuber moth belong to the same family. *Tuta absoluta* attacks tomatoes as well as potatoes. Tomato plants can be attacked from seedlings to mature plants and infestations are primarily found in buds, leaves, stems, flowers and fruit. The main concern with *Tuta* is that it can cause potato crop yield losses of 50 to 100%.

A workshop on tuber moths was held by Potatoes SA and McCain on 23 March last year at the Raasblaar conference venue.

On the left is a Tuta absoluta adult 6 mm in size and on the right a Phthorimaea operculella adult 8 mm in size.
(Photograph: Dr Diedrich Visser, www.researchgate.net)

Tuta can cause major damage to the leaves of potato plants. Tuber moth has been present in Southern Africa for more than a century. Larvae mine into leaves as well as stems and can cause severe yield losses. The main differences between *Tuta* and tuber moth are their size, antennas, marks on the wings and marks on their thoraxes.

Tuta is approximately 6 mm long whereas tuber moths are typically 8 mm in size. *Tuta* antennas are more clearly banded. The marks on tuber moth wings are black and more pronounced. Tuber moth has three marks on its thorax whereas *Tuta* has none.

Potatoes SA would like to extend a special thanks to all trial participants as well as the speakers at the moth workshop.

The Marble Hall trial was planted on 15 June 2023 and consisted of processing varieties.

For more information, email damien@potatoes.co.za.

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Markmonitor: Die eerste vyf weke van 2024 op varsproduktemarkte

Deur FP Coetzee en Dikgetho Mokoena, Aartappels SA

Die 2023-kalenderjaar het afgeskop met rekord-pryse wat hoër as die vorige drie jaar s'n was. Aan die begin van 2024 het die prentjie homself herhaal – aartappels het weereens met rekord-hoë pryse afgeskop en die 2023-rekord geklop.

Figuur 1 dui die weeklikse gemiddelde prys vir 'n 10 kg-sakkie aartappels aan en het aan die einde van week vyf R72.51 behaal. Sedert die begin van Januarie het die gemiddelde pryse oor die algemeen 'n effense afname getoon en van R80.20 na R72.51 gedaal.

'n Algehele afname van 10% vanaf week een tot vyf is waargeneem en voorraadvlakke het 'n effense daling oor dieselfde tydperk getoon. Hierdie afname in voorraadvlakke is te wyte aan streke, soos die Oos-Vrystaat en KwaZulu-Natal, wat weens verskeie redes agter is met hul oes. Pryse het vanaf middel tot einde Januarie begin styg.

Figuur 2 dui die daaglikse gemiddelde voorraadvlakke teenoor die daaglikse gemiddelde pryse vir die ses-week tydperk aan. Let op na die weeklikse tendens vanaf die begin tot einde van die week. Gemiddelde voorraad vir die eerste vyf weke het effens afgeneem. *Figuur 3* bied 'n vergelykende ontleding van die gemiddelde voorraadvlakke vir elke maand in teenstelling met die ooreenstemmende maande van die vorige jaar.

Kumulatiewe verkope daal

Figuur 4 illustreer die kumulatiewe verkoopsprestasie op die VPM'e vir die afgelope vyf jaar. In 2023 is 'n afname van 11% aangeteken in vergelyking met die ooreenstemmende syfer in 2022 (vir die eerste ses weke), terwyl 'n verdere daling van 13% in kumulatiewe verkope vir die eerste ses weke tussen 2023 en 2024 aangeteken is.

Daarbenewens bied *Figuur 4* insig in die gemiddelde pryse oor dieselfde tydperk, wat aandui dat die gemiddelde prys in 2024 sy hoogste punt in die afgelope vyf jaar bereik het. Boonop is die verkope op die VPM'e ná die eerste ses weke van 2023, 2.07 miljoen 10 kg-sakke minder as die vyf-jaar gemiddeld. Die verwagting is dat 'n sloerende effek, weens verskeie uitdagings in 2023, vanjaar sal voortduur.

Figuur 5 bied 'n oorsig van die maandelikse verkope op die VPM'e vanaf 2021 tot vanjaar. Die verkope van 10 kg-sakkies daal tot 'n laagtepunt van 6.9 miljoen sakkies, laer as enige ander maand in 2023. As Januarie 2024 met Januarie 2023 vergelyk word, word 'n beduidende afname van 14.5% vir die eerste ses weke van 2024 waargeneem. 'n Toename word in die middel van die jaar verwag wanneer groter streke oes.

Verkope by VPM'e

Tabel 1 toon die aantal sakkies wat gedurende die eerste vyf weke van 2024 op die verskeie markte verkoop is. 'n Gedetailleerde ondersoek na verkoopsprestasie in die streke in 2024, toon gemengde uitslae. Die vyf grootste markte gedurende hierdie tydperk was gesamentlik verantwoordelik vir 83% van die land se verkope, dieselfde as vir die hele jaar in 2023. Die gemiddelde prys (alle klasse en groottes) vir elke mark word ook in *Tabel 1* uiteengesit.

Die mark met die hoogste persentasie Klas 1-verkope is die Johannesburg-mark. Johannesburg-mark besit ook die grootste markaandeel van alle VPM'e. Interessant genoeg, alhoewel die Johannesburg-mark die grootste markaandeel het en persentasie-gewys van die hoogste gehalte lewer, het ander markte soos Kaapstad-mark hoër gemiddelde pryse behaal met

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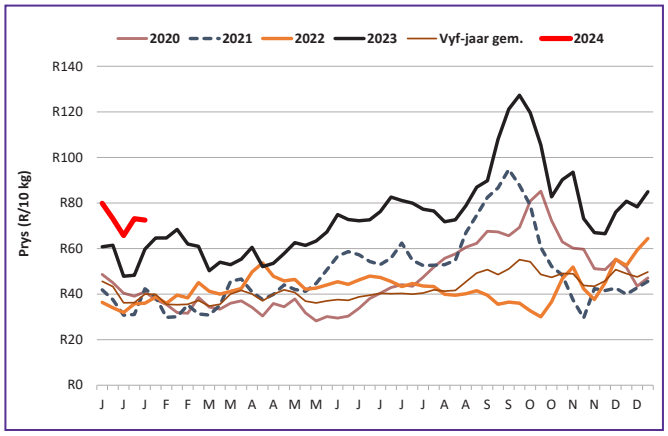
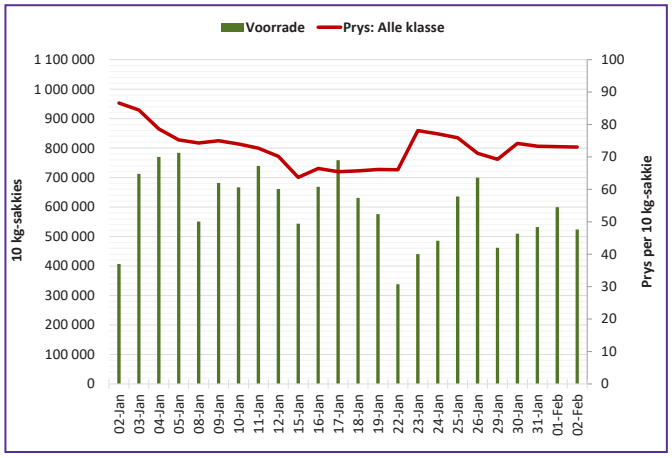
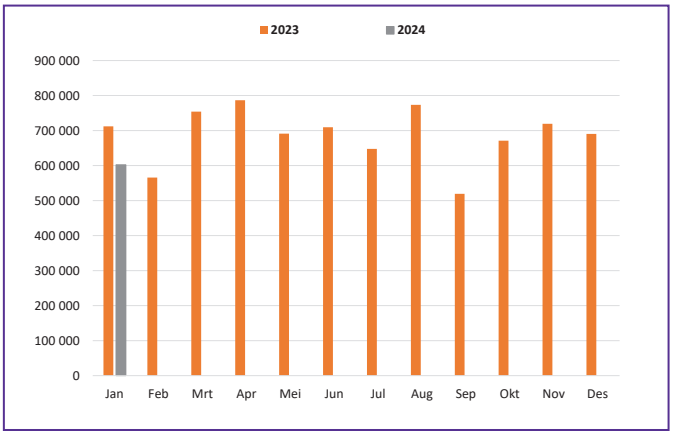
Figuur 1: Die weeklikse gemiddelde prys op alle markte. (Bron: RSA-lêer)



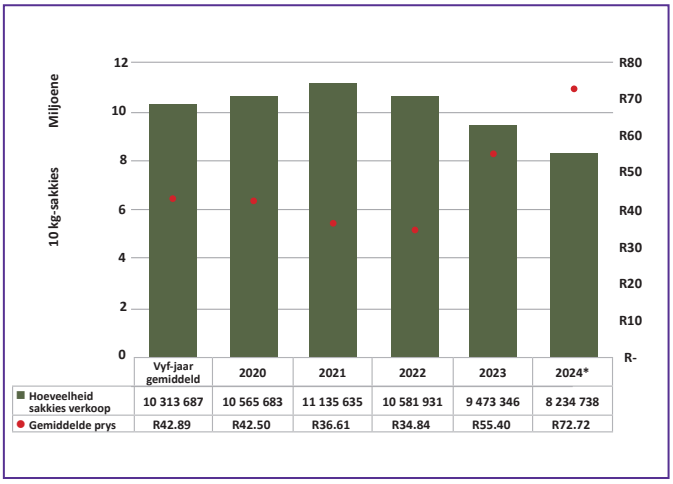
Figuur 2: Daaglikse gemiddelde voorraadvlakke teenoor die daaglikse gemiddelde prys (alle groottes en klasse). (Bron: Jhb daaglikse prys en voorraad)



Figuur 3: Gemiddelde daaglikse voorraadvlakke per maand in 2023 versus 2024. (Bron: RSA-lêer)



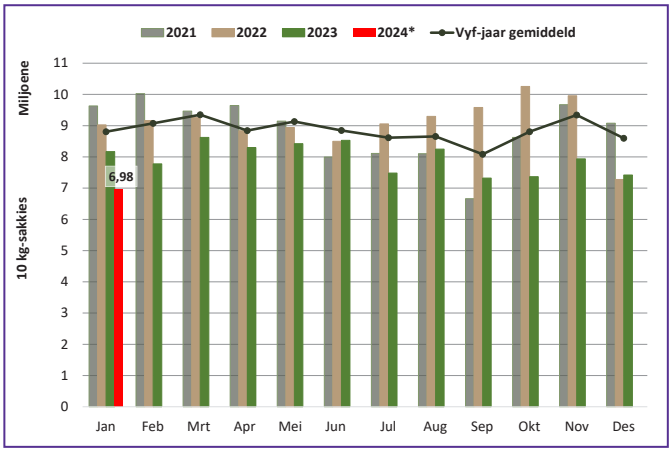
Figuur 4: Kumulatiewe aantal 10 kg-sakkies verkoop op markte tot week 14 van elke jaar.



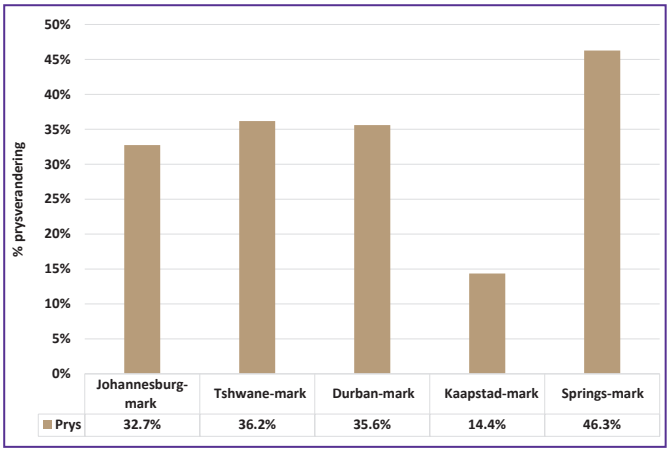
Tabel 1: Verkope op VPM'e tot week vyf van 2024.

				% van verkope op VPM'e			
Mark	Aantal 10 kg-sakkies	% van totaal	Gem. prys (R/10 kg)	Klas 1	Klas 2	Klas 3 en 4	Klas 1 M
Johannesburg-mark	3 450 356	41.9%	71.24	87%	10%	3%	19%
Tshwane-mark	1 490 955	18.1%	73.06	78%	17%	5%	19%
Durban-mark	835 785	10.1%	73.1	82%	12%	7%	28%
Kaapstad-mark	633 946	7.7%	83.42	78%	20%	2%	20%
Springs-mark	427 687	5.2%	70.44	72%	21%	8%	17%
Bloemfontein-mark	251 041	3.0%	72.34	65%	22%	13%	16%
Oos-Londen-mark	236 091	2.9%	72.16	74%	19%	7%	20%
Klerksdorp-mark	212 412	2.6%	65.96	77%	14%	9%	19%
Welkom-mark	207 861	2.5%	71.76	50%	42%	8%	11%
Port Elizabeth-mark	145 906	1.8%	69.93	68%	24%	8%	21%
Pietermaritzburg-mark	227 102	2.8%	74.73	73%	23%	3%	21%
Vereeniging-mark	35 368	0.4%	72.74	75%	22%	2%	12%
Witbank-mark	29 631	0.4%	71.83	74%	18%	9%	14%
Kimberley-mark	50 260	0.6%	-	-	-	-	-
Totaal	**8 234 401**	**100%**	**72.72**	**80%**	**15%**	**5%**	**20%**

Figuur 5: Maandelikse verkope op markte vanaf 2021 tot 2024: Alle verpakkings omgeskakel na 10 kg-sakkies.



Figuur 6: Jaar-op-jaar prysveranderinge van die top vyf markte.



Tshwane-mark in die tweede posisie. Uit die vyf grootste markte was Klerksdorp- en Port Elizabeth-markte se gemiddelde pryse laer as die landsgemiddeld van R72.72.

Figuur 6 dui die jaar-op-jaar prysveranderinge vir die vyf grootste markte aan. Pryse het gemiddeld met meer as 33% gestyg teenoor 50% in 2023. Die Springs-mark het die hoogste persentasie styging getoon, met 'n prysstyging van 46.3%.

Figuur 7 dui die jaar-tot-jaar skommelinge in verkoopsvolumes van die vyf grootste markte aan. Durban-mark is die mark met die laagste afname in verkope gedurende dieselfde tydperk in 2023. Daarteenoor het Tswane-mark die grootste jaar-op-jaar afname onder die top vyf markte getoon.

Figuur 8 bied 'n omvattende oorsig van verkoopsprestasies van verskillende streke en vergelyk 2024 met 2023. Vyf streke het op die VMP'e 'n afname in verkope van 10 kg-sakkies getoon, terwyl Suidwes-Vrystaat die enigste streke was wat gedurende die eerste vyf weke van die jaar 'n toename in verkope getoon het.

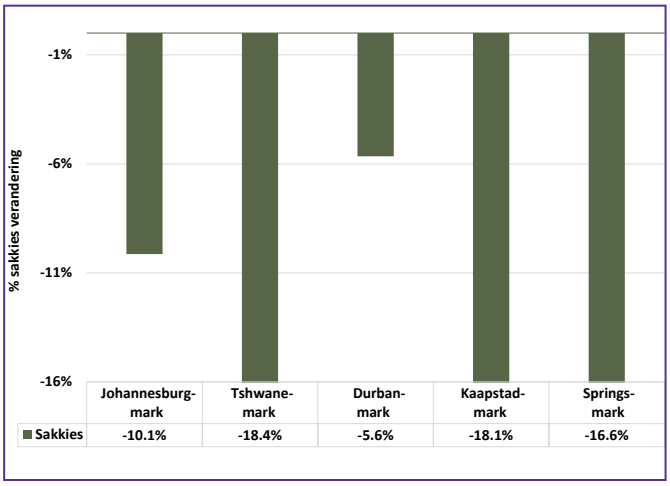
Klas 1-verkope neem toe

Wat markaandeel op VPM'e betref, was Suidwes-Vrystaat, Gauteng en Noordwes vir die eerste vyf weke die drie grootste streke met gesamentlik 55% van die algehele

Tabel 2: Verkope per streek op VPM'e tot week vyf van 2024.

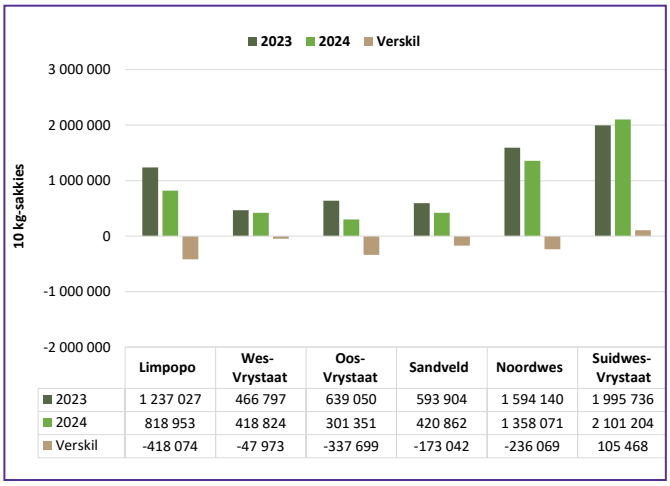
				% van verkope op VPM'e			
Streek	Aantal 10 kg-sakkies	% van totaal	Gem. prys (R/10 kg)	Klas 1	Klas 2	Klas 3 en 4	Klas 1 M
Limpopo	818 953	10%	69.27	85%	13%	2%	20%
Wes-Vrystaat	418 824	5%	70.86	73%	24%	3%	19%
Oos-Vrystaat	301 351	4%	70.56	75%	17%	7%	17%
Sandveld	420 862	5%	81.34	74%	24%	2%	20%
Noordwes	1 358 071	16%	74.75	84%	10%	6%	18%
Noord-Kaap	-	-	-	-	-	-	-
KwaZulu-Natal	1 014 997	12%	76.82	74%	20%	5%	14%
Suidwes-Vrystaat	2 101 204	26%	73.16	81%	12%	8%	22%
Gauteng	1 073 032	13%	69.58	90%	8%	2%	25%
Ander streke	204 438	2%	58.09	61%	36%	4%	21%
Noordoos-Kaap	128 100	2%	72.25	75%	20%	5%	22%
Ceres	-	-	-	-	-	-	-
Mpumalanga	308 116	3.74%	73.44	79%	16%	5%	15%
Oos-Kaap	86 785	1.05%	60.95	52%	37%	11%	13%
Suid-Kaap	-	-	-	-	-	-	-
Suidwes-Kaap	349	-	29.4	-	-	-	-
Totaal	**8 235 082**	**100%**	**72.72**	**80%**	**15%**	**5%**	**20%**

Figuur 7: Veranderinge in jaar-op-jaar sakkieverkope by die top vyf markte.



	Johannesburg-mark	Tshwane-mark	Durban-mark	Kaapstad-mark	Springs-mark
Sakkies	-10.1%	-18.4%	-5.6%	-18.1%	-16.6%

Figuur 8: Aantal 10 kg-sakkies verkoop per streek, gedurende die eerste vyf weke van 2023 versus 2024.



	Limpopo	Wes-Vrystaat	Oos-Vrystaat	Sandveld	Noordwes	Suidwes-Vrystaat
2023	1 237 027	466 797	639 050	593 904	1 594 140	1 995 736
2024	818 953	418 824	301 351	420 862	1 358 071	2 101 204
Verskil	-418 074	-47 973	-337 699	-173 042	-236 069	105 468

aartappelverkope op VPM'e, soos uiteengesit in *Tabel 2*.

Daarbenewens toon *Tabel 2* die persentasiesamestelling van Klas 1, 2, 3 en 4 aartappelvoorrade vir elke streek gedurende hierdie tydperk. Dit is opmerklik dat Klas 1-verkope in Januarie 80% van die totale verkope uitgemaak het. Dit dui op 'n positiewe tendens in die bemarking van aartappels van uitstaande gehalte.

Tien produksiestreke se aangetekende Klas 1-verkoopspersentasies het die 70%-drempel oorskry. Gauteng het die voortou geneem met die hoogste persentasie Klas 1-verkope op 90%, gevolg deur Limpopo (85%) en Noordwes (84%).

Vir meer inligting, kontak FP Coetzee by fp@potatoes.co.za of Dikgetho Mokoena by dikgetho@potatoes.co.za.

World potato markets: Record global potato crops recorded

By Anjé Erasmus, Potatoes SA

The potato industry has reached new heights in global production, with 2022 witnessing a record 374.8 million tonnes which represents a 0.3% increase from the previous year. This remarkable achievement, fuelled by higher yields compensating for reduced planting areas, sets the stage for continued growth and challenges in the potato market.

Preliminary data for 2023 indicates continued growth in Asia and Africa, with North America boasting a notable 10% increase in its harvest which should make up for a disappointing European harvest affected by excessive rain. However, potatoes diverge from other major crops (maize, wheat, rice, potatoes and soya), experiencing a decade-long decrease in planting, prompting concerns. The looming challenges for 2024 include uncertainties pertaining to weather and seed availability.

Recent trade figures reveal a shift favouring local suppliers in Asia rather than other countries exporting to it, as initially expected with the rise of Asia as the most important potato region. China, a major role-player, has increased shipments to destinations such as Japan, underscoring changing dynamics in the global potato market.

Achievements in 2022

At the end of every year, the United Nations' Food and Agriculture Organization's statistical division, Food and Agriculture Organization Statistics (UN FAOSTAT), publishes production figures for the previous year, which means Supply Intelligence (the publishers of World Potato Markets) obtained the 2022 figures.

Global potato production reached a new peak in 2022 at 374.8 million tonnes, 0.3% up on the 2021 figure, driven by a 3.5% overall growth in the decade between 2012 and 2022.

Asia contributed significantly, surpassing the 200 million tonne mark (up 2.9%), while every other region, including Europe, North America and Oceania, faced challenges with a dampened yield (2.8, 3.7 and 15.6%, respectively).

Planting and yield trends

The global potato-growing area decreased slightly by 1.2% to 17.788 million ha but remained 3.5% higher than in 2012. Asia, Africa and the Caribbean saw an increase in their potato areas (although the African increase was tiny). Europe and Oceania saw significant declines in their areas.

The world average yield rose by 1.5%, reaching 21.1 t/ha, an increase

Figure 1: World potato area in '000s hectares.

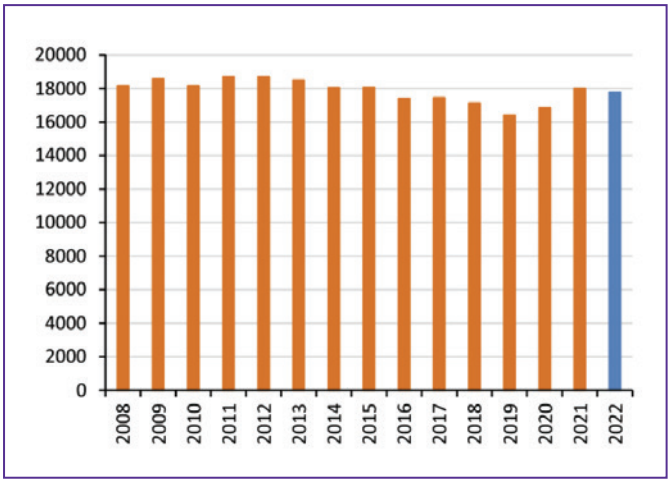


Figure 2: Average world potato yield in tonnes/hectare.

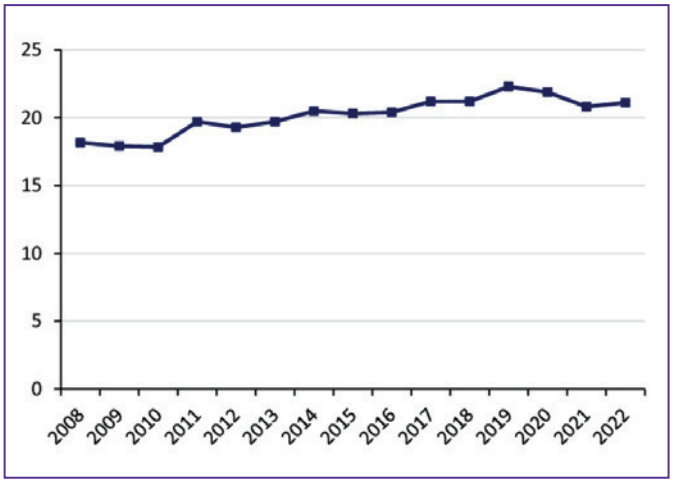


Table 1: World potato area, yield and production from 2015 to 2022. (Source: UN FAOSTAT)

Area ('000 hectares)									
	2022	%change	2021	2020	2019	2018	2017	2016	2015
Asia	10 336.8	+0.2	10 311.6	8 944.3	8 435.2	9 127.6	9 263.6	9 186.3	9 175.5
Europe	4 063.3	-4.7	4 263.7	4 422.6	4 614.2	4 663.5	4 770.8	4 830.2	5 540.4
Africa	1 823.2	0.0	1 822.7	1 881.9	1 776.7	1 737.1	1 704.8	1 665.1	1 690.2
North America	511.5	-3.1	527.9	512.8	517.7	544.4	560.3	557.8	564.3
South America	913.6	-1.3	925.6	934.1	921.6	917.6	954.4	990.2	946.9
Central America	92	-2.1	94	94	90.9	91.7	90.7	95.3	93.6
Caribbean	12.8	5.6	12.2	12.7	13.6	13.3	13.7	11.5	11.9
Oceania	35.1	-18.1	42.9	38.6	43.3	40.2	38.3	37.9	39
World	**17 788.4**	**-1.2**	**18 000.7**	**16 840.9**	**16 413.1**	**17 135.5**	**17 396.6**	**17 374.3**	**18 061.8**
Yield (tonnes/hectare)									
Asia	19.7	+2.7	19.2	21.2	22.3	20.6	19.7	19	19.4
Europe	24.1	+2	23.7	23.8	22.9	22.1	23.8	22.4	21
Africa	14.9	-0.9	15	14.7	14.8	14.6	14.1	13.7	14.9
North America	47	-0.6	47.3	47.5	47.6	47.1	46.2	46.2	45.9
South America	19.4	-1.3	19.6	19.6	19.6	19	18.8	18.1	17.4
Central America	28.8	-0.3	28.9	29	28	27.7	27.3	26.7	26.2
Caribbean	18.6	-5.6	19.7	20.1	20.2	20.6	20.7	20.4	20.8
Oceania	43.8	+3.1	42.5	42.3	40.4	42	41.2	42.3	41.3
World	**21.1**	**+1.5**	**20.8**	**21.9**	**22.3**	**21.2**	**21.2**	**20.4**	**20.3**
Production (million tonnes)									
Asia	203.338	+2.9	197.561	189.227	187.733	187.867	182.724	174.662	177.558
Europe	98.113	-2.8	100.898	105.204	105.503	103.279	113.646	108.032	116.573
Africa	27.148	-0.9	27.401	27.675	26.330	25.290	24.043	22.854	25.238
North America	24.040	-3.7	24.962	24.339	24.615	24.626	25.626	25.873	25.888
South America	17.708	-2.6	18.185	18.321	18.045	17.472	17.965	17.913	16.502
Central America	2.652	-2.4	2.718	2.730	2.549	2.541	2.475	2.544	2.448
Caribbean	0.239	-0.3	0.240	0.254	0.275	0.275	0.283	0.234	0.248
Oceania	1.540	-15.6	1.824	1.631	1.752	1.690	1.581	1.606	1.614
World	**374.778**	**+0.3**	**373.787**	**369.381**	**366.802**	**364.018**	**368.590**	**353.618**	**366.068**


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Table 2: Production of key crops from 2012 to 2022. (Source: UN FAOSTAT)

	2022				2012		
	Million tonnes	Million ha	Tonnes/ha	%change	Million tonnes	Million ha	Tonnes/ha
Maize	1 163.5	203.5	5.7	+33	874.6	180.4	4.8
Wheat	808.4	219.2	3.7	+20	673.7	217.8	3.1
Rice	776.5	161	4.8	+6.4	729.4	161	4.5
Potatoes	374.8	17.8	21.1	+3.6	361.8	18.7	19.4
Soya	348.9	133.8	2.6	+44.5	241.3	105.5	2.3
Population		7 941.7		+11.6		7 117	

Note: % change in production between 2012 and 2022.

of 9.3% on the decade, but 5.4% below the all-time high of 22.3 t/ha in 2019, with Asia and Europe experiencing increases (2.7 and 2%, respectively).

In 2023, however, Asia experienced further increases in both yield and cultivated area, while the United States (US) crop saw a significant 8.9% boost and the Canadian crop increased by 3.7%. These gains are expected to offset the stagnant production in Europe. However, overall global production is forecast to reach between only 377 to 380 million tonnes, indicating a modest increase.

Potato growth lag

While potatoes maintain the highest yield among major crops, the decade leading up to 2022 saw potato production lag behind other crops such as soya (output jumped by 44.5%), maize (yields up by 17.9%), wheat (yields up by 19.2%), and rice (yields up by 6.4%).

Concerns arise as potatoes fail to match the growth in the world's population (an 11.6% increase) over the same period. Rice production has also not kept pace with global population growth. Only soya beans and maize have significantly surpassed population growth.

Potatoes remain the highest-yielding crop among the five mentioned, with an average yield of 21.1 t/ha. However, rice showed the smallest increase in average yields over the past decade.

Global players

China and India, the top potato-growing nations, increased

Figure 3: China's fry exports from 2020 to 2023.

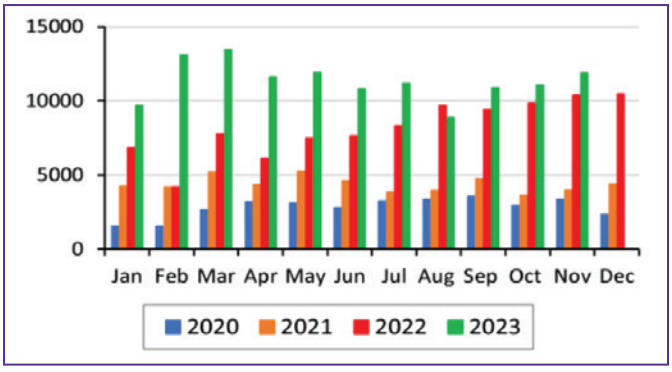


Figure 4: China's monthly frozen fry imports and exports in tonnes.

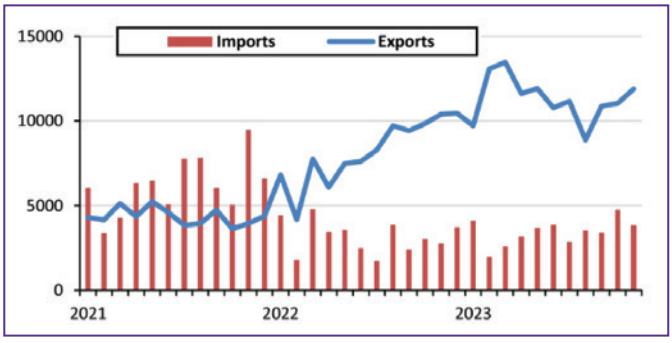


Figure 5: China's monthly fry exports (tonnes).

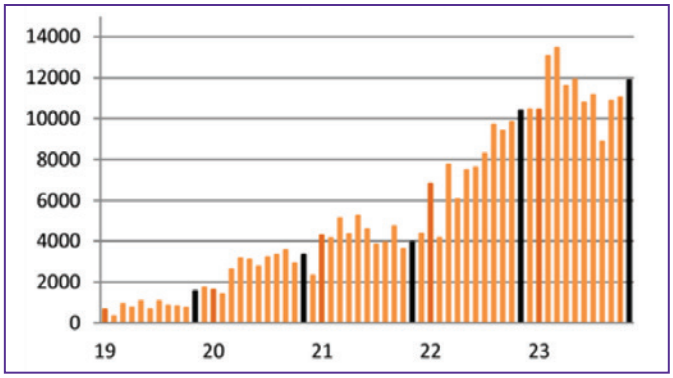
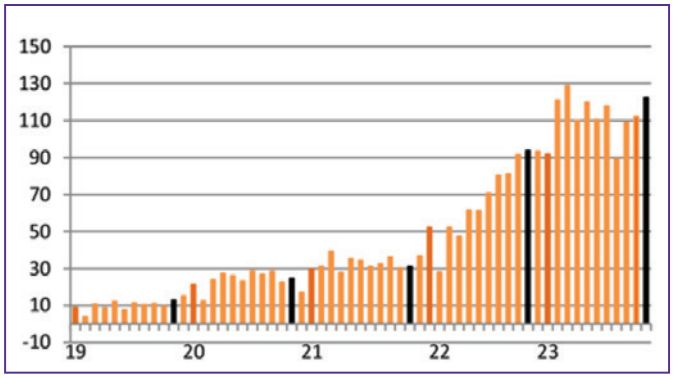


Figure 6: China's monthly fry exports (RMB million).



production in 2022 (95.631 million tonnes and 56.176 million tonnes, respectively). Noteworthy shifts in production were observed in various countries, highlighting the industry's dynamic nature.

In 2023, several Asian countries witnessed significant increases in potato production, with Bangladesh reaching 10.145 million tonnes and Pakistan achieving a record crop of 7.937 million tonnes. Despite the war, Ukraine maintained its position as the third-largest producer, although output decreased by 2.1% to 20.899 million tonnes due to a 6.1% reduction in harvested area. Russia, on the other hand, saw a 3.2% increase in production to 17.792 million tonnes. In contrast, the US experienced one of its smallest crops in recent years in 2022, with a 4.3% decline to 17.792 million tonnes compared to 2017.

Drought in Europe negatively affected yields across the continent, except for Denmark, which saw an increase. Over the past decade, 11 countries (Qatar, Senegal, Burundi, Niger, Guinea, Afghanistan, Turkmenistan, Nicaragua, Lebanon, and Mali) more than doubled their potato production, notably Pakistan. However, production halved in 12 countries, including the United Arab Emirates, Iraq, Greece, Belize, Uruguay, Lithuania, Rwanda, Hungary, Malawi, Democratic People's Republic of Korea, Latvia and Laos.

Japan boosts China sales

China's fry exports witnessed a surge in November, reaching their second-highest monthly earnings at Renminbi (RMB) 122.337 million. Japan emerged

Figure 7: Average price of China's fry exports (RMB/tonne).

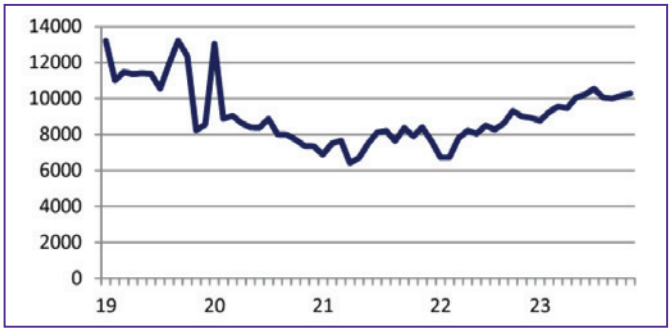


Figure 8: China's fry exports over 12-month periods in tonnes.

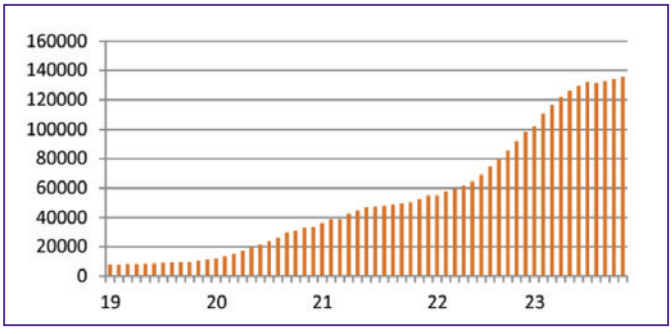


Figure 9: China's fry imports from 2020 to 2023.

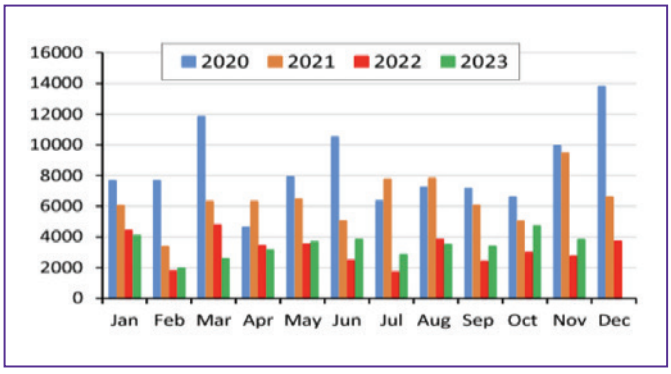


Figure 10: China's monthly fry imports in tonnes.

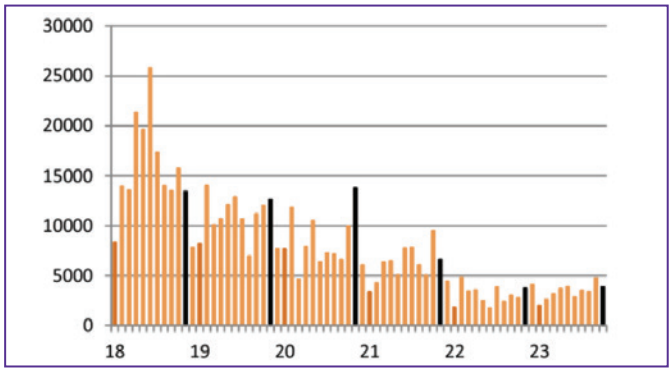


Figure 11: China's monthly fry imports (RMB million).

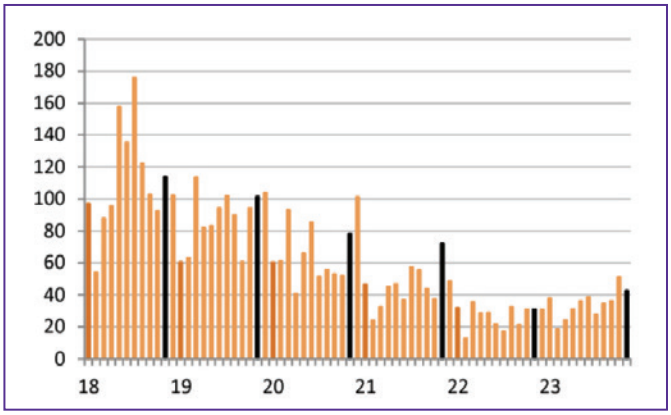
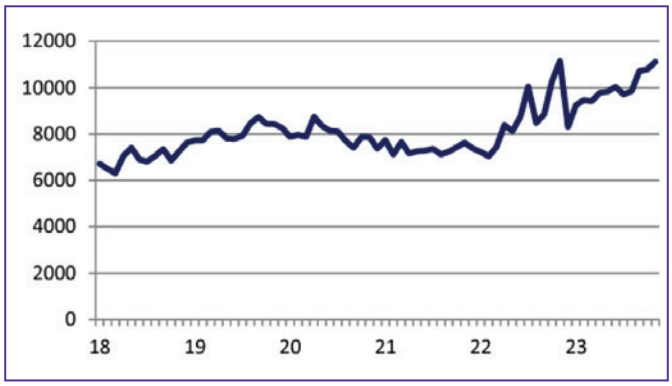


Figure 12: Average price of China's fry imports (RMB/tonne).



as the largest customer, contributing to higher prices and boosting China's earnings.

Market dynamics

In November, exports of US fries to China experienced a significant decline, reaching just 950 tonnes, marking the worst month since February. Despite this, there was a notable improvement of 38.7% compared to the same period last year. Total imports for the year have slightly increased by 1.5% to 41 433 tonnes, although still significantly lower than in 2020/21.

Turkey emerged as a beneficiary, with its fry exports to China increasing by 79.7% compared to the previous year, reaching 2 536 tonnes for November and 10 805 tonnes for the year, reflecting a rise of 63.9%. Despite being more expensive than US fries, Turkey's sales were robust. Belgian fries, although cheaper, experienced a price increase of 19.8% over the past year, selling 336 tonnes in November, which was half its October sales. However, annual sales for Belgium still increased by 69%.

France also made an appearance in the market with 16 tonnes of processed product at a higher price point, reflecting the top end of the market.

China's strategic export moves included sales to the Philippines, Indonesia, Malaysia, South Korea, Thailand and Bahrain, showcasing the versatility and growth potential of the Chinese fry market.

Regional impact

China's fresh potato exports experienced a 16.7% decline, totalling 41 146 tonnes. Despite lower orders from Vietnam and Malaysia, increased orders from Thailand and Singapore, along with a higher average export price, maintained market stability.

Japan: Rising prices, lower sales

Higher import prices in November last year led to a decline in Japanese fry sales, totalling 32 726 tonnes. This marks the second consecutive month below 2022 levels. US fries faced a significant 24.2% decrease in fry sales, while Dutch importers emerged as winners with increased sales.

The average import price rose to ¥281 039/tonne, a 7.7% increase from the previous year. US and Canadian fries' prices surged, impacting overall sales and contributing to market dynamics.

Global competitors

Dutch and Belgian fries experienced sales variations, with Dutch fries achieving significant growth (4 539 tonnes), and Belgian fries facing declines despite higher prices (3 140 tonnes). Chinese fries, with increasing sales (2 718 tonnes, almost 800 tonnes higher) and prices, showcased a competitive edge.

Other players are keenly eyeing the opportunities in Japan's price-sensitive market. India capitalised on this by selling 195 tonnes, bringing their yearly sales to 1.202 tonnes.

Figure 13: China's fry imports over 12-month periods in tonnes.

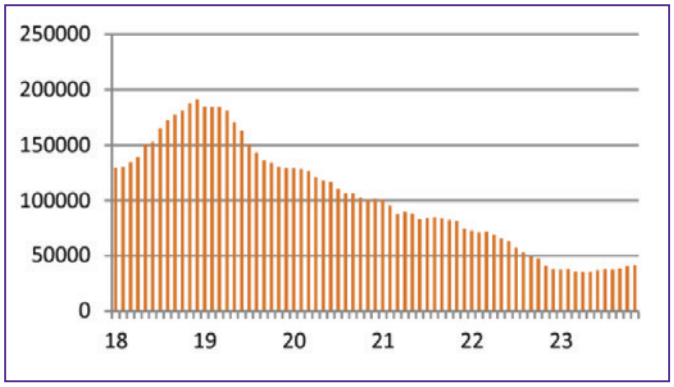


Figure 14: Japan fry imports from 2020 to 2023 in tonnes.

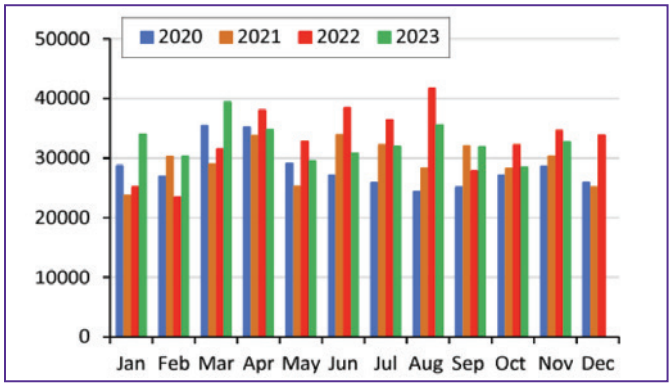


Figure 15: Import comparison from 2020 to 2023 in ¥/tonne.

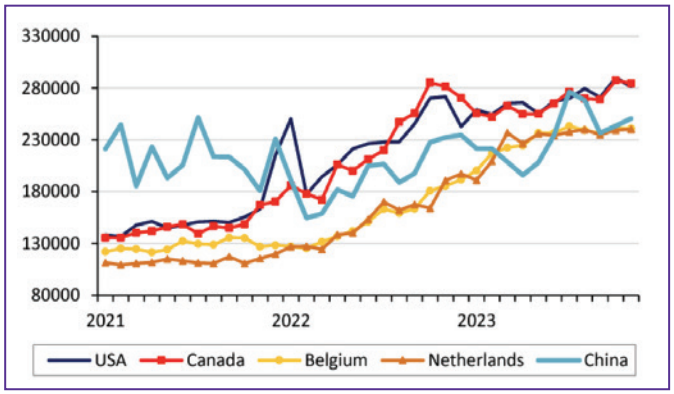


Figure 16: Japanese monthly fry imports in tonnes.

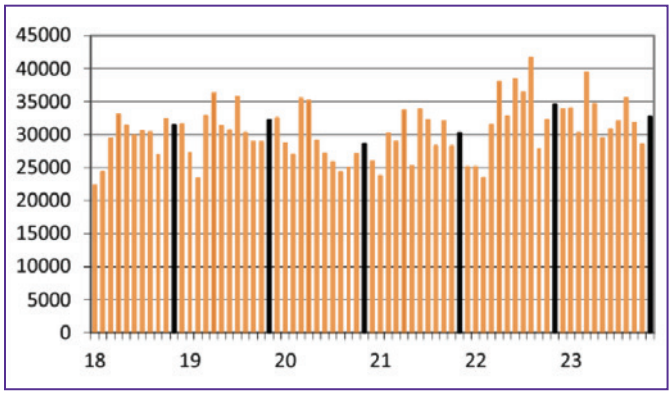


Figure 17: Japanese monthly fry imports (¥ billion).

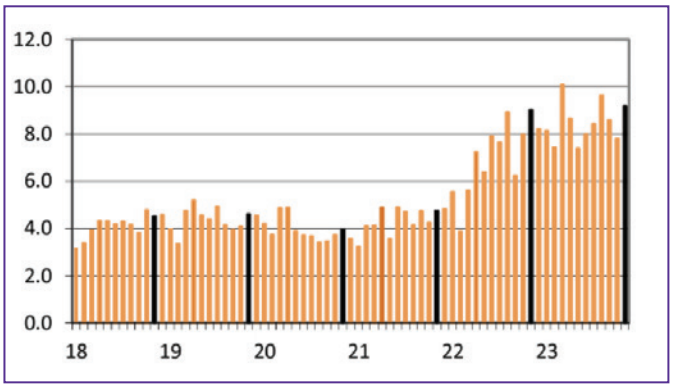


Figure 18: Unit value of Japan's fry imports (¥/tonne).

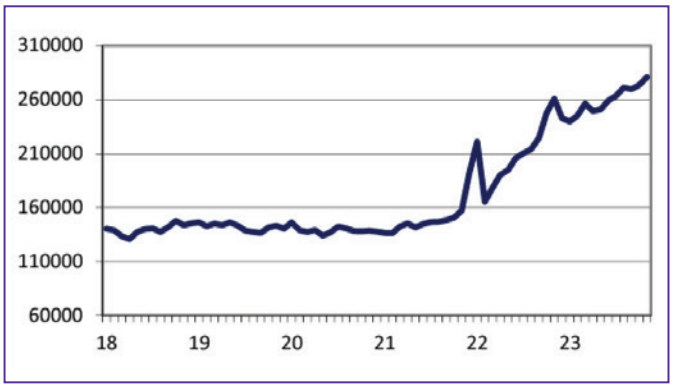


Figure 19: Japanese fry imports over 12-month periods in tonnes.

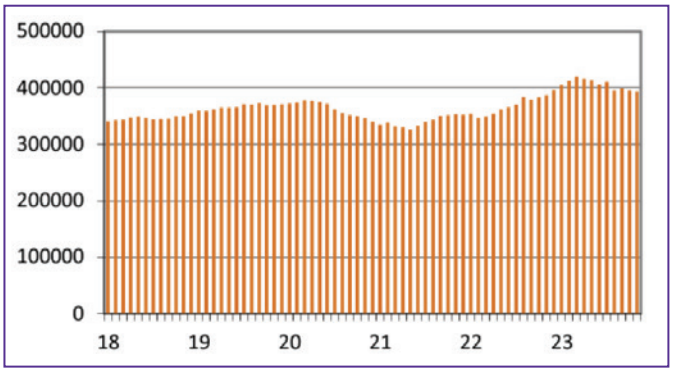


Figure 20: Thai fry imports from 2020 to 2023 in tonnes.

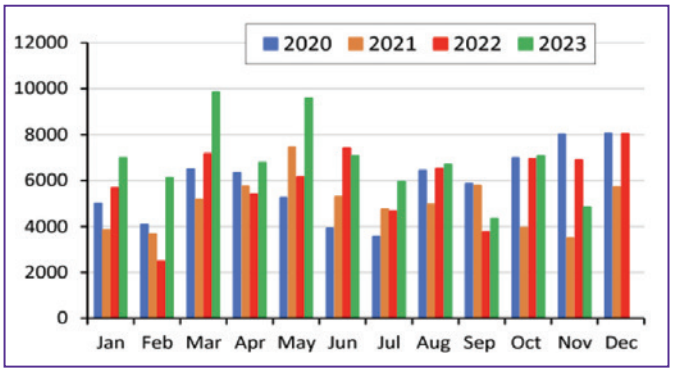


Figure 21: Average price of Thai fry imports (Baht/tonne).

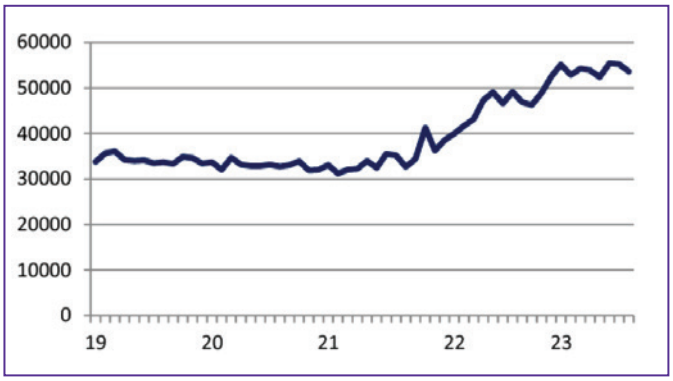


Figure 22: Thailand's monthly fry imports (Baht millions).

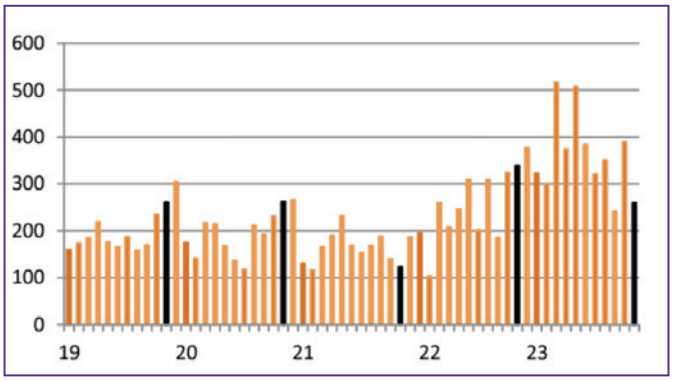


Figure 23: Thailand's monthly fry imports in tonnes.

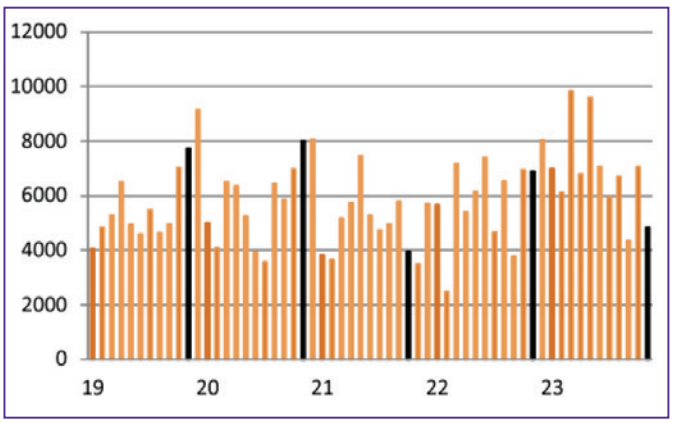
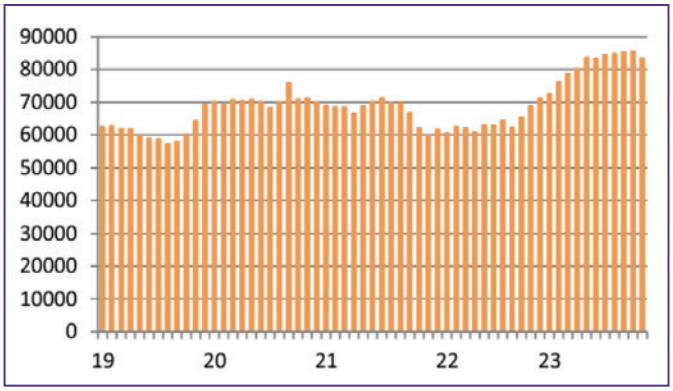


Figure 24: Thailand's fry imports over 12-month periods in tonnes.



Argentina also entered the market with 173 tonnes, in addition to 86 tonnes imported in October. However, Argentinas' price of ¥327 336/tonne (US$2 295/t; €2 098/t) was not competitive, being ¥31 000 higher than US fries.

The annual cost of Japan's fry import market has surpassed ¥100 billion, reaching ¥101.694 billion (US$713 million; €652 million). December is a significant month for fry consumption in Japan due to its seasonal celebration of Christmas, making it a crucial test of the import market's sensitivity.

Thailand: Economic uncertainty

In November, potato fry imports into Thailand declined by 2 225 to 4 843 tonnes, indicating economic uncertainty. The hospitality industry's readiness for the tourist season faced challenges amid ongoing economic shifts.

November's imports experienced a significant decrease of 29.8% compared to the previous year. Excluding the Covid-affected tourist season of 2021, this marks the lowest November imports since 2018. In 2019, Thailand welcomed over 39 million tourists, whose spending contributed to 12% of the country's gross domestic product. Although 2023 saw an estimated 27 million visitors, predictions for 2024 suggest an increase in tourist numbers to between 35 and 40 million.

With Thailand welcoming fewer tourists in recent years, predictions for 2 024 suggest potential growth, presenting both challenges and opportunities for the potato market.

Chinese tourists, crucial for the Thai market, are impacted by China's slow economic growth. To encourage more Chinese tourists, Thailand's new prime minister has implemented measures such as permanent visa-free entry and increased security.

Cut back on fry imports

Major fry imports into the country saw a decrease in volume recently. India sold 2 002 tonnes, down by 954 tonnes from October and 14.6% lower than last year, despite a lower price. China reduced its price further and sold 952 tonnes, which is 33.8% less than in 2022.

Dutch fry sales fell by 540 to 1 016 tonnes, 36.7% lower than last year, at a higher price compared to the previous year. New Zealand and the US also experienced a drop in sales, with the US selling just 208 tonnes, 67.3% less than a year ago. Despite the decline in imports, annual sales figures remain higher than in previous years, with Chinese fries showing the most growth. Higher prices have led to an increase in the Thai fry import market, which is now worth Baht 4.349 billion, up 51.5% since a year ago.

For more information and references, email anje@potatoes.co.za or visit *www.potatoes.co.za.*

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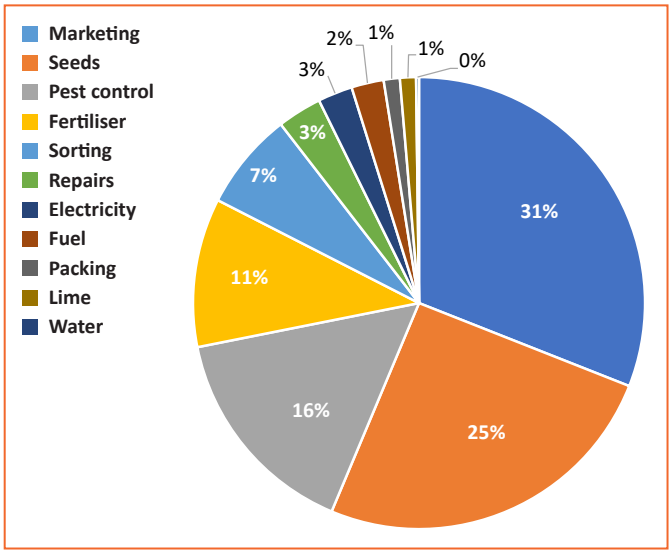
What we spend on protecting potatoes

By Dirk Uys, Potatoes SA, and Marco Marchi, Ocram Pest and Crop Analysis

Crop protection is a significant contributor to a potato producer's production costs. Following the cost of marketing and potato seed, crop protection cost is the potato producer's largest input. The increase in the cost of individual pesticides increased significantly during 2021 and 2023 but appears to have stabilised.

In a Potatoes SA budget estimate based on a yield assumption of 60 t/ha in a typical irrigation area, crop protection costs amount to 16% of a grower's input costs (*Figure 1*).

Figure 1: Proportion (%) of various potato crop production input costs.



Crop protection

In the context of crop protection expenses, it is important to note that nematicides account for 45% of a typical potato producer's crop protection input costs (as highlighted in *Figure 2a*). In the 2022/23 season, this amounted to more than R1 billion spent by potato producers to protect their crops annually. It is worth noting a few trends.

Firstly, crop protection spending per hectare has not increased over the last three years (*Figure 2b*), despite the increase in the cost of various products. One can probably conclude that crop protection programmes are being based on better prediction and monitoring systems, and growers think twice before spraying.

It is also important to note that a significant portion of existing crop protection products are being phased out due to pressure from influences such as the European Green Deal and the Globally Harmonized System (GHS) of classification and labelling of crop protection products.

As a result, one can expect that biological crop protection products will start to play a more prominent role in years to come. The use of biological-based products has increased by an average of 10% per year and the total segment already amounts to more than 10% of the total crop protection sector. This is also evident in the recent acquisitions of biological companies by multinational crop protection companies.

The role of products

Although these products are probably not a silver bullet, they certainly need to be understood better regarding the way they are used in spray programmes. These products offer

Figure 2a: Proportional (%) spending on nematicides, fungicides, insecticides and herbicides in potatoes.

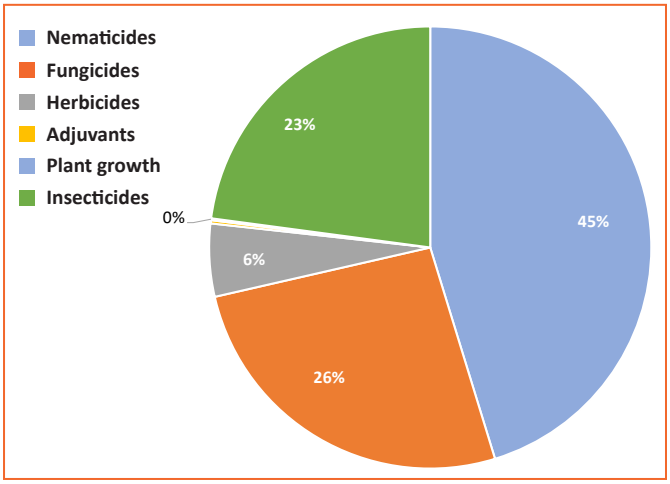


Figure 2b: Crop protection trends between 2019 and 2022 in R millions.

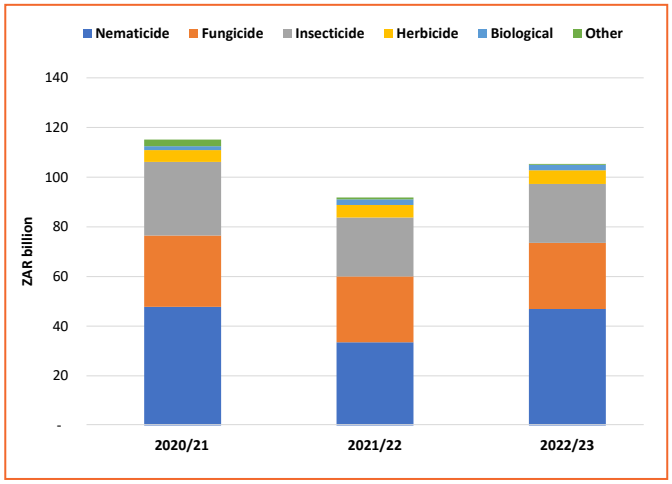
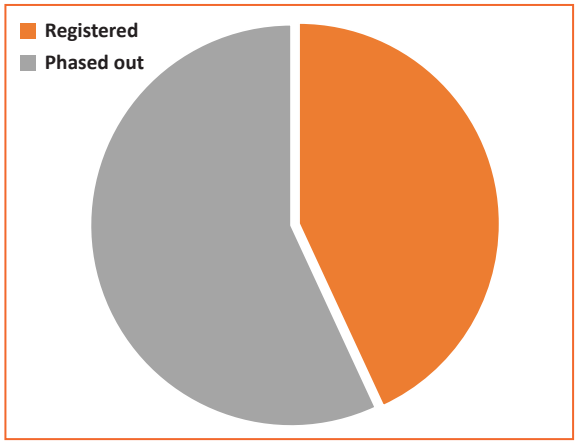


Figure 3: Nematicide ratio between phased out and registered.



Potatoes SA strategy: Three research projects by the Agricultural Research Council (ARC) are underway to evaluate the impact of crop rotation systems on reducing nematode damage by improving soil health. This research is showing positive results with an increase in the occurrence of beneficial nematodes.

the opportunity to support growers in developing spray programmes and offer the following benefits:

- Improved residue profiles.
- An alternative mode of action to minimise and counter resistance.
- Supporting the natural progression of indigenous beneficials.

We also need to keep in mind that global trends are progressing with new breeding technologies that will provide future strategies for the management of pests and diseases, and to improve the quality of potatoes. The challenge, however, is how these will be regulated by authorities.

Table and processing potatoes have similar spray programmes and producers have spent between R16 000 and R18 000/ha, while seed potato producers spent more than R30 000/ha in 2022 due to their very strict pest and disease regimes.

Nematicides

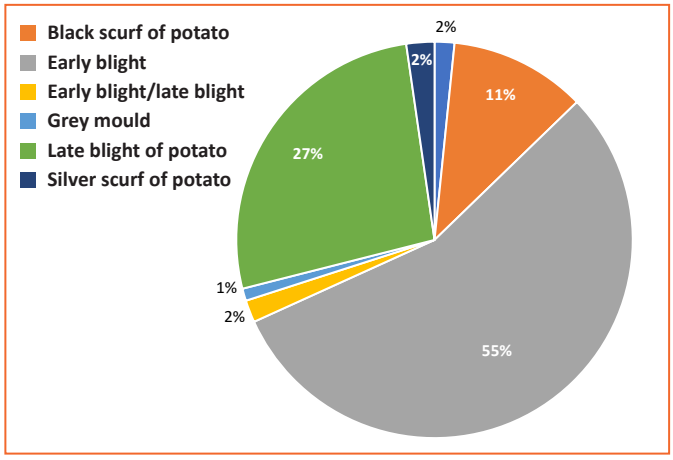
Nematode management is an important element in potato health as it alters the yield and appearance of potatoes. Nematodes are complicated organisms to control, and consequently nematicides contribute significantly to potato production costs. The older nematicides are facing challenges to remain registered. Approximately 57% of nematicides are under threat of being phased out (*Figure 3*).

Fortunately, newer nematicides have been registered such as fluopyram and fluensolfone and innovations in the pipeline look promising.

Disease control

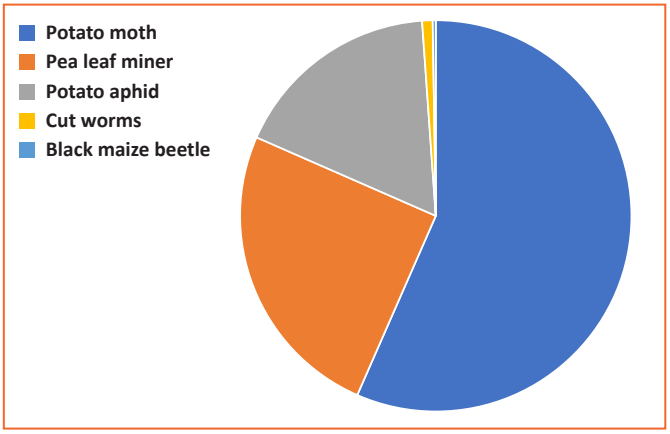
Early blight remains the most significant potato disease. Almost a third of products are in danger of being phased out and there are specific concerns regarding the future of mancozeb-based fungicides. A further challenge is the potential development of a sensitivity shift as multicides such as mancozeb offer an

Figure 4: Size of the different fungicide segments (%) with early blight being the most significant disease to control in 2022.



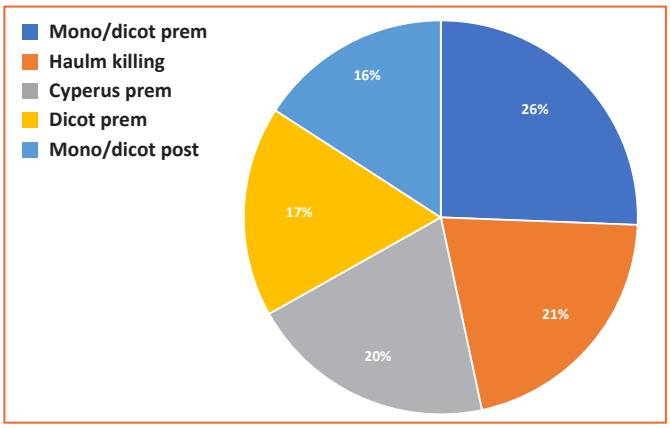
Potatoes SA strategy: Collaboration with the crop protection industry through the CropLife SA Fungicide Resistance Action Committee is essential. Potatoes SA funded two research projects by the ARC to monitor the status of *Alternaria* diseases' resistance against fungicide sensitivity as well as the occurrence of possible new mating types of the late blight pathogen *Phytophthora infestans*. Growers can contact their regional coordinator to test their status should they have a concern.

Figure 5: Size of the different insecticide segments with potato tuber moth being the most significant pest to control in 2022.



Potatoes SA strategy: An insightful piece of work by North-West University has highlighted the sensitivity shift of three of the key modes of action. Aphid trends are monitored in the key seed production regions to ensure optimal control strategies. This is supported by studies by the ARC to understand the environmental dynamics of the tuber moth and leaf miner biology.

Figure 6: Size of the different herbicide segments with mono/dicot prem being the most significant weed to control in 2022.



ideal tool to reduce resistance against both early and late blight.

Pest control

Controlling potato tuber moth complex remains the greatest expense, followed by pea leaf miner and aphid control. In the insecticide segment, we have noted the phasing out of chlorpyriphos and cartab hydrochloride which have been stalwarts in any insect control strategy.

Herbicides

Herbicides are the smallest segment but are also facing pressure. Of concern is the loss of active ingredients with different modes of action as a result of the GHS.

Concerns

It is important to emphasise that using unregistered products should be avoided. This includes growth regulators such as paclobutrazol which are used to inhibit gibberellic acid production, triggering the potato to produce more tubers. This is a trend that seems to be unique to South Africa. Many other potato production countries refrain from this practice as the possible impact on the next generation of tubers must be understood. Furthermore, the cost of developing new crop protection innovations is expensive.

Potatoes SA, through its research efforts, is focussing on integrating control strategies including:

- Crop rotation studies and green manure systems adapted to prevailing soilborne challenges.
- Weather modelling.
- Pest modelling.

Potatoes SA is also focussing on supporting growers in predicting diseases. To achieve this, growers and advisors will benefit from sharing pest and disease data to develop population trends.

For more information, contact Dirk Uys at dirk@potatoes.co.za or Marco Marchi at marcomarchimm@outlook.com.

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Rubber, plastiek, karton, papier en katoen op 'n aartappelplaas – wat nou?

Deur dr Gerhard Verdoorn, CropLife SA

Dit is haas ondenkbaar om enige tipiese Suid-Afrikaanse maaltyd voor te berei sonder een of ander vorm van aartappels. Skaapboud en oliegebraaide aartappels, souserige skaapnek met kapokaartappels, ordentlike beeshaas met gebakte aartappel en suurroom, vis en aartappelskyfies, en laastens die witgeel aartappelslaai wat enige maaltyd soos koningskos laat smaak. Die lewe sonder aartappels is bloot saai.

Maar wat het rubber, plastiek, karton en papier met aartappels te make? Dit handel alles oor plaagdoderveiligheid. Plaagdoders is intrinsiek gevaarhoudende stowwe, maar as die korrekte veiligheidsmaatreëls daarmee gehandhaaf word, is die risiko's bitter min of selfs nul.

Persoonlike beskerming

Enige persoon op 'n aartappelplaas wat met plaagdoders te doen het, gaan katoen, rubber en plastiek benodig.

Katoenoorpakke is die een item wat algemeen deur plaaswerkers gebruik word, maar vir die stoor-bestuurder wat elke dag in die plaagdoderstoor werk en spuitoperateurs wat plaagdodermengsels op aartappels aanwend, is goeie, hoë-digtheid katoenoorpakke nie onderhandelbaar nie.

Daardie oorpak vang enige newel of drywing wat die liggaam sou bereik stewig vas en voorkom dat die plaagdoder velkontak maak. Vra maar vir diegene wat nie volledig beskermende klerasie gedra het tydens die aanwending van lambda-sihalotrien nie, hoe dit voel 'n uur nadat die produk op die vel beland het. Dan moet die oorpak ook mooi afgerond word met 'n breërand katoenhoed om die kop te beskerm, want die kopvel is uiters penetreerbaar vir plaagdoders.

Rubber is die materiaal waarvan die werker se stewels en handskoene gemaak word; dit is gewoonlik chemies ondeurdringbaar en bied totale beskerming teen enige velkontak met plaagdoders. Plastiek kom in die vorm van oogbeskerming en 'n ondeurdringbare plastiekvoorskoot wat gebruik word deur diegene wat die spuitmengsels voorberei en met gekonsentreerde plaagdoders werk.

Neus- en mondbeskerming is gewoonlik in die vorm van 'n masker wat van geweefde polipropileen vervaardig word en die plaagdodernewel vang, sodat dit nie in die lugweg of mond beland nie. Werkers wat met hoogs gevaarlike plaagdoders soos terbufos, metamidofos, parakwat en fenamifos werk, behoort 'n respirator te dra omdat sulke produkte glad nie die liggaam moet binnedring nie.

Ken die vyand

Dis is baie maklik om beskermende klere te vermy, maar om die nagevolge te dra is baie minder aangenaam. 'n Goeie voorbeeld nou onlangs was 'n spuitoperateur wat geen beskermende klerasie gedra het terwyl hy 'n glifosaattoediening gedoen het nie. Die wind was redelik sterk en die spuitnewel het die operateur deeglik besoedel. 'n Uur later het hy ernstige velirritasie, lugwegirritasie, naarheid, braking en duiseligheid ondervind.

Klink dit vreemd? Beslis ja, want almal weet dat glifosaat se giftigheid vir mense bitter laag is, ongeag wat die anti-plaagdoderbewegings van hulle podiums af predik.

Wat min mense weet is dat die formulasies waarin vloeibare glifosaat voorsien word, 'n aantal bymiddels bevat om die glifosaat doeltreffend oor die teikenplante (onkruide) te versprei en laat bind. Daar is ook oplosmiddels wat aansienlik meer skadelik vir mense is as wat glifosaat is. Sommige vloeistofformulasies van glifosaatbevattende onkruiddoders bevat tot soveel as 20% etileenglikol en dit alleen kan ernstige nagevolge inhou as dit ingeasem of per mond ingeneem word.

'n Ander voorbeeld is van 'n jong boer wat sowat drie jaar gelede 'n spuitmengsel van parakwat en lambda-sihalotrien gespuit het sonder dat hy enige beskermende klere aangehad het. Die wind het skielik gedraai en die boer is deurdrenk met die spuitmengsel. Teen die tyd dat sy ma my geskakel het, was sy vel al bloedrooi en het hy ernstige pyn ervaar. Parakwat is baie giftig as dit deur die vel opgeneem word en lambda-sihalotrien brand die vel soos witwarm koolstofbrikette. Die boer moes gehospitaliseer word en het ernstige velbrandwonde opgedoen.

Onnodige blootstelling

Die slotsom is dat vreemde chemiese of biologiese stowwe nie 'n mens se liggaam behoort binne te dring nie. Dit is waarom CropLife SA gedurig

herinner aan beskermende klerasie: geen mens behoort onnodig aan chemiese of biologiese middels blootgestel te word nie. 'n Oorpak, hoed, neus- en mondbedekking, oogbeskerming, rubberstewels en rubberhandskoene is die minimumvereiste en is ook duidelik in beroepsveiligheidswetgewing vervat. Die plaaseienaar moet sulke beskermende toerusting aan werkers verskaf en werkers moet dit, ter wille van hul eie gesondheid, dra.

Is die nagevolge van die voorbeelde soos genoem as gevolg van slegte plaagdoders? Nee, daar bestaan nie slegte plaagdoders nie; daar bestaan net slegte gewoontes, soos om nie beskermende klerasie te dra nie. Die nuwe GHS (*Global Harmonisation System*)-formaat vir plaagdoderetikette dui pertinent aan dat selfbeskerming nodig is.
Die nie-dra van beskermende klerasie is ook teenstrydig met die vereistes van die *Wet op Misstowwe, Veevoedsel, Saad en Middels, 1947 (Wet 36 van 1947)* wat bepaal dat alle etiketinstruksies nagekom moet word.

Nog stof tot nadenke

Plaagdoders word in verskeie soorte verpakkings verskaf, waarvan hoë-digtheid poliëtileen (HDPE) die grootste persentasie uitmaak. Polipropileensakke (PP) met lae-digtheid poliëtileenvoerings (LDPE) word gebruik vir korrel- en poeierformulasies van onder andere glifosaat-wateroplosbare korrels, terwyl swaargewig papiersakke met LDPE-voerings en kartondose ook gebruik word.

CropLife SA het homself 14 jaar gelede al begin toespits op die insameling en verwerking van leë plaagdoderverpakkings, veral HDPE-dromme, omdat dit algemeen in die landbou gebruik word. Daar is 'n groot aantal individue en maatskappye wat aan CropLife SA se netwerk van gesertifiseerde verwerkers behoort en hulle kan nie genoeg leë houers kry om aan hulle behoeftes te voldoen nie.

Aartappelprodusente word ook daarop gewys dat afvalbestuurswetgewing leë plaagdoderhouers as gevaarhoudende afval klassifiseer en dat dit nie op enige plaas geberg mag word nie. As die leë houers egter drie keer met 'n kwart van die leë houer se volume gespoel word, is die houer volgens die *Suid-Afrikaanse Nasionale Standaard (SANS) 10406* nominaal skoon en mag dit dan na verwerkers geneem word vir verdere reiniging en verwerking.

Daar word soms gevra wat dan met die spoelwater gedoen word, want dit sal desnoods plaagdoder bevat. Daardie spoelwater gaan spuittenk toe, want dit bevat plaagdoder waarvoor die produsent betaal het. Daarna kan die skoon houer na die naaste CropLife SA gesertifiseerde verwerker geneem word, wat dan aan die produsent 'n sertifikaat van voldoende herwinning sal uitreik.

CropLife SA is die eerste nie-winsgewende liggaam in Suid-Afrika wat deur die Departement van Bosbou, Vissery en Omgewing (DBVO) as 'n plaagdoderproduk verantwoordelikheidsorganisasie (PRO in Engels) geregistreer is. Dit het 'n mandaat van die DBVO om alle plaagdoderverpakking te bestuur (met ander woorde, in te samel en so ver as moontlik te laat herverwerk). Dit beteken dat ons ernstig moet raak oor leë plaagdoderhouers. Aktiwiteite soos die begrawe en brand van plaagdoderhouers is 'n euwel wat met mag en mening uitgewis moet word ten einde die landbou se kant skoon te hou.

Gesertifiseerde verwerkers

Aartappelprodusente kan die lys van CropLife SA gesertifiseerde verwerkers onder 'Container management' op *www.croplife.co.za* kry, asook die riglyne vir die skoonmaak van verskillende verpakkingstipes. Plastiekverwerkers het 'n reuse- en onversadigbare behoefte aan HDPE asook PP. Onthou dat die plaas se leë houers iemand anders se lewensaar is; moet dit nie afsny deur leë houers te begrawe of te verbrand nie.

Vir verdere navrae, kontak dr Gerhard Verdoorn by gerhard@croplife.co.za of 082 446 8946.

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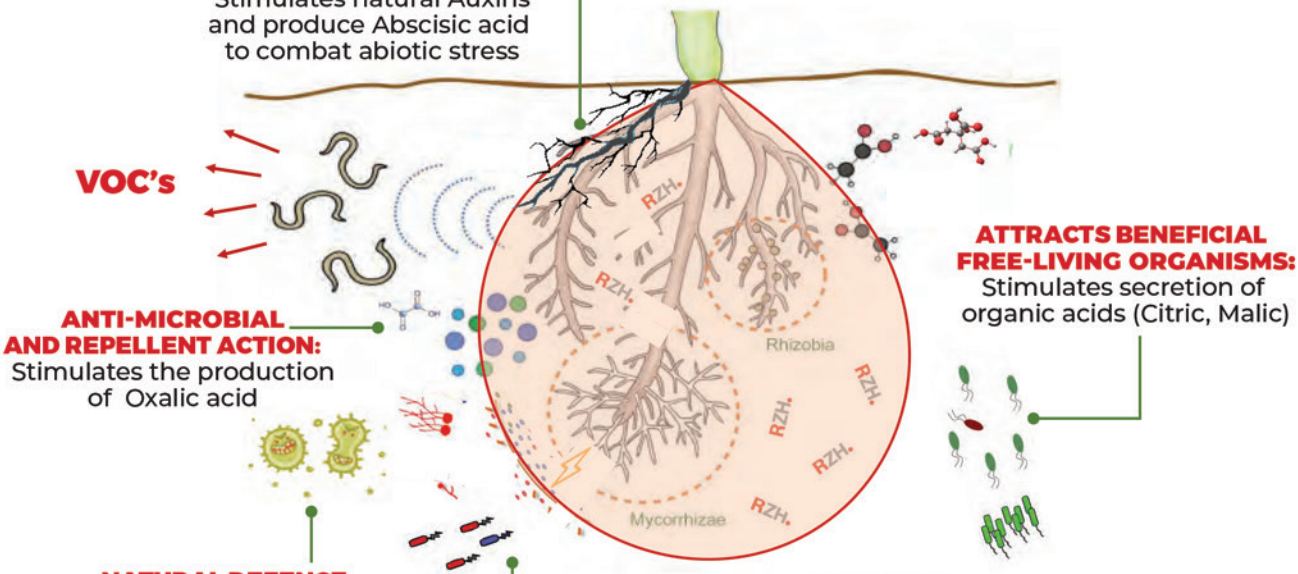

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Wilhelm Schultz, 061 902 0139, wschultz@cosmocel.co.za

'n Ondersoek na die gebruik van dekgewasse as groenbemesting teen *Verticillium*-verwelk van aartappels

Deur dr Estianne Retief, LNR-Plantgesondheid en -beskerming

Verskeie gewasse is reeds ondersoek as groenbemesting vir die beheer van grondgedraagde siektes in kommersiële aartappellande. Daar is verskillende meganismes betrokke by die verlaging van grondgedraagde patogene deur die implementering van groenbemestingsgewasse wat uiteindelik kan lei tot verhoogde opbrengste in kommersiële gewasse.

Een van die meganismes is bioberoking. Bioberoking vind gewoonlik plaas nadat gewasse wat aan die *Brassicaceae*-familie behoort, toegedien is. Dit sluit gewasse soos mosterd, brokkoli, kool en kanola asook ander families van die orde, *Capparales*, in. Die spesifieke gewasse bevat 'n bestanddeel bekend as glukosinolaat. Die soort en hoeveelheid glukosinolaat teenwoordig in verskillende plantspesies, wissel tussen spesies en binne individuele plante.

Wanneer die gewasse as groenbemesting by die grond gevoeg word, breek die glukosinolaat deur die werking van ensieme af en vlugtige produkte word vrygestel. Die vlugtige produkte het 'n biotoksiese funksie. Isotiosianaat is een van die algemeenste toksiese vlugtige produkte. Berokingsgewasse kan siekte onderdruk deur die patogeen se inokulum (mikrosklerotia) direk dood te maak, die vermoë van die mikrosklerotia om te ontkiem te verminder, of die groei van die patogeen te onderdruk.

Groenbemesting

Sommige *Brassicaceae*-gewasse bevat lae konsentrasies glukosinolaat. Daar is nie-*Brassicaceae* groenbemestingsgewasse wat geen glukosinolaat bevat nie, maar steeds siekte onderdruk en selfs beter presteer as gewasse met hoë hoeveelhede glukosinolaat.Dit is 'n aanduiding dat ander meganismes betrokke is.

Groenbemesting kan die mikrobiese populasies in die grond verander wat kan bydra tot siekte-onderdrukking. Daar kan 'n toename van mikrobes wees wat antagonisties teenoor die patogeen is en dus lei tot 'n biologiese beheereffek.

'n Toename van die mikrobiese populasie naby die rhizosfeer van die plante kan ook lei tot verhoogde kompetisie tussen mikrobes en patogene. Dit lei tot 'n verlaging van patogeeninfeksie. Die wyse waarop 'n tipe groenbemestingsgewas die struktuur van die mikrobiese populasie beïnvloed, is uniek en verskil dus tussen verskillende groenbemestingsgewasse.

Groenbemesting kan ook 'n gewas se opbrengs verhoog deur die mineraalinhoud en organiese materiaalinhoud van die grond te verander deur onder andere die residu's af te breek. 'n Toename in minerale en organiese materiaal kan bydra tot die verhoging van mikrobiese aktiwiteite wat lei tot die onderdrukking van *Verticillium*-verwelk. Dit kan verbeterde groei van die aartappelplant tot gevolg hê.

Buiten vir siektebeheer, sluit groenbemesting ook ander voordele in. Soedangras is 'n goeie beweidingsgewas en ander plante soos mielies, hawer, koring en gars, is kommersiële kontantgewasse.

Die projek

'n Projek is van stapel gestuur om die gebruik van dekgewasse as groenbemesting vir die beheer van *Verticillium*-verwelk van aartappels te ondersoek. Verskeie gewasse is vir die studie geselekteer en in 'n kweekhuis ondersoek. Eerstens is 'n *Verticillium dahliae* silika-sand inokulum voorberei.

Dit is in die grond geïnkorporeer sodat die inokulum in die grond 'n konsentrasie van 20 mikrosklerotia per gram grond bevat het. Groenbemestingsgewasse is in die grond geïnkorporeer tot dit gelykstaande was aan 20 t/ha.

Gewasse wat tydens die studie gebruik is, was akkerboon, dolichos-bone, fababoon, gars, graansorghum, hawer, Italiaanse raaigras, kanola, korog, kroonwieke, lupiene, mielies, rog, serradella, soetsorghum, sojaboon, tef, voersorghum, witbuffelsgras en witmosterd.

Die proef is 12 weke na plant gestaak. Siekte-erns is geëvalueer volgens 'n skaal gebaseer op die simptome wat gewissel het van 1 tot 5:

- 1 – geen verwelking of vergeling van die plant.
- 2 – verwelking en vergeling van een derde van die plant.
- 3 – verwelking en vergeling van twee derdes van die plant.
- 4 – totale verwelking en vergeling van die plant.
- 5 – die hele plant is dood (*Figuur 1*).

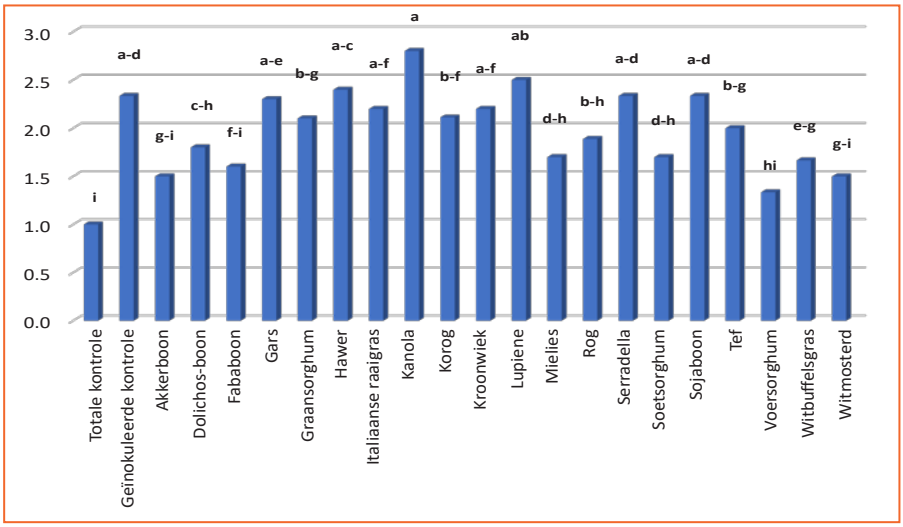
Die resultate word in *Figuur 2* weergegee.

Resultate en bespreking

Drie van die groenbemestingsgewasse naamlik kanola, hawer en lupiene, se behandeling het gelei tot hoër siektevoorkoms as die geïnokuleerde kontroleplante en tot 'n verhoging in die verwelkingsindeks.

Figuur 1: Skaal van simptome wat siekte-erns aandui.

Figuur 2: Siekte-erns veroorsaak deur verskillende groenbemestingsgewasse. Statistiese verskille word deur alfabetiese letters aangedui.



Die resultate van die studie verskil van reeds-gepubliseerde resultate in literatuur wat aangedui het dat kanola *Verticillium*-verwelk van aartappels suksesvol onderdruk het.

In die gepubliseerde studie is gevind dat die toediening van kanola as groenbemesting gelei het tot 'n toename in inheemse *Streptomycetes*, wat gelei het tot verhoogde patogeeninhibisie. Die resultate van ons studie verskil van die gepubliseerde studie s'n.

Dit kan verduidelik word deur die feit dat die effek van die groenbemestingsgewas op die mikrobiese populasie, grootliks afhanklik is van die grondtipe. Die grondtipe wat ons in die kweekhuisproef gebruik het, het vermoedelik 'n ander mikrobiese populasie bevat wat waarskynlik nie voordelig beïnvloed is deur die toediening van kanola nie.

Dit is moontlik ook dieselfde situasie met die toediening van die hawer en lupiene, waar die toestande wat ontwikkel het na toediening, skynbaar bevorderlik was vir die ontwikkeling van *Verticillium*-verwelk.

Verwelkingsintensiteit

Groenbemesting met sojabone en serradella het dieselfde hoeveelheid siekte veroorsaak as die geïnokuleerde kontroleplante. Die groenbemesting het dus geen voordelige effek gehad nie. 'n Verdere nege behandelings naamlik dolichos-bone, gars, graansorghum, Italiaanse raaigras, korog, kroonwieke, mielies, rog, soetsorghum en tef het nie gelei tot 'n verwelkingsintensiteit wat betekenisvol verskil het van die geïnokuleerde kontroleplante nie. Dit het wel tot 'n klein verlaging in verwelkingsintensiteit gelei, hoewel nie betekenisvol nie.

Groenbemesting met witbuffelsgras het gelei tot 'n betekenisvolle verlaging in die verwelkingsintensiteit, veral as dit vergelyk word met die geïnokuleerde kontroleplante. Die gewas wat egter tot die meeste siekte-onderdrukking gelei het, was voersorghum. Drie ander behandelings naamlik fababoon, akkerboon en witmosterd het ook verwelking verlaag, sodat dit nie betekenisvol van die totale kontroleplante verskil het nie. Dit word dus beskou as baie doeltreffende groenbemestingsbehandelings.

Voersorghum is 'n sorghum-en-Soedangrashibried en word tipies gebruik as dierevoer en ook as groenbemesting. Ander gepubliseerde studies het gevind dat voersorghum doeltreffend teen *Verticillium*-verwelk en ander grondgedraagde aartappelsiektes aangewend kan word wanneer dit as groenbemesting dien.

Meer as een metode wat 'n rol in die doeltreffendheid van die groenbemestingsgewas speel, mag dalk betrokke wees. Die voorkoms van dhurrin mag moontlik een rede wees. Dhurrin is 'n sianogeniese glikosied wat kan hidroliseer en waterstofsianied afskei wat uiters toksies is vir verskeie grondorganismes.

Literêre navorsingsresultate

Die literatuur het gewys dat die toediening van akkerboon op aartappels gelei het tot verminderde aartappelskurf. In ons studie het dit gewys dat dit ook voordelig aangewend kan word as groenbemesting teen *Verticillium*-verwelk.

Fababone word ook soms gebruik as 'n groenbemestingsgewas en het die vermoë om groot hoeveelhede stikstof vry te stel wanneer dit in die grond afbreek. In die literatuur het verskeie nie-*Brassica* gewasse in studies, aartappelsiektes effektiewelik verlaag.

Dit is verkry deur meganismes wat verwant is aan 'n toename in die mikrobiese biomassa en aktiwiteite, asook 'n verandering van die grond-mikrobiese populasiekenmerke en spesifieke effekte op die populasie van antagonistiese mikrobes. Hierdie is almal eienskappe wat deur 'n toename in stikstof geaffekteer kan word.

Witmosterd is al in die literatuur aangeteken as 'n doeltreffende groenbemestingsgewas teen *Verticillium*-verwelk. Dit is veral doeltreffend wanneer dit in kombinasie met Oosterse mosterd gebruik word. Witmosterd word dikwels geselekteer as 'n groenbemestingsgewas weens sy vermoë om groot hoeveelhede vlugtige stowwe te produseer wat toksies is vir grondgedraagde patogene.

Witbuffelsgras, voersorghum en akkerboon is veral geskik vir somerreënvalgebiede en witmosterd en fababone is meer geskik vir die winterreënvalareas. Die voorlopige resultate van die studie het verskeie gewasse geïdentifiseer wat geskik is om in rotasie met aartappels te groei en ook gewasse wat toegedien kan word as groenbemesting in beide die winter- en somerreënvalareas van Suid-Afrika. Die resultate van die studie sal bevestig en/of getoets word deur 'n opvolgkweekhuisproef.

Vir meer inligting, kontak die outeur by RetiefE@arc.agric.za.

Wes-Vrystaatse kultivarproef onder besproeiing op Bultfontein in 2023

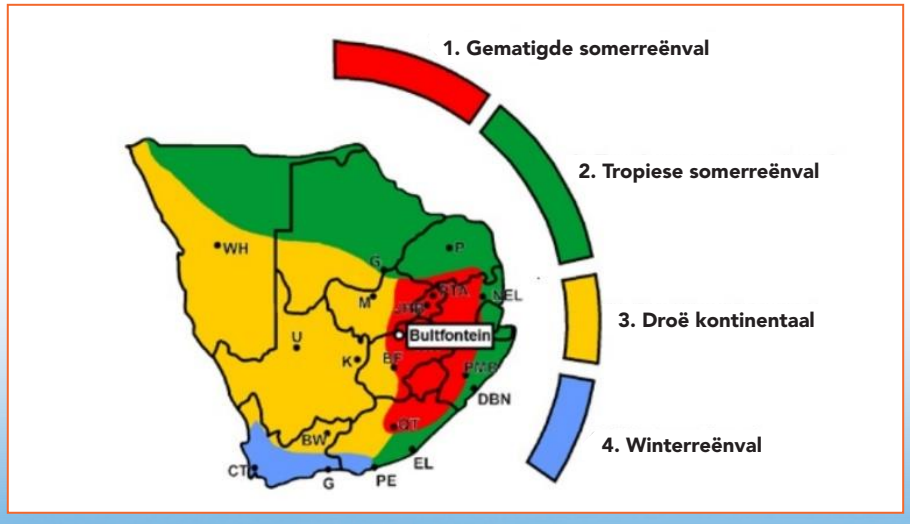
Deur Enrike Verster, Anjé Erasmus en Laryssa van der Merwe, Aartappels SA, en Izak Cronjé, produsent

Die Wes-Vrystaat is ’n groot aartappel-produksiestreek waar 40 produsente sowat 14% van die land se aartappels op ongeveer 7 372 ha produseer. Die mees prominente kultivars wat hier vir kommersiële verbruik (tafel- en verwerkingsaartappels) geproduseer word, is Mondial (33%), Sifra (39%) en Lanorma (18%).

Bultfontein val in Suid-Afrika se somerreënvalgebied (*Figuur 1*) en het vir die afgelope 23 jaar ’n gemiddelde jaarlikse reënval van ongeveer 580 mm ontvang. Die streek se matige klimaat sluit baie warm somers in (die warmste in Desember en/of Januarie) tot koue winters met ryp wat vanaf April tot Augustus kan voorkom.

Die Bultfontein-kultivarproef is uitgevoer in sandleemgrond en die proef is in ’n ewekansige blok-ontwerp met drie herhalings per kultivar uitgelê. In *Tabel 1* word relevante tegniese inligting rakende die proef verskaf.

Figuur 1: Ligging van Bultfontein in die Wes-Vrystaat produksiegebied.



Groeitydperke

Ingesluit in die proef is kultivars met kort tot lang groeitydperke. Derhalwe kan groeitydperke die uiteindelike opbrengs van sekere kultivars beïnvloed. Die lengte van groeitydperke is onderhewig aan die aard van die seisoen, maar word gesien as die hoeveelheid tyd wat verloop vanaf opkoms tot natuurlike loofafsterwe.

Die gemiddelde opbrengs van die proef vir die 2023-seisoen is 51.28 t/ha, wat baie soortgelyk is aan die afgelope vyf seisoene se gemiddelde opbrengs van 50.8 t/ha.

Tabel 1: Opsomming van tegniese inligting rakende proefperseel en uitleg.

Plaas	**Oasis**					
Produsent	Izak Cronjé					
Plantdatum	17 Januarie 2023					
Oesdatum	7 September 2023					
Besproeiing/droëland	Besproeiing					
Dubbel- of enkelrye	Dubbelry in een wal					
Loofafsterwe	Natuurlik					
Tussenry-spasiëring	1 m					
Inry-spasiëring	37 cm					
Proefperseel	20 m^2					
Plantestand	27 000 plante/ha					
Bemestingsprogram						
Voedingswaarde						
	N (kg/ha)	**P (kg/ha)**	**K (kg/ha)**	**Ca (kg/ha)**	**Mg (kg/ha)**	**S (kg/ha)**
Totaal	**296**	**106**	**200**	**109**	**41**	**84**

Tabel 2 toon hoedat groeitydperke van kultivar tot kultivar verskil. Omgewingsfaktore en bestuurspraktyke beïnvloed ook die verskillende groeifases en wanneer dit 'n aanvang neem.

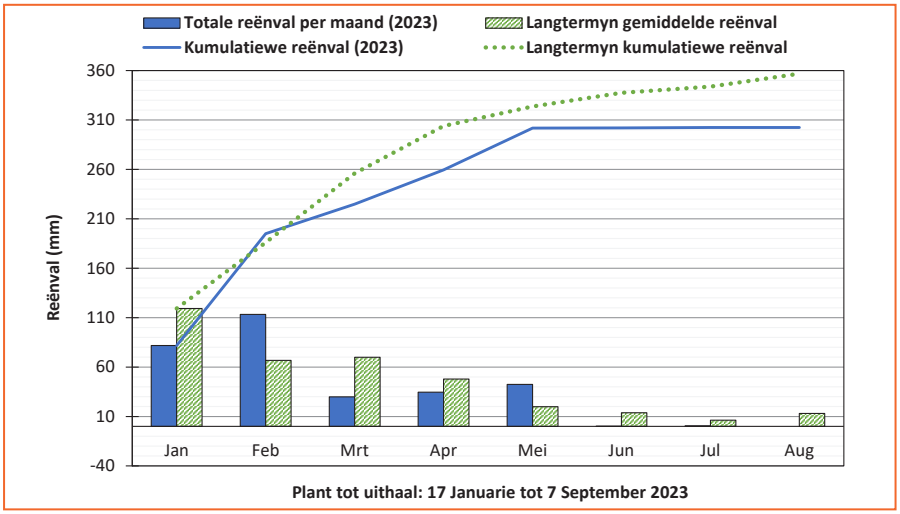
Stand en aantal halms per moer beïnvloed knolgrootte en opbrengs. Die aantal ogies per knol is kultivarafhanklik en bepaal die hoeveelheid spruite wat per knol voortgebring kan word. Plantgereedheid van moere is baie belangrik in hierdie verband, aangesien moere wat plantgereed is gewoonlik aanleiding gee tot moere wat beter spruit en per kultivar die ideale aantal stamme per spruit voortbring, eerder as knolle wat nog nie plantgereed is nie.

Tabel 2: Karaktereienskappe rakende groeitydperk, plantgereedheid, stand (%) en halmtellings vir betrokke kultivars.

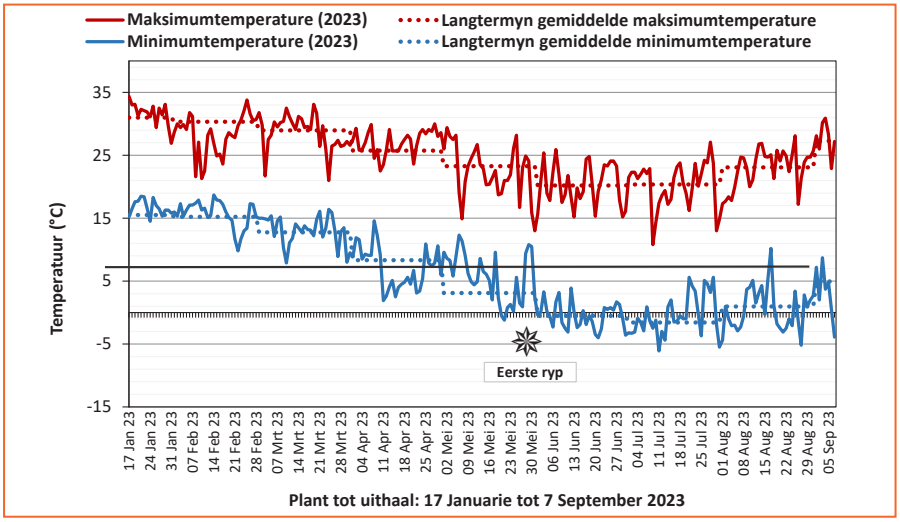
Kultivar	Groeitydperk (dae)[1]		Plantgereedheid[2]	Stand (%)	Halms per plant	Halms per ha
11Z49A1	Medium tot lank	(100-120)	3	85	4	98 900
11Z55A5	Medium tot lank	(100-120)	3	80	4	90 300
Allison	Medium tot lank	(120)	3	89	5	108 000
Amony	Medium tot lank	(110)	3	91	3	72 275
CMK2015	Lank	(120)	2	82	5	102 300
Connect	Medium tot lank	(120)	3	46	3	39 375
Foxy	Kort tot medium	(90-100)	2	65	3	57 750
Kelly	Lank	(120)	3	80	4	79 550
Lilly	Medium	(100)	3	94	4	110 925
Mondial	Medium tot lank	(110-115)	3	83	4	99 000
Noha	Medium	(100)	3	82	5	100 100
Noya	Medium tot lank	(120)	3	54	2	33 350
Palace	Lank	(110-115)	2	93	4	111 250
Panamera	Medium	(90-110)	3	69	3	51 800
Panamera*	Medium	(90-110)	3	82	3	57 200
Prince	Lank	(110-115)	2	98	4	109 975
Sababa	Medium tot lank	(110-115)	2	100	4	113 400
Sifra	Kort tot medium	(90-100)	3	91	4	85 750
Sound	Medium	(110)	3	83	4	94 500
Tyson	Kort tot medium	(90-100)	3	83	3	63 000

[1]Algemene riglyne en kategorieë (dae vanaf opkoms tot natuurlike loofafsterwe, afhangend van die seisoen): Kort = 70 tot 90 dae; kort tot medium = 80 tot 100 dae; medium = 90 tot 110 dae; medium tot lank = 90 tot 120 dae; lank = 90 tot 140 dae.
[2]Plantgereedheid van moere: 1 = vars; 2 = effens vars; 3 = plantgereed; 4 = effens oud; 5 = oud.
**'n Kultivar wat van die proef onttrek het, is vervang met kommersiële Panamera-saad van die boerdery om die proefplan te behou.*

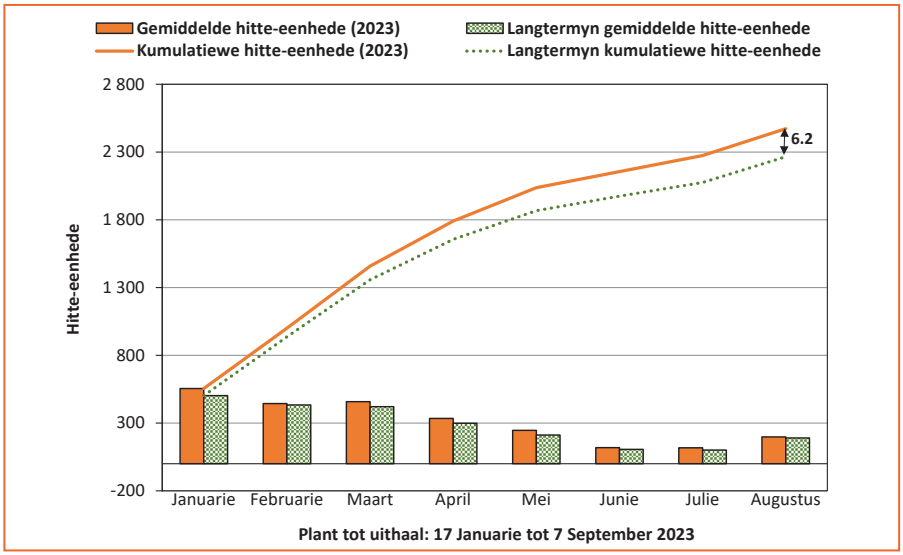
Figuur 2: Reënval (2023 seisoen) en langtermyn gemiddelde reënval.



Figuur 3: Minimum- en maksimumtemperature (2023 seisoen) sowel as langtermyntemperature.



Figuur 4: Hitte-eenhede (2023 seisoen) asook langtermyn gemiddelde hitte-eenhede.



**Totale hitte-eenhede spesifiek bepaal vir aartappels as gewas (drumpeltemperatuur = 5°C). Bereken vanaf uurlikse data.*

Moere wat te oud is vorm baie stingels en klein knolle. Die plantgereedheid van moere ten tye van die plant van die proef, sowel as standpersentasie en halmtelling wat later in die groeitydperk waargeneem is, word in *Tabel 2* aangedui.

Opbrengs- en bemarkingsindeks

Die evaluering van kultivars soos in die Bultfontein-kultivarproef, verskaf resultate oor onder meer die opbrengs- en bemarkingsindeks. Die bemarkingsindeks van die betrokke kultivars word bereken deur elke kultivar te klas en sorteer volgens gehalte en grootte-groepe (byvoorbeeld Klas 1 Groot of Klas 2 Groot-medium).

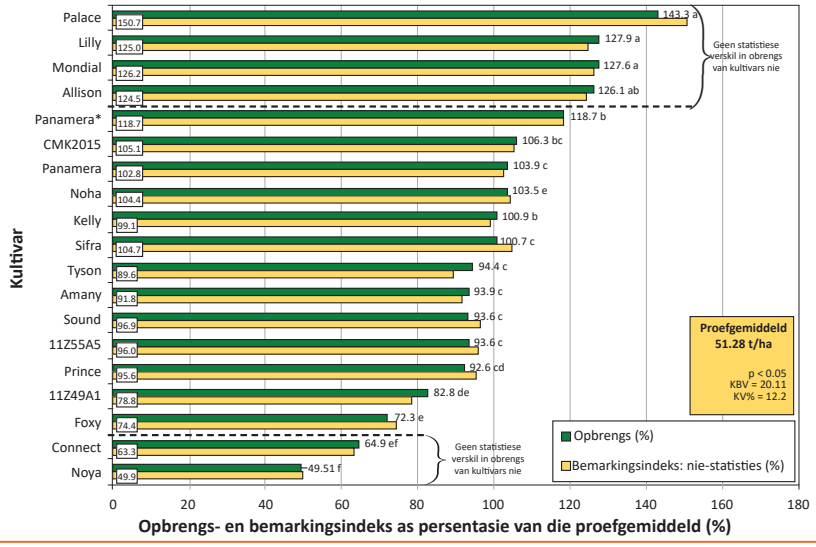
In hierdie proef is al drie herhalings bymekaargegooi en deur die pakstoor geklas en sorteer. Dienooreenkomstige prysvergelykings is dan gemaak met markpryse soos verkry ten tye van oes. Die prestasie van nuwe kultivars kan nie net op die resultate van een bepaalde seisoen geskoei word nie, omdat klimaat van een jaar na 'n volgende wissel. Juis daarom word die kultivars verkieslik oor 'n aantal seisoene getoets.

Abiotiese faktore

Soos met enige gewas is temperatuur, die beskikbaarheid van water (hetsy goeie besproeiingskedulering of reënval), sowel as hitte-eenhede belangrike faktore wat 'n wesenlike invloed uitoefen gedurende die aartappelplant se groeitydperk. Hierdie faktore word dus in aanmerking geneem wanneer die prestasie van kultivars geëvalueer word. Toepaslike daaglikse- en langtermynweerdata is verkry vanaf 'n Hortec-weerstasie wat naby die proefperseel geleë is, asook die naaste Landbounavorsingsaad (LNR)-weerstasie.

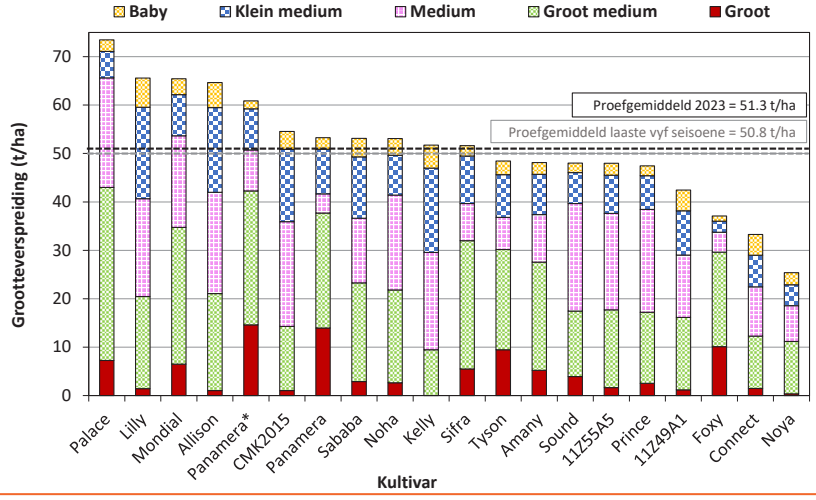
Gedurende die 2023-seisoen is oor die algemeen ondergemiddelde reënval ervaar (*Figuur 2*). Gedurende Februarie, in die maand na plant, sowel as Mei, aan die einde van die groeitydperk, is bogemiddelde reënval egter ontvang. Stamvrot is gedurende stand- en halmtelling in die proef in sommige kultivars opgemerk. Die bogemiddelde reënval

Figuur 5: Totale opbrengs en bemarkingsindeks per kultivar as persentasie van die proefgemiddeld.

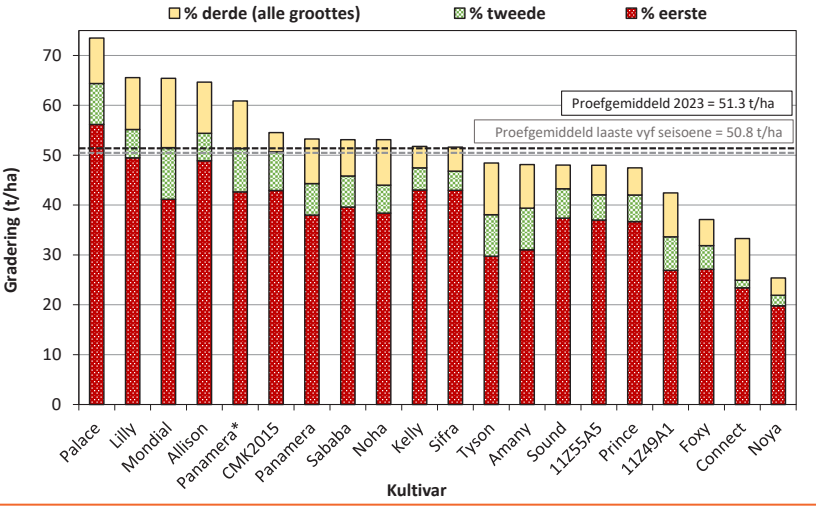


Waardes gevolg deur dieselfde letter is nie beduidend verskillend van mekaar nie.
**Panamera: 'n Kultivar wat onttrek het van die proef is vervang met kommersiële Panamera-saad van die boerdery om die proefplan te behou.*

Figuur 6: Groottegroepverspreiding van elke betrokke kultivar.



Figuur 7: Gradering van elke betrokke kultivar.



nader aan die einde van die groeityd, kan waarskynlik gehalteprobleme soos misvorming verklaar.

Minimum- en maksimumtemperature word in *Figuur 3* uiteengesit. Groot fluktuasies is deurgaans in veral maksimumtemperature aangeteken. Temperature onder vriespunt het in 2023 nader aan einde Mei voorgekom en, daarmee saam, natuurlike loofafsterwe.

Hitte-eenhede

Die versameling van hitte-eenhede gedurende 'n groeitydperk is 'n belangrike faktor in die ontwikkeling van 'n plant. Die tendens van hitte-eenhede beskikbaar vir die kultivar-proef van die betrokke seisoen, blyk deurgaans bo die langtermyndata-tendens te wees vir die seisoen as geheel (*Figuur 4*).

Opbrengsdata wat tydens oesdag versamel is, word onderwerp aan statistiese verwerking met behulp van die GenStat®-program. Die Tukey-toets van kleinste betekenisvolle verskille is gebruik om die gemiddelde te skei.

Die kultivareffek gedurende die betrokke proef (*Figuur 5*) was statisties beduidend ($p<0.05$) en die koëffisiënt van variasie was laag (12.2%). Hierdie faktore dui daarop dat die proef goed uitgevoer is en die resultate derhalwe betroubaar is. Die opbrengs van elke kultivar word deur die proefgemiddeld gedeel (die proefgemiddeld van al die kultivars word as 100% geneem). Hierdeur word 'n opbrengsindeks geskep en word elke kultivar se prestasie in terme van opbrengs as 'n persentasie van die proefgemiddeld gelees.

Evaluasie van opbrengs

Die gemiddelde opbrengs van die proef vir die 2023-seisoen is 51.28 t/ha. Dit is baie soortgelyk aan die afgelope vyf seisoene se gemiddelde opbrengs van 50.8 t/ha. Die kultivars Palace, Lilly, Mondial en Allison het statisties die hoogste opbrengste gelewer. Dieselfde kultivars het ook die hoogste bemarkingsindeks behaal – dit kan toegeskryf word aan baie goeie opbrengs in Groot- en Klas 1-knolle (*Figure 5, 6* en *7*).

Tabel 3: Hoofredes vir afgradering.

Kultivar	Sandspleet	Ander splete	Bruinskurf	Silwerskurf/ swartspikkel	Rhizoctonia	Mot	Vergroening	Misvorming	Holhart
11Z49A1		x	x	x		x			
11Z55A5				x		x			
Allison		x		x		x	x		
Amony			x	x		x	x	x	
CMK2015	x			x		x	x	x	x
Connect						x	x	x	
Foxy	x			x	x	x	x		
Kelly					x	x	x		
Lilly		x	xx	x		x			x
Mondial	x	x		x		x		x	
Noha		x			x	x	x	x	
Noya			x	x	x	x	x		x
Palace				x		x	x		
Panamera	x	x	x			x	x	x	
Panamera*	x	x	x			x	x	x	
Prince						x	x	x	
Sababa				xx		x	x		
Sifra		x		x		x		x	
Sound	x					x			
Tyson	x	x	x	x		x			

Tabel 4: Kook- en prosesseringseienskappe van kultivars (uitgevoer deur LNR-Roodeplaat).

Kultivar	Skyfiekleur[1]	DM[2]	SG[3]
11Z49A1	52,4	15,7	1,059
11Z55A5	51,4	16,7	1,064
Allison	52,0	17,8	1,069
Amony	50,7	17,1	1,065
CMK2015	53,3	19,2	1,075
Connect	48,4	17,8	1,069
Foxy	53,4	16,6	1,063
Kelly	55,2	19,7	1,078
Lilly	49,5	15,8	1,059
Mondial	50,3	17,0	1,065
Noha	56,1	17,9	1,069
Noya	52,5	18,2	1,070
Palace	56,0	17,2	1,066
Panamera	53,3	20,8	1,083
Panamera*	60,0	19,8	1,078
Prince	53,9	17,2	1,066
Sababa	46,6	17,1	1,065
Sifra	51,6	17,4	1,067
Sound	51,4	17,8	1,069
Tyson	52,4	15,7	1,059

[1]Skyfiekleur met waarde >50 en sonder defekte is aanvaarbaar vir die droëskyfiebedryf.
*[2]Die persentasie droëmateriaal is 'n berekende waarde: DM% = 24.182 + 211.04 * (SG-1.0988). Die werklike persentasiewaarde sal effens verskil tussen variëteite uit hierdie berekeningswaarde.*
[3]Soortlike gewig van ≥1.075 is aanvaarbaar vir die prosesseringsbedryf.

Besproeiing is toegepas in hierdie kultivarproef.

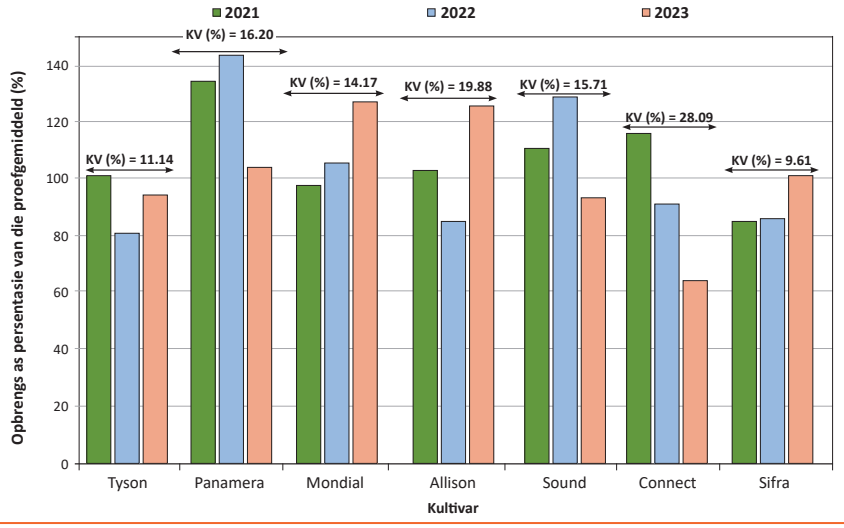
Groottegroepverspreiding en gradering is onontbeerlike evaluasies wanneer gekyk word na 'n kultivar se bemarkbaarheid. Die hoofredes vir afgradering van elke kultivar (*Tabel 4*) asook interne kwaliteit is alles belangrike faktore en moet dus ook geëvalueer word.

Motskade, silwerskurf en swartspikkel en relatiewe lae soortlike gewig (SG), soos aangeteken in hierdie proef, is probleme wat kan intree wanneer knolle so lank onder die grond lê voor uithaal. Volgens die beskikbare weerdata is meer hitte-eenhede aangeteken oor die wintermaande as die langtermyngemiddeld, wat moontlik bygedra het tot hoër motdruk op die aartappels wat onder die grond lê. Interne defekte in die vorm van holhart is in drie van die kultivars aangeteken.

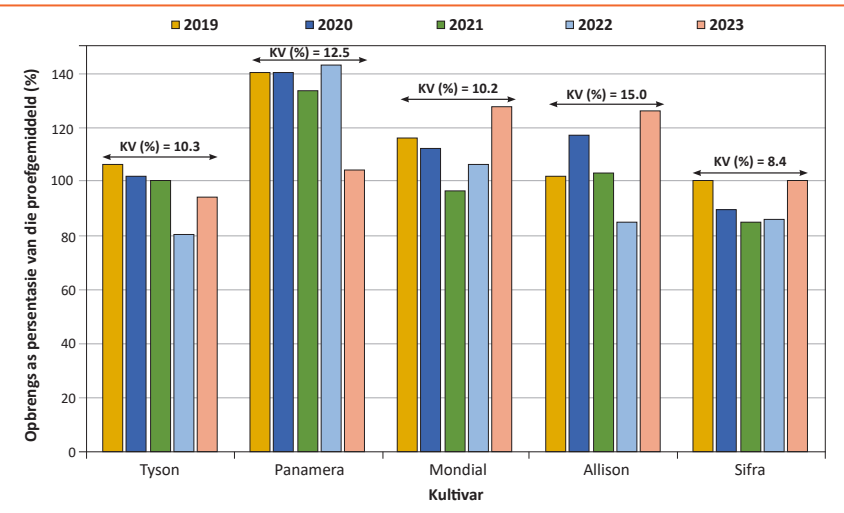
Die prestasie van kultivars wissel van seisoen tot seisoen. Dit is omdat klimaat van een seisoen na 'n volgende eenvoudig nooit eenders is nie. Derhalwe is dit belangrik om konsekwente kultivarprestasie oor 'n aantal seisoene in ag te neem. Sifra toon tans die minste variasie vir die Bultfontein-area oor die laaste drie asook vyf seisoene (*Figuur 8* en *9*).

Laastens, wanneer gekyk word na die interne gehalte van aartappels, kan kook- en prosesseringseienskappe ook geëvalueer word. Om te voldoen aan prosesseringsvereistes, moet kultivars aan 'n skyfiekleurnorm van >50 en 'n SG van ≥1.075 voldoen. Sewentien uit 20 kultivars het voldoen aan die voorgeskrewe skyfiekleur, maar slegs CMK2015 en Kelly het voldoen aan die voorgeskrewe SG sowel as skyfiekleur (*Tabel 5*).

Figuur 8: Prestasie van kultivars wat vir drie jaar in die proef ingesluit was (uitgedruk as 'n persentasie van die proefgemiddeld).



Figuur 9: Prestasie van kultivars wat vir vyf jaar in die proef ingesluit was (uitgedruk as persentasie van die proefgemiddeld).



Spesiale dank aan die betrokke boerdery en medewerker, sowel as die proefdeelnemers en Wes-Vrystaat Aartappelwerkgroep. Vir navrae, kontak Enrike Verster by enrike@potatoes.co.za, Anjé Erasmus by anje@potatoes.co.za of Laryssa van der Merwe by laryssa@potatoes.co.za.

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Potassium nitrate: A dual solution

Potassium (K) is an essential nutrient for potato crops, as it affects various aspects of yield and quality throughout the growth period. There are three main potassium fertiliser sources namely potassium nitrate (KNO_3), potassium sulphate (K_2SO_4) and potassium chloride (KCl). The major difference between these potassium sources is the counter-ion that comes with the potassium nutrient. KNO_3 contains 38% potassium and 13% nitrate nitrogen (N-NO_3^-). Both potassium and nitrogen (N) are used in large quantities for potato production.

Potassium sulphate contains 40% potassium and 18% sulphur (S). Potassium is needed in large amounts. Sulphur, although important in plant nutrition, is needed in much lower quantities and excess application can create unwanted salinity in the root zone. Potassium chloride contains 50% potassium and chloride (Cl^-). It is a common fertiliser and provides only potassium as a nutrient and no additional N or S.

Work smart

Potatoes are among several high-value crops that are particularly sensitive to Cl and salt. Continued application of potassium sources with a high Cl content or salt index can have a toxic effect, building up in the soil and contributing to lower yields, lower quality and lost income.

When producers replace KNO_3 with K_2SO_4 and KCl in their fertiliser recommendation programme, an extra 13% N must be applied to compensate for the N they lose when not applying KNO_3 (*Table 1*).

Bester and Maree (1990) conducted a two-year trial to compare the number and weight of tubers between KNO_3, K_2SO_4, and KCl potassium treatments. They found that the application of KNO_3 significantly increased the number and weight of tubers compared to K_2SO_4 and KCl.

Higher yield with KNO_3

SQM is a global market leader in producing KNO_3 of natural origin. Their product is chlorine-free, 100% water-soluble, and has the lowest carbon footprint, providing the producer with high-quality KNO_3 products such as Ultrasol® K Plus**, Ultrasol®ine K Plus*** and Qrop® K****.

Ultrasol® K Plus is a crystalline water-soluble KNO_3 source for producing outstanding crops. The additional N-NO_3^- ensures rapid absorption by the plant. It has very low levels of Cl, sodium, and heavy metals. It is a free-flowing, fine crystalline powder that dissolves quickly in water. It can be mixed with all water-soluble fertilisers, and it is also compatible with most pesticides in foliar application. N-NO_3^- is non-volatile and enhances the uptake of other cations (K^+, Ca^{2+}, Mg^{2+}). Due to its low N/K ratio, Ultrasol® K Plus is suitable for all crops and growth stages, including flowering and ripening stages. Ultrasol®ine K Plus is SQM's brand of crystalline water-soluble KNO_3 that contains the plant nutrient, iodine. Ultrasol®ine makes it easy for producers to ensure the right amount of iodine in the nutrient solution and prevents excess uptake in leaves or fruits. Iodine is a structural component of plant proteins.

A versatile product

Qrop® K**** is a prilled KNO_3 source that is rapidly absorbed by the plant and provides N-NO_3^-, the plants' preferred N source.

This product can be mixed with virtually any straight fertiliser applied in agriculture. Due to the elements it provides and its low salinity, Qrop® K can be applied to a wide range of crops and during each growth stage. More than 80% of the N consumed by plants is nitrate, the preferred nitrogen source of plants.

Using KNO_3, producers can maximise the application of potassium and nitrate that cannot be obtained by using either KCL or K_2SO_4. Therefore, with Ultrasol K Plus, the potato is being supplied with two of its main nutritional elements in one product.

Table 1: Potassium fertilisers with their nutrient content.

Potassium product		Nutrient content (%)			
		N	K	S	Cl
Potassium nitrate	KNO_3	13	38		
Potassium sulphate	K_2SO_4		42	17	
Potassium chloride	KCl		50		50

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Control strategies for potato early dying

By Dr Rene Sutherland, Dr Elsie Cruywagen and Dr Mariette Truter, ARC-Vegetable, Industrial and Medicinal Plants, and Dr Mariette Marais and Dr Chantelle Girgan, ARC-Plant Health and Protection

Potato early dying (PED) has been observed in various fields in Limpopo. The disease manifests as the premature senescence and ultimate death of a potato plant. The cause of PED in Limpopo was determined to be the result of a combination of soilborne pathogens and plant stress. The best long-term and environmentally friendly option for the control of soilborne diseases is through the improvement of soil health.

Soil biology is a major component of soil health and contributes significantly to soil quality and productivity. There is a great need to ensure that the introduced soil management practices improve soil quality and will also result in and maintain healthy soil.

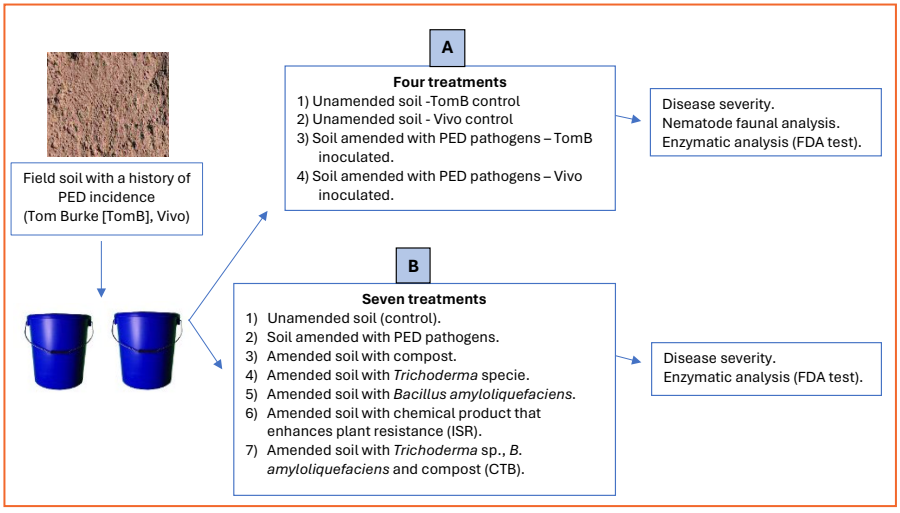
Objective A: Establishing a PED screening system

Greenhouse trial

Soil was collected from potato fields with a history of PED problems. Certified potato tubers (Mondial) were planted in 25-litre plastic buckets filled to 70% capacity. The plastic buckets contained soil either from Tom Burke or Vivo.

For the first month, greenhouse day/night temperatures were 28/13°C. In the second month, day/night temperatures were increased to 30/17°C, and further increased for the third and fourth months to day/night temperatures of 38/20°C. Pots were arranged in a randomised block design on the greenhouse benches.

Figure 1: Diagrammatic illustration of the materials and methods used.



The plants grew vigorously in the early stages without any signs of abnormality or disease. Plants showed yellowing and wilting from 12 weeks onwards.

Enzymatic analysis

Fluorescein diacetate hydrolysis (FDA) is an accepted technique and an accurate and simple method for measuring total microbial activity in a range of environmental samples, including soils. Compost materials can stimulate microbial activity and nutrient mineralisation due to their high organic matter content. An increase in total microbial activity and microbial biomass may lead to an

Figure 2: Soil enzyme activity of Tom Burke and Vivo soils before and after the greenhouse trial.

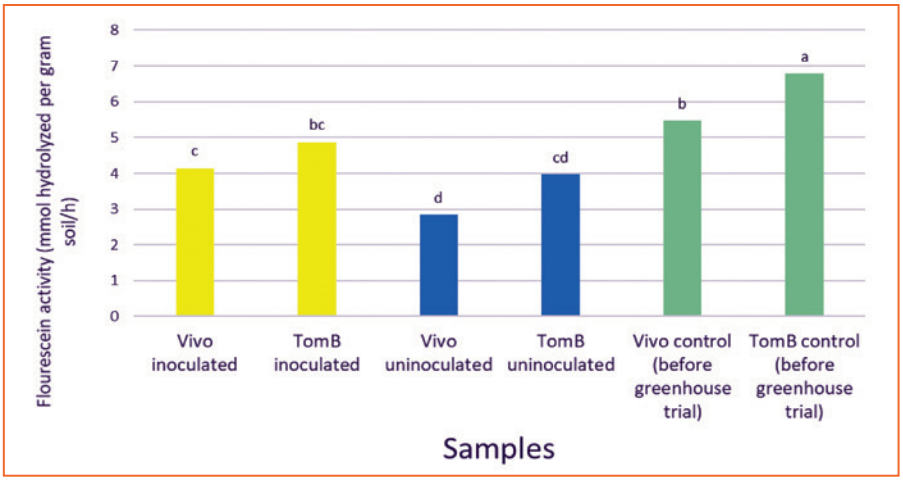
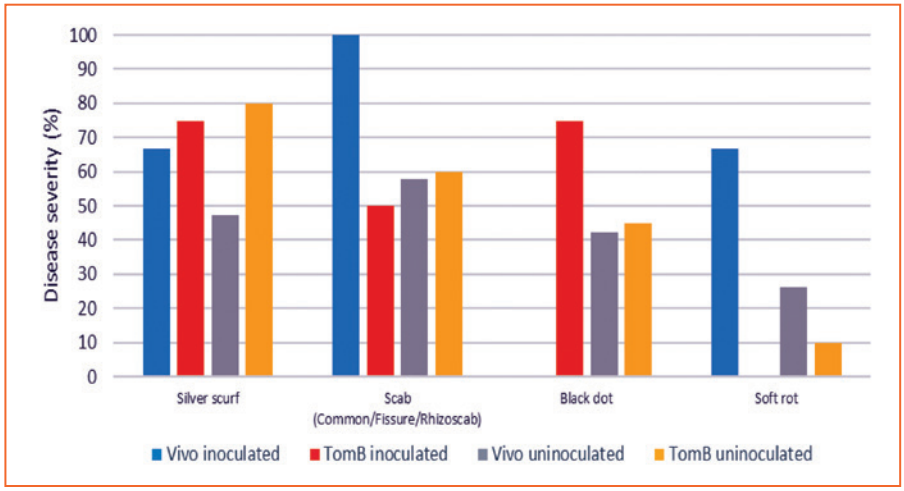


Figure 3: Disease symptoms on harvested tubers for soil collected from Tom Burke and Vivo.



increase in competition for beneficial organisms, which will suppress the pathogenic organisms in the soil.

The soil enzyme activity was high at the start of the greenhouse trial. At the end of the trial, the soil enzyme activity was significantly reduced in both Vivo and Tom Burke soils. The enzyme activity was also significantly lower in the Vivo soil that was not inoculated compared to inoculated soil. Thereby, the active biomass declined over time.

Tuber evaluations

Tubers harvested showed severe symptom development of black dot, silver scurf and scab, whereas only a few tubers showed soft rot symptoms (*Figure 3*). The high incidence of black dot on the tubers correlates with results from the fungal analysis of the plant material as several *Colletotrichum* isolates were obtained, as well as previous results from isolates obtained from diseased PED samples.

Pratylenchus sp. was isolated in very low numbers (only three individuals) from the soil. This result is similar to results obtained from samples previously collected in commercial fields with a history of PED in Limpopo. Based on these results, we do not believe that *Pratylenchus* spp. is a major role-player in PEDs in South Africa. Similar results were obtained for *Meloidogyne* spp., as only eight juveniles were extracted.

In this study, there was a high ratio of bacterial to hyphal-feeding nematodes. A high ratio of bacterial to hyphal-feeding nematodes indicates that nutrient cycling is occurring rapidly through bacterial decomposition, and it is an indication of disturbed soil. The soil used in the study was transported from Limpopo to Gauteng.

A predominance of fungal-feeding nematodes indicates that the food web is dominated by fungi and that biological nutrient cycling will be relatively slow, and soils are relatively undisturbed. The results of this study showed low numbers of fungal-feeding nematodes, therefore indicating that the soils are disturbed.

The number and biodiversity of the omnivorous nematodes were extremely low. Low populations of omnivorous nematodes indicate that the soil biology is likely to be affected by excessive fertiliser inputs, but also by disturbance through practices such as tillage. High populations of omnivorous and predatory nematodes can suppress soilborne pathogens.

Objective B: Determining the effect of soil health on the severity of PED

The goal was to determine the effect of soil health on the severity of PED. Tubers harvested had symptoms of black dot, silver scurf and scab, while only a few tubers showed soft rot symptoms (*Figure 4*). The effect of the different treatments such as compost and biological control agents on tuber diseases was also evaluated.

Table 1: Nematode analysis of soil after the greenhouse trial.

	Total plant feeder	Total sedentary parasites	*Meloidogyne* sp.	Total migratory endoparasites	*Pratylenchus* sp.	Total semi-endoparasites	Total ectoparasites	Total epidermal cell and root hair feeders
Vivo inoculated	0	0	0	0	0	0	385	0
Tom Burke inoculated	253	0	0	0	0	0	253	0
Vivo uninoculated	358	0	0	1	1	0	358	0
Tom Burke uninoculated	894	8	8	2	2	0	872	9
	Total hyphal feeders	**Total bacterial feeders**	**Total substrate ingestion**	**Total animal predation**	**Unicellular eukaryote feeding**	**Dispersal or infective stages of animal parasites**	**Total omnivorous**	**Total nematodes**
Vivo inoculated	205	2710	0	30	0	0	0	3 135
Tom Burke inoculated	20	235	0	10	0	0	0	518
Vivo uninoculated	71	293	0	13	0	0	0	735
Tom Burke uninoculated	77	417	0	13	0	0	3	1 342

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However, none of the treatments significantly reduced the disease incidence.

Figure 4 indicates the effect of the different treatments on disease severity. Treatments include control (unamended soil), inoculated (soil amended with PED pathogens), amended soil with compost, amended soil with *Trichoderma* species, amended soil with *Bacillus amyloliquefaciens*, amended soil with chemical products that enhance plant resistance (ISR), and amended soil with Trichoderma sp., *B. amyloliquefaciens* and compost, *Trichoderma* sp. and *Bacillus amyloliquefaciens* (CTB).

The soil enzyme activity was relatively high at the start of the greenhouse trial. The addition of compost and CTB significantly increased the soil enzyme activity. Higher soil enzyme activity may result in an increased active biomass in the soil leading to increased competition with the pathogen complex. At the end of the greenhouse trial, the soil enzyme activity was significantly reduced in the control (uninoculated and inoculated).

Figure 4a: Effect on common scab.

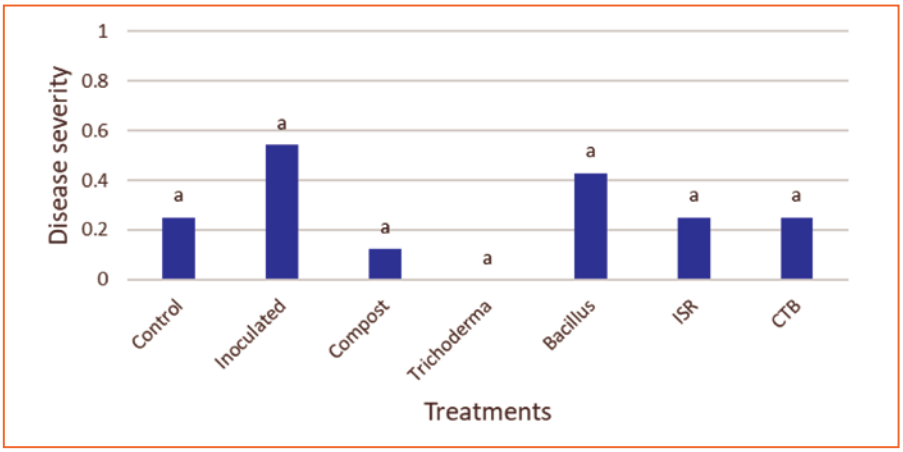
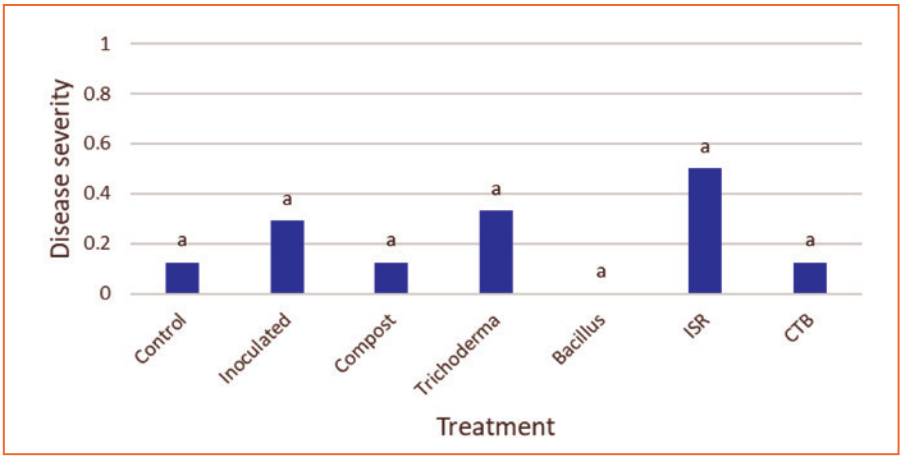


Figure 4b: Effect on fissure scab.



The depletion of nutrients in the soil through bacterial uptake can negatively influence the microbial biomass in the soil, thereby lowering the enzyme activity. There was no significant difference in the soil enzyme activity after the trial in the following treatments:

- Soil inoculated with *Bacillus*.
- Soil inoculated with *Trichoderma*.
- Amended soil with chemical products that enhance plant resistance.

Mondial plants after eight weeks in the greenhouse trial. The tubers were planted in 25ℓ buckets with either soil from Tom Burke or the Dendron area, with a history of potato early dying.

Conclusions

Certified potato tubers (Mondial) were planted in soil that was collected from sites with a history of problems with PED. The trial was conducted under greenhouse conditions with cooler nights at the beginning of the trial and extreme heat stress in the latter part of the study. Plants showed typical PED symptoms after 12 weeks.

Several fungal pathogens were isolated from root and stem tissues and included *Verticillium* sp., *Colletotrichum* sp., *Fusarium* sp., *Rhizoctonia* sp. and *Alternaria* sp. These isolates correlated with the pathogens isolated from diseased plant material samples previously collected in commercial fields with

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Figure 4c: Effect on silver scurf.

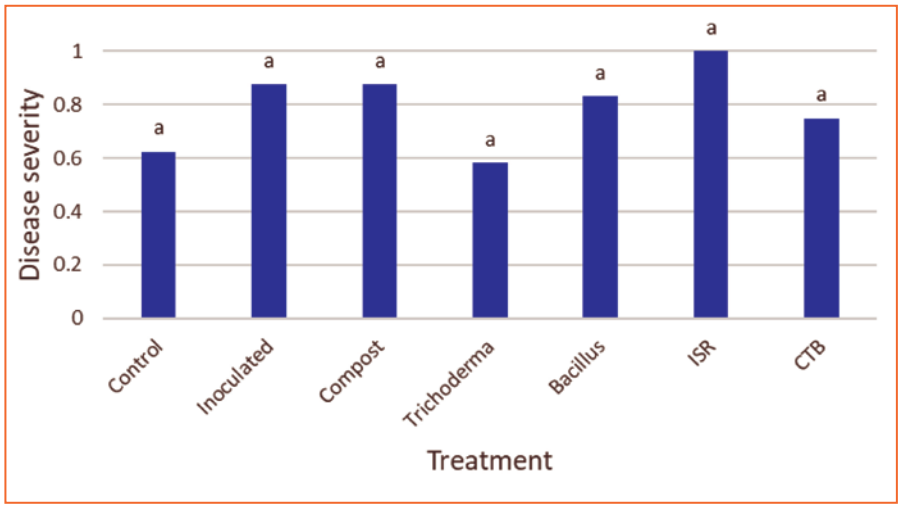


Figure 4d: Effect on soft rot.

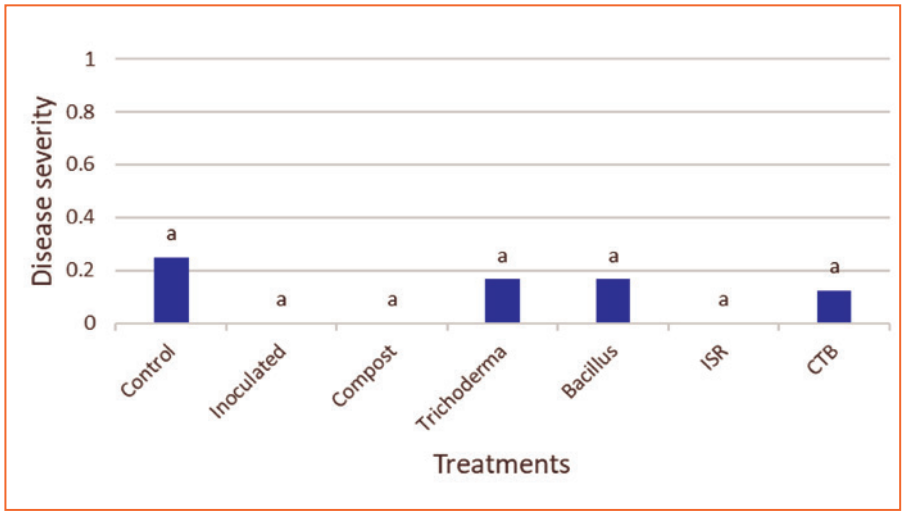
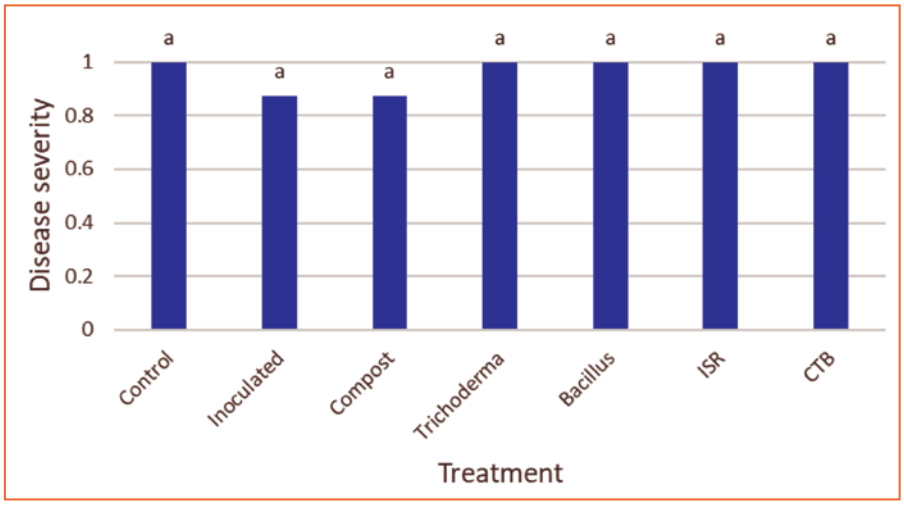


Figure 4e: Effect on black dot.



Mondial plants after 14 weeks. Plants showed signs of early dying.

a history of PED in Limpopo. Thus, a screening system against PEDs was established under greenhouse conditions.

The addition of compost and two biological control agents did not significantly reduce the disease severity in the greenhouse trial. Commercially available biocontrol agents may not be able to cope with the high heat stress conditions that lead to PED.

Further studies should be conducted to identify strains that may be better adapted to the conditions in Limpopo and may be better able to compete with the PED pathogen complex. Global warming is a reality and will increase stress conditions in plants.

Likely, PED will dramatically increase in the future as it is linked to plant stress. Using greener technologies to increase plant resilience and reduce disease severity and incidence is vital. We suggest that field trials should be performed to assess the effectiveness of various biocontrol agents under field conditions.

For more information, contact Dr Sutherland at sutherlandr@arc.agric.za, Dr Truter at TruterM@arc.agric.za, Dr Marais at MaraisM@arc.agric.za or Dr Girgan at JansenC@arc.agric.za.

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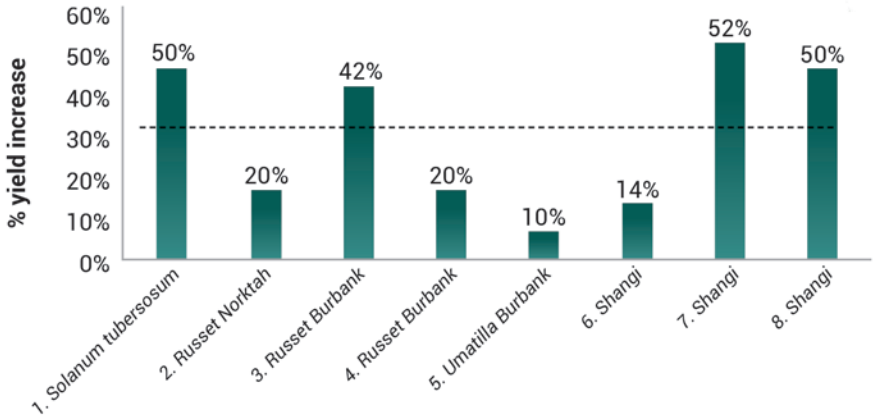

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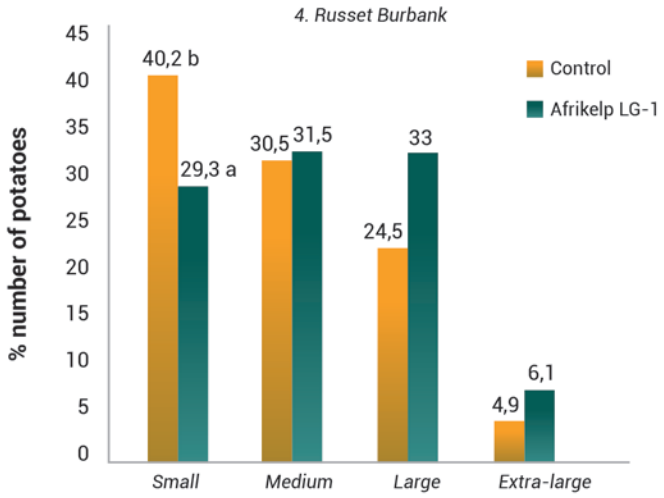

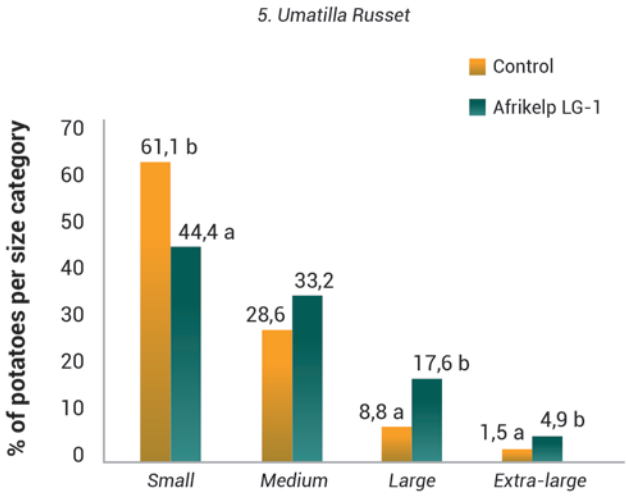

Trial conducted by external researcher: Crop Matters, USA

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Preventive filter maintenance

By Dexter Neethling, product manager, Netafim South Africa

The precise application of water and nutrients via precision irrigation systems offers numerous benefits. Lack of regular preventive filter maintenance and optimal operation will lead to inefficient filter operation and even breakdowns. Keep in mind that wear and tear always increase exponentially.

Screen filter maintenance

Weekly visual inspections on automatic, semi-automatic and manual screen filters should be performed. This is done to check for leaks which should be repaired as soon as possible.

When working with an automatic screen filter and no leaks are found, activate a manual flushing cycle to ensure the filter is flushing successfully. Check the pressure differential and if this value is abnormally high, perform two more manual flushing cycles. If the value remains high after three manual flushing cycles, the filter should be opened, checked for failed parts and the screen cleaned manually if necessary.

Be sure to follow the manufacturer's step-by-step guide and all safety instructions when opening the filter and taking out the screen. Use pressurised water to remove the remaining dirt. Reinstall the clean screen according to the supplier guidelines and follow all safety instructions.

The cleaning operation must be initiated before the pressure differential reaches 0.5 bar in a semi-automatic screen filter. Some semi-automatic screen filters have an automatic clogging indicator that will communicate when the pressure differential limit is reached.

To initiate the cleaning operation, open the drain valve and turn the handle out and then back in. The screen's inside will be cleaned as you turn the handle and suction is created in the nozzles. If the water is of poor quality or pressure is low, perform the cleaning operation while the downstream valve is closed. Close the drain valve after the process has been completed.

If the pressure differential remains abnormally high after three completed cleaning operations, the filter should be opened, checked for failed parts and the screen cleaned manually.

In a manual screen filter, a high-pressure differential will always require opening the filter for manual cleaning. Start by closing the water supply to the filter and opening the drain valve to release all the pressure. Open the filter body clamp and remove the filter cover. Carefully pull out the screen element and clean it using pressurised water. If necessary, use a soft nylon brush. Never use any abrasive tools and ensure that the body and screen O-rings are lubricated before reassembly.

Disc filter maintenance

Check the pressure differential between the filter inlet and outlet. Initiate a flushing cycle and recheck the pressure differential a minute after the flushing cycle has been completed. If the pressure differential is still abnormally high, open the filter and remove the discs for manual cleaning. Before removing the filter cover, close the water supply to the filter and open the drain valve to release all the pressure.

Visually inspect the discs after they have been removed. If there is visible sediment, clean the discs according to the supplier's recommendations. Visually inspect the spine and make sure the cone membrane is not damaged. If any filter parts are damaged, replace it immediately.

When reassembling the spine and discs, ensure the number of discs is correct, as indicated by the line on the spine, and lubricate the O-rings, open the command filter and clean its discs.

Choose the best and look after it

To ensure that a filtration system continues to function effectively and has a long lifespan, two factors should never be neglected: the use of quality products and system maintenance.

For more information, send an email to infoza@netafim.com

Die kultivarproef by Kroonstad is in sandleemgrond uitgevoer en in 'n ewekansige blokontwerp met drie herhalings per kultivar uitgelê.

Wes-Vrystaatse kultivarproef onder droëlandtoestande op Kroonstad in 2023

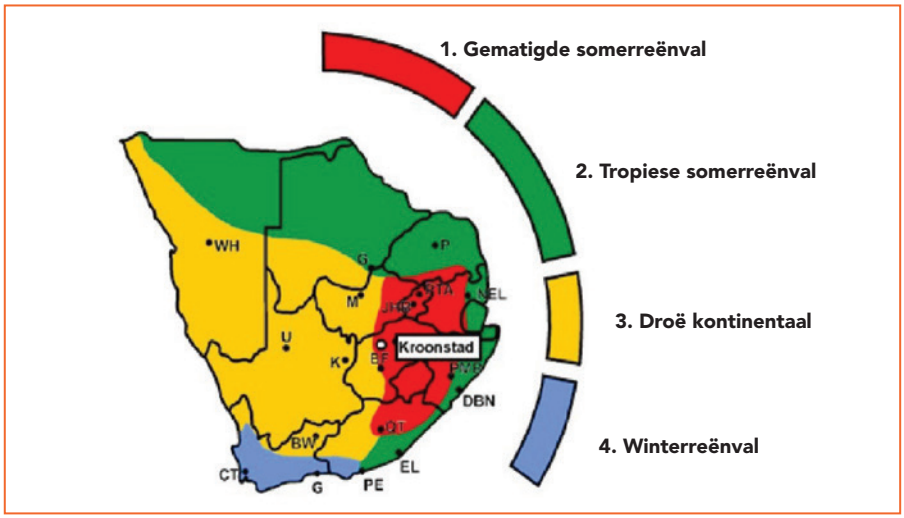
Deur Enrike Verster, Anjé Erasmus en Laryssa van der Merwe, Aartappels SA en Fanus van Zyl, Aartappelnetwerk Suid-Afrika

Die Wes-Vrystaat is 'n groot aartappelproduksiestreek waar 30 produsente aartappels op ongeveer 6 990 ha produseer. Die mees prominente kultivars wat geproduseer word (ongeveer 6% verwerking, 67% moere, 27% tafelaartappels, meestal onder besproeiing) is Sifra (34%), Panamera (31%) en Mondial (17%).

Kroonstad val in Suid-Afrika se somerreënvalgebied (*Figuur 1*) en ontvang die afgelope drie jaar 'n gemiddelde jaarlikse reënval van 820 mm vanaf Januarie tot Desember, soos gemeet by die Landbounavorsingsraad (LNR) se Geluk-weerstasie. Die matige klimaat van die streek sluit baie warm somers (die warmste in Desember/Januarie) tot koue winters in met ryp wat vanaf April kan voorkom.

Die Kroonstad-kultivarproef is in sandleemgrond uitgevoer en in 'n ewekansige blokontwerp met drie herhalings per kultivar uitgelê. *Tabel 1* bevat bykomende tegniese inligting rakende die proef.

Figuur 1: Ligging van Kroonstad in die Wes-Vrystaat produksiegebied.



Groeitydperke

Ingesluit in die kultivarproef is kultivars met kort- en langgroeitydperke; derhalwe kan groeitydperke die uiteindelike opbrengs van sekere kultivars beïnvloed. Die lengte van groeitydperke is onderhewig aan die aard van die seisoen, maar word gesien as die hoeveelheid tyd wat verloop vanaf opkoms tot natuurlike loofafsterwe.

Tabel 1: Opsomming van tegniese inligting rakende proefperseel en uitleg.

Plaas	**Grootkuil**
Produsent	Kobus Crous
Plantdatum	18 Januarie 2023
Oesdatum	28 September 2023
Besproeiing/droëland	Droëland
Dubbel- of enkelrye	Enkelrye
Loofafsterwe	Natuurlik
Tussenry-spasiëring	1.8 m
Proefperseel	18 m^2
Plantestand	16 000 plante/ha

Tabel 2 bied 'n uiteensetting van hoe groeitydperke van kultivar tot kultivar verskil. Omgewingsfaktore en bestuurspraktyke beïnvloed ook die verskillende groeifases en die tyd wanneer dit 'n aanvang neem. Die ideale praktyk sou wees om kultivars te oes wanneer dit oesgereed is, maar dit is nie prakties wanneer die proef op 'n kommersiële plaas uitgevoer word nie.

Die stand en aantal halms per moer beïnvloed knolgrootte en opbrengs. Die aantal ogies per knol is kultivarafhanklik en bepaal die aantal spruite wat per knol voortgebring word.

In hierdie opsig is die plantgereedheid van moere baie belangrik, aangesien die ideale plantgereedheid gewoonlik meebring dat moere beter spruit en meer stamme per spruit voortbring.

Die plantgereedheid van moere ten tyde van die plant van die proef, sowel as die standpersentasie en halmtelling wat later in die groeitydperk waargeneem is, word in *Tabel 2* aangedui.

Opbrengsgemiddeldes

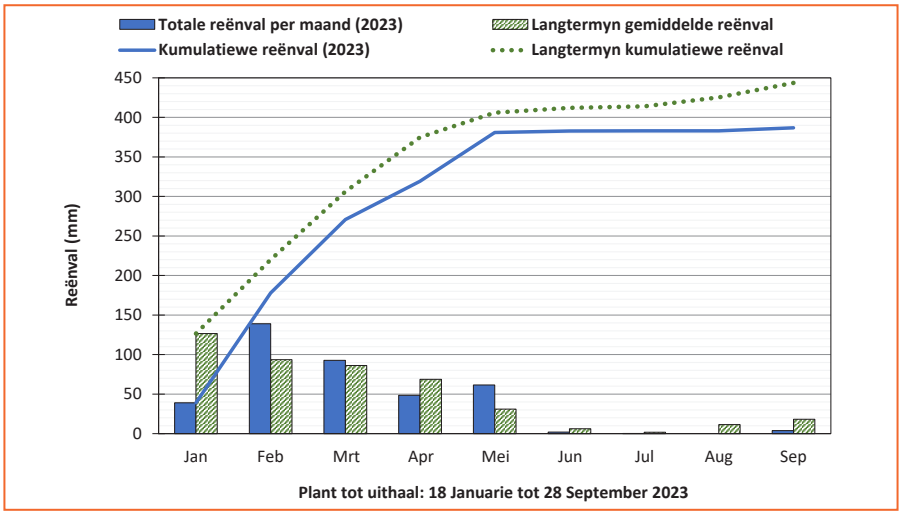
Die evaluering van nuwe kultivars soos in die Kroonstad-kultivarproef, verskaf resultate rakende, onder andere, die opbrengs- en bemarkingsindeks. Die bemarkingsindeks van die betrokke kultivars word bereken deur elke kultivar te klas en sorteer volgens gehalte en grootte-groepe (byvoorbeeld: Klas 1 Groot of Klas 2 Groot-medium). In hierdie proef word al drie herhalings deur die pakstoor geklas en sorteer.

Tabel 2: Karaktereienskappe rakende groeitydperk, plantgereedheid, stand (%) en halmtellings van die betrokke kultivars.

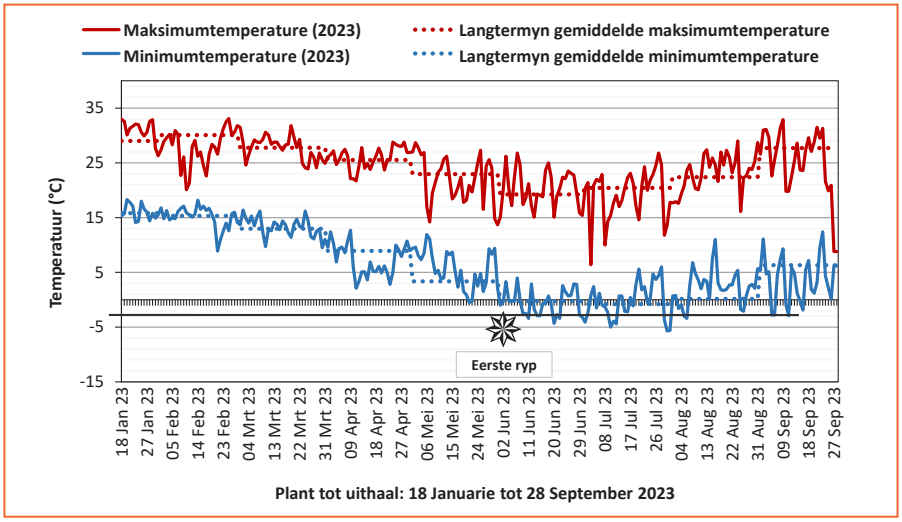
Kultivar	Groeitydperk (dae)[1]		Plantgereedheid[2]	Stand (%)	Halms per plant	Halms per ha
11Z49A1	Medium tot lank	(100-120)	4	94	4.1	61 956
11Z55A5	Medium tot lank	(100-120)	4	92	4.6	67 467
Allison	Medium tot lank	(120)	3	81	3.5	45 111
Alverstone Russet	Medium tot lank	100	3	100	3.5	56 000
Amony	Medium tot lank	(110)	3	92	2.8	41 067
CMK2015	Lank	(120)	3	89	4.4	62 578
Foxy	Kort tot medium	(90-100)	3	28	3.8	16 889
Kelly	Lank	(120)	4	92	3.4	49 867
Lilly	Medium	(100)	3	97	4.2	65 333
Mondial	Medium tot lank	(110-115)	3	81	4.3	55 422
Mondial*	Medium tot lank	(110-115)	3	72	3.6	41 600
Noya	Medium tot lank	(120)	4	58	2.4	22 400
Palace	Lank	(110-115)	3	94	3.5	52 889
Panamera	Medium	(90-110)	3	81	3.1	39 956
Prince	Lank	(110-115)	3	89	4.6	65 422
Sababa	Medium tot lank	(110-115)	3	97	4.8	74 667
Sound	Medium	(110)	3	94	3.7	55 911
Up-To-Date*	Medium tot lank	(90-120)	3	53	2.9	24 489

[1]Algemene riglyne en kategorieë (dae vanaf opkoms tot natuurlike loofafsterwe, afhangend van die seisoen): Kort = 70 tot 90 dae; kort tot medium = 80 tot 100 dae; medium = 90 tot 110 dae; medium tot lank = 90 tot 120 dae; lank = 90 tot 140 dae.
[2]Plantgereedheid van moere: 1 = vars; 2 = effens vars; 3 = plantgereed; 4 = effens oud; 5 = oud.
**Kommersiële kultivars van die boerdery in proef ingeskryf.*

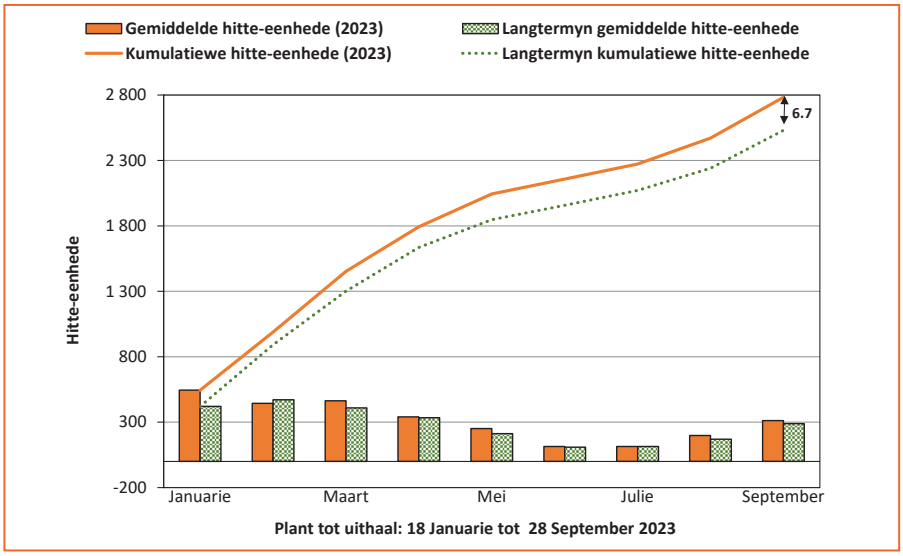
Figuur 2: Reënval (2023 seisoen) en langtermyn gemiddelde reënval.



Figuur 3: Minimum- en maksimumtemperature (2023 seisoen) sowel as langtermyntemperature.



Figuur 4: Hitte-eenhede (2023 seisoen) asook langtermyn gemiddelde hitte-eenhede.



**Totale hitte-eenhede spesifiek bepaal vir aartappels as gewas (drumpeltemperatuur = 5°C). Bereken vanaf uurlikse data.*

Dienooreenkomstige prysvergelykings word dan gemaak met markpryse soos verkry ten tyde van oes. Die prestasie van nuwe kultivars kan nie net op die resultate van een bepaalde seisoen geskoei word nie, omdat klimaat van een jaar na 'n volgende kan wissel. Juis daarom word die kultivars verkieslik oor 'n aantal seisoene getoets.

Abiotiese faktore

Soos met enige gewas is temperature, beskikbaarheid van water (hetsy goeie besproeiingskedulering of reënval), sowel as hitte-eenhede belangrike faktore wat 'n wesenlike invloed gedurende die aartappelplant se groeitydperk het. Hierdie faktore word dus in aanmerking geneem wanneer die prestasie van kultivars geëvalueer word. Toepaslike daaglikse en langtermynweerdata word verkry vanaf 'n Hortec-weerstasie naby die proefperseel, sowel as 'n gekose LNR-weerstasie wat so na as moontlik aan die proefperseel geleë is.

Die reënvaltendens vir die 2023-seisoen toon 'n laer (as normale langtermyn gemiddelde) reënval. Januarie het buitengewoon lae reënval ontvang (*Figuur 2*). Aan die einde van die groeitydperk in Mei, is bogemiddelde reënval weer aangeteken.

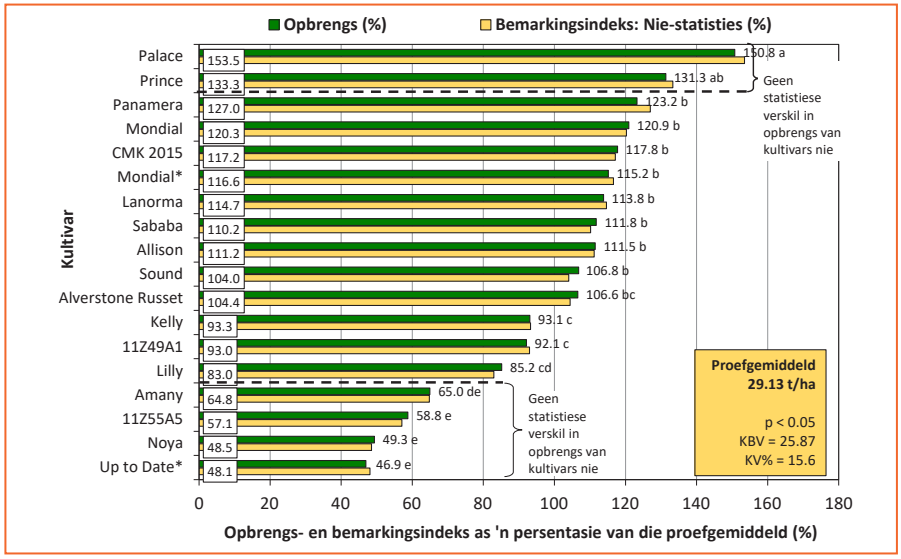
Minimum- en maksimumtemperature word in *Figuur 3* uiteengesit. Dae met winterstemperature onder vriespunt is vanaf begin Mei tot einde Augustus aangeteken. Matige maksimumtemperature is deur die seisoen ervaar met geen dae met temperature bo 35°C wat aangeteken is nie.

Die versameling van hitte-eenhede gedurende 'n groeitydperk is 'n belangrike faktor in die ontwikkeling van 'n plant. Die tendens van hitte-eenhede beskikbaar vir die kultivarproef van hierdie betrokke seisoen blyk aansienlik hoër te wees as die tendens rakende langtermyndata van hitte-eenhede (*Figuur 4*).

Opbrengsindeks

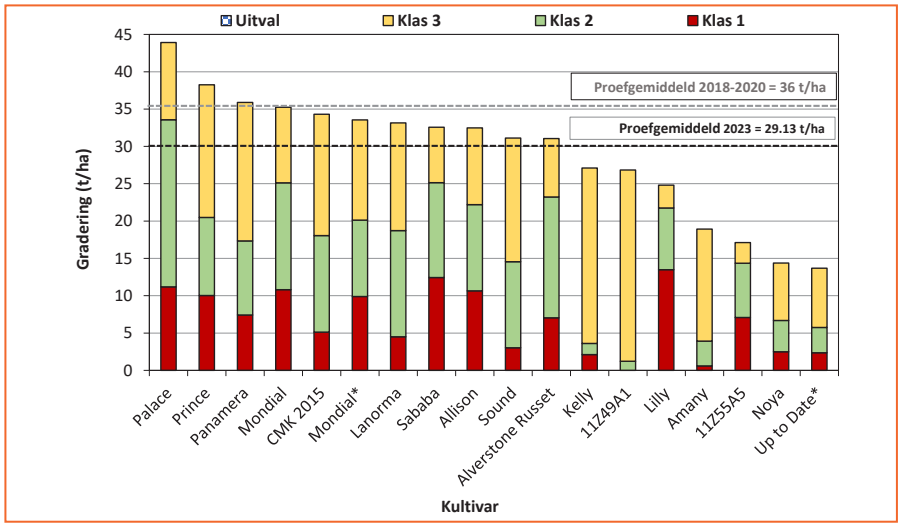
Opbrengsdata versamel tydens oesdag word onderwerp aan statistiese verwerking met behulp van die GenStat®-program. Die Tukey-toets

Figuur 5: Totale opbrengs- en bemarkingsindeks per kultivar as 'n persentasie van die proefgemiddeld.

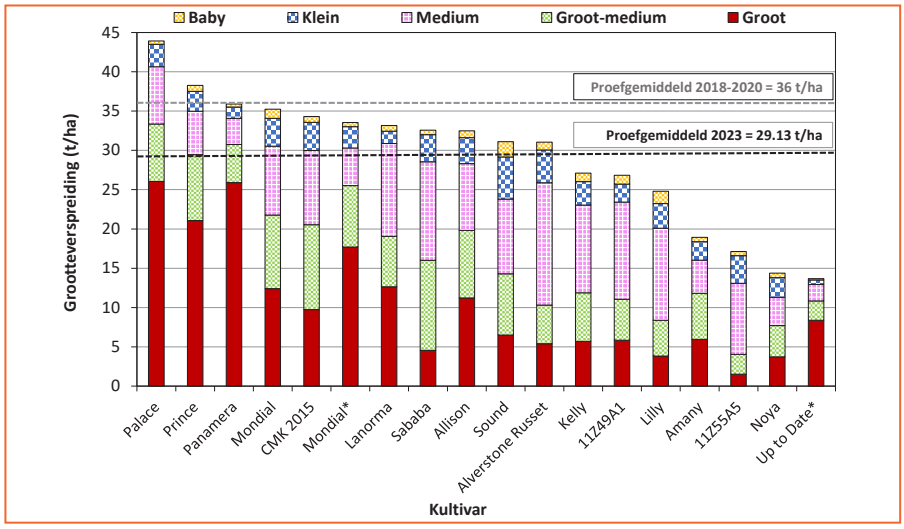


Waardes gevolg deur dieselfde letter is nie beduidend verskillend van mekaar nie.
**Kommersiële kultivars van die boerdery in proef ingeskryf.*

Figuur 6: Gradering van elke betrokke kultivar.



Figuur 7: Groottegroepverspreiding van elke betrokke kultivar.



van kleinste betekenisvolle verskille (KBV) is gebruik om die gemiddelde te skei. Die kultivareffek gedurende hierdie betrokke proef (*Figuur 5*) was statisties beduidend ($p<0.05$) en die koëffisiënt van variasie was laag (15.6%).

Hierdie faktore dui daarop dat die proef baie goed uitgevoer is en die resultate derhalwe betroubaar is. Die opbrengs van elkeen van die kultivars word deur die proefgemiddeld gedeel (die proefgemiddeld van al die kultivars word as 100% geneem). Hierdeur word 'n opbrengsindeks bepaal en word elke kultivar se prestasie in terme van opbrengs, as 'n persentasie van die proefgemiddeld gelees.

Die gemiddelde opbrengs van die proef vir die 2023-seisoen is 29.13 t/ha, wat ietwat laer is as die proefgemiddeld van 36 t/ha wat vanaf 2018 tot 2020 aangeteken is. Palace en Prince het die hoogste opbrengs gelewer (*Figuur 5*). Palace en Prince sowel as Panamera het die hoogste bemarkingsindekse behaal – dit kan toegeskryf word aan 'n goeie opbrengs van Groot sowel as Klas 1-knolle. Groottegroepverspreiding en gradering is die evaluasies wat uitgevoer word om die kultivars se bemarkbaarheid te bepaal (*Figure 6* en *7*).

Afgradering en gehalte

Die hoofredes vir afgradering was aansienlike bruin- sowel as silwerskurf. Die proefperseel was onderwerp aan 'n ontsettende hoë bruinskurfdruk en die skade was deurgaans groot, met die uitsondering van slegs enkele kultivars.

Soos die aard van seisoene is, wissel die prestasie van kultivars van seisoen tot seisoen, bloot omdat klimaat van een seisoen na 'n volgende nooit eenders is nie. Derhalwe is dit belangrik om konsekwente prestasie van kultivars oor 'n aantal seisoene in ag te neem. Mondial, Lanorma en Panamera toon tans die minste variasie vir die Kroonstad-proef van 2018 tot 2023 (*Figuur 8*).

Laastens, wanneer daar gekyk word na die interne gehalte van aartappels, kan prosesseringseienskappe ook

Tabel 3: Hoofredes vir afgradering.

Kultivar	Bruinskurf	Sandspleet	Spleetskurf	Silwerskurf	Misvorming	Mot	Vergroening
11Z49A1	x			x			
11Z55A5	x			x			
Allison	x			x	x		x
Alverstone Russet	x			x			x
Amony	x					x	
CMK2015	x			x		x	x
Foxy	x				x		
Kelly	x			x	x		x
Lanorma	x			x			
Lilly	x			x		x	
Mondial	x	x	x	x	x	x	x
Mondial*	x	x	x	x			x
Noya	x	x	x	x			x
Palace	x		x	x			x
Panamera	x		x	x		x	x
Prince	x					x	x
Sababa	x			x			x
Sound	x			x			
Up-To-Date*	x			x	x		x

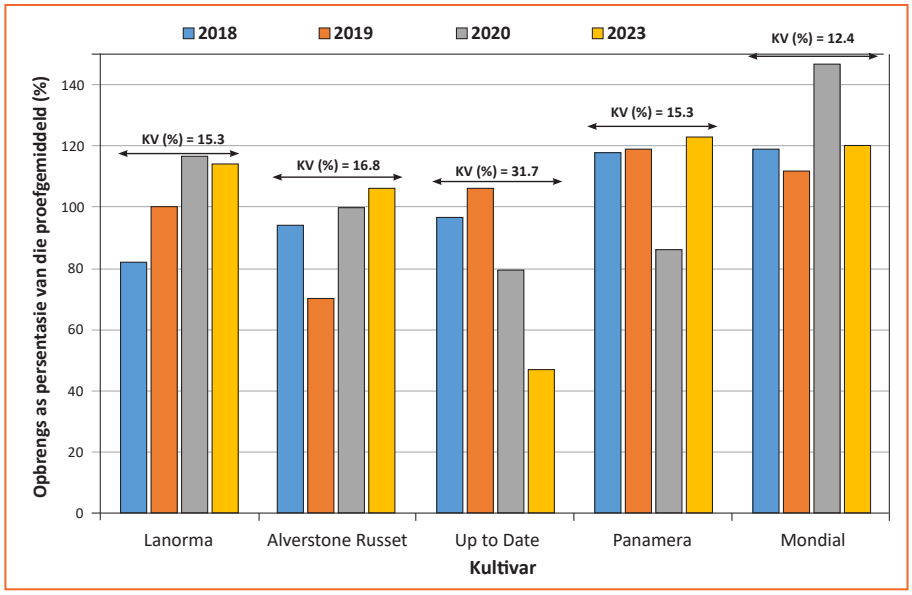
Tabel 4: Kook- en prosesseringseienskappe van kultivars (uitgevoer deur LNR-Roodeplaat).

Kultivar	Skyfiekleur[1]	DM[2]	SG[3]
11Z49A1	61.6	17.1	1.065
11Z55A5	62.4	17.7	1.068
Allison	50	19	1.074
Alverstone Russet	58.3	20.4	1.081
Amony	56.1	19.3	1.076
CMK2015	63.1	20.3	1.081
Foxy	39.5	16.6	1.063
Kelly	63.8	18.3	1.071
Lanorma	65.3	17.8	1.069
Lilly	55	16.7	1.064
Mondial	47.5	17.6	1.068
Mondial*	57.1	16.7	1.063
Noya	61	19	1.074
Palace	63.8	21.9	1.088
Panamera	56	18.7	1.073
Prince	65.2	20.4	1.081
Sababa	56.7	17.4	1.067
Sound	59.2	17.5	1.067
Up-to-Date*	48.3	19.1	1.075

[1]Skyfiekleur met waarde >50 en sonder defekte is aanvaarbaar vir die droëskyfiebedryf.
*[2]Die persentasie droëmateriaal is 'n berekende waarde: DM% = 24.182 + 211.04 * (SG-1.0988). Die werklike persentasiewaarde sal effens verskil tussen variëteite uit hierdie berekeningswaarde.*
[3]Soortlike gewig van ≥1.075 is aanvaarbaar vir die prosesseringsbedryf.

Die bemarkingsindeks van die betrokke kultivars word bereken deur elke kultivar volgens gehalte en groottegroepe te klas en sorteer.

Figuur 8: Prestasie van kultivars wat vir drie jaar in die proef ingesluit was (uitgedruk as 'n persentasie van die proefgemiddeld).



Die hoofredes vir afgradering was aansienlike bruinskurf asook silwerskurf.

geëvalueer word. Geen kultivars het holhart of interne bruinvlek getoon nie. Om te voldoen aan prosesseringsvereistes, moet kultivars aan 'n skyfiekleurnorm van >50 en 'n soortlike gewig (SG) van ≥1.075 voldoen (*Tabel 4*). Alverstone, Russet, Amony, CMK2015, Palace en Prince het voldoen aan beide die SG- en skyfiekleurvereistes. Die meeste kultivars het aan die korrekte skyfiekleurvereiste voldoen.

Spesiale dank aan die betrokke boerdery en medewerkers, sowel as die proefdeelnemers en die Wes-Vrystaat werkgroep. Vir meer inligting, kontak Enrike Verster by enrike@potatoes.co.za, Anjé Erasmus by anje@potatoes.co.za of Laryssa van der Merwe by laryssa@potatoes.co.za.

Harvest day: An uplifting event for producers

By Rachichi Marokane, national transformation co-ordinator, Potatoes SA

Potatoes SA and the Department of Agriculture, Land Reform and Rural Development (DALRRD) recently hosted a harvesting day in the Capricorn district. The event was hosted in Avon Village, located in the Blouberg municipal area in Limpopo. This area is part of the renowned potato belt extending to the north. The day took place at the farms of Willie Maseka and Andries Masoga. Both producers received potato production input support from DALRRD in 2023.

Amid the relatively higher summer temperatures and with the tubers being well set in the field, producers experienced the gratifying process of harvesting potatoes. This activity not only served as a practical lesson in potato harvesting, but also instilled a deep sense of appreciation for the hard work and dedication of DALRRD in unlocking the potential of potato farming for previously disadvantaged groups. Over 300 ha were funded through a partnership with Potatoes SA over the past year.

Khula!, a service provider that offers software tools to support and expand agriculture and food businesses, attended the event. The event also featured exhibits from the Limpopo Department of Agriculture (LDARD), Standard Bank, VKB, New Holland, and African Explosives and Chemical Industries.

Potato production has great significance in the rural areas of the Capricorn district, serving as a testimony to the deep-rooted connections between industry role-players and the community. Harvest days bring together industry role-players as well as local potato producers.

Community involvement

On this day, the true spirit of the community was palpable. The day not only celebrated the harvest but also strengthened community bonds. By actively engaging in the harvesting process, individuals gained a deeper appreciation of the hard work producers put in, and the value of fresh local produce.

Producers learnt the importance of supporting sustainable agricultural practices and promoting the local economy. Most importantly, the potato harvest day reminded the industry of the positive impact of collective action.

In general, the day provided a unique opportunity to foster collaboration between Potatoes SA and other industry role-players in developing an inclusive potato industry in Limpopo. Organising such an event and inviting stakeholders to exhibit, could potentially increase interest in potato production.

Through its experience in enticing investment in rural communities, Potatoes SA not only supports local agriculture and its economy, but also hopes to strengthen bonds and build relationships within the communities of Capricorn district. This event also promotes sustainable farming practices and provides a platform for sharing opportunities.

A productive effort

Reflecting on this day, Potatoes SA's CEO, Willie Jacobs, and the transformation team appreciated the hard work of producers and various organisations. Potatoes SA also hosted a cooking show during

Potatoes SA's transformation team conducted a cooking show during which various cultivars were tested for taste and other quality aspects.

which various cultivars were fried and boiled to demonstrate the characteristics of table and processing potatoes. The harvest day also presented producers with the opportunity to learn about the various funding programmes offered by Potatoes SA.

LDARD went to great lengths to prepare for the day. Throughout the years, the department has been playing a pivotal role in the region through its support of developing producers in terms of inputs and extension services.

The director of DALRRD, Lethabo Rakgoale, elaborated during the event on the LDARD, DALRRD, and Potatoes SA partnership milestones which has provided alternative streams of project-related support. Masoga, on behalf of local producers, thanked the various industry stakeholders for uplifting these rural economies.

Masoga, one of the recent beneficiaries of the collaborative support, managed to plant ten ha of potatoes. The potatoes were successfully harvested and sold to the Mozambique market.

For more information, contact Rachichi Marokane at rachichi@potatoes.co.za.

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Potatoes SA visits inspiring EDP candidates

By Brian Makhele, transformation specialist, Potatoes SA

From 18 to 20 December 2023, the Potatoes SA team visited three remarkable projects in the Eastern Cape and KwaZulu-Natal. These projects are not just relevant to growing potatoes; they are also focussed on building communities, sharing knowledge, and paving the way to a brighter future.

Vuyani Kama, Ugie

The first farm visited is a Potatoes SA Enterprise Development Programme (EDP) success story and is now thriving as an independent commercial entity. The farm is located in Ugie in the Eastern Cape. Potatoes are cultivated on the farm and it also serves as a mentorship hub for aspiring producers in the region.

Its founder, Vuyani Kama, is a visionary in his own right. He offers guidance and support to fellow producers, fostering a culture of knowledge sharing and collective growth. Should the farm receive proper support, it has the potential to grow potato seeds and supply the surrounding producers.

Rendani Murovhi, transformation manager of Potatoes SA, with former Potatoes SA EDP producer, Vuyani Kama.

Family farming brings hope

Our next stop was a family-run farm in Ugie that is growing a variety of crops including potatoes under the guidance of Potatoes SA's EDP. This farm, handed down through generations, embodies the enduring spirit of family farming. However, the farm is grappling with challenges in upgrading its infrastructure for effective crop processing. Potatoes SA has pledged to assist the farm in acquiring support in addition to the support they already receive from Potatoes SA.

The Mthatha fresh produce market brings hope amid these challenges. Set to open in 2024, this market promises a new avenue for producers to wash and sell their potatoes while creating jobs for the local community. This initiative will not just be advantageous to potato producers, but it will be focussed on building a thriving market that benefits everyone involved.

Moreover, the market's emergence has profound implications for the potato industry, particularly in bolstering supply chains and fostering market inclusivity. With a burgeoning demand for potatoes anticipated, producers stand poised to capitalise on this opportunity, thus catalysing economic growth and social upliftment in the region.

A visit to KwaZulu-Natal

We also visited a farm in Kokstad in KwaZulu-Natal that is leading the charge in potato production. With 80 ha planted to potatoes, this farm supplies top-quality produce to various markets.

Remarkably, the producer at the helm of this enterprise also occupies a pivotal role within Potatoes SA. Meshack Ndongeni serves on the Potatoes SA board of directors and is the chairperson of the Transformation Committee. This dual role underscores a steadfast commitment to fostering inclusivity and equity within the industry, ensuring that the dividends of agricultural success are shared equitably among all stakeholders.

The new potato washing and sorting facility at the Mthata fresh produce market.

Potatoes SA EDP farmer, Meshack Ndongeni.

Transformation is happening!

It is clear that change is underway in the South African potato industry. These farms are more than just places where crops grow; they are symbols of resilience, innovation and community spirit. The journey towards a transformed potato industry is ongoing, but with dedication and collaboration, we can sow the seeds of change and reap the rewards for generations to come.

For more information, email Brian Makhele at brian@potatoes.co.za.

Transformation producers: A deep dive into sales strategies

By Dikgetho Mokoena, project coordinator, and
Billy Pholoso Mampa, transformation and research intern, Potatoes SA

Potatoes are a staple crop that is deeply entrenched in the South African culinary culture. Potatoes SA has played a pivotal role in fostering growth and development, particularly through initiatives aimed at empowering transformation producers.

As these producers navigate the complexities of market dynamics, their choices regarding where to sell their produce significantly impact their success. In this article, we delve into the market preferences of Potatoes SA transformation producers, analysing their strategies, the benefits derived from it, and the challenges they face across various market channels.

Fresh produce markets

These markets represent a traditional avenue for producers to sell their goods, offering direct access to buyers ranging from retailers to wholesalers. For transformation producers, fresh produce markets provide a familiar and accessible platform to showcase their produce.

One of the key benefits of these markets lies in the ability to facilitate quick transactions, allowing producers to offload their harvest efficiently. Moreover, these markets often feature a diverse array of buyers, leading to different prices depending on supply and demand forces.

However, fresh produce markets also present challenges. Intense competition among sellers can lead to pricing pressures, potentially reducing profit margins for transformation producers. In addition, logistical considerations such as transportation and packaging requirements may add complexity and costs to the sales process. Despite these challenges, many transformation producers continue to utilise fresh produce markets due to their reliability and established networks.

Informal markets

Informal markets, including roadside stalls and community markets, offer transformation producers a direct link to consumers in their local communities. These markets are characterised by their informal nature, often operating without strict regulations or formal infrastructure. One notable example is the Soweto market, where producers can engage directly with consumers, showcasing the freshness and quality of their potatoes.

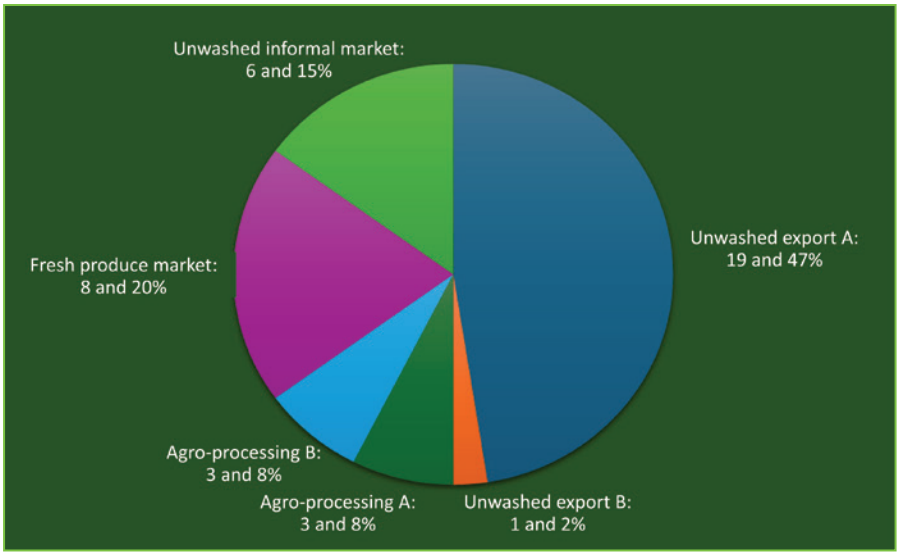
The primary benefit of informal markets lies in their ability to command competitive prices compared to wholesale channels, as consumers are willing to pay a premium for fresh, locally sourced produce. These markets also offer greater flexibility in setting prices and adjusting supply to meet demand fluctuations. However, informal markets may lack consistency in sales volumes, leading to unpredictable income streams. Moreover, the informality of these markets may expose producers to risks such as theft or non-payment.

Export (unwashed) markets

Export markets represent an avenue for transformation producers to access foreign markets. An example of this is the Mozambican market where the majority of our transformation producers opt to sell. Producers benefit from the fact that buyers bring their own transport and buy the produce unwashed. This minimises the producer's transport and potato washing costs, which naturally translates into more money in the bank. The middleman is also eliminated from the transaction as only the producer and buyer negotiate the selling price.

With infrastructure challenges, including a lack of washing and

Figure 1: Markets utilised by Enterprise Development Programme (EDP) producers in 2023/24.



Potatoes being loaded onto the back of a bakkie to be sold in the informal economy. One in three potatoes in South Africa is sold by informal traders.

Unwashed potatoes ready to go to the market in Mozambique.

sorting facilities, this market is bringing about the relevant avenue for trading.

Processing companies

Collaborating with potato processing companies presents transformation producers with an alternative market channel, catering to the food processing industry. These companies utilise potatoes as raw materials for various products such as chips, crisps and frozen fries. Trading with these companies offers producers a stable demand source and long-term contracts, providing predictability in sales and revenue.

In conclusion, the market preferences of Potatoes SA's transformation producers reflect a strategic balancing act between accessing diverse market channels and mitigating associated risks and challenges. While each market presents its unique opportunities and obstacles, successful producers often adopt a diversified approach, leveraging multiple channels to optimise sales and maximise profitability.

As Potatoes SA continues to champion the empowerment of transformation producers, understanding and addressing the evolving needs of these producers within the broader market context will be crucial for sustaining growth and fostering resilience in South Africa's potato industry.

Unwashed potatoes harvested for the Mozambican market.

Fresh produce market challenges

Price fluctuations: Prices for fresh produce such as potatoes can fluctuate due to factors such as seasonality, weather conditions and market demand, affecting producers' income.

Quality standards: Meeting quality standards and specifications set by buyers or regulatory bodies can be challenging, especially for small-scale producers who may lack access to proper storage facilities or transportation infrastructure.

Market access: Accessing distant or urban markets can be difficult for rural producers due to inadequate transportation infrastructure or lack of market information.

Agro-processing market challenges

Processing facilities: Lack of access to nearby processing facilities or agro-processing infrastructure can hinder producers' ability to add value to their potato crops.

Technical expertise: Developing and implementing processing techniques requires technical expertise, which may not be readily available to all producers.

Market demand: Understanding and responding to market demands for processed potato products can be challenging, especially if there is limited market research or consumer awareness.

Export challenges

Quality standards and regulations: Meeting stringent quality standards and adhering to import regulations in target export markets can be complex and costly for potato producers.

Logistics and transportation: Ensuring timely and efficient transportation of perishable products such as potatoes to export markets, especially long distance, can be challenging.

Market competition: Competing with other potato-exporting countries, which may have lower production costs or preferential trade agreements, can pose challenges for small-scale or less competitive producers.

Informal market challenges

Price volatility: Prices in the informal market can be highly volatile, leading to uncertainty and income instability for potato producers.

Quality control: Ensuring product quality and safety standards in the informal market can be difficult, as there may be fewer regulations or oversight mechanisms compared to formal markets.

Market access: Accessing informal markets may require building relationships with local traders or middlemen, which can be challenging for producers, particularly those from marginalised or remote communities.

For more information, contact Dikgetho Mokoena at Dikgetho@potatoes.co.za or Billy Mampa at Billy@potatoes.co.za.

Tuber or not tuber? That is the question

By Dr Carmen Muller, Dr Hennie Fisher and Prof Hettie Schönfeldt, University of Pretoria

Growing up in a house where your father has Irish roots and potatoes are regarded as staple food, you would understand the constant dissatisfaction at the dinner table over 'glassy' potatoes.

Until recently it was understood that certain potato varieties could be marketed for specific purposes – one would therefore buy potatoes specifically for mash, others for deep-frying and so on. However, it has become apparent that different environmental conditions could impact certain harvests to the extent that the same potato variety may be suitable for deep-frying, mashing and baking.

The current South African potato classification system groups cultivars or varietals which does have value. However, agricultural diversity complicates such a system and consumer education is essential in guiding consumers to consider varying factors when purchasing potatoes fit for purpose.

Potatoes as a commodity

Potatoes play a pivotal role in bolstering economic and agricultural progress in South Africa. The primary industry is valued at R11 billion while the secondary sector is valued at R25 billion. This makes the sector a positive and powerful contributor to the country's gross domestic product and a linchpin for food and nutrition security.

This food commodity is becoming a role-player in food security in many developing countries buoyed by rising global consumption trends that are boosted by improved processing and storage technologies. Growing global consumption is primarily attributed to evolving consumer preferences, lifestyle shifts, and the continuous growth of the global population. The growth and popularity of this highly diverse crop necessitates continuous novel and innovative research to support the enduring presence of our beloved spuds on our plates.

Agriculture and consumers

Over the years, the long-time partnership between the University of Pretoria (UP) and Potatoes SA has consistently yielded exceptional, high-quality research that is mutually beneficial. With an increased focus on the link between agriculture and consumers, a recent study conducted by the UP Department of Consumer and Food Sciences is highly relevant to potato producers and consumers.

It delves into the juicy flesh of potatoes seeking to understand whether we can cost-effectively and quickly classify potatoes from the farm according to their fit-for-purpose goal. Numerous factors alter the delicate textural, internal nuances of potatoes to lead to chips being crispy and mash being smooth and creamy. Hence, the creation of a rapid classification method that can classify potatoes at farm level is a very exciting prospect for the agricultural industry.

This type of classification allows consumers and producers to buy potatoes that are fit for purpose and that deliver the desired results, depending on seasonal and agricultural practices. While the existing cultivar-based classification system holds merit, the complexity of agricultural diversity poses a challenge to this approach with the same cultivar delivering varying results.

The value of this project goes even further, as it indirectly contributes to efforts to decrease food waste. A potato that delivers the desired cooking results is inherently less likely to be discarded, thus aiding in waste reduction efforts.

What South Africans want

As part of this interdepartmental, inter-industry collaboration, it was necessary to first establish what South Africans want when they select and use potatoes. From an initial analysis of 423 South African participants between the ages of 18 and 80, it was found that they have very little awareness of different cultivars. Only 31% were aware that different cultivars exist or that there are fit-for-purpose cultivars.

The survey indicated that 40% of South African consumers prefer to buy 'all-purpose' potatoes and 28% do not care about the textural classification. Contrary to buying behaviours in Europe, 71% of participants stated that they do not buy potatoes for a specific use or preparation method. These factors can contribute to consumer dissonance. Using a cultivar that is fit for purpose will deliver a better overall cooking and eating experience.

When purchasing potatoes, the consumer should consider the potato classification system and the type of cooking method that will be used. Waxy potatoes are ideal for boiling and in potato salads, as they keep their shape. Floury potatoes are great for mashing and frying and will deliver a smooth, fluffy end product.

Next time you are selecting a packet of potatoes, take time to look at the packaging detail and educate yourself on the best cultivar or textural class for your specific needs. In doing so, you will ensure that every potato dish is a delight, and nothing is wasted.

For more information, contact Dr Carmen Muller at vanniekerk.carmen@gmail.com, Dr Hennie Fisher at hennie.fisher@up.ac.za or Prof Hettie Schönfeldt at hettie.schonfeldt@up.ac.za.

Global trends in fresh potato retailing

By Lukie Pieterse, Potato News Today

Potatoes are marketed at the retail level in four key markets: the United States (US), Canada, the United Kingdom (UK), and the Netherlands. Each of these countries has a unique approach to potato marketing, influenced by cultural preferences, agricultural practices, and consumer behaviour.

Marketing strategies in the US

The marketing of fresh potatoes in the United States is a dynamic and multifaceted sector, reflecting the diverse preferences and lifestyles of American consumers. The strategies employed by retailers and producers in the US are shaped by several key factors, including consumer trends, technological advancements, and competitive market dynamics.

The emphasis is on variety. Retailers offer a wide range of potato types, including russet, red, yellow, white, purple, and fingerling potatoes, catering to diverse culinary needs and preferences.

This variety extends to organic and non-genetically modified organism (GMO) options, appealing to health-conscious consumers. The availability of assorted sizes and packaging options, from bulk purchases to small, pre-packaged quantities, allows retailers to cater to various consumer segments, from large families to single-person households.

Packaging and wellness trends

Retailers and producers invest in innovative packaging that extends shelf life and appeals aesthetically to consumers. Clear, informative labelling that includes nutritional information, cooking suggestions, and origin details is common practice. Some brands also have resealable and environmentally friendly packaging to appeal to eco-conscious consumers.

Retailers and producers are increasingly highlighting the nutritional benefits of potatoes, such as being a reliable source of potassium and vitamin C. Marketing campaigns focus on the health aspects of potatoes, countering misconceptions labelling potatoes to be unhealthy. There is also a trend towards marketing potatoes as a versatile ingredient for healthy diets, including plant-based and gluten-free options.

Technology and loyalty programmes

Online retail platforms and grocery delivery services have become increasingly popular, especially in urban areas. Retailers leverage data analytics to understand consumer preferences and tailor their inventory and marketing strategies accordingly. Social media and digital marketing are also used extensively to engage with consumers, share recipes, and promote new potato products.

Promotional activities such as discounts, coupons, and loyalty programmes, are widely used to attract and retain customers. Seasonal promotions, especially during Thanksgiving and Christmas when potato dishes are popular, are common. Retailers collaborate with food influencers and chefs to create unique recipes and cooking demonstrations, further enhancing the appeal of potatoes.

Local and sustainable produce

There is a growing trend in the US towards locally sourced and sustainably grown produce. Retailers often source potatoes from local farms, highlighting this aspect in their marketing to appeal to consumers who prefer to support local agriculture. Sustainability initiatives, such as reducing water usage and minimising pesticide use in potato farming, are also becoming part of the marketing narrative.

Retailers and producers are quick to adopt latest trends, whether it is offering exotic varieties, adopting new packaging technologies, or engaging in sustainability practices.

Canadian market trends

The Canadian market prefers locally sourced produce, valuing the freshness, reduced environmental impact, and support for local producers. Retailers respond to this demand by prominently labelling and marketing potatoes as locally sourced, often providing information relating to the specific region or farm of origin.

Environmental sustainability is a major concern and has led to an increased focus on eco-friendly practices in potato cultivation and marketing. Retailers and producers are adopting sustainable farming practices, such as reduced pesticide use, water conservation, and organic farming methods. Additionally, there is a growing trend towards using biodegradable or recyclable packaging for potato products.

Health and nutrition awareness

Health and nutrition play a significant role. Consumers are more aware of and interested in the nutritional value of the food they consume. Retailers and producers market potatoes as a healthy food choice, emphasising their natural, non-processed nature, and nutritional benefits such as being a good source of fibre, vitamins, and minerals.

This trend also sees the introduction of speciality potato varieties with enhanced health benefits, such as lower glycaemic index options.

Innovation and marketing

Innovation in potato products is a notable trend in Canada. This includes the introduction of value-added potato products, such as pre-washed, pre-cut, and ready-to-cook potatoes, catering to consumers seeking convenience. There is also a focus on introducing new and exotic potato varieties to the market, offering consumers a wider range of choices.

The use of digital platforms for marketing and selling potatoes is on the rise in Canada. Retailers are increasingly utilising online stores, social media, and digital advertising to reach consumers. This includes online promotions, recipe sharing, and engaging with consumers through social media platforms. The growth of online grocery shopping has also influenced the way potatoes are marketed, with a focus on ease of purchase and home delivery options.

Seasonal marketing plays a significant role. Retailers often run promotions and special offers during key seasons and holidays. This includes in-store displays, special pricing, and themed marketing campaigns.

Consumer preferences and trends

The Canadian potato market is responsive to consumer preferences and emerging trends, whether it is a shift towards organic produce, a preference for convenience, or a demand for sustainable practices.

The market for fresh potatoes is shaped by a strong preference for locally sourced and sustainably grown produce, a focus on health and nutrition, innovation in product offerings, the increasing use of digital marketing, and responsiveness to seasonal and consumer trends. These trends reflect the evolving preferences of Canadian consumers and the commitment of retailers and producers to meet these demands sustainably and innovatively.

UK retail strategies

In the UK, there is a strong emphasis on the quality and heritage of potato varieties. British consumers often prefer traditional and locally grown varieties, such as Maris Piper, King Edward, and Jersey Royals. Retailers capitalise on this preference by marketing these varieties as premium products, often highlighting their unique taste, texture, and suitability for different British culinary uses, such as roasting or making chips.

The UK market has seen a growing demand for convenience in food products. This has led to the introduction and marketing of value-added potato products, such as pre-washed, pre-cut, and microwave-ready potatoes. These products cater to busy lifestyles, offering quick and easy meal solutions without compromising on quality.

Aligned with global trends, health and wellness are key factors in the UK. Retailers and producers emphasise the health benefits of potatoes, countering the misconception that potatoes are inherently unhealthy. This includes marketing campaigns that highlight the nutritional value of potatoes.

Packaging and E-commerce

Environmentally friendly packaging options are becoming more prevalent, responding to consumer demand for sustainable practices. Digital marketing and electronic commerce play an increasingly vital role in the UK's retail strategies. Retailers utilise online platforms, social media, and digital advertising to engage with consumers, promote products, and provide convenient shopping experiences. The rise of online grocery shopping has also influenced the marketing of potatoes, with a focus on ease of purchase and delivery options.

Seasonal promotions are a common strategy in the UK potato market. Retailers often run unique offers and marketing campaigns during key seasons and holidays, such as Christmas and Easter, when traditional potato dishes are popular. This includes themed in-store displays, advertising campaigns, and recipe suggestions that align with seasonal culinary traditions.

Consumer insights

The market is competitive, with multiple retailers and brands vying for consumer attention. This competition drives innovation in marketing and product offerings. Retailers and producers are keen to understand consumer insights through market research, allowing them to tailor their strategies to meet changing preferences and trends effectively.

The retail strategies for marketing fresh potatoes in the UK are characterised by a focus on quality and heritage varieties, provenance and traceability, adaptation to convenience and lifestyle trends, health and wellness messaging, innovative packaging, leveraging digital platforms, seasonal promotions, and a responsive approach to a competitive market.

Dutch marketing practices

The Netherlands, renowned for its advanced agricultural practices and significant export capacity, employs distinct marketing strategies shaped by the country's innovative farming techniques, focus on sustainability, and a strong export market.

The Dutch potato market is characterised by a strong emphasis on agricultural innovation. The Netherlands is known for its high-quality potato production, achieved through advanced farming techniques, including precision agriculture, which optimises crop health and yield. Retailers and producers market these high-quality potatoes by highlighting their superior taste, texture, and versatility in cooking.

Sustainability is a cornerstone of Dutch marketing. The Netherlands has been a pioneer in sustainable agricultural practices, such as efficient water management, reduced use of

pesticides, and implementing eco-friendly farming technologies.

Focus on export markets

The Dutch potato industry is heavily oriented towards the export market. This international focus influences marketing strategies, with Dutch potatoes branded as high-quality, sustainably produced products that meet international standards. The reputation of Dutch potatoes as a premium product is leveraged in both domestic and international marketing.

Innovation extends to the product offerings in the Dutch market. There is a focus on developing and marketing new potato varieties with specific characteristics, such as improved taste, longer shelf life, or certain cooking qualities. Additionally, the market sees a range of value-added potato products, such as pre-packaged, pre-cut, and speciality potatoes, catering to diverse consumer needs.

Digital marketing plays a significant role as producers and retailers engage with consumers through online platforms, social media, and digital advertising.

Packaging and branding

Packaging is functional, preserving the quality and freshness of the potatoes, appealing and informative. This includes environmentally friendly packaging options, which align with the overall sustainability ethos of the Dutch market.

The Dutch potato market is responsive to changing consumer trends and preferences. This includes a growing demand for organic and locally sourced produce, convenience products, and health-conscious options. Retailers and producers adapt their offerings and marketing strategies to align with these trends, ensuring they meet the evolving needs of consumers.

Collaborative marketing

The Dutch industry often engages in collaborative marketing efforts, involving various stakeholders including producers, processors, retailers, and export partners. These collaborations help in promoting Dutch potatoes as a brand.

Dutch practices in potato marketing are characterised by a focus on agricultural innovation, sustainability, a strong export orientation, innovative product offerings, digital marketing, effective packaging and branding, adaptation to consumer trends, and collaborative marketing efforts. These practices cater to the domestic market and position Dutch potatoes as a high-quality, sustainable choice in the international market.

Health and convenience

Potatoes, traditionally viewed as carbohydrate-rich foods, are being reassessed for their nutritional benefits, such as being a good source of fibre, vitamins (especially vitamin C), and minerals (such as potassium). Consumers are increasingly looking for natural, non-processed food options, and potatoes fit this preference well.

The fast-paced lifestyle of modern consumers has led to a rising demand for convenience in food preparation. This trend is evident in the growing popularity of pre-washed, pre-cut, and ready-to-cook potato products. These products save time and effort in meal preparation, appealing to busy families and individuals.

Environmental sustainability and ethical considerations are becoming increasingly important in consumer choices. This includes preferences for organically grown potatoes, eco-friendly packaging, and support for local producers.

Consumers are showing an interest in experimenting with several types of potatoes, including heritage and exotic varieties. This trend is driven by a desire for new culinary experiences and flavours.

Value for money

Price remains a significant factor in consumer decision-making. While there is a segment of consumers willing to pay a premium for high-quality or speciality potatoes, most of the market is price-sensitive and looks for value for money. Retailers often use promotional pricing, discounts,

and loyalty programmes to attract and retain these cost-conscious customers.

Brand loyalty and trust play a crucial role in consumer behaviour. Consumers tend to stick with brands that consistently deliver quality and meet their expectations. Trust is particularly important in food products, and brands that can establish a reputation for quality, safety, and reliability benefit from repeat purchases.

Digital media and social trends

Digital media and social trends significantly influence consumer behaviour. Online reviews, social media influencers, and recipe blogs can sway consumer preferences and introduce new ways of using potatoes in cooking.

For more information and references, email lukie@potatonewstoday.com.

During December 2023 and January 2024, a total of 13 potato producing regions as well as non-producing suppliers delivered potatoes nationally to fresh produce markets.

Average percentage downgraded: **6.64%.**

Total number of bags delivered from 13 regions and non-producing suppliers and inspected at the fresh produce markets: **10 980 022.**

Figure 1: Classes of potato bags inspected during Dec 2023/Jan 2024 at all fresh produce markets.

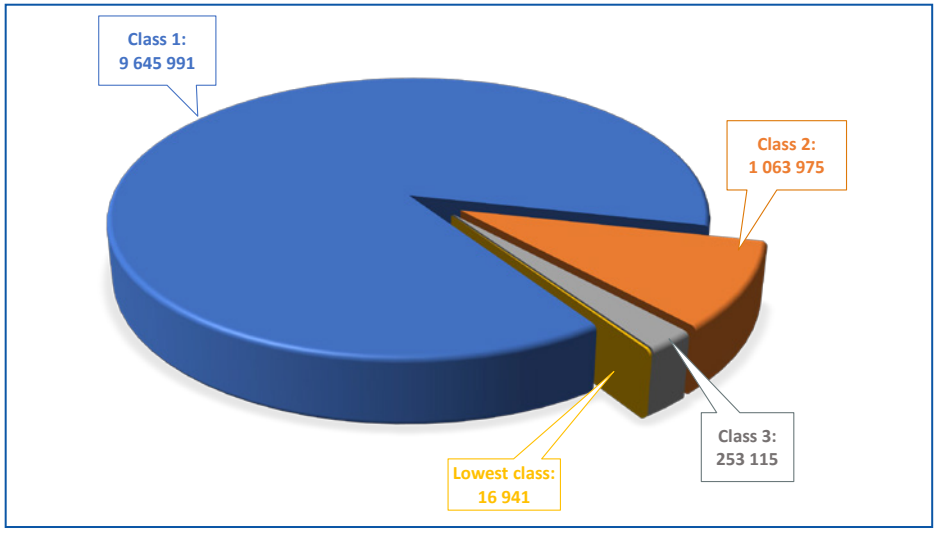


Figure 2: Classes of potato bags downgraded (total 729 188) at all fresh produce markets during Dec 2023/Jan 2024.

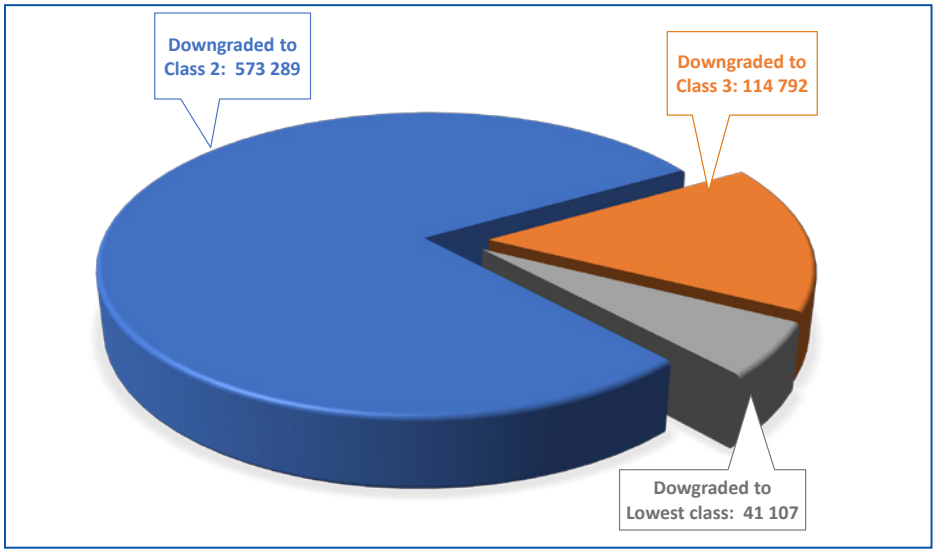


Figure 3: Potatoes bags downgraded (%) per region at all fresh produce markets during Dec 2023/Jan 2024.

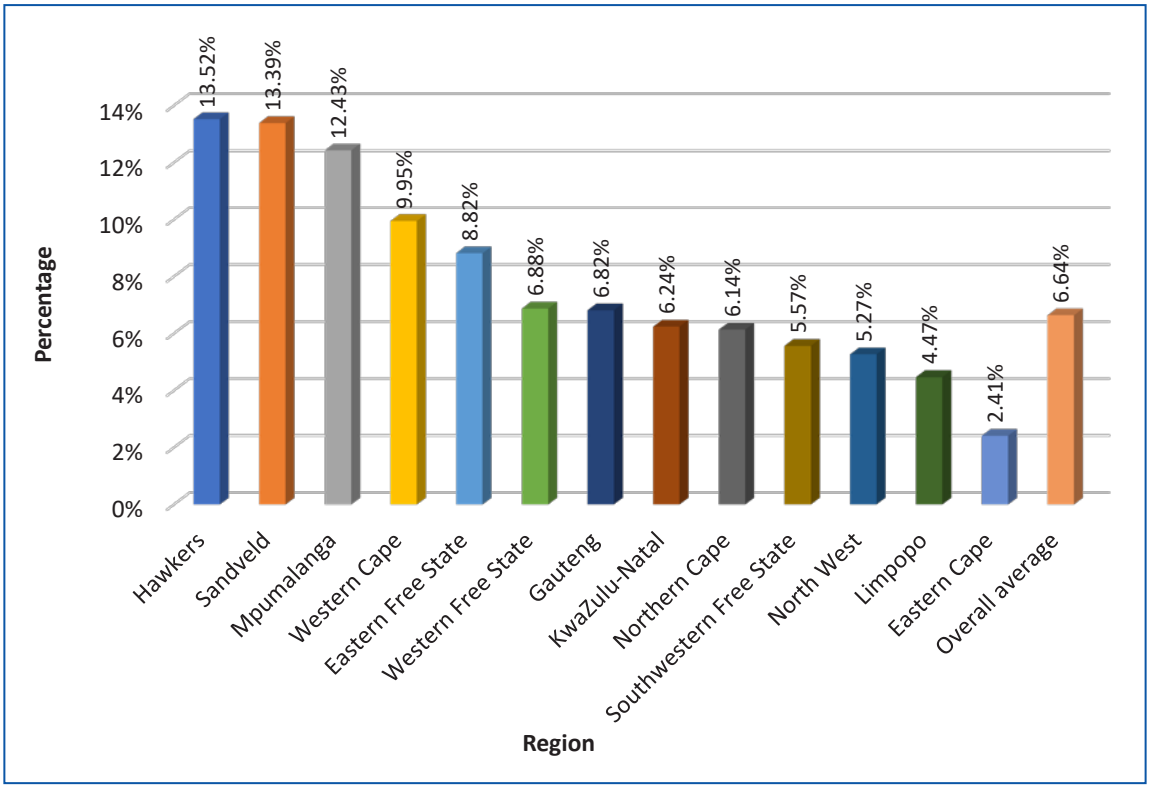
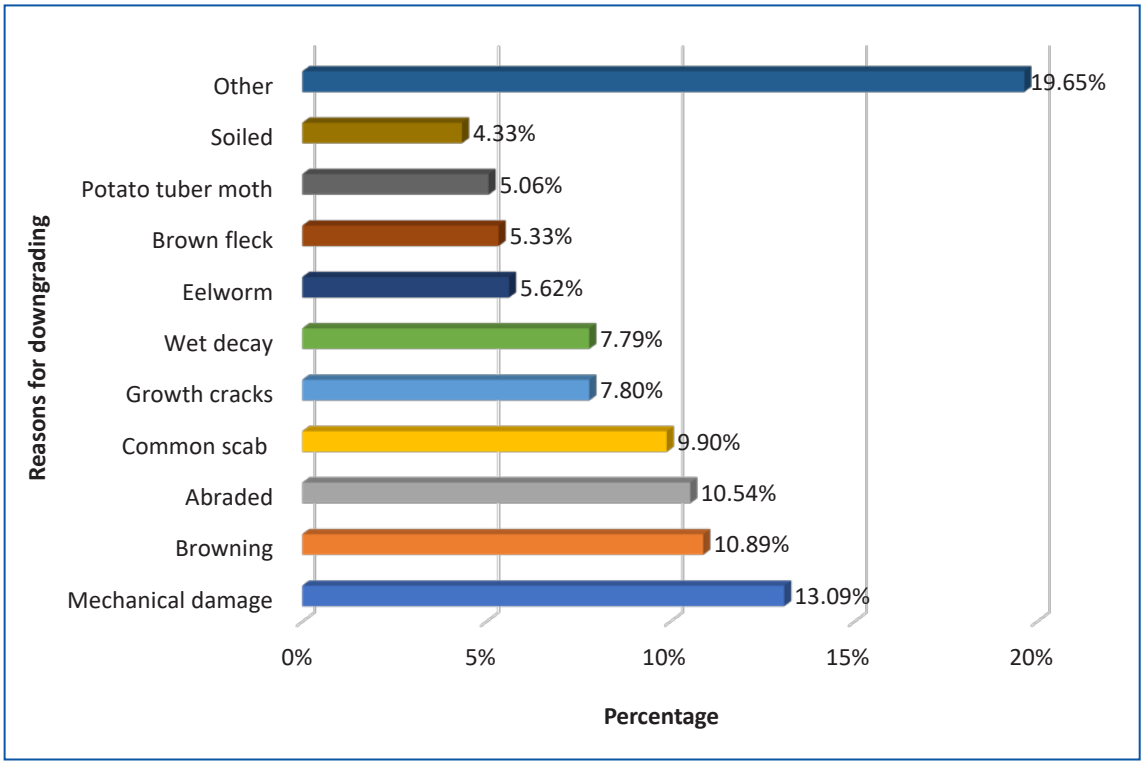


Figure 4: Main reasons for downgrading at all fresh produce markets during Dec 2023/Jan 2024.



Other include: *Greening, too small, skin eelworm, malformed, insect damage, hollow heart, collectively too big and small, watergrass damage (external), vascular browning, wet by decayed tubers, heat damage, broken and cut tubers, wilt, dry stem-end, soiled by decayed tubers, watergrass damage (internal), and soiled decay.*

REGISTERED FRESH PRODUCE AGENCIES

BLOEMFONTEIN FRESH PRODUCE MARKET

Bloemfontein Market Agency
Modise Market Agency
RSA Bloemfontein Market Agency
Subtropico Bloemfontein Market Agency
Vrystaat Market Agency

CAPE TOWN FRESH PRODUCE MARKET

Boland Market Agency
Fine Bros Market Agency
Rhoda's Market Agency
RSA Cape Town Market Agency
Subtropico/Spes Bona Market Agency

DURBAN FRESH PRODUCE MARKET

Hanly Market Agency
Port Natal Market Agency
RSA Coastlands Market Agency
Subtropico Durban Market Agency

EAST LONDON FRESH PRODUCE MARKET

AA Market Agency
Border Farmers Market Agency
Martin & Scheepers Market Agency
Subtropico East London Market Agency

GEORGE MUNICIPALITY

RSA Southern Cape Market Agency

JOBURG FRESH PRODUCE MARKET

Botha Roodt Johannesburg Market Agency
CA-TU Fresh Market Agency
C L de Villiers Market Agency
Citi Deep Waatlemoen Market Agency
Citifresh Market Agency
Dapper Market Agency
DW Fresh Produce Johannesburg Market Agency
Exec-U-Fruit Market Agency
Marco Market Agency
Matla Market Agency
Metro Market Agency
RSA Johannesburg Market Agency
Subtropico Johannesburg Market Agency
Swartberg Market Agency
Uni Dev Market Agency
Wenpro Johannesburg Market Agency

KEI FRESH PRODUCE MARKET

Farmers Direct Market Agency

KING WILLIAM'S TOWN FRESH PRODUCE MARKET

RSA Eastern Cape Market Agency

KIMBERLEY FRESH PRODUCE MARKET

Kimberley Market Agency
Subtropico Kimberly Market Agency

KLERKSDORP FRESH PRODUCE MARKET

Garfield Market Agency
J Frances & Son Market Agency
Matlosana Market Agency
Subtropico Klerksdorp Market Agency
W.L. Ochse & Kie Market Agency

LIMPOPO PROVINCE

RSA Limpopo Market Agency
RSA Mooketsi Market Agency

NELSPRUIT MUNICIPALITY

RSA Nelspruit Market Agency
Whoopi Up Nelspruit Market Agency

NOORDEINDE FRESH PRODUCE MARKET

Noordeinde Market Agency

PIETERMARITZBURG FRESH PRODUCE MARKET

G.W. Poole Market Agency
Natalia Market Agency
Nkosi Market Agency
Peter & Co Market Agency
Subtropico Pietermaritzburg Market Agency

PORT ELIZABETH FRESH PRODUCE MARKET

African Market Agency
Algoabaai Market Agency
Gouws & Co Market Agency
Lansdell Market Agency
W Finlayson & Co Market Agency

SPRINGS FRESH PRODUCE MARKET

AM Meyer Market Agency
New Africa Market Agency
RSA Springs Market Agency
Springs Vegtable Market Agency
Subtropico Springs Market Agency

TSHWANE FRESH PRODUCE MARKET

Botha Roodt Pretoria Market Agency
Du Plessis & Wolmarans Market Agency
DW Fresh Produce Tshwane Market Agency
Farmers Trust Market Agency
Fresh Way Market Agency
Mabeka Market Agency
Noordvaal Market Agency
Prinsloo & Venter Market Agency
RSA Tshwane Market Agency
Subtropico/Protea Market Agency
Tshwane Green Market Agency

VAAL MUNICIPALITY

RSA Vaal Market Agency

VEREENIGING FRESH PRODUCE MARKET

Subtropico Vereeniging Market Agency

WELKOM FRESH PRODUCE MARKET

Botha & Roodt Welkom Market Agency
Opkoms Market Agency
Subtropico Welkom Market Agency

WITBANK FRESH PRODUCE MARKET

Subtropico Witbank Market Agency
Witbank Market Agency

OTHER

Agri Empire Market Agency
Comfy Fresh
Core Fruit
Farm Fresh Direct
Federated Farmers
Fruitways
GrapeHub
Green Network
HL Hall & Sons
Multiflora
RSA Beyond
Stargrow
Subtropico Online
Subtropico Online DC
United Exports
Westfalia Marketing

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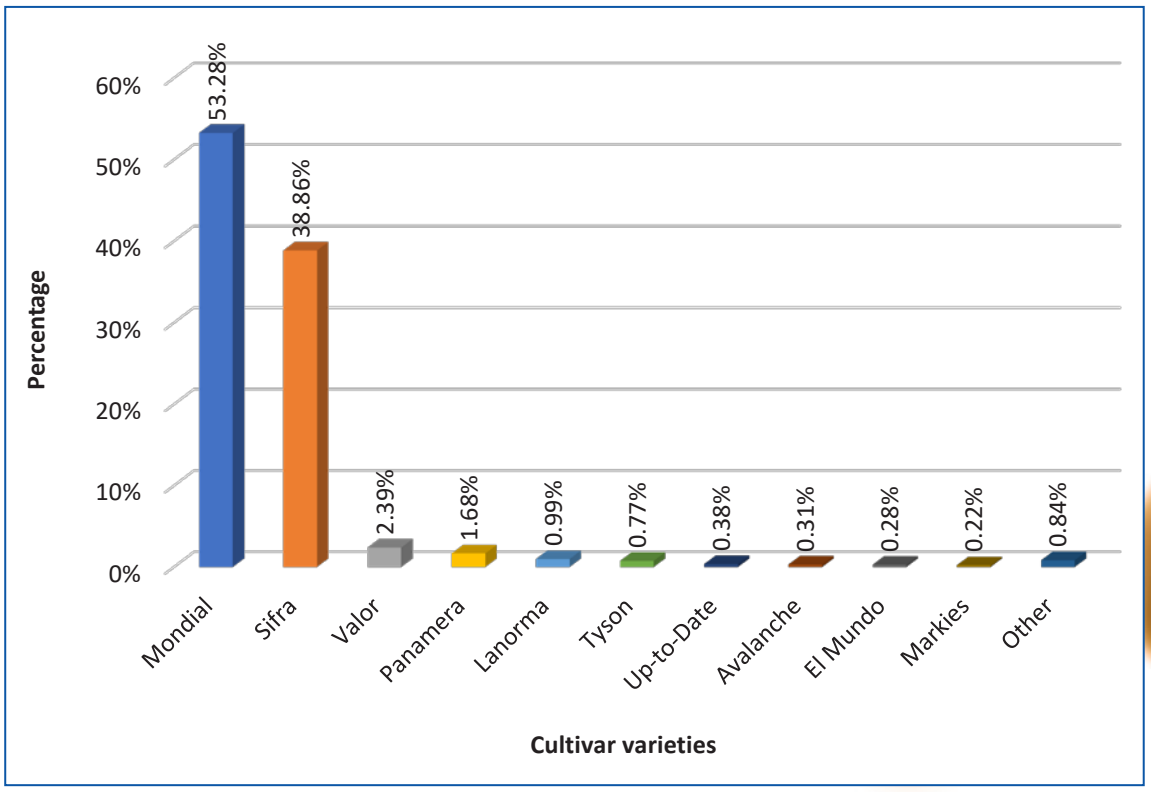
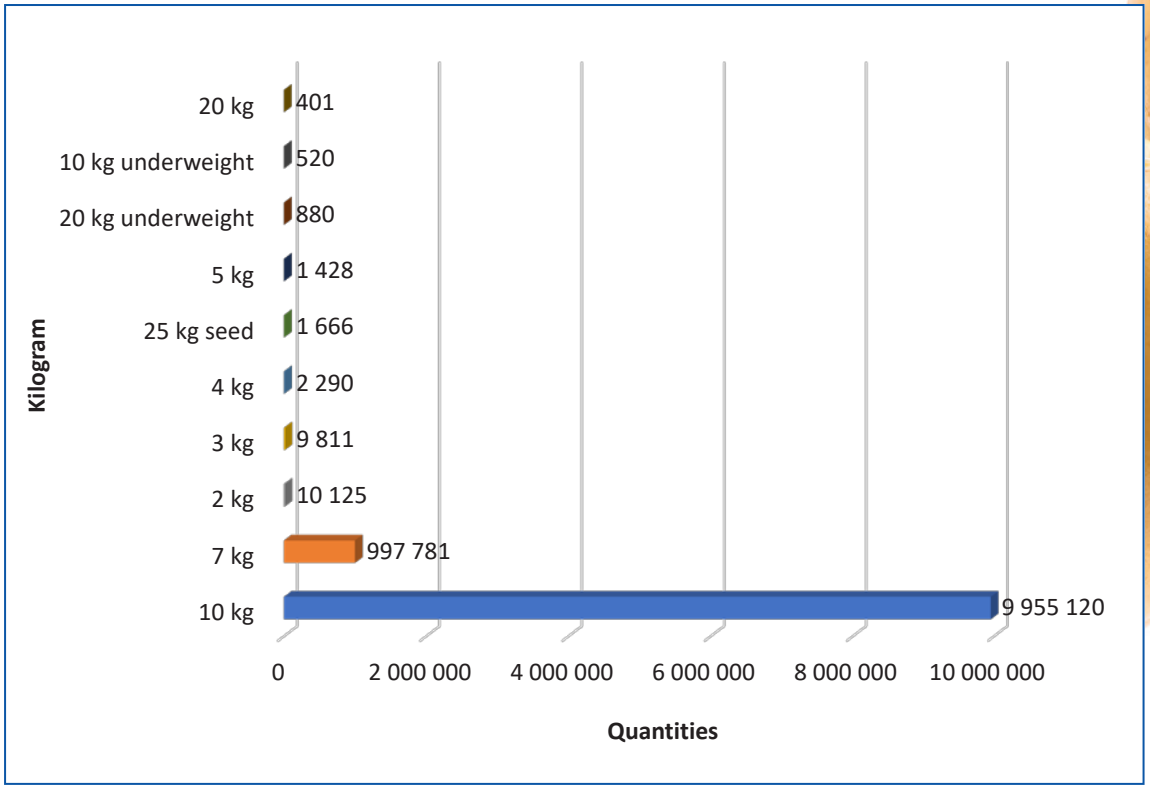
Figure 5: Cultivar varieties inspected at all fresh produce markets during Dec 2023/Jan 2024.



Other include: *Savanna, Nicola, Taurus, Sababa, Hertha, Mondeo, Electra, Mnandi, Almera, Apache (POWW), Abby, Innovator, and Fianna.*

Figure 6: Volumes of different potato bags inspected on all fresh produce markets during Dec 2023/Jan 2024.



Die verskil tussen wangedrag en onbevoegdheid

Deur Madeleine Ackermann, regsadviseur, LWO Werkgewersorganisasie

Voordat enige dissiplinêre stappe in die werksplek geneem word, is dit belangrik dat die werkgewer behoorlik ondersoek instel om te bepaal of die werknemer se gedrag neig na wangedrag of onbevoegdheid. Dit sal bepaal watter proses gevolg moet word om die probleem aan te spreek. Werkgewers volg dikwels die verkeerde prosedure en ontslaan dan die werknemer. Dit hou 'n wesenlike risiko vir die werkgewer in indien die werknemer die saak na die Kommissie vir Versoening, Bemiddeling en Arbitrasie (KVBA) sou verwys en die kommissaris dan 'n bevel vir vergoeding en/of herindiensname sou uitreik.

Wangedrag

Wangedrag verwys na 'n werknemer se versuim om aan die werkgewer se reëls en beleid te voldoen en behels 'n gedragsprobleem aan die werknemer se kant. Sodanige gedrag is gewoonlik doelbewus of nalatig van aard, en werknemers kan verantwoordelik gehou word vir hul optrede. Wangedrag kan verskeie vorme aanneem, waaronder diefstal, bedrog, oneerlikheid, insubordinasie, afwesigheid sonder toestemming, en dies meer.

Die erns van die oortreding word bepaal op grond van die werknemer se tipe werk en verantwoordelikhede, die (moontlike) gevolge van die oortreding, asook die impak wat die oortreding op die werknemer-werkgewer vertrouensverhouding het.

Die dissiplinêre kode

Elke werksplek moet 'n toepaslike dissiplinêre kode hê wat verseker dat daar duidelike reëls (met toepaslike sanksies) is wat werknemers moet volg. Die werkgewer kan progressiewe dissipline toepas en in gevalle van ernstige wangedrag, direk voortgaan met 'n dissiplinêre verhoor.

Tydens die dissiplinêre verhoor moet die werkgewer die werknemer die geleentheid bied om aangehoor te word, en te reageer op bewerings wat gemaak word. Die werkgewer moet kan bewys:

- Was daar 'n reël in die werksplek en was die werknemer (redelik) bewus van hierdie reël?
- Het die werknemer die reël oortree?
- Het die werkgewer progressiewe dissipline (waarskuwings) toegepas?
- Word die reël konsekwent toegepas?

Onbevoegdheid

Onbevoegdheid verwys na 'n situasie waar 'n werknemer inherent nie in staat is om aan vasgestelde prestasiestandaarde te voldoen nie, hetsy weens swak gesondheid of werksprestasie. Waar die werknemer nie oor die vereiste vaardigheid of kennis beskik om 'n sekere taak te verrig nie, word van die werkgewer verwag om daardie werknemer van opleiding en leiding te voorsien, asook die geleentheid te bied om te verbeter.

Waar die werknemer weens swak gesondheid nie volgens die werkgewer se vereiste standaard kan presteer nie, moet die werkgewer die aard van die werknemer se werk, tydperk van afwesigheid, erns van die siekte of besering, die moontlikheid om 'n gestremdheid te akkommodeer, en die moontlikheid van alternatiewe indiensneming binne die besigheid oorweeg.

Werknemers wat onbevoeg is om teen die vereiste standaard te presteer, het 'n groot impak op 'n besigheid se normale werking, aangesien die meeste werkgewers nie die luukse van spaarkapasiteit in terme van personeel het om vir hierdie tekort op te maak nie. Werkgewers het die reg om gehaltestandaarde vir die werksplek te stel en om billike en regmatige instruksies te gee.

Gronde vir ontslag

Die *Wet op Arbeidsverhoudinge, 1995 (Wet 66 van 1995)* onderskei tussen 'geenskuld-afdankings' (weens operasionele vereistes of onbevoegdheid) en 'afdankings weens wangedrag'. Die drie gronde vir regverdige ontslag word gelys as wangedrag, onbevoegdheid, en operasionele vereistes.

2024 ADVERTISING RATES

CHIPS

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084 580 5120 I lynette@plaasmedia.co.za

SALES MANAGER: **MARNÉ ANDERSON**
072 639 1805 I marne@plaasmedia.co.za

Published on behalf of Potatoes SA

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- 12 easy monthly instalments.
- Guaranteed coverage in news pages.
- Advertisements in Plaas Media's other magazines and/or online and broadcast platforms.

FORMAT: A4, full-colour, glossy, printed & digital/online
PRINT RUN: Minimum 2 000
PRINT DISTRIBUTION: Postal database and at events.
ONLINE MAGAZINE: *www.potatoes.co.za/chips-online*
www.agriorbit.com • digimags.agriorbit.com
INDEXED FOR RESEARCH: *www.sabinet.co.za* (paid subscription)
READERSHIP: Minimum 6 000
LSM: 8 -10
FREQUENCY: Bimonthly (every second month)
LANGUAGE: English / Afrikaans

TARGET AUDIENCE: Members of Potatoes SA • All commercial and aspiring commercial potato producers
Universities, agricultural colleges, technicons and research institutions • Relevant government departments
Input suppliers to the potato industry

ADVERTISEMENTS

Outside back cover (OBC)	**R18 360**	280mm (h) x 210mm (w) plus 3mm bleed
Premium page (IFC, P1)	**R16 740**	280mm (h) x 210mm (w) plus 3mm bleed
Inside back cover (IBC)	**R14 040**	280mm (h) x 210mm (w) plus 3mm bleed
Right-hand full page	**R16 740**	280mm (h) x 210mm (w) plus 3mm bleed
Double-page spread (DPS)	**R19 636**	280mm (h) x 420mm (w) plus 3mm bleed
Full page / FP advertorial	**R10 800**	280mm (h) x 210mm (w) plus 3mm bleed
Half page (landscape)	**R6 480**	115mm (h) x 180mm (w); no bleed
Half page (portrait)	**R6 480**	237mm (h) x 85mm (w); no bleed
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Rates exclude package discounts, VAT and agency commission.

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Existing clients – strictly 30 days after invoice date.
New clients – 14 days prior to placement.

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4 Dec 2023	21 Feb 2024	24 Apr 2024	18 June 2024	16 Aug 2024	16 Oct 2024	2 Dec 2024
11 Dec 2023	27 Feb 2024	30 Apr 2024	25 June 2024	23 Aug 2024	24 Oct 2024	9 Dec 2024

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Danie van Heerden | Oos-Kaap/Suid-Kaap | 082 415 3666
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