

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

CHIPS

VOL 38 NO 1 • JANUARY / FEBRUARY 2024

**CULTIVATING SOIL HEALTH:
VITAL FOR
POTATO PRODUCTION**

**World potato markets
at the end of 2023**

**'n Kykie na die
pepper ringspot-situasie**

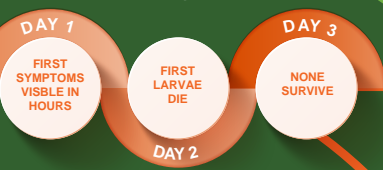
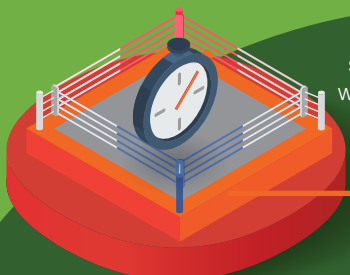
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Approach life like a producer

By Willie Jacobs, CEO, Potatoes SA

As we reached the festive season last year, South Africa's load distribution changed. It became lighter inland and heavier on the coast. I wonder if it influenced climate change ...

Other questions also popped into my mind such as:

- What, apart from the dates on a calendar, determines the start and end of things?
- What influence do calendar years have on us? I believe the school system might be blamed for the bulk of these patterns and certainly for the largest contingent of parents.
- So, if school terms did not end, if December to January was not a long school holiday, like July, how would things change?
- How will it impact our expectations, stress levels and reactions to different emotional drivers?

As we prepare ourselves as consumers for a new year, someone somewhere is planting potatoes and someone somewhere is harvesting potatoes. Several trucks are on the roads moving potatoes from one place to the next. Potatoes do not celebrate Christmas or the new year, nor do they enjoy holidays. Its job is to continue feeding the nation daily, ensuring all consumers are properly nourished.

Towards year-end, we tend to experience burnout-like symptoms as we are overworked and overstressed, our finances are under severe pressure, and we probably did not manage to achieve all of the goals

we set out to reach. Meanwhile, we have probably damaged a number of our key relationships due to our own stress.

Learn from the producer

There are so many lessons and pieces of advice that were given to overcome or at least mitigate this issue. For instance, Francois Knowles, registrar of the Agricultural Produce Agents Council or APAC, advised me to choose the largest pieces of washing to hang first so that the bin looks emptier faster. A famous United States commander said to start your morning by making your bed. Even if you then have a bad day, feeling that you've achieved nothing, you will get home to a neatly made bed and know that something was achieved.

My message to all is to approach life like a producer. The moment you harvest, the soil should already be prepared for the new crop. Something should always be in a production phase. That way there is always something to look forward to. When the crop is growing, allow time to admire the work nature is doing. Have faith that the knowledge you have developed in understanding all the activities that are out of your control, is sufficient to yield a good crop and positive outcomes.

Accept the results and plan for new successes. Never let the risk of failure be your guideline, but rather the dream of success.

After a few years of tense farming conditions, the potato industry is looking forward to good seasons. Nature is unpredictable, but we have seen that even at lower yields, the profitability of the industry is improving due to the value seen by our consumers in this superfood.

To our consumers: The price of potatoes should rise immensely before it truly becomes too expensive. It is important to note that the cost of potatoes should not be measured per bag, but per year as part of your nutritional plan. As much as our potato producers are trying to keep stock available throughout the year, it is ultimately up to nature, and we have to be sensitive to that fact.

Buy your potatoes and eat it with pride and thankfulness. Approach life the way producers handle their farms. Lessen the pressure of trying to achieve everything at once and don't postpone breaks or celebrations. Take time to appreciate the relaxing effects of nature. I trust everyone enjoyed a truly energising festive season and is ready to take on this new phase of life in smaller, more calculated steps. 🍷

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

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CROP	APPLICATION RATE PER HECTARE	RECOMMENDATIONS
Vines	10 - 40 L	Apply through irrigation system or spray on ridges.
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Wheat	50 - 100 L	Apply through the irrigation system as a pre-plant soil application.
Oats	60 - 120 L	Apply through the irrigation system as a pre-plant soil application.
Potatoes	60 - 120 L	Apply in a maximum of 100 L/ha as a direct spray during the planting process in furrows.
Sugarcane	60 - 120 L	Apply in a maximum of 100 L/ha as a direct spray during the planting process in furrows.
Corn	100 - 100 L	Apply through the irrigation system as a pre-plant soil application.
Pumpkins	40 - 80 L	Apply through the irrigation system as a pre-plant soil application.

5L



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Here comes the sun ...

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If 2023 served as an indication of what we can expect in terms of weather patterns, then South Africans are in for a rough ride in 2024 and beyond. These past few years have been characterised by record maximum temperatures and to make it even worse, we currently find ourselves amid an El Niño cycle that is set to continue and make 2024 our hottest year yet. Our producers are bracing themselves for a really tough time.

Change is a given

The thing about climate change is that we can't really do much about it. Yes, there are many manmade situations that have exacerbated the situation, but throughout history there has been climate change that altered the face of Earth.

These changes are mostly divided into cold periods or ice ages (glacials) and warm periods (interglacials). For the last one million years, these changes have mostly taken place in roughly 100 000-year cycles, with the last of the ice age glaciations having peaked around 20 000 years ago. Experts tell us that over the course of these cycles, global average temperatures warmed or cooled anywhere from 3°C to perhaps as much as 8°C.

We also know that these drastic changes wiped out some species and gave life to new or adapted ones. Perhaps this is what scares humankind the most, but we must always remember that these changes took place over hundreds of thousands of years. Change is a given, but it doesn't happen overnight.

Perhaps these last few years with its numerous fires, floods, heatwaves and cold spells also made it seem as though the elements were suddenly changing. However, it has been increasing gradually and perhaps we have just been slumbering a bit and did not notice it until it really and truly affected us directly.

The fact is, climate change is in our faces and no matter how much we plan and mitigate, it is bound to happen and will affect us in some or other way. A lot of research is being done regarding the adaptability of crops and animals to changing climates. However, none of this will come to fruition if humankind does not also adapt and this seems to be the greatest challenge of all – getting humans to adapt. Animals and plants, without human interference, have a natural way of adapting and changing as they have no choice but to follow instinct. Humans, however, seem to have lost that instinct to survive and adapt.

Adaptability of humans

I read the other day that studies show humans are losing their cognitive ability at a rapid pace, especially when it comes to logic, vocabulary, visual and mathematical problem solving. Most of this is because of our reliance on cellphones, runaway social media statements, and automated functions such as artificial intelligence (ChatGPT) and autocomplete. In short, we are losing our ability to take decisions, accept change and adapt naturally.

Take your own decisions

My wish for 2024 is very simple – let's start using the brains we were blessed with by taking decisions without consulting social media and AI-generated solutions. Follow your gut (the gut has been shown to be linked to the brain). Technology might be smart, but it is dumbing us down. Life has a simple rule – only the fittest (and smartest) will survive.

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Owners of illegal potato chip factory nabbed

The Johannesburg metro police recently collected evidence from the scene of an illegal potato chip factory. Officers found steel containers where the vegetables were being cut, fried, and packaged at a property in Marlboro.

“Environmental health inspectors were summoned to the scene, and it was discovered that the owner did not have a manufacturing certificate and the relevant documents for operating the business.” Metro police spokesperson, Xolani Fihla, says they made the discovery after officers searched a vehicle and found packets of chips without the necessary South African Bureau of Standards approval mark. Seven illegal immigrants were also arrested.

The raid came days after consumer inflation data revealed that the price of potatoes went up 64% over the past year.

– East Coast Radio

France’s potato prices surge

France is grappling with a severe farming crisis, as national inflation has dramatically increased potato prices, affecting various potato-based products. The National Institute of Statistics and Economic Studies reported an almost 23% rise in potato prices within a year.

By September 2023, a kilogram of potatoes cost €2.09, a significant increase from the previous year. This surge is attributed to the “worst harvest in 30 years” with producers citing poor crop yields. Factors such as the Ukraine war impacting fertiliser availability and rising energy costs, coupled with damaging heatwaves, have severely affected potato growth.

The crisis has disrupted the French supply chain, leading to a 50% hike in prices for potato processors buying potatoes from growers. Contracts between growers and manufacturers have become 36% more expensive, with no immediate relief in sight. The ongoing climate change poses additional threats, such as flooding and continued droughts, further jeopardising future crops. – Express

AI transforms Canadian potato farming

In a groundbreaking development for the agricultural sector, Canadian potato growers are now turning to artificial intelligence (AI) to monitor and predict the nutritional needs of their crops in real time. This innovative approach is set to transform the way potatoes are cultivated in Canada.

Researchers from Dalhousie University, including PhD candidate Reem Abukmeil and associate professor Ahmad Al-Mallahi, are at the forefront of this agricultural revolution. Their research involves the use of a portable spectrophotometer, an optical sensor, to rapidly determine petiole nutrient values in potato fields.

Technological advances in optical sensors and their wavelength ranges has led to wide-ranging applications of spectroscopy to evaluate the nutritional composition of plants using machine learning techniques. This technology, combined with machine learning algorithms trained on historical data, allows for near real-time assessment of the plant’s nutritional needs.

This AI-driven approach offers numerous advantages. It enables producers to apply fertilisers more efficiently and timely, ensuring that the plants receive the right nutrients at the right time. This not only optimises crop quality and yields but also helps in balancing production goals with environmental protection.

– The Conversation

Genetically edited potato to prevent browning

Scientists from the National Institute of Agricultural Technology of Argentina, the public entity in charge of carrying out and centralising agricultural research in the country, are close to releasing the first genetically edited potato in Latin America, according to a report by Agro-Bio.

The development aimed to turn off the gene that causes the potato to darken after being cut, peeled or from being hit during the harvesting and transportation process. This trait, known as enzymatic browning, occurs due to the oxidation of the potato and alters the flavour, texture and colour, thus affecting its nutritional properties and the quality of the product.

Through the revolutionary CRISPR-Cas9 genetic editing technique, within the framework of Dr Matías González’s doctoral thesis developed in the Agrobiotechnology Laboratory of the Balcarce Agricultural Experimental Station co-directed by Dr Sergio Feingold and Dr Gabriela Massa, managed to turn off the gene that encodes the expression of polyphenol oxidase enzymes, responsible for browning. – Agro-Bio

Potato prices a driver of food price inflation

Food inflation has been topical over the past few months and South Africa saw double-digit levels from mid-2022 to mid-2023. This was not unique to South Africa but a global phenomenon underpinned by various factors, including drought in South America, China’s strong demand for grains and oilseed, higher energy prices, and the Russia-Ukraine war.

October 2023 disrupted the six-month consecutive decline, with consumer food inflation having quickened to 8.8% from 8% the previous month. The product prices underpinning this increase were mainly milk, eggs, cheese, fruit and vegetables.

Regarding vegetables, potatoes were mainly the driver of the prices in the basket as the harvest was limited following quality challenges caused by irrigation disruptions in some fields due to load shedding during the first half of the year. – *Wandile Sihlobo, Agbiz*

GM potato variety free from late blight

In a groundbreaking development, scientists in Kenya have engineered a new genetically modified (GM) potato variety that is resistant to the devastating late blight disease. The Global Biotech Potato Partnership project, spearheaded by Dr Eric Magembe, has shown promising results in confined field trials across Uganda, Kenya and Nigeria.

The trials, which began in May last year following approval from the National Biosafety Authority, were conducted at three Kenya Agricultural Livestock Research Organisation (KALRO) sites. This initiative is a collaborative effort involving Michigan State University, KALRO, the Africa Agricultural Technology Foundation, and the International Potato Centre, among others.

The new GM potato variety boasts a tolerance to late blight, caused by *Phytophthora infestans*, potentially eliminating the need for harmful chemical applications. The innovation promises to significantly boost yields from the current 10t/ha to over 40t/ha, without the need for chemical sprays.

– *Nation Media Group*

European Commission to extend glyphosate use

The European Commission will continue the use of the controversial chemical herbicide glyphosate in the European Union (EU) for ten more years, after its 27 member countries again failed to find a common position for or against a prolongation.

The chemical, which is widely used in the bloc to the great anger of environmental groups, had been approved in the EU market until mid-December. The Greens political group of the EU Parliament immediately urged the Commission to backpedal and ban the use of glyphosate.


Greenpeace had called on the EU to reject the market re-approval, citing studies indicating that glyphosate may cause cancer and other health problems and could also be toxic to bees. The agroindustry sector, however, says there are no viable alternatives. – *Associated Press*

The battle against acrylamide intensifies

A research team based in Italy monitored the acrylamide (AA) levels in 15 674 samples from 12 processed food commodities in a scientific study. Potato-based products and coffee were found to be the main sources of AA exposure. The data was then compared to the information previously published by the European Food Safety Authority (EFSA) to assess the trend over time and the effectiveness of the mitigation measures.

This study presents an accredited method for the assessment of AA in various foods, highlighting its consistency with established standards. The study found that the presence of AA in various foods poses significant health risks. This emphasises the critical need to monitor AA levels for consumer safety and to evaluate the effectiveness of new food preparation methods to minimise contamination. Recent research supports the 2015 findings of the EFSA, which showed reduced levels of contamination in most food categories. However, it is important to note that processed potatoes and coffee had higher contamination levels.

The overall reduction in contamination levels is promising. This reduction is particularly noteworthy as the sampled products adhered to a strict self-monitoring plan. This compliance ensured that products exceeding the benchmarks set by the EU did not enter the market. In particular, baby food showed a remarkable improvement, with a fivefold reduction in contamination levels compared to the levels reported by EFSA.

This significant reduction underscores the effectiveness of European regulations and the proactive measures taken by food manufacturers to reduce AA levels. It also highlights the critical need for continued monitoring and strict enforcement to protect public health. – *Potato News Today* 

Tom Burke-inligtingsdag fokus op bemerking

Deur Andries Gouws, Plaas Media

Die onvoorspelbare en lang sessies beurtkrag en die uitermatige styging in die dieselprys, het 'n wurggreep op aartappelprodusente. Al die skakels in die waardeketting werk nou saam om, te midde van die uitdagings, die bemerking van aartappels te koördineer om ontwrigtende pryskommelings te versag.

Aartappels SA is die rentmeester van 'n volhoubare aartappelbedryf en hou gereelde inligtingsdae tydens verskillende produksiefases in die onderskeie streke. Dit bied die geleentheid vir al die betrokkenes in die waardeketting om uitdagings, sowel as voorgestelde oplossings, openlik en sinvol te bespreek.

By hierdie byeenkomste, wat onlangs op Vivo en Tom Burke in Limpopo gehou is, het die voorsitter van Aartappels SA, Willie Jacobs, gesê hoewel die verskillende skakels in die bedryfsketting nie noodwendig dieselfde waarde aan die onderskeie aspekte van die bedryf heg nie, 'n gesonde en volhoubare bedryf tot almal se voordeel is. Daarom is deursigtige, akkurate data noodsaaklik vir goeie koördinasie om te verhoed dat



Talle belangstellendes het die inligtingsdag op Tom Burke bygewoon. Van links is Jako Nel, 'n boer van Tom Burke, FP Coetzee van Aartappels SA, Louis du Plessis van Swartwater, Evert de Goede van Evo Fresh, en Gerhard Heinlein van Tom Burke.

markte toegegooi word en sodoende die prys van die produk negatief raak. Net so kan ondervoorsiening die verkeerde seine aan produsente stuur en derhalwe bemerking ontwig.

Aartappelproduksie floreer

Suid-Afrikaanse aartappelprodusente is van die produktiefste ter wêreld. In die laaste drie dekades het aartappelproduksie in die land verdubbel van 1.3 miljoen ton na 2.6 miljoen ton. Terselfdertyd het die grondoppervlakte onder aartappels van 62 000ha in 1990 tot die huidige 52 355ha gekrimp. Dit beteken

dat die produksie/ha van 20 ton/ha na 50 ton/ha gestyg het.

Suid-Afrika het dit vermag sonder die substansiële subsidies wat Europese produsente ontvang. Dit is 'n bewys van die vindingrykheid en veerkragtigheid van die land se produsente wat, ondanks

uitdagings, volhoubare oeste produseer.

Beurtkrag se kettingreaksie

Verwerkingsaanlegte se vermoë word ernstig deur beurtkrag geknel. Vervaardigers van bevrore aartappelskyfies is veral swaar getref en tekorte het ontstaan. Die eienaars van die aanlegte het hul kommer teenoor Eskom en hul plaaslike owerhede uitgespreek, aangesien dit 'n probleem is wat buite die beheer van die bedryf is.

Op plaasvlak het beurtkrag 'n beduidende negatiewe uitwerking op die doeltreffende besproeiing van aartappels. Volgens Aartappels SA lei dit nie net tot 'n laer opbrengs nie, maar beïnvloed ook die gehalte van die aartappels as gevolg van die toename in aartappelmot en misvorming van knolle.

Toonaangewende aartappelprodusente in Limpopo sê beurtkrag en die versengende hitte wat gewoonlik tydens produksietyd ervaar word, het die afgelope paar jaar miljoene rande se skade aan aartappeloeste aangerig.

Diesel-kragopwekkers voorsien krag aan die pakhuis gedurende beurtkrag en dan staan die besproeiingstelsels stil. Produsente se



Willie Jacobs, uitvoerende hoof van Aartappels SA, in die middel, saam met met Drikus Hattingh (links) en Coenie Uys van die Tshwane-varsproduktemark (regs).

kragrekeninge moet na verwagting dus minder wees, maar dit styg aangesien die besproeiingstelsels piek-hoeveelhede krag gebruik wanneer dit weer aangeskakel word. Met die dieselprys wat die afgelope vier maande al hoe meer gestyg het, ruk die koste om paksure aan die gang te hou, nou hand uit.

Beurtkrag en duurder diesel raak elke skakel in die aartappelwaardeketting, wat uitloop op hoër pryse vir die eindverbruiker wat self in die knypgang van alledaagse lewenskoste vasgevang is.

Bemaking is belangrik

Te midde van die uitdagings is dit noodsaaklik dat aspekte waaroor die bedryf 'n mate van beheer het, glad moet verloop tot groter voordeel van almal. Aartappels moet so vars as moontlik bemark word. Dit is gewoonlik baie warm wanneer aartappels in Limpopo uitgehaal word. As dit nie so vinnig as moontlik van die land na die verbruiker gebring word nie, kan dit begin sleg word.

Die bemakingstempo moet egalig verloop. As die mark toegegooi word met aartappels, gaan dit langer duur as die markagente se mikpunt om dit binne twee dae van die markvloer af te kry. As die lewering egter te traag is, kan dit die verkeerde boodskap aan produsente stuur, wat ook die bemakingstempo kan ontwrig. Die verskillende skakels in die aartappelwaardeketting moet ook nie fyngewoelig wees vir mededinging tussen verskillende deelnemers nie. Die bedryf bestee baie geld om alles vlot te laat verloop.

Die seine wat aan produsente, hanteerders en aartappelverwerkers uitgestuur word, bepaal die waarde van die produk. Die grootste rede waarom pryse dikwels abnormaal fluktuëer, is 'n gebrek aan inligting. Die oogmerk is om vinnige, skerp stygings of dalings in die markprys te versag en gelyk te maak.

Produsente besluit dikwels om hul aartappels vinniger uit te haal om die voordeel van hoër gehalte te benut. Dit kan egter teenproduktief wees, omdat 'n buitengewone aanbod die prys skielik skerp kan laat daal.



Talle rolspelers in die aartappelbedryf het die byeenkoms bygewoon. Van links is Edwin Moulden van Prokon, Raymond da Costa en Lindie Lezar van Farmwise-bemaking en verpakking, Etienne Booyens, ook van Prokon, Coetzer Hattingh van Wenpro, Marco Potgieter van Freshmark, en Danie Els van Wenpro.

In die somermaande is Limpopo feitlik die enigste streek wat aartappels bemark. As gevolg van ongewone koue en ryp die afgelope winter, word verwag dat sowat 10% minder aartappels uit die streek sal kom wat sowat sewe miljoen sakkies aartappels minder as die langtermyn gemiddeld is.

Verpakking en sortering

Markagente het op die inligtingsdag gesê daar is kopers wat bereid is om meer te betaal vir goeie, gesonde aartappels van dieselfde klas wat sorgvuldig gesorteer en verpak is. Dit vergemaklik herverpakkers se taak en bied aan kleinhandelaars die geleentheid om aan kieskeurige kopers se behoeftes te voldoen.

Produsente is aangeraai om moeite met hul sortering en verpakking te doen en, waar moontlik, die nuutste sorteringstoerusting te gebruik om vir hulle 'n handelsmerk te vestig wat oor die lang termyn beter pryse op die markte kan beteken. Die beste 50% van die aartappels op markte verskuif maklik, terwyl agente sukkel om die swakker helfte van hul voorraad verkoop te kry.

Meganiese skade maak dit moeilik om hierdie aartappels te verkoop. Produsente moet bepaal waar die skade aangerig word en moeite doen om die probleem reg te stel. Dit wil voorkom asof die probleem meer voorkom waar aartappels in massa hanteer word. Die verskil in waarde per vrag aartappels wat min of baie meganiese skade het, kan van R17 000 tot R35 000 beloop.

Produsente moet hul markte leer ken. Op sekere tye in 'n maand en in 'n jaar is die vraag na aartappels hoër as normaalweg. Dit geld aan die einde van die week en ook aan die einde van die maand wanneer verbruikers hul salarisse ontvang en voorrade aanvul. In November is die vraag na aartappels vir verwerking as droë skyfies gewoonlik groter as in ander maande.

Die mark bepaal die tempo

Die bemaking van aartappels deur kettingwinkels en ander handelaars, is ook meer aggressief teen die einde van die maand. Produsente kan daarby baat vind om dié gegewens in samewerking met hul bemakings-agente in ag te neem wanneer hulle die tempo waarteen aartappels uitgehaal gaan word, beplan.

Hou ook in gedagte dat verbruikers al hoe meer bewus raak van kospryse en dus meer selektief kos aankoop. Probeer om by al hierdie faktore aan te pas, ten einde die vloei na markte só te beplan, dat daar nie onnodige ooraanbiedings ontstaan nie. Kommunikasie is alles. Al die deelnemers in die waardeketting moet inligting betyds deel om doelgerigte beplanning deur die hele produksie- en bemakingseisoen te doen om 'n winsgewende, volhoubare bedryf tot voordeel van almal in stand te hou. 📍

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Vivo Boerebemarkingsdag: The biggest agricultural expo in Limpopo!

By Ané du Plessis, Potatoes SA

The annual Vivo Boerebemarkingsdag is a major agricultural expo held in South Africa's Limpopo province.

This event serves as an important platform for local producers to showcase their agricultural products, services, and technologies. The expo attracts many visitors including producers, agricultural professionals, investors, and buyers from different parts of the country.

The event features a diverse range of exhibitors, including livestock breeders, farm equipment manufacturers, fertiliser and pesticide suppliers, and many more.

One of the highlights of this expo is the informative seminars and workshops conducted by experts in the agricultural industry. These sessions cover various topics such as sustainable farming practices, crop management, and marketing strategies. These informative discussions provide valuable insights and knowledge to farmers and agricultural professionals, helping



One of the highlights of the Vivo Boerebemarkingsdag is the informative seminars and workshops conducted by experts in the agricultural industry.

them to improve their farming techniques and business practices.

Despite the scorching hot weather, with temperatures reaching up to 40°C, the expo still saw an average of 2 500 visitors each day.

Potatoes SA meeting

One of the major events that takes place at the Vivo Boerebemarkingsdag is the annual meeting hosted by Potatoes SA. This meeting brings together farmers, market agents, retailers, and pre-packers to collaborate on strategic plans for the potato industry. This meeting creates a valuable opportunity for the entire value chain to come together and communicate face-to-face, paving the way for better cooperation and an understanding of the needs and challenges of each stakeholder.

These types of meetings are of immeasurable value

to potato producers as it ensures the sustainability of the potato industry in South Africa. By working together, the industry can identify and address issues such as production, marketing, distribution, and develop strategies to overcome them. This ultimately benefits all stakeholders involved and contributes to the growth and success of the potato industry in the country.

Economy and climate

Potatoes SA would like to express our sincere gratitude to Nedbank for providing us with the invaluable expertise of Crystal Huntley. During her presentation titled "The economic prospect of enduring amidst a harsh climate", she shed light on the challenges that the economy is currently facing and will continue to face in future.


Her presentation was an eye-opener that provided us with a better understanding of the economic climate we operate in. We are grateful for the opportunity to gain insights from such a knowledgeable expert, and we believe that the information shared will help us navigate the challenges ahead with greater confidence. ©



Potatoes SA held an annual meeting during which producers were able to network with other role-players in the potato value chain.

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



Spiromat 240 SC
 IRAC: 23
 Dosage rate: 150 mL/ha
 Pests:
 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



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



TebuCure 250 EW
 FRAC: 3
 Dosage rate: 75 mL/100 L water
 Minimum of 375 mL/ha
 Diseases:
 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
 Diseases:
 Grey mould



Protector 400 SC
 FRAC: 9
 Dosage rate: 150 mL/100 L water
 Minimum of 750 mL/ha
 Diseases:
 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
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 (*Pectobacterium*) in water



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 Gangrene
 Black scurf (suppression)
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Market monitor: The first 46 weeks of 2023 at fresh produce markets

By Lynné Roos, Sibabaliwe Rulumeni and Dikgetho Mokoena, Potatoes SA

Until week 39 of 2023, prices on the country's fresh produce markets (FPMs) had consistently been on the rise, reaching unprecedented highs. Subsequently, a phase of stabilisation followed, characterised by sporadic price hikes in specific weeks and an overall acknowledgement of declining prices by the end of week 46.

Figure 1 portrays the weekly average prices for a 10 kg bag of potatoes that had reached R73.15 at the conclusion of week 46. Since the start of October, the average prices showed a decline, dropping from R127.29 to R82.70 by the final week of October. However, in the first two weeks of November, prices rose to R93.48, only to drop again to R73.15 by the 46th week.

This overall decrease of 42.5% from week 40 to 46 coincided with an increase in deliveries, attributable to regions such as the Eastern Cape entering the market season. Additionally, there was a modest increase in deliveries from the Sandveld during October. Although

there was an increase in deliveries, it was still lower than the previous year, resulting in a significant shortfall of 1 454 546 x 10 kg bags in the current year for the same period.

Daily levels and prices

Figure 2 illustrates the daily average stock levels and corresponding daily average prices for the first 46 weeks of 2023. In turn, Figure 3 provides a comparative analysis of the average stock levels for each month as opposed to the corresponding months of the previous year. In November, daily average stock levels across all national FPMs amounted to 719 000 x 10 kg bags, a decline of 171 000 bags compared to the same month last year and an increase of 483 000 bags compared to October 2023.

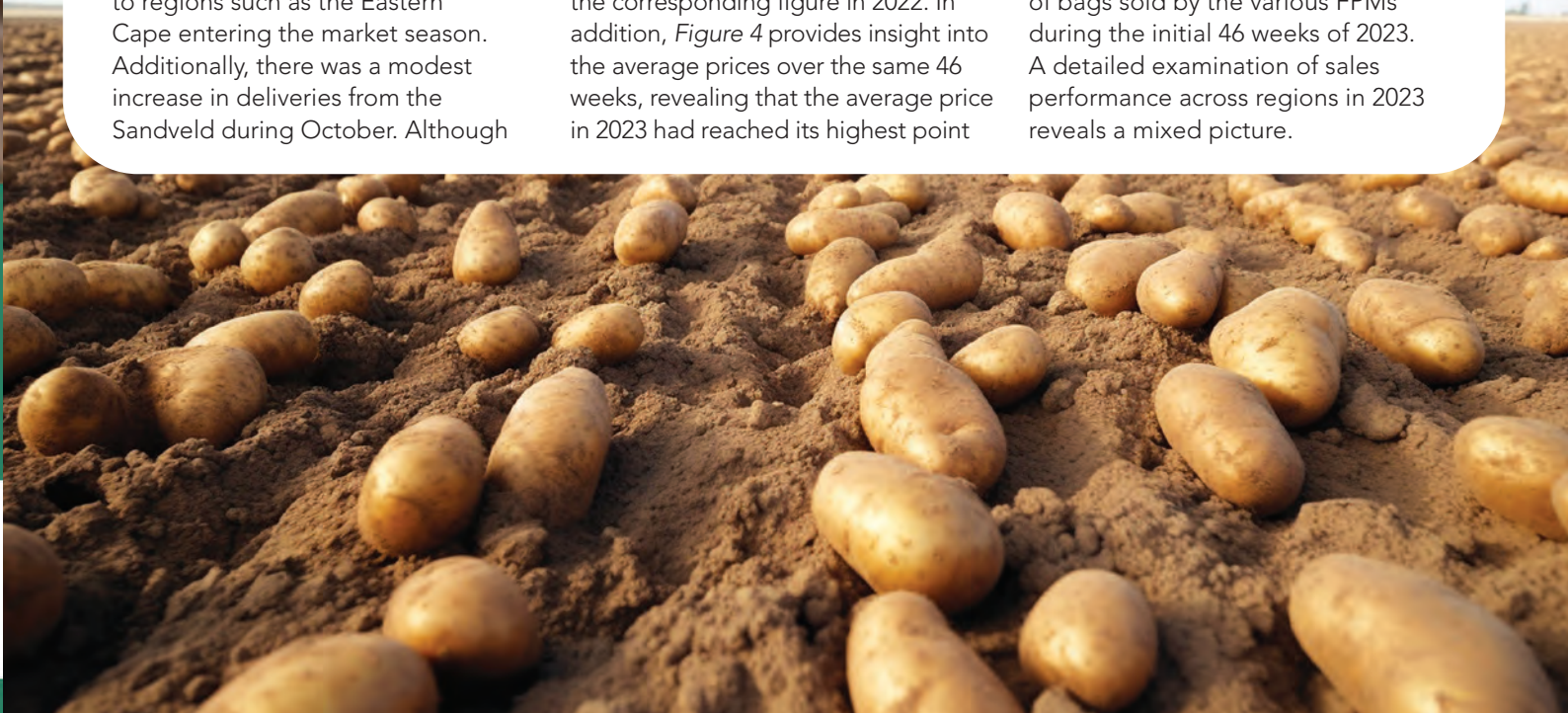
Figure 4 outlines sales performance on the FPMs throughout 2023, showing a 12% decrease compared to the corresponding figure in 2022. In addition, Figure 4 provides insight into the average prices over the same 46 weeks, revealing that the average price in 2023 had reached its highest point

in the past five years. Moreover, sales on the FPMs after the first 46 weeks of 2023 were 12 million 10 kg bags less than the five-year average. At the time of writing it was anticipated that the lagging effect due to the various challenges faced throughout the year would persist until year-end.

Potato sales

Figure 5 provides an overview of the monthly sales at the FPMs starting 2020 to date. In November, sales dropped below the eight million 10 kg bags threshold to 4.7 million 10 kg bags, compared to October's sales of 7.3 million 10 kg bags and September's sales of 7.3 million 10 kg bags. When comparing November 2023 with those of November 2022, a significant decrease of 52% is observed. However, it was anticipated to increase slightly by the end of November 2023.

Table 1 contains the number of bags sold by the various FPMs during the initial 46 weeks of 2023. A detailed examination of sales performance across regions in 2023 reveals a mixed picture.



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 Vegetable 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
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Figure 1: Weekly average prices on all FPMs of all classes and sizes. (Source: RSA file)

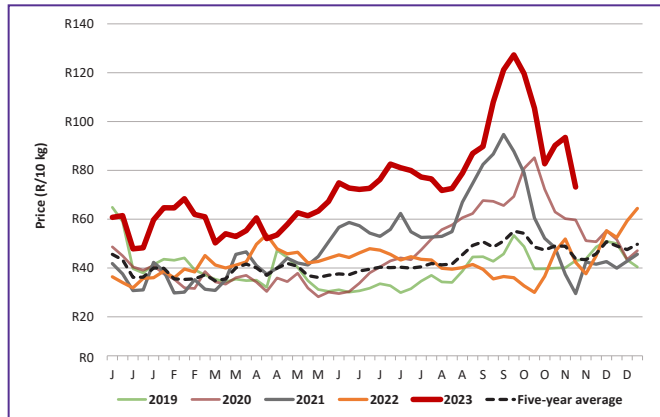


Figure 2: Daily average stock levels compared to the daily average price of all classes and sizes. (Source: Joburg daily price and stock)

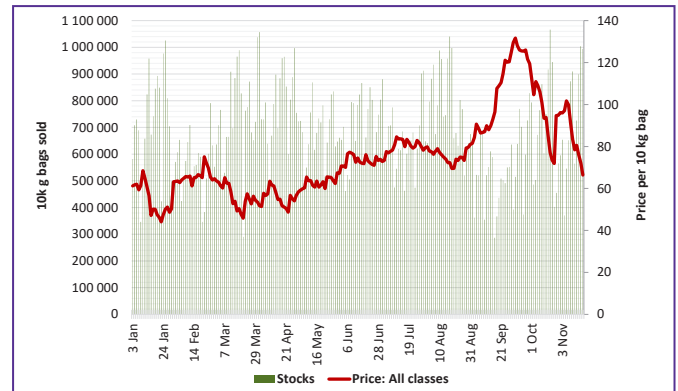


Figure 3: Average daily stock levels per month in 2022 versus 2023. (Source: RSA file)

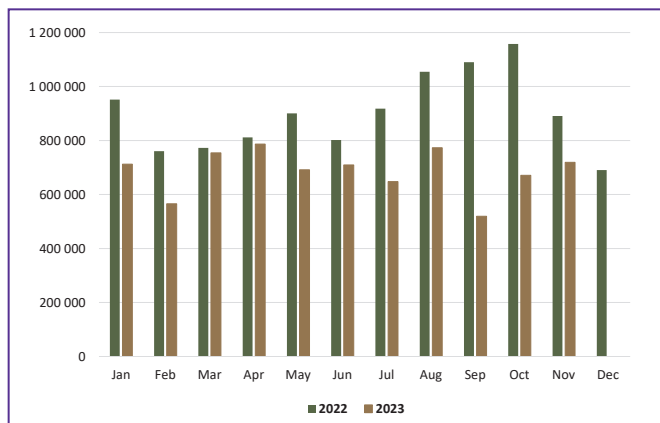


Figure 4: Cumulative number of 10 kg bags sold at FPMs until week 46 of every year (average price).



Table 1: Sales at FPMs until week 46 of 2023.

Market	Number of bags 10 kg	% of total	Avg price (R/10 kg)	Percentage of sales at FPMs			
				Class 1	Class 2	Class 3 & 4	Class 1 M
Johannesburg Market	35 128 609	41%	72.45	81%	13%	6%	20%
Tshwane Market	15 806 061	18.4%	72.43	72%	19%	8%	18%
Durban Market	8 227 998	9.6%	71.39	83%	11%	6%	27%
Cape Town Market	7 042 177	8.2%	78.28	78%	18%	4%	25%
Springs Market	4 623 526	5.4%	68.79	71%	18%	11%	16%
Bloemfontein Market	2 562 270	3%	74.62	65%	24%	11%	18%
East London Market	2 303 802	2.7%	75.21	76%	15%	9%	23%
Klerksdorp Market	2 188 307	2.6%	70.96	71%	18%	10%	17%
Welkom Market	2 008 892	2.3%	69.75	64%	20%	16%	14%
Port Elizabeth Market	1 970 416	2.3%	70.58	69%	19%	12%	24%
Pietermaritzburg Market	1 846 243	2.2%	66.62	68%	21%	11%	17%
Vereeniging Market	677 101	0.8%	70.2	73%	18%	9%	15%
Witbank Market	439 089	0.5%	73.02	74%	15%	11%	15%
Kimberley Market	404 524	0.5%	67.9	72%	18%	10%	25%
Nelspruit Market	325 380	0.4%	81.68	83%	12%	5%	11%
George Market	154 442	0.2%	72.59	61%	25%	14%	16%
Kei Market (Umtata)	10 083	0.0%	28.14	0%	0%	0%	0%
Total	85 718 920	100%	72.51	77%	16%	7%	20%

The five leading FPMs during this period collectively accounted for 83% of total FPM sales. The average price for each market, encompassing all classes and sizes, is also outlined in Table 1.

Among the top five FPMs, Durban and Springs markets exhibited average prices that were R1.19 and R3.72 lower respectively than the countrywide average yearly price of R72.51. In terms of market composition, Durban and Johannesburg markets showed the highest proportion of Class 1 bags in their total sales, accounting for 83 and 81% respectively, representing the

highest percentages among the top five markets.

Price fluctuations and sales

Figure 6 provides insights into the year-on-year price fluctuations of the leading five markets. In all these markets, prices escalated by more than 50% compared to the same period the previous year. Notably, the Springs market witnessed the most pronounced percentage surge, registering a price increase of 80.9%.

Conversely, Figure 7 depicts the year-on-year fluctuations in sales volumes across the top five markets.

The Durban market stands out as the sole market that demonstrated the least decline in sales during the same period compared to the previous year. The Springs market, on the other hand, displayed the biggest decrease year-on-year among the top five markets.

In Figure 8, a comprehensive view of sales performance across various regions in 2023 compared to 2022 unveils an intriguing pattern. Five regions experienced a decline in sales of 10 kg bags on the FPMs, while the Northern Cape was the only region that witnessed an upswing in sales

Figure 5: Monthly sales at FPMs from 2020 to 2023 (all packaging converted to 10 kg bags).

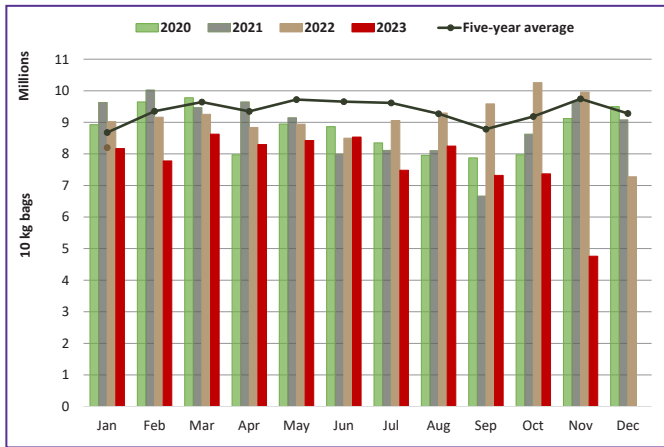


Figure 6: Year-on-year change at the top five markets from 2022 to 2023.

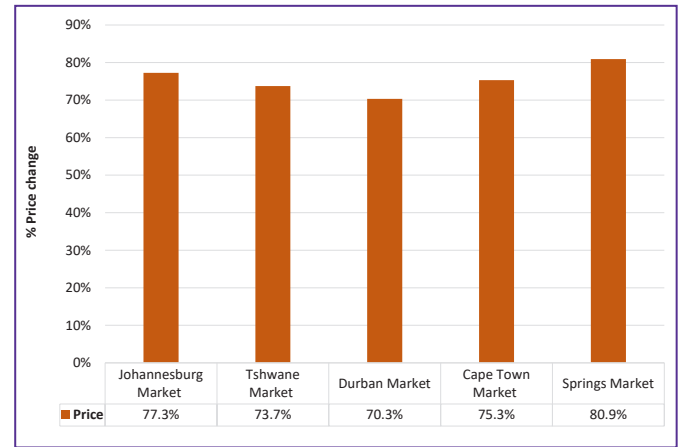


Table 2: Sales per region at FPMs until week 46 of 2023.

Region	Number of bags 10 kg	% of total	Avg price (R/10 kg)	Percentage of sales at FPMs			
				Class 1	Class 2	Class 3 & 4	Class 1 M
Limpopo	22 972 557	27%	91.01	88%	10%	3%	23%
Western Free State	19 507 741	23%	69.68	75%	17%	8%	23%
Eastern Free State	14 143 573	16%	60.6	70%	18%	12%	14%
Sandveld	5 157 954	6%	79.26	78%	20%	2%	25%
North West	4 860 447	6%	61.53	79%	13%	8%	16%
Northern Cape	4 336 890	5%	71.27	57%	24%	19%	14%
KwaZulu-Natal	4 206 714	5%	59.67	79%	16%	4%	14%
Southwestern Free State	4 108 159	5%	64.34	78%	12%	10%	21%
Gauteng	1 799 466	2%	53.83	83%	12%	5%	23%
Other regions	1 698 029	2%	54.96	42%	49%	9%	13%
Northern Cape	1 256 444	1%	58.79	67%	23%	11%	24%
Ceres	697 474	1%	70.79	82%	9%	8%	25%
Mpumalanga	630 027	0.73%	54.36	67%	24%	9%	15%
Eastern Cape	295 031	0.34%	86.6	72%	14%	14%	19%
Southern Cape	48 065	0.06%	54.59	84%	9%	7%	32%
Southwestern Cape	349	0.00%	29.4	0%	0%	0%	0%
Total	85 718 920	100%	72.51	77%	16%	7%	20%

Figure 7: Top five markets year-on-year change in bag sales.

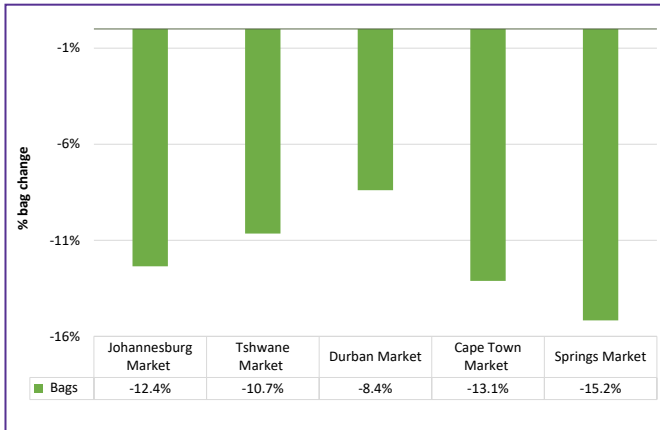
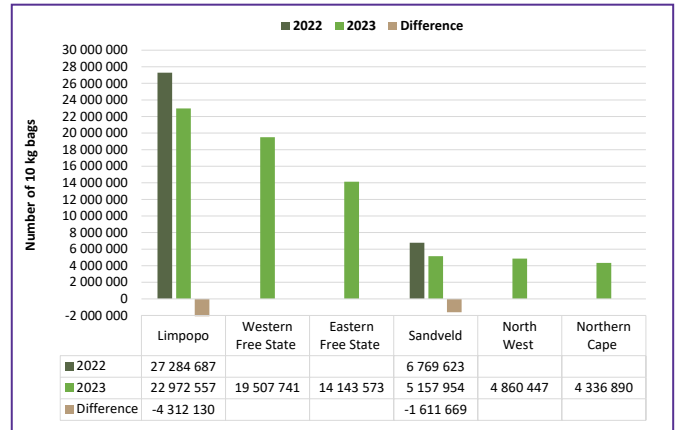


Figure 8: Sales performance across regions during the first 39 weeks in 2022 compared to 2023.



during the first 46 weeks of 2023. This divergence highlights the diverse trends that played out across regions within this period.

In terms of market presence on the FPMs, Limpopo, the Western Free State, and Eastern Free State – the three largest regions in terms of share during the initial 46 weeks –

accounted for 66% of overall potato sales, as detailed in Table 2.

Additionally, Table 2 depicts the percentage composition of Class 1, 2, 3, and 4 potato supplies for each region during this period.

Noteworthy is the observation that in November, Class 1 sales constituted 77% of total sales.

This signifies a positive trend in marketing superior quality potatoes. Among the production regions, 12 recorded Class 1 sales percentages exceeding the 70% threshold. Limpopo led the way with the highest percentage of Class 1 sales at 88%, followed by the Southern Cape (84%) and Gauteng (83%).

For more information, send an email to Lynné Roos at lynne@potatoes.co.za or visit www.potatoes.co.za

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World potato markets at the end of 2023

By PJ Nell, Potatoes SA

In August 2023, North American potato supplies were increasing, and the United States (US) experienced the second-largest monthly volume of fry exports. Despite an almost 3% dip in retail sales volume, the value surged by 17%.

Canada was set for a record harvest, easing potential supply issues. Germany's potato market remains robust, and Spain saw increased production despite planting the smallest area. In the US, fry and frozen product exports showed signs of recovery for the 2023/24 season. While Asian Pacific markets faced pressure,

South Africa and Australia continued to demand more fries.

US fry prices surged by nearly 30% last year, reaching a 12-month average of US\$1 586/tonne. Despite a decline in demand from key Asian Pacific markets, exports to China doubled. Mexico witnessed increased demand, with ware exports rising by 10.6%.

The US imported 103 870 tonnes of fries in August, while its retail volume sales dipped but values soared, reaching a new record of US\$16.941 billion in the year ending June 2023.

Lamb Weston experienced a 47.9% increase in sales, reaching US\$1.665 billion in the July to September period. North American

Figure 1: Canadian fry exports (tonnes).

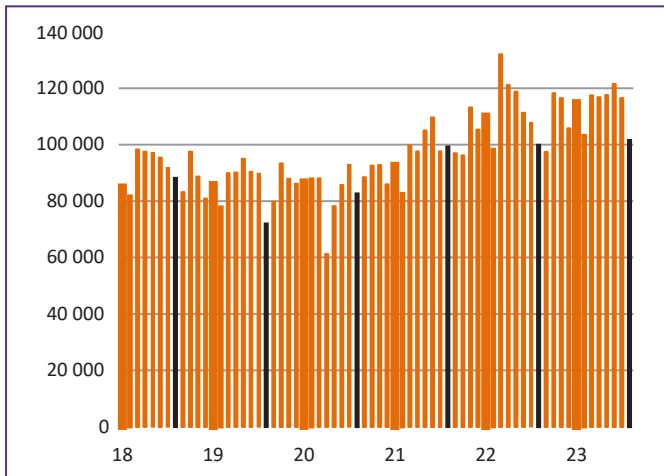


Figure 2: Canadian fry exports (Ca\$ million)

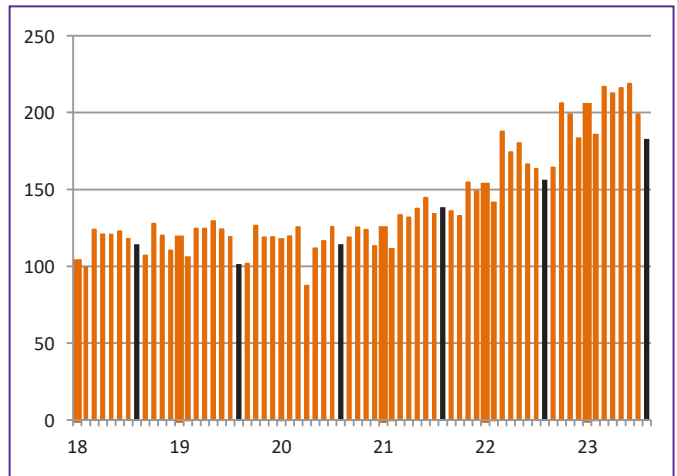


Figure 3: The unit value of Canadian fry exports (Ca\$/tonne).

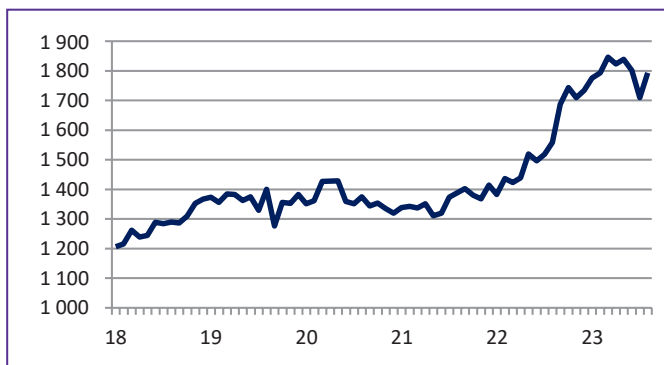


Figure 4: Canadian fry exports, 12-month periods (tonnes).

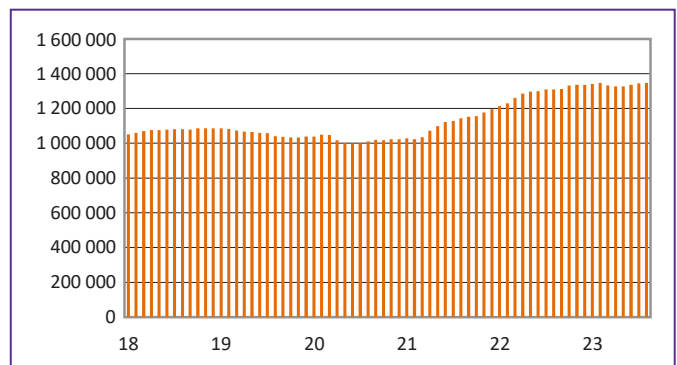


Table 1: French table market price quotations, 2022/23 (€/tonne). (Source: RNM)

	2023/24 05 Oct	2023/24 28 Sep	2023/24 21 Sep	2023/24 14 Sep	2022/23 Oct 03	2021/22 Sep
Nord Basin						
Washed, Cat I, 40-75 mm, 5 kg pack	530	530	560	580	450	320
Washed, Cat I, 40-75 mm, 10 kg pack	520	520	550	570	440	310
Washed, Cat I, 50-75 mm, 5 kg pack	540	550	560	600	530	330
Washed, Cat I, 50-75 mm, 10 kg pack	530	540	560	590	520	320
Unwashed, Cat II, 50-75 mm, 10 kg bag	370	400	NQ	450	380	240
Unwashed, Cat II, 60-75 mm, 25 kg bag	450	450	480	480	400	330
France, firm-fleshed varieties						
Red-skinned, washed, Cat I, 35 mm up, 12.5 kg pack	1 050	1 050	1 120	1 120	750	710
Red-skinned, washed, Cat I, 35 mm up, 2.5 kg pack	1 000	1 000	1 100	1 100	730	690
Various, washed, Cat 1, 35 mm up, 12.5 kg	1 050	1 050	1 100	1 100	720	680
Various, washed, Cat 1, 35 mm up, 2.5 kg	980	980	1 050	1 050	720	650

Note: Average prices. Various varieties unless specified. Cat I = Category I. NQ = not quoted.

sales rose by 19%, with a 24% price increase and a 5% drop in volume. International sales surged by 212%, with prices up 18% and volumes up 194%. Lamb Weston raised its earnings target for the year, anticipating sustained demand and a favourable pricing environment. The company remains optimistic about the potato crop in North America and Europe, emphasising strategic investments for long-term growth.

Canada: Export records reached

North American exports have enabled Canada to sustain record levels of frozen fry exports. In August last year, 101 663 tonnes were shipped, a 1.7% increase from

August 2022, with 12-month exports up 2.8% to 1.348 million tonnes. The US accounted for 87.6% of these exports and 88.1% over the year, experiencing a 3% demand increase to 1.187 million tonnes.

Market performance varied, with a 2.1% annual sales increase to Mexico and a significant 19.1% decline in Japanese demand over the year. South Korean sales, however, rose by 22.4%, and the United Kingdom (UK) witnessed a substantial 606% increase in exports to 9 546 tonnes over 12 months.

The US remains the highest-priced market for Canadian fries, with average prices reaching Ca\$1 852/tonne (€1 287 or US\$944) in August.

This compares to Ca\$1 793/tonne (€1 246 or US\$914) for the overall average and Ca\$1 269/tonne (€882 or US\$93) for exports to Taiwan.

Despite challenges such as drought and heavy rain, Canada expected a record national crop of 5.760 million tonnes, a 3.3% increase from 2022. Alberta led with a 17.3% increase to 1.426 million tonnes. Manitoba followed with an 8.1% rise to 1.282 million tonnes, and Saskatchewan saw a 20.6% increase. Prince Edward Island faced wet conditions, resulting in a 1.1% production drop. The eastern Maritime region experienced a 2.8% decrease to 1.936 million tonnes, while Quebec expected a 13.9%

Figure 5: Nord Basin/France price for 40 to 75 mm washable table potatoes (€/tonne).

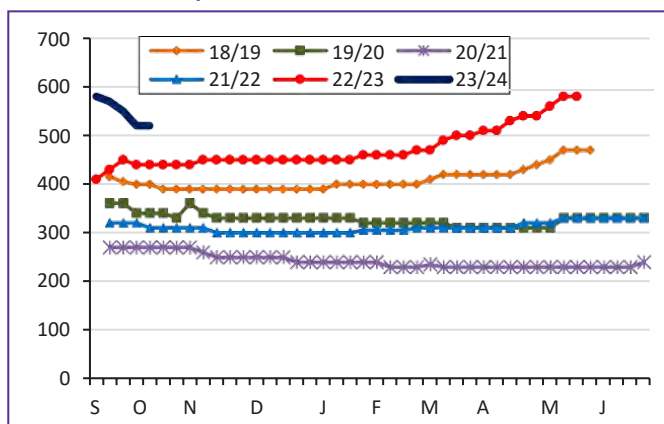
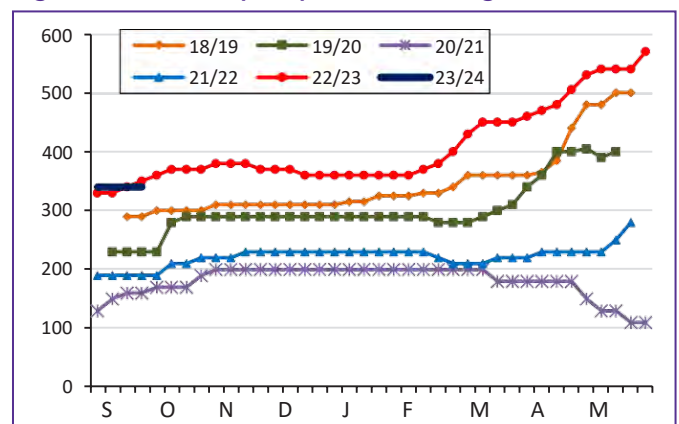


Figure 6: French export price, 40 mm Agata (€/tonne).



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Table 2: French export price quotations, 2023/24 (€/tonne). (Source: RNM)

	2023 05 Oct	2023 28 Sep	2023 21 Sep	2023 14 Sep	2022 03 Oct	2021 Oct
Agata, washable, Cat I, 40 to 70 mm+, 1 tonne	340	340	340	340	350	210
Various, washable, Cat I, 40 to 70 mm, 1 tonne	340	340	340	340	340	180
Red skin, washable, 45 mm upwards, 1 tonne	330	330	330	330	340	190

Note: Average prices. Various varieties unless specified. Cat I = Category 1.

Table 3: Prices of 35 mm fry quality potatoes in France (€/tonne). (Source: RNM)

	2023 10 Oct	2023 03 Oct	2023 26 Sep	2023 13 Jun	2023 6 Jun	2022 10 Oct	2021 12 oct	2020 13 Oct	2019 15 Oct	2018 16 Oct
Bintje	NQ	NQ	NQ	NQ	NQ	NQ	120	30	115	260
Various	100	100	100	525	525	250	120	40	115	260
Fontane	100	100	100	500	500	250	90	NQ	NQ	NQ
Innovator	110	110	NQ	NQ	NQ	260	NQ	NQ	NQ	NQ
Flaking	NQ	NQ	NQ	NQ	NQ	120	NQ	NQ	NQ	NQ

Note: Nord Basin, 35 mm fry quality, unwashed, 360 g underwater weight. NQ = not quoted.

drop in production to 579.646 tonnes due to heavy rain.

France: Rain aids harvesting

Hot weather has slowed the demand for table potatoes in France. Despite initial high season starting prices, table potato prices stabilised. The elevated temperatures deterred shoppers from purchasing potatoes, while growers took advantage of the dry weather to harvest. Maintaining the coolness of lifted potatoes posed a challenge, making the temperature drop a welcome relief.

The northeast of France anticipated some showers which could aid harvesting conditions, although a return to sunny and dry weather was also forecast, accompanied by a decrease in temperatures to highs of 15°C.

Export potato prices for bulk loads of Agta held at €340/tonne, slightly below the levels from the previous year. There was ongoing interest in French potatoes in the country's main export markets, with exporters actively selling at events like the Fruit Attraction show in Madrid. Spain stood out as the most crucial export market for French table potatoes.

Processing potato prices remained steady, standing at €100/tonne for Fontane and other primary processing

types, with a €10/tonne premium for Innovator, as reported by pricing agency, RNM.

Netherlands: Prices stabilise

After weeks of declining prices, there was a sense of optimism as values stabilised and even exhibited signs of increase. The main PotatoNL price quote averaged €230/tonne within a range of €110 to €150/tonne. This reflected a €15/tonne increase from the previous week when the range was €100 to €130/tonne. Prices in other major categories also rose by as much as €25/tonne, indicating heightened competition for free-buy stocks among processors.

While prices were approximately €100/tonne lower than the previous year, they did align with the 2021/22 season when values started to rise post-Christmas. Trial digs suggested yields slightly below the five-year average, but there was a higher-than-average proportion of

50 mm+ potatoes. Dry matters were below the five-year average, impacted by quality issues, including elevated levels of blight.

This left vulnerable potatoes seeking quick market placement, while growers were storing higher-quality material to fulfil later-season contracts or capitalise on anticipated increases in free-buy prices.

Harvesting conditions remained favourable, though cooling hot potatoes to storage temperatures presented challenges.

Belgium: Quality concerns

Belgium continued to grapple with a surplus of free-buy potatoes, exerting downward pressure on prices.

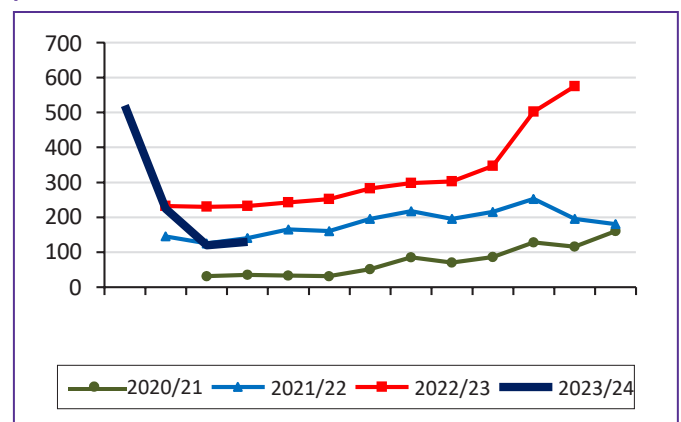
Figure 7: Average main PotatoNL processing potato price in €/tonne.

Table 4: Dutch physical market quotation by PotatoNL, 2023/24 (€/tonne). (Source: PotatoNL)

	2023 Week 41 09 Oct	2023 Week 40 02 Oct	2023 Week 39 25 Sep	2022 Week 41 10 Oct	2021 Week 41 11 Oct
Cat 1, Processed in the Netherlands, Belgium and Germany	110-150	100-130	110-130	205-265	120-135
Cat 2, Processed elsewhere	NQ - NQ	NQ - NQ	NQ - NQ	260-265	150-170
Fresh fries, Agria etc.	NQ - NQ	NQ - NQ	NQ - NQ	250-265	150-170
Fast food fries, Innovator etc.	130-130	130-130	120-130	250-265	135-135
Regular fries, Fontante, Bintje etc.	110-150	100-110	110-110	205-255	120-130
40 to 50 mm for fries	110-130	100-120	110-130	150-170	80-120
Export: Field crops, 35 mm bulk	210-230	230-260	240-275	220-240	150-160
Flakes: Underwater weight, >360 g	80-90	80-100	90-100	115-150	60-75
Livestock	45-45	35-45	50-50	40-55	20-45

Better-than-expected yields helped to meet contract requirements but concerns regarding quality prompted growers to swiftly move their at-risk stocks. Export potato demand provided some support to the market. Despite the surplus, there was an anticipation that prices would rise once harvest supplies were depleted, and growers wanted to fulfil their contract commitments.

The Belgapom free-buy price for Fontane and Challenger remained at €100/tonne, with supply meeting demand. However, the PCA/Fiwap price was slightly more bearish, averaging €90/tonne for Fontane and Challenger within a range of €80 to €100/tonne. Bintje, used for fresh fries in Belgian consumption, commanded

a premium with an average price of €112.50/tonne in a range of €100 to €125. Innovator and Agria had no quoted prices.

Prices were lower than those in the 2022/23 and 2021/22 seasons, though similar to values at the same point in the 2019/20 season. The average free-buy Fontane price remained approximately €75/tonne below the average contract price. If this trend persisted during growers' planting decisions for 2024, it may have influenced planting choices in spring.

Germany: Strong demand continues

Germany continued to experience strong demand for processed potato products, with usage just below the

record of the previous season in 2022/23, according to figures from the national statistics office, Destatis. In the 12 months to June 2023, 2.2 million tonnes of potatoes were used for processing, a 0.8% decrease from 2021/22.

Usage for frozen fries and other products was at 1.225 million tonnes, down by 1.8% from 2021/22. Chips/crisps usage decreased by 1% to 393 000 tonnes, while usage for chilled products increased by 1.7% to 582 000 tonnes. Last year saw no usage for dehydrated products, which was the largest category in the 2021/22 season at 1.592 million tonnes.

Production of frozen, chilled, chip/crisps, and potato salad products reached 1.121 million tonnes,

Figure 8: Belgapom average Fontane free-buy price in €/tonne.

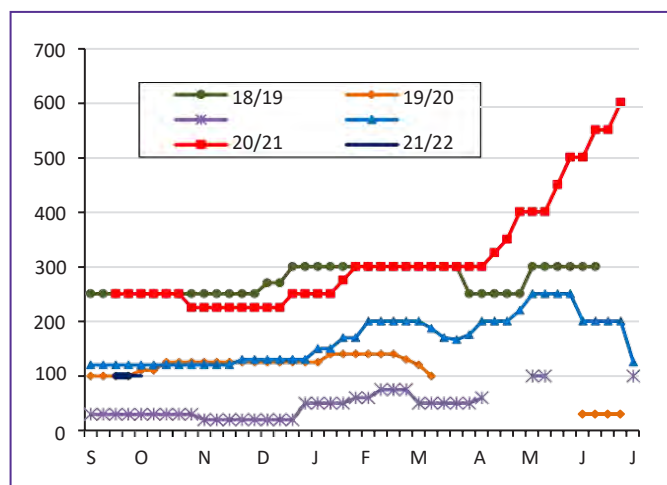
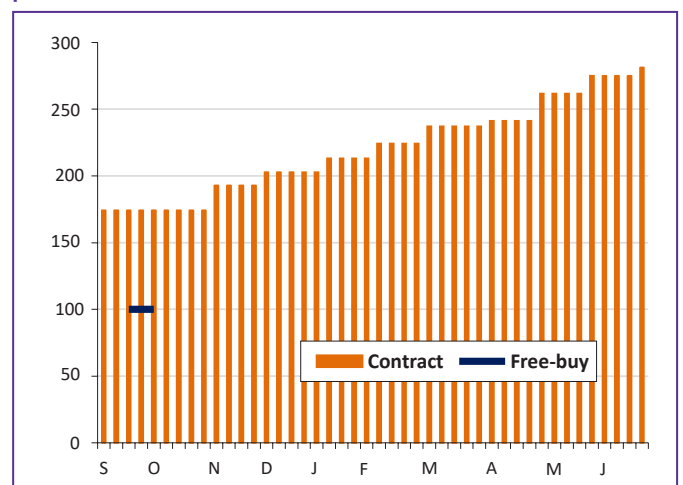


Figure 9: Belgapom Fontane free-buy and contract prices in €/tonne 2023/24.



a record for the group of four and a 4.9% increase from the previous year. Potato salad production more than doubled to 69 000 tonnes, with an 8.7% increase in chilled products to 324 000 tonnes. Chip/crisp output decreased by 0.9% to 116,000 tonnes, while frozen fries and other products decreased by 1.9% to 612 000 tonnes.

Prices for frozen fries rose by 40%, chip/crisp prices increased by 25%, chilled products prices rose by 21%, and potato salad prices saw a 20% increase.

Processing potato prices remained steady, with the lowest price quote by the Rhineland organisation at €100/tonne. Harvesting progressed well with good conditions reported across the country. Some table potato lifting was completed. The forecast was for some showers, which should not significantly delay harvesting and may have helped soils that were drying out. However, the favourable weather for harvesting was not conducive to promoting table potato consumption.

Spain: Price decrease anticipated

Spain witnessed a bigger middle-season potato harvest in 2022, reaching 835 437 tonnes from 28 708 ha, a 2.4% increase compared to the previous year. The average yield for the middle season crop was 29.1t/ha, marking a 6.6% increase from the previous year. The early potato harvest, however, was revised downward to 397 767 tonnes from

12 914 ha, with an average yield of 30.8t/ha, a 3.5% decrease from the previous year.

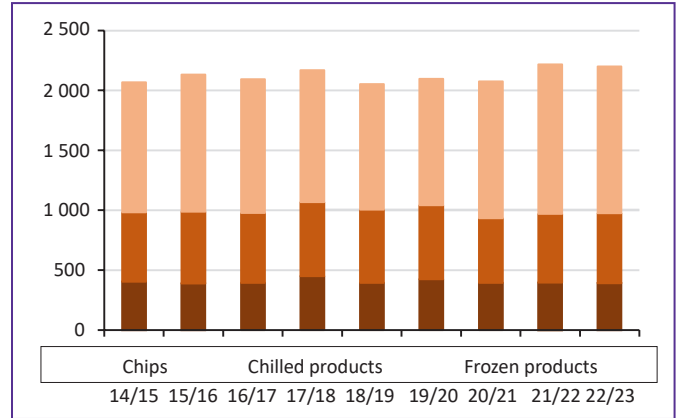
Late-season potatoes in Spain were also revised downward to 17 278 ha but still recorded a 1.1% increase compared to the previous year. Castilla y León, the main producing region, reported 11 419 ha of late potatoes, a 3.1% increase from the previous year.

Despite the revisions, the total Spanish potato area was at 62 052 ha, 2.3% below the previous year and the smallest on record.

The ex-farm potato price in Spain decreased by 1% to €365.20/t in the week ending 1 October, the second-highest price for that time of the year since 2018. Prices at Lonja de León decreased, with all varieties sold at €300/t except for Agria at €330/t on 4 October. This price decline was attributed to French potatoes entering the Spanish market.

Emiliano Marcos, the commercial manager at Interagro de Patatas in Castilla y León, anticipated further decreases in potato prices in the free-buy market due to the pressure from France to sell potatoes with poor quality across Europe.

Figure 10: Potato usage by processed category in '000s tonnes in the year ending June. (Source: AMI and Destatis)



Portugal: Potted plants promoted

In Portugal, the average ex-farm price of white-skinned ware potatoes stood at €300/t in the week ending 1 October, remaining consistent with the previous week. However, it reflected a 20% decrease compared to the same week the previous year and a 17.6% increase compared to the average price in the triennium from 2019 to 2021, according to SIMA-GPP.

Specifically, the ex-farm price of ware potatoes was €300/t at Guarda, Beira Litoral, and Entre Douro e Minho markets, while it was €400/t at Viseu market in the week ending 8 October.

Meanwhile, Elsner Pac, a German breeder and producer of ornamental plants, introduced a new method of planting potatoes in Portugal. The company's Portuguese subsidiary in the Peninsula de Setúbal region is producing potted potato plants,

Figure 11: Spanish potato area and average yields. (Source: Ministry of Agriculture)

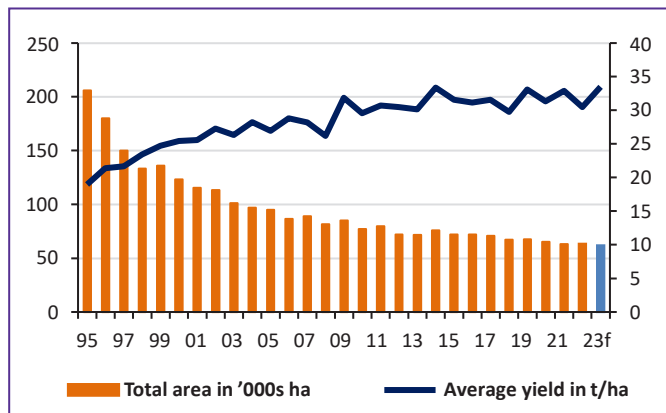


Figure 12: Spanish potato production in '000s tonnes.

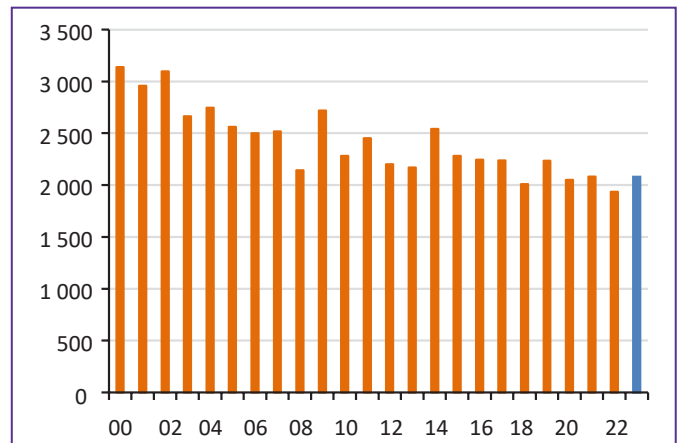


Figure 13: Australian monthly fry imports (2020 to 2023) in tonnes.

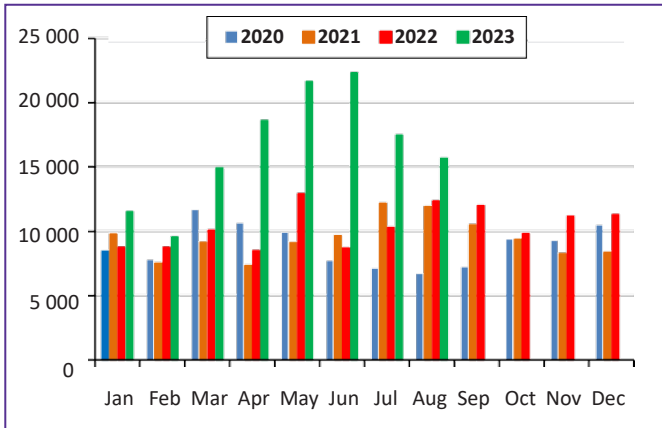


Figure 14: Australian fry imports (tonnes).

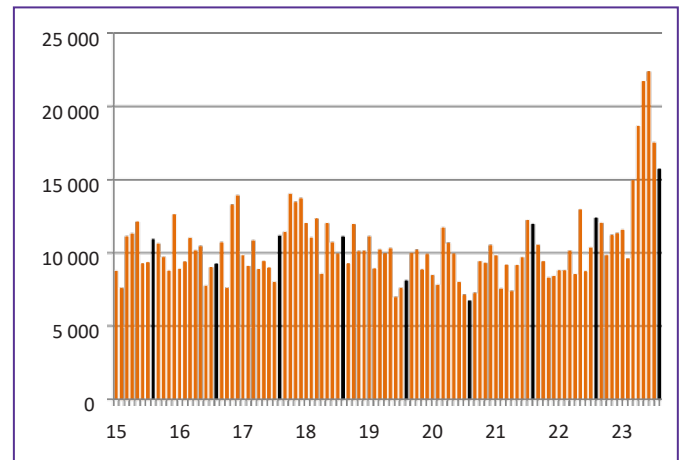


Figure 15: Australian fry imports (Au\$ million).

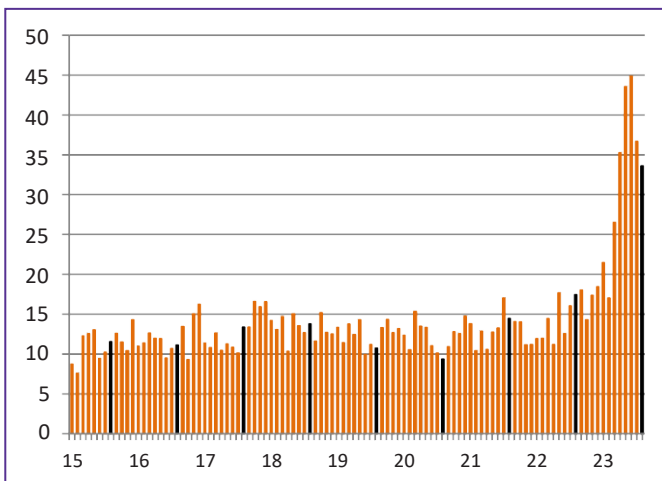


Figure 16: Unit value of Australian fry imports (Au\$/tonne).

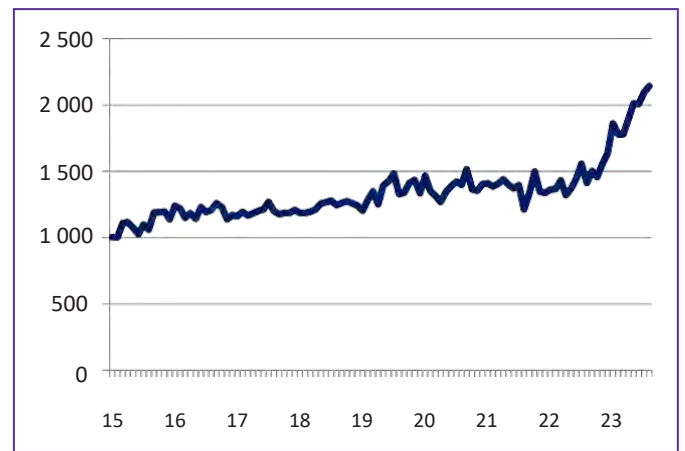
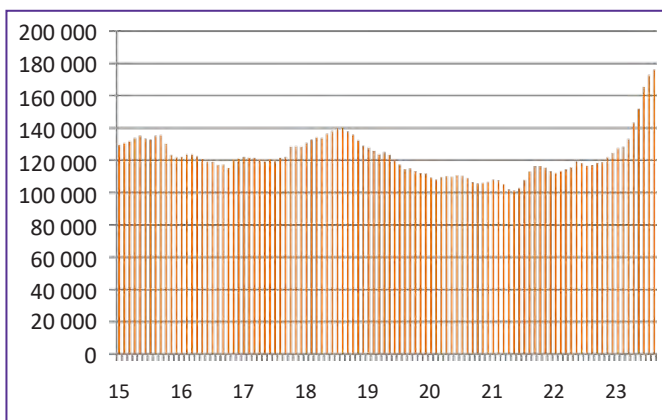


Figure 17: Australian fry imports, 12-month periods (tonnes).



including gourmet varieties with blue and purple skin and flesh. These potted plants can fetch up to £5.45 a pot in the UK.

Sérgio Figueiredo, manager at Elsner Pac Portugal, notes that while rooted plants were 5% less

field trials in Portugal and Spain to compare the performance of potatoes produced with rooted plants versus seed, and the company is seeking producers to host these trials. In addition to potato plants, Elsner Pac

productive, they feature more uniformed tillers, grow more quickly and have a production cycle four to five weeks shorter than seed potatoes. This approach leads to savings in water, energy and pesticides.

Elsner Pac Portugal aims to conduct

Portugal also produces 45 million cuttings of ornamental, aromatic, and potato plants.

UK: Bagged potatoes in demand

Divergent weather conditions have significantly impacted the potato industry. Southern regions experienced dry and very warm conditions, with temperatures exceeding 25°C, while Scotland faced heavy rainfall, reaching more than 170 mm in some areas.

Some eastern growers in the UK had to irrigate before harvesting due to dry soils, but favourable conditions in England allowed for steady progress. Yields were reported to be around average and better than anticipated given the late planting season.

Growers were primarily focussed on storing potatoes rather than selling them, helping to maintain prices. Maincrop prices ranged from £200

to £370/tonne, as per Potato Call's European and UK Review. Prices were expected to increase further throughout the season, particularly if there were supply issues from Scotland.

The warm and sunny weather in England positively impacted fish and chip sales at the end of October, reinforcing demand for bagged potatoes, which were fetching up to £300/t depending on location and variety.

Scotland anticipated to experience a welcome period of drier weather.

Australia: High fry prices

Frozen fry and other product imports in August hit a five-month low but remained 27% higher than in August 2022, totalling 15 692 tonnes. Annual imports reached a new all-time high of 176 044 tonnes, marking a 50.5% increase compared to 2021/22.

Despite the small quantity, importers were willing to pay exceptionally high prices for frozen

fries, reaching a record price of Au\$2 142/t (€1 434 or US\$794) in August, representing a 51.6% increase from the same month in 2022.

The total value of imports doubled in the year ending August 2023 to Au\$329.059 million (€198.950 or US\$209.750).

Belgium has significantly benefited from Australia's demand for frozen potato products. Imports from Belgium doubled in August 2023 compared to August 2022, reaching 6 949 tonnes or 44% of the total. Over the year, imports from Belgium surged by 133% to 68 249 tonnes, constituting 39% of the total. Despite not being a low-cost supplier, Belgian sales growth remained strong.

In August, the average price of Belgian fries was Au\$2 315/tonne (€1 400 or US\$1 476), marking a 42.5% increase from the previous year but 8.1% less than the average and 38% more than the lowest-priced supplier, France.

Dutch imports increased by 29.6% throughout the year and continued to rise in August. However, New Zealand imports, despite being among the lowest-priced products and covering a shorter distance, fell by 11.7% in the year ending August compared to the previous 12 months and 68.1% lower than in August 2022.

Smaller suppliers with modest bases experienced substantial increases, with French imports soaring by nearly 7 000% to 12 044 tonnes, while UK trade increased by almost 8 000% to 1 935 tonnes.

Due to a lack of domestic supplies resulting from challenging harvests, Australian exports continued to decline. In August 2023, only 823 tonnes were exported, representing a 23.7% decrease from August 2022, and annual exports were down 26.2% to 9 031 tonnes. The average price of exports increased by 15.7% to Au\$2 372/t (€1 434 or US\$1 512) between August 2022 and August 2023. 

For more world potato market information, visit www.potatoes.co.za.

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Pepper ringspot-virus onder die vergrootglas

Deur Dirk Uys, Aartappels SA, en dr Lindy Esterhuizen, Landbounavorsingsraad

Die pepper ringspot-virus (PepRSV) is vanjaar in verskeie aartappel-produksiegebiede waargeneem, insluitend Limpopo, Vrystaat, KwaZulu-Natal, Noordwes en die Noord-Kaap. Die Landbounavorsingsraad (LNR) se Navorsingsinstituut vir Plantbeskerming by Roodeplaat, onderneem tans 'n landswye opname om die verspreiding van die virus te bepaal.

Die teenwoordigheid van die siekte is in die Januarie/Februarie 2023-uitgawe van *CHIPS* aangemeld toe die Onafhanklike Sertifiseringsraad vir Aartappelmoere in samewerking met Aartappels SA, die Suid-Afrikaanse Aartappelsertifiseringsdienste, LNR, Departement van Landbou, Landelike Ontwikkeling en Grondhervorming (DALRRD), Plantovita en PathSol,



Hierdie aartappelknolle toon (a) eksterne kringe en (b) interne vlekke veroorsaak deur tabakratelvirusinfeksie. (c) vergelying van blare veroorsaak deur PepRSV, en (d) interne vlekke ook veroorsaak deur PepRSV.

die teenwoordigheid van PepRSV bevestig het.

Alhoewel die PepRSV-simptome reeds in die verlede waargeneem is, is dit eers in 2020 bevestig. Die siekte is ook vanjaar deur dr David Read van die Universiteit van Pretoria se Instituut vir Voedsel- en Landboubiotegnologie op sonneblom aangemeld.

Wat veroorsaak pepper ringspot?

PepRSV is een van drie virusspesies in die tobavirus-genus. Dit is nou verwant aan die tabakratelvirus (TRV) en *pea early-browning virus*, beide virusse wat nie in Suid-Afrika voorkom nie.

Simptome

PepRSV is op die blare sigbaar as 'n vergelying (Foto 1c) sowel as op die knolle met ringvlekke en simptome wat gepaard gaan met interne verbruining (Foto 1d). In baie gevalle kan die siekte ook voorkom as 'n simptoomblose, latente infeksie. Foto 1d toon 'n knol met erge simptome, maar die voorkoms van hierdie mate van

simptome is uiters skaars. Die meeste knolle is simptoombloos of toon slegs 'n klein mate van bruin kolle of ringagtige vlekke.

Verspreiding

Die PepRSV-virus is in die 1960's in Brasilië aangeteken en daarna in 2020 in Suid-Afrika. Sy teenwoordigheid in ander dele van die wêreld is onbekend. Verspreidingsmetodes vir tobavirusse sluit in meganiese verspreiding deur saad en stuifmeel op gewasse soos tamaties, rissies en verskeie aalwurmspesies in verskillende dele van die wêreld. Implemente kan ook die virus versprei.

Navorsing toon dat tobavirusse deur die stompwortel-aalwurm (*stubby root nematode* of *Nanidorus minor*) kan versprei. In die geval van PepRSV moet dit egter nog bevestig word. Hierdie evaluasies word ook tans deur die LNR behartig, maar aangesien dit uiters moeilik is om die aalwurms in kolonies te vermeerder met die oog op oordragstoetse, gaan dit nog 'n tydjie neem voordat die resultate beskikbaar is.

Gasheerreëks

Daar is 'n wye gasheerreëks waarop die virus kan voorkom en dit kan soms ook latent teenwoordig wees. Gasheerplante waarop PepRSV wel aangemeld is sluit in knapsekêrel (*Bidens pilosa*), *Chenopodium*



'n Voorbeeld van PepRV op sonneblom. (Bron: dr David Read, Universiteit van Pretoria)

amaranticolor, *Nicotiana clevelandii*, tabak (*Nicotiana tabacum*), bone (*Phaseolus vulgaris*), ertjies (*Pisum sativum*), tamaties (*Lycopersicon esculentum*), rissies (*Capsicum spp.*) en fababone (*Vicia faba*).

Die rol van wetgewing

Dit is belangrik om te beklemtoon dat die *Wet op Landbouplae, 1983* (*Wet 36 van 1983*) ontwikkel is om die verspreiding van nuwe siektes te bekamp. Dit word deur DALRRD se Direkoraat Plantgesondheidsdienste bestuur. Hulle is verantwoordelik daarvoor om 'n besmette perseel waar 'n nuwe siekte teenwoordig is, onder kwarantyn te plaas om die verspreiding te beperk. Hierdie geld ook tans vir PepRV-insidente.

Beheer


Omdat dit onmoontlik is om virus-siektes met gewasbeskermingsprodukte te beheer, moet die verspreiding daarvan beperk word.

Daar is tans nog nie duidelikheid of PepRV deur aalwurms versprei kan word nie. Dit maak egter sin om 'n aalwurmbeheerstrategie te implementeer. Omdat die virus deur plantmateriaal versprei kan word, is dit sinvol om verskillende kultivars van verskillende saadbronne aan te plant om die risiko van saadbesmetting te verminder.

Daar is geen bekende nadelige effek op die verbruiker aangemeld nie; dus is besmette aartappels geskik vir gebruik. As die siekte wel teenwoordig is, kan die volgende maatreëls toegepas word:

- Meld die teenwoordigheid van simptome by die Direkoraat Plantgesondheid aan by epos phytomatters@dalrrd.gov.za.
- Besmette saad mag nie vir saad-doeleindes aangewend word nie. Die geleentheid bestaan dus om besmette saad te bemark, mits bewys kan word dat dit nie as saadaartappels verkoop kan word

nie. Die aanbeveling is dus dat saad vir verwerkingsdoeleindes bemark word.

- Om verspreiding deur die aanplant van plantmateriaal te voorkom, mag besmette saad nie bemark word nie.
- Dit word aanbeveel dat besmette aartappels met 'n anti-uitloopmiddel behandel word. Die produk met die aktiewe bestanddeel, chloorprofam (Reg No: L 6467), is ingevolge die *Wet op Kunsmis, Veevoere, Landboumiddels en Veemedisyne, 1947* (*Wet 36 van 1947*) geregistreer en word deur 'n geregistreerde plaagbeheeroperateur toegedien. 

Vir meer inligting of verwysings, stuur 'n epos aan Dirk Uys by dirk@potatoes.co.za of dr Lindy Esterhuizen by esterhuizenl@arc.agric.za.



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PLANT HEALTH

Cultivating soil health: Vital for potato production

By Dirk Uys, Potatoes SA

Potatoes form part of rotation cycles together with grains and pastures, including maize, soya beans and cereals. For this reason, Potatoes SA and Grain SA have joined forces to address soil health together with researchers from the University of Pretoria, the Western Cape Department of Agriculture (WCDA), and the Agricultural Research Council (ARC).

In the quest for more efficient and affordable potato production systems, the spotlight is turning towards soil health and quality. The definition of soil health and quality is complex as it relates to numerous factors associated with the measurement of its physical, biological and chemical properties. Many debates have taken place and research has been conducted into the measurement of soil health. The ultimate outcome, however, is the ability of healthy soil to produce a viable, healthy, good quality potato harvest.

During the previous season, growers encountered potato quality challenges which are believed to have been triggered by environmental impacts rather than primary diseases. These triggers include fluctuating water levels and water quality during tuber initiation. This was probably also aggravated by a weakening of the soil's biological profile due to the excessive use of broad-spectrum soil-applied crop protection products. These all tend to impact beneficial soil organisms. Pathogens such as *Rhizoctonia solani*, *Streptomyces scabiei* and *Fusarium* spp. manifest through a secondary infection of weakened plants.

What is healthy soil?

The United States Department of Agriculture (USDA) recommends that

healthy soils should function as a living ecosystem by sustaining plant and animal life, and providing crucial functions which include regulating water, filtering pollutants, recycling nutrients and offering physical stability to the plant (Figure 1). This provides a base to suppress plant diseases, improve plant health and improve a plant's ability to recover from stress (Figure 2).

Current research

Two interesting long-term field studies are currently underway in two diverse production areas. The aim is to evaluate the long-term evolution

Figure 1: The base for healthy soils. (Source: USDA)

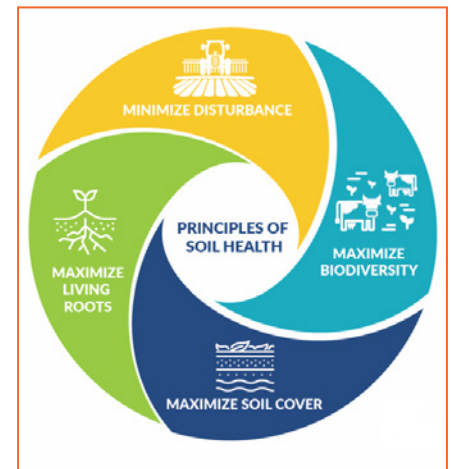
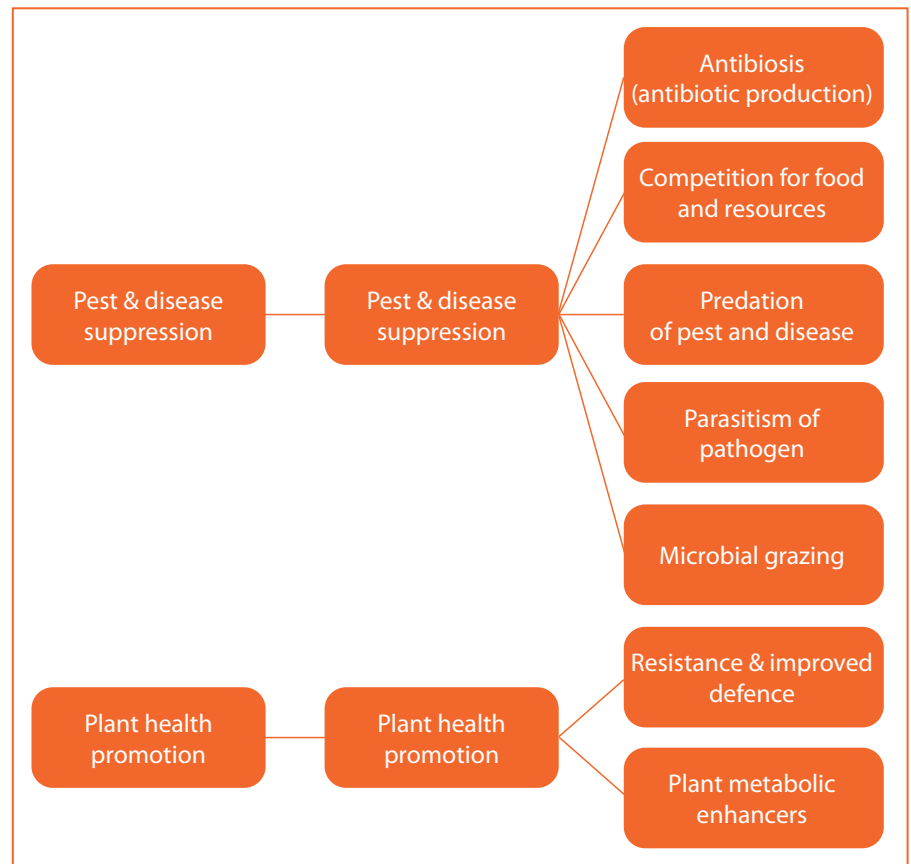


Figure 2: The different biological soil processes associated with healthy soils that reduce pests and diseases. (Source: Creamer et al., 2022)



of soil health based on different production systems with the objective of improving pack-out quality and yield. Potatoes SA is currently managing a total of 11 soil health projects (Table 1).

Two of these are long-term projects with a focus on:

- The impact of minimum cultivation systems in the sandy, low-carbon soils of the Sandveld production area.
- Crop rotation systems with summer crops in the dryland production systems of the Eastern Free State.

Cultivation systems

In a nine-year study overseen by Dr Jacques van Zyl of the WCDA in the Sandveld production environment, it was demonstrated that soil biological activity improved because of minimal cultivation practices. The paraplough and rip system was compared to standard, more intensive cultivation practices with a mouldboard plough. This study also looked at rotation systems incorporating rye, triticale (*korog*) and barley.

The study suggests that cover crops including triticale and rye, along with fodder barley, can be recommended in rotation systems. Additionally, the study shows that soil biological activity varies with growth stages, peaking ten weeks after emergence.

The impact of minimal cultivation systems on beneficial free-living

Table 1: Current Potatoes SA research projects related to soil quality.

Topic	Co-operator	Description
Soil water quality	Groundwater and Earth Sciences	Impact of potato production on groundwater
Cultivation	WCDA	Sandveld conservation farming practices
Rotation	University of Pretoria	Region-specific crop rotation systems
Nutrition efficiencies	University of Pretoria	Nutrient and water use efficiencies, Western Free State
Soilborne diseases	ARC	Characterisation of <i>Fusarium</i> associated with potato early dying in Limpopo
Soilborne diseases	University of Pretoria	Survival of soft-rotting <i>Enterobacteriaceae</i> (SRE) in soil
Soilborne diseases	University of Pretoria	Survival and pathogenicity of SRE during a rotation trail in the Eastern Free State
Soilborne diseases	ARC	Potential of cover crops for green manure for application against <i>Verticillium</i>
Nematodes	ARC	Movement towards 'greener' management tools for root-knot nematodes on potato
Soilborne diseases	ARC	Cover crops and green manure to reduce soilborne diseases (<i>Colletotrichum coccodes</i> , <i>Fusarium</i> spp. and <i>Rhizoctonia solani</i>)
Nematodes	ARC	Cover crops and green manure to reduce nematode pests, soilborne diseases and foliar diseases

nematode counts was also the highest in minimum till and rip treatments. The minimum tillage practices resulted in a slight increase in soil carbon levels.

In the Sandveld, triticale and rye would ultimately be recommended as cover crops along with fodder barley planted in winter, the year before the potato planting. The selection of cover crop mixtures with different rooting depths and growth periods would potentially also be of value in promoting soil quality at different soil-depth levels.

Scan the QR code to watch a presentation by Dr Jacques van Zyl at the 2023 Potatoes SA Research Symposium.



Rotation systems

In a long-term, multi-disciplinary field study in the Eastern Free State led by Prof Martin Steyn from the University of Pretoria, long-term crop rotation focussed on soil health, physical and chemical conditions in rotation systems typical to the Eastern Free State was studied.

The rotation system, which included sunflowers, was found to aggravate the plant parasitic nematodes with *Pratylenchus zae* being dominant. *Sclerotinia* wilt also became an issue, specifically in a sunflower system. Rotation treatments appeared to support biological control agents, particularly those involving maize, soya beans, fallow, and potatoes.

Dr Mariette Marais from the ARC Plant Health and Protection Research Institute observed an evolution of the nematode population. This included an improvement of the



An example of tuber malformations associated with soil quality challenges such as growth cracks (left) and fissure scab (right). Pathogens such as *Rhizoctonia*, *Streptomyces* (brown scab) and even *Fusarium* often manifest because of this damage.

free-living species as well as a change in the plant parasitic profile. While nematodes such as *Meloidogyne incognita* and *Meloidogyne javanica* are a concern in potato production, the study emphasised the importance of identifying the nematode species in each field to tailor rotation crops, control solutions and cultivar selection.

Although the perception is that only *Meloidogyne* species are considered a problem in potato production, the succession of plant-feeding nematodes associated with the different crops clearly illustrates the importance of the entire complex of nematodes as illustrated by the prominence of *P. zeae* and the presence of large populations of *Helicotylenchus dihystrera* specimens observed inside potato tubers, thus emphasising the concept that plant feeder nematodes are always a complex in the soil and roots of plants.

The focus on soil health in South Africa's potato industry is not only

Scan the QR code to watch a presentation at the 2023 Potatoes SA Research Symposium on the work done in the Eastern Free State regarding *Sclerotinia* management through crop rotation by Manda Sibaya.



Scan the QR code to watch a presentation by Dr Mariette Marais on the succession of nematode populations in the Eastern Free State.



about protecting potatoes and grain crops; it is about safeguarding the future of sustainable agricultural soil.

The regulations on crop protection remedies are increasing and traditional crop protection remedies are under pressure. It is becoming critical to integrate control solutions, including the use of biological compounds in innovative farming practices. This needs to be well understood and includes matching

the pathogen and pest biology with the potential control remedy.

The perception is often that yield and quality are initially negatively influenced by conservation tillage. This was not observed in the Sandveld and Eastern Free State study. The Sandveld with its low carbon levels improved over time when minimum tillage was applied.

It does make sense to consider rotation with different rooting depths and growth periods to promote soil carbon levels. By nurturing soil to improve biological activities, specifically in the root rhizosphere, we are laying the foundation for a healthier, more resilient production system.

Conservation farming practices are a viable practice for potato production. Improving soil takes time and patience. 🍌

For more information, contact Dirk Uys at dirk@potatoes.co.za.



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Plaagdoderresidu's en voedselveiligheid

Deur dr Gerhard Verdoorn, CropLife SA

Plaagdoders is noodsaaklike insette waarmee aartappelprodusente plaë, siektes en onkruid moet bestry.

Sonder plaagdoders is dit haas ondenkbaar om die verwagte tonnemaat aartappels te produseer wat deur Suid-Afrikaners benut word, hetsy as vars aartappels of in verwerkte vorm soos kraakskyfies (*crisps*).

Aartappels is, veral vir kinders, 'n uiters belangrike bron van koolhidrate en desnoods moet daardie voedselbron teen landbouplaë, siektes en onkruid beskerm word. Die groot vraag wat al hoe meer na vore kom, is of die voedsel wat ons daaglik nuttig nie vol plaagdoders is nie?

Konsentrasievlakke in voedsel

Die antwoord is eenvoudig dat daar wel residu's van plaagdoders in alle voedsel voorkom, maar dit is nie noodwendig in konsentrasies wat langtermyn skade aan mense se gesondheid sal rig nie. Twee staatsdepartemente, naamlik die Departement van Landbou, Grondhervorming en Landelike Ontwikkeling en die Departement van Gesondheid, het die mandaat om plaagdoderresidu's in voedsel te reguleer gepubliseer ten einde te verseker dat voedsel veilig is vir mens en dier. Dit is gedoen deur middel van regulasies wat die maksimum residulimiete (MRL) van plaagdoders per gewas bepaal.

Daar is natuurlik die sosiale media 'spesialiste' wat gal braak oor plaagdoderresidu's in voedsel, maar hulle het meestal geen benul van die intense en uitgerekte studies wat gedoen word om te bepaal wat veilige konsentrasies van plaagdoderresidu's in voedselgewasse is nie.

As die MRL van 'n bekende plaagdoder soos chloorantranilipool in aartappels in Suid-Afrika byvoorbeeld op 0.05 mg/kg vasgestel is, kan die verbruiker seker wees dat daardie konsentrasie chloorantranilipool geen risiko vir mense inhou nie. Die MRL

is dus die drumpelwaarde waaronder die plaagdoder se konsentrasie vir die verbruiker en produsent gemoedsrus sal gee.

Moniteringstelsels

In Suid-Afrika is daar baie instansies soos voedselverwerkers, varsproduktelandelaars en voedselkleinhandelaars wat hul eie residu-moniteringstelsels bedryf en gereeld vars produkte analiseer of laat analiseer vir die teenwoordigheid van plaagdoderresidu's. Dit is waar die produsent onkant gevang mag word as 'n hoeveelheid aartappels by 'n verwerker positief vir oorskryding van 'n plaagdoder se MRL toets.

Na só 'n analise kan daar verskeie roetes deur die nuwe eienaar van die aartappels gevolg word:

- Die nuwe eienaar kan al die aartappels verwerp en weier om die produsent te betaal.
- Die aartappels kan in kwarantyn geberg word ten einde die plaagdoder toe te laat om voldoende te metaboliseer of fisies af te breek tot onder die MRL-konsentrasie.
- Die aartappels kan bloot mee weggedoen word en die nuwe eienaar kan skadevergoeding van die produsent eis.

Die vraag is waar produsente inligting oor plaagdoderresidu's en hul verwante MRL'e in aartappels kan vind? CropLife SA se Agri-Intel databasis bevat omvattende inligting oor meer as 95% van die geregistreerde plaagdoders in Suid-Afrika en onder andere is daar 'n sub-databasis oor MRL'e wat op gewasse soos aartappels van toepassing is.

Daar is 'n reeks MRL'e vir elke plaagdoder wat vir elke gewas geregistreer is, en dit sluit ook uitvoertoleransies na oorsese bestemmings in. Uitvoertoleransie beteken dat die uitvoerbestemming sy eie MRL vasstel waaraan 'n produsent moet voldoen

om die gewas na die bestemming te kan uitvoer.

Synde meeste aartappels plaaslik verbruik word, kan produsente dus meestal net op die Suid-Afrikaanse databasis fokus. Die MRL van 'n plaagdoder gaan altyd gepaard met die voor-oesinterval (*pre-harvest interval*) wat aandui tot op watter groei stadium van die gewas 'n plaagdoder aangewend kan word voor oes, ten einde die oorskryding van die MRL te voorkom. Al die inligting is op www.agri-intel.com beskikbaar. Produsente kan hul eie aartappels by analitiese laboratoriums laat ontleed.

Maatreëls

CropLife SA maan produsente om plaagdoders streng volgens etiketvoorskrifte aan te wend. Daardie voorskrifte is nie aanbevelings nie; dit is wetlike vereistes wat deur die *Wet op Misstowwe, Veevoedsel, Landboumiddels en Veemiddels, 1947 (Wet 36 van 1947)* gestel word.

Enige afwyking van die etiketvoorskrifte mag ernstige nagevolge vir die produsent inhou. In die konteks van plaagdoderresidu's, is die gevaar dat die MRL van 'n aktiewe bestanddeel oorskry mag word, wat die produsent se aartappels onbemarkbaar mag maak.

Produsente moet op die volgende aktiwiteite let wanneer plaagdoders in aartappelproduksie oorweeg word:

- Is die plaagdoder wel vir gebruik op aartappels geregistreer vir die plaag, plantsiekte of onkruid? Indien wel, gaan voort en wend die plaagdoder volgens die etiketvoorskrifte aan. Indien nie, bly weg van die produk want daar is geen rede om te glo dat dit met veiligheid op aartappels aangewend mag word nie.
- Wat is die frekwensie van aanwending? Met ander woorde, hoeveel keer mag die plaagdoder per produksieseisoen aangewend word? Die etiketvoorskrifte sal

byvoorbeeld aandui dat slegs twee aanwendings per seisoen gemagtig is. Indien die aantal aanwendings oorskry word, is daar groot risiko vir weerstandsontwikkeling, sowel as oorskryding van die MRL van die plaagdoder. Plaagdoders het altyd 'n goed-vasgestelde afbraakkurwe, maar dit gaan gepaard met die dosis sowel as aantal aanwendings per seisoen. As daar meer as die toegelate aantal aanwendings per seisoen is, dan geld die normale afbraakkurwe nie omdat die hoeveelheid plaagdoder op die gewas meer is as wat die navorsing oor die afbraakkurwe in ag geneem het.

- Die dosis wat toegedien word is 'n baie belangrike faktor in die uitkoms van die residu tydens oes van die gewas. Oormatige dosering (meer as etiketvoorskrifte) veroorsaak noodwendig hoër terminale residu's van plaagdoders.
- Die voor-oes interval speel ook 'n baie belangrike rol in die terminale

residu's van plaagdoders tydens oes; hoe korter die voor-oes interval, hoe hoër die terminale residu's van plaagdoders in die gewas.

- Tenkmengsels kan ook 'n rol speel in die afbreek van die plaagdoder se aktiewe bestanddeel. Dit is daarom totaal ongewens om bloot tenkmengsels aan te maak wat nie volgens etiketvoorskrifte aangedui word nie.

Die onmoontlike is wel moontlik

Dit gebeur soms in uitsonderlike gevalle dat produsente plaagdoders streng volgens etiketvoorskrifte op aartappels aanwend en dat daar oorskryding van die MRL'e is. Daar was jare gelede 'n geval met siromasien, 'n insekgroeireguleerder, wat so 'n situasie geskep het.

Navorsing deur registrasiehouers het bewys dat die voorgestelde voor-oes interval te kort was om die gereguleerde MRL te kon bereik en 'n aansoek is dus ingedien om die MRL opwaarts aan te pas, nadat 'n

gesondheidsrisikobepaling deur toksikoloë onderneem is. Indien aartappelprodusente met so 'n situasie te doene kry, moet hulle onmiddellik met die registrasiehouers van die plaagdoders kontak maak om die situasie te ondersoek en op te los.

Neem self verantwoordelikheid

Aartappelprodusente het die verantwoordelikheid om etikette self te lees en na te volg. Een van die grootste misstappe is om na iemand te luister wat sê: "Kom ons probeer ...". Hierdie raad en aanbevelings is selde op etiketvoorskrifte gegrond en benadeel slegs die produsent.

Moet ook nie die raad aanvaar dat een handelsmerkprodukt identies aan 'n ander een is nie. Hou by die beginsel dat as die produk nie vir gebruik op aartappels geregistreer is nie, dan is dit nie geldig om op aartappels te gebruik nie, al is daar 'n soortgelyke produk met dieselfde aktiewe bestanddeel wat wel vir aartappels geregistreer is. 🍏

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

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Trends in sustainable potato cultivation

By Lukie Pieterse

The potato, a staple food for millions across the globe, finds itself at a critical juncture. The industry is navigating a complex matrix of challenges, ranging from climate change and environmental sustainability to evolving market demands and global food security concerns. These challenges are shaping the present and defining the future trajectory of potato cultivation.

At the heart of this transformation is a growing emphasis on sustainability and resilience. The agricultural sector, including the potato industry, is increasingly recognising the need to adopt practices that are ecofriendly, economically viable and socially responsible. This shift is driven by a deeper insight of the interconnectedness of our ecosystems and the impact of agricultural practices on the planet and its inhabitants.

In response to these challenges, stakeholders from diverse sectors are coming together. The focus of this collaborative effort is on the research and development of sustainable potato varieties.

This endeavour is marked by several emerging trends, each addressing different aspects of sustainability and resilience. From leveraging cutting-edge genetic research to adopting age-old farming practices in new ways, the potato industry is transforming. This ensures sustainability and sets a precedent for other agricultural sectors.

As we delve into each of these trends, it becomes clear that the future of potato cultivation is being rewritten.

Disease resistance

Potatoes are threatened by various diseases. Chief among these is late blight and potato cyst nematodes. These lead to substantial yield losses

and necessitate the use of chemical pesticides.

The development of disease-resistant cultivars is trending. This represents a paradigm shift in agricultural practices, moving away from chemical dependency towards a more holistic approach to crop health.

Disease-resistant potatoes are a culmination of cutting-edge genetic research and traditional breeding methods. Scientists are identifying and isolating genes that confer natural resistance to specific diseases. These genes are then introduced into popular potato varieties through advanced breeding techniques, creating new cultivars that inherently resist diseases.

The development of the Sarpo Mira variety in Scotland, known for its exceptional resistance to late blight, has been a game-changer. This variety, developed through traditional breeding methods, has shown remarkable resilience to blight outbreaks.

By reducing its dependency on chemical treatments, these varieties lower production costs and mitigate environmental pollution and health risks associated with pesticide use.

Reduced carbon footprint

Agriculture contributes greatly to global greenhouse gas (GHG) emissions. There is an increasing focus on sustainable agricultural practices due to climate change. Potatoes are emerging as potential allies in the fight.

The development and adoption of varieties that contribute to carbon sequestration is a good example. Carbon sequestration refers to capturing and storing atmospheric carbon dioxide. Certain potato varieties have shown an enhanced ability to sequester carbon in the soil.

Potatoes influence carbon sequestration in several ways:

- **Root system:** Potatoes have a dense root system that contributes to soil organic matter. As the roots decompose, they become part of the soil organic carbon pool, effectively locking away carbon that would otherwise be released into the atmosphere.
- **Crop residues:** After harvest, the leaves and stems of potato plants add to the soil organic matter as they decompose, further contributing to carbon sequestration.
- **Soil health:** Healthy potato cultivation practices, such as reduced tillage and cover cropping, can enhance soil health and its ability to store carbon. Healthier soils with higher organic matter content can store more carbon over longer periods.

Breeding programmes focus on selecting potato varieties that are high-yielding, disease-resistant and efficient in carbon sequestration. This involves understanding the genetic traits that influence root growth and decomposition rates, as well as how these plants interact with soil microbes.

Reducing the carbon footprint of one of the world's major food crops can have a substantial impact on agriculture's contribution to GHG emissions.

Sustainable farming practices play a crucial role in maximising the carbon sequestration potential of potatoes. Crop rotation, organic farming, and precision agriculture support the health and yield of potato crops and enhance their environmental benefits.

By addressing the carbon footprint, the potato industry is contributing to global efforts to combat climate change. This trend aligns with the United Nations' sustainable development

goals, particularly those related to climate action and sustainable land use.

Drought tolerance

In a world increasingly affected by climate change, water scarcity is becoming a critical challenge, particularly in agriculture. Droughts occur more frequently due to global warming. This shift poses a threat to crops such as potatoes that are traditionally reliant on consistent water supply. In response, the development of drought-tolerant potato varieties has become a key focus in sustainable agriculture.

Potato cultivation is water intensive. In regions facing water scarcity or restrictions, the ability to grow potatoes with less water is an agricultural advancement and necessary for food security.

The quest for drought-resistant potatoes involves both traditional breeding methods and advanced genetic techniques. Scientists are identifying and harnessing genetic traits that enable potatoes to thrive with less water. These traits include:

- *Deeper root systems*: Deeper roots can access water from deeper soil layers, reducing their reliance on surface water.
- *Waxy leaf surfaces*: Leaves with a waxy coating reduce water loss through transpiration, helping the plant retain moisture.
- *Efficient water use*: Some varieties are being bred to use available water more efficiently, ensuring maximum yield with minimal water input.

In parts of Africa and South America, producers are successfully growing new varieties that maintain yield and quality under reduced irrigation. These successes demonstrate the viability of drought-tolerant potatoes in real-world agricultural settings. Producers in drought-prone areas can maintain potato production without the need for extensive irrigation systems. This shift conserves precious water resources and reduces the energy and costs associated with irrigation.

Developing drought-tolerant potatoes is part of a broader strategy to make agriculture more resilient to climate change. These varieties are often bred to withstand other stressors, such as high temperatures and salinity, making them well-suited for the changing environmental conditions expected in many potato-growing regions.

Advances in genomics and plant physiology are accelerating the development of new varieties. Moreover, as these varieties become more widely available, they have the potential to transform potato farming in arid and semi-arid regions around the world.

Market demand and collaboration

There has been a significant shift in consumer preferences towards sustainability in the food sector. A growing awareness of environmental issues, health concerns, and a desire for quality and traceability in food products drives this change. The potato industry is responding by focussing on sustainable potato varieties.

Consumers are increasingly seeking out products that are grown in an environmentally friendly and socially responsible manner. This includes preferences for organically grown potatoes, locally sourced varieties, non-genetically modified organisms and heritage varieties.

Many producers are transitioning to organic farming and exploring a wider range of potato varieties, including those that are better suited to local growing conditions and consumer tastes.

Retailers and the food industry play a crucial role in shaping consumer preferences. By offering a variety of sustainable potato products and promoting their benefits, these entities can drive consumer choices towards more sustainable options.

Transitioning to sustainable farming practices can require significant investment and a learning curve for producers. Meeting the specific preferences of diverse markets can be complex, requiring careful selection and cultivation of appropriate potato varieties. Innovation and adaptation are key.

This trend involves the synergistic efforts of various stakeholders – including academic institutions, government agencies, private companies, and international organisations – working together to address the complex challenges facing potato cultivation.

Collaborative research encompasses a wide range of activities, from genetic research and breeding programmes to field trials and the dissemination of best practices. The primary goal is to develop potato varieties that are more sustainable in terms of environmental impact and resilient to climate change, diseases, and other challenges:

- *Genetic research and breeding*: Focus on potato varieties that are disease-resistant, drought-tolerant, and capable of thriving in diverse environmental conditions. This involves sharing genetic resources, technologies, and expertise across borders and institutions.
- *Sustainable farming practices*: Partnerships work towards developing and promoting sustainable farming practices. This includes research into soil health, water management, and organic farming techniques that can be adopted by potato producers worldwide.
- *Climate change adaptation*: Collaborative research is increasingly focussing on developing potato varieties and farming practices that are resilient to changing weather patterns, temperatures, and precipitation levels.

Numerous successful collaborations highlight the effectiveness of this approach. For instance, the International Potato Center works globally to improve potato genetics and share knowledge on sustainable cultivation practices. Similarly, collaborations between universities and agricultural research institutes have led to the development of new varieties. 

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VARIETY

of

SOLUTIONS

SABABA

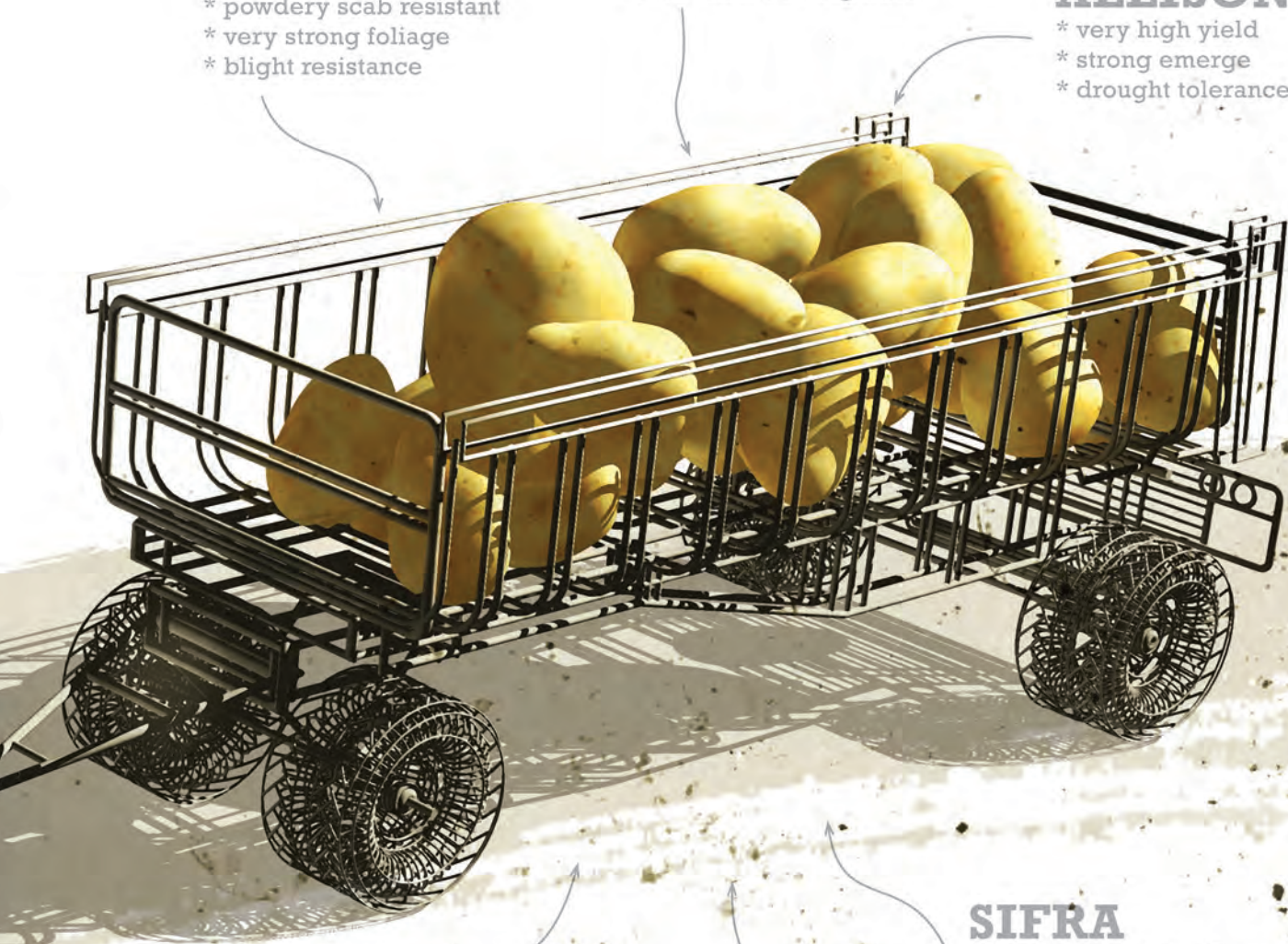
- * big size tubers
- * powdery scab resistant
- * very strong foliage
- * blight resistance

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

SIFRA

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

MONDIAL

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

Noord-Kaap kultivarproef onder besproeiing op Douglas in 2023

Deur André Prins, GWK, en Enrike Verster, Aartappels SA

Die Noord-Kaap is 'n aartappelproduksiestreek waar 18 produsente op 2 214 ha aartappels vir die land se varsprodukte-markte produseer. Nagenoeg 60.74% van hierdie streek se aartappelproduksie bestaan uit moerproduksie. Lanorma, Sifra en Mondial is die mees prominente kultivars vir kommersiële produksie in hierdie streek.

Douglas val in Suid-Afrika se droë kontinentale gebied (*Figuur 1*) met 'n gemiddelde reënval van ongeveer 200 mm vir die afgelope ses jaar. Winters is koud met ryp wat gereeld voorkom, terwyl somers baie warm word.

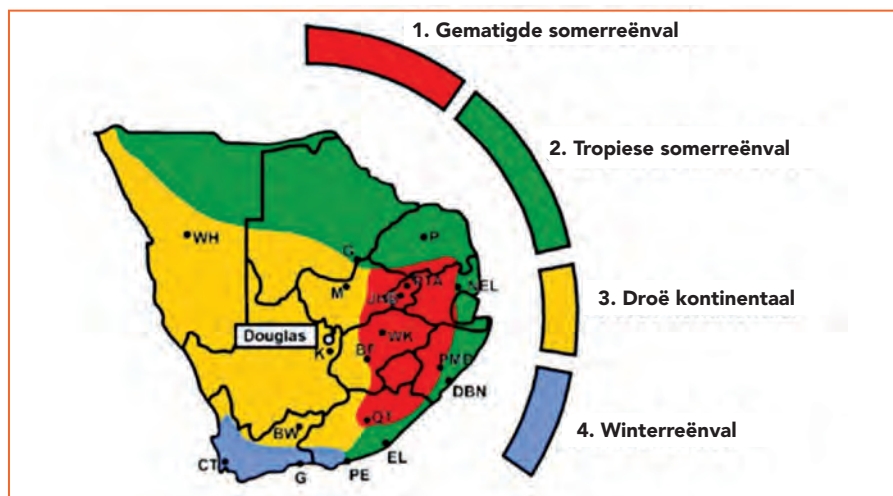
Hierdie kultivarproef by Douglas is uitgevoer in sandleemgrond en die proef is uitgelê in 'n ewekansige blokontwerp met drie herhalings per kultivar. *Tabel 1* verskaf ander tegniese inligting rakende die proef.

Ingesluit in die kultivarproef is kultivars met kort en lang groeitydperke; derhalwe kan groeitydperke die uiteindelijke opbrengs van kultivars beïnvloed. Die lengte van die groeitydperke is onderhewig aan die aard van die seisoen, maar word gesien as die hoeveelheid tyd wat verloop vanaf opkoms tot natuurlike loofafsterwe. 'n Aartappelplant se leeftyd word verdeel in vyf groeifases, naamlik spruitontwikkeling, vegetatiewe groei, knolinisiasie, knolvulling en volwassenheid.

Tabel 2 sit uiteen hoe hierdie groeitydperke van kultivar tot kultivar verskil. Omgewingsfaktore en bestuurspraktyke beïnvloed ook die verskillende groeifases en wanneer dit 'n aanvang neem.

Stand en aantal halms beïnvloed knolgrootte en opbrengs. Die aantal

Figuur 1: Ligging van Douglas in die Noord-Kaap produksiegebied.



Hierdie betrokke kultivarproef by Douglas is uitgevoer in sandleemgrond en die proef is uitgelê in 'n ewekansige blokontwerp met drie herhalings per kultivar.














ogies per knol is kultivar-afhanklik en kan die hoeveelheid spruite wat per knol voortgebring word, bepaal. In hierdie verband is die plantgereedheid van moere baie belangrik, aangesien beter plantgereedheid gewoonlik veroorsaak dat moere na behore spruit. Plantgereedheid van moere ten tyde van die plant van die proef, sowel as standpersentasie en halmtelling wat later in die groeitydperk waargeneem is, word in *Tabel 2* aangedui.

Die evaluering van nuwe kultivars soos in hierdie kultivarproef verskaf resultate rakende, onder andere, opbrengs en bemarkingsindeks. Die bemarkingsindeks van die betrokke kultivars word bereken deur elke kultivar te klas en sorteer volgens gehalte en groottegroepe (byvoorbeeld: Klas 1 Groot of Klas 2 Groot-medium). Dienooreenkomstige prysvergelykings word dan gemaak met markpryse soos verkry ten tyde van oesdatum.

Tabel 1: Opsomming van tegniese inligting rakende proef area en uitleg.

Plaas	Bossiespan		
Produsent	Jaco Mulke		
Plantdatum	26 Januarie 2023		
Oesdatum	31 Augustus 2023		
Besproeiing/droëland	Besproeiing		
Dubbel- of enkelrye	Dubbelrye		
Loofafsterwe	Natuurlik		
Tussen-ryspasiëring	0.9 m		
Proefperseel	18 m ²		
Plantestand	44 444 plante/ha		
Moergrootte	250 telling (gemiddeld 100 g)		
	Bemestingsprogram		
	Voedingswaarde		
	N (kg/ha)	P (kg/ha)	K (kg/ha)
Totaal	220	185	216

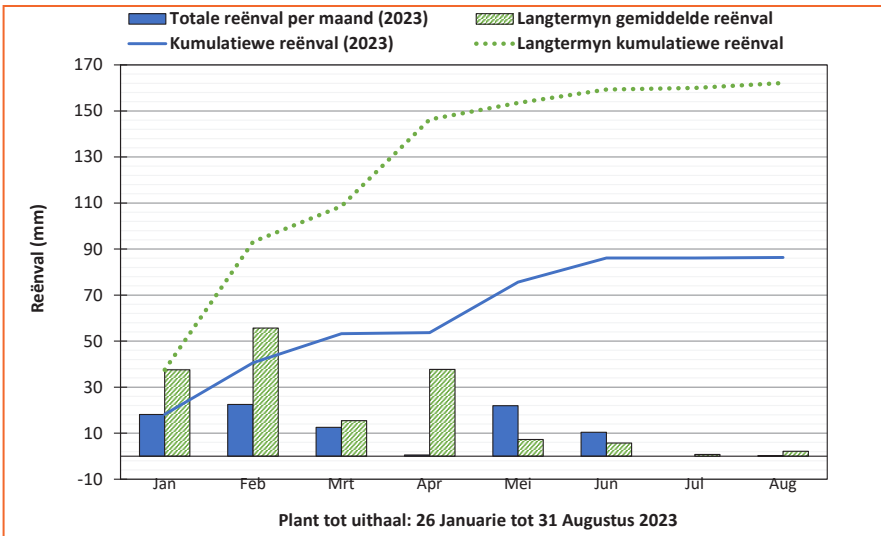
Tabel 2: Karaktereienskappe rakende groeitydperk, plantgereedheid, stand (%) en halmtellings vir betrokke kultivars.

Agent	Kultivar	Groeitydperk (dae) ¹		Plant-gereedheid ²	Stand (%)	Halms per plant	Halms per ha
	11Z49A1	Medium tot lank	(100-120)	3	100	6.4	284 442
	11Z55A5	Medium tot lank	(100-120)	3	97	5.0	215 553
	Amany	Medium tot lank	(110)	3	92	5.1	208 531
	Connect	Medium tot lank	(120)	3	80	5.0	177 776
	Foxy	Kort tot medium	(90-100)	2	97	3.6	155 198
	Kelly	Lank	(120)	3	92	5.4	220 798
	King Russet	Kort	(80-90)	3	100	7.4	328 886
	Lanorma	Kort	(80-90)	3	100	5.3	235 553
	Lilly	Medium	(100)	3	92	8.0	327 108
	Mondial	Medium tot lank	(110-115)	2	100	5.6	248 886
	Noha	Medium	(100)	3	100	3.9	173 332
	Noya	Medium tot lank	(120)	3	95	2.5	105 555
	Panamera	Lank	(120-125)	3	89	5.5	217 553
	Sababa	Medium tot lank	(110-115)	3	100	6.7	297 775
	Sifra	Kort tot medium	(90-100)	3	98	5.8	252 620
	Tyson	Kort tot medium	(90-100)	3	91	4.3	173 909

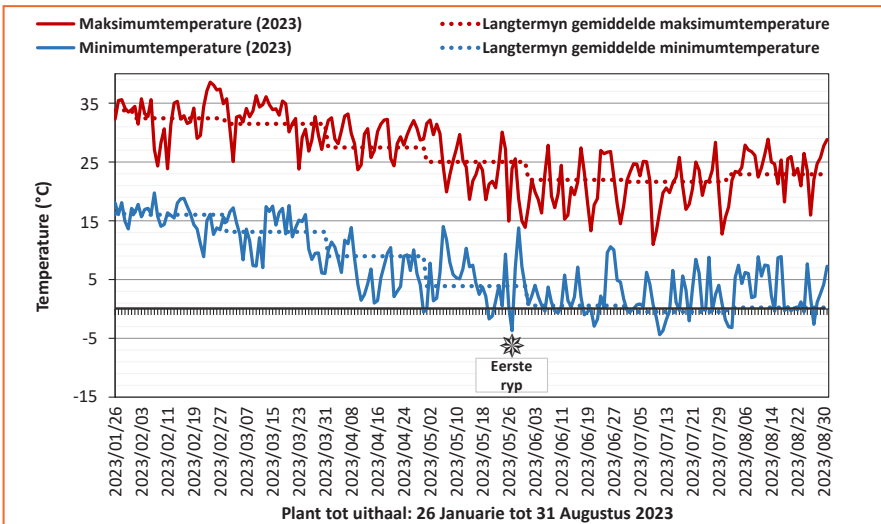
¹Algemene riglyne en kategorieë (dae vanaf opkoms tot natuurlike loofafsterwe, afhangelend van die seisoen): Kort: 70 tot 90 dae; kort tot medium: 80 tot 100 dae; medium: 90 tot 110 dae; medium tot lank: 90 tot 120 dae; lank: 90 tot 140 dae.

²Plantgereedheid van moere: 1 - vars, 2 - effens vars, 3 - plantgereed, 4 - effens oud, 5 - oud.

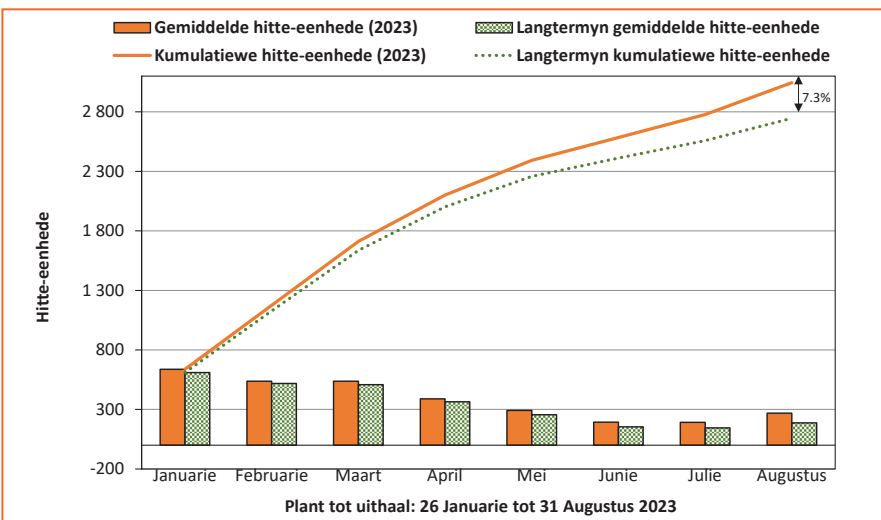
Figuur 2: Reënval vir die 2023-seisoen en langtermyn gemiddelde reënval.



Figuur 3: Minimum- en maksimumtemperature vir die 2023-seisoen sowel as langtermyn temperature.



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.



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.

Soos met enige gewas is die temperatuur, beskikbaarheid van water (hetsy goeie besproeiingskedulering of reënval), sowel as hitte-eenhede belangrike faktore wat wesenlike invloed uitoefen gedurende die aartappelplant se groeitydperk. Hierdie faktore word dus in aanmerking geneem wanneer die prestasie van kultivars geëvalueer word.

Reënval en besproeiing

Die seisoen se reënval was heelwat laer as die normale langtermyn gemiddelde reënval vir die hele groeiseisoen (Figuur 2). In hierdie droë kontinentale streek word daar uiteraard swaar gesteun op goeie besproeiingskedulering vir aartappels.

Temperatuur en hitte-eenhede

Minimum- en maksimumtemperatuur word in Figuur 3 uiteengesit.

Ingesluit in die kultivarproef is kultivars met kort en lang groeitydperke. Derhalwe kan groeitydperke die uiteindelijke opbrengs van kultivars beïnvloed.



Vanaf einde Mei is temperature onder vriespunt gereeld aangeteken. Die voortdurende temperature onder vriespunt het natuurlike loofafsterwe tot gevolg.

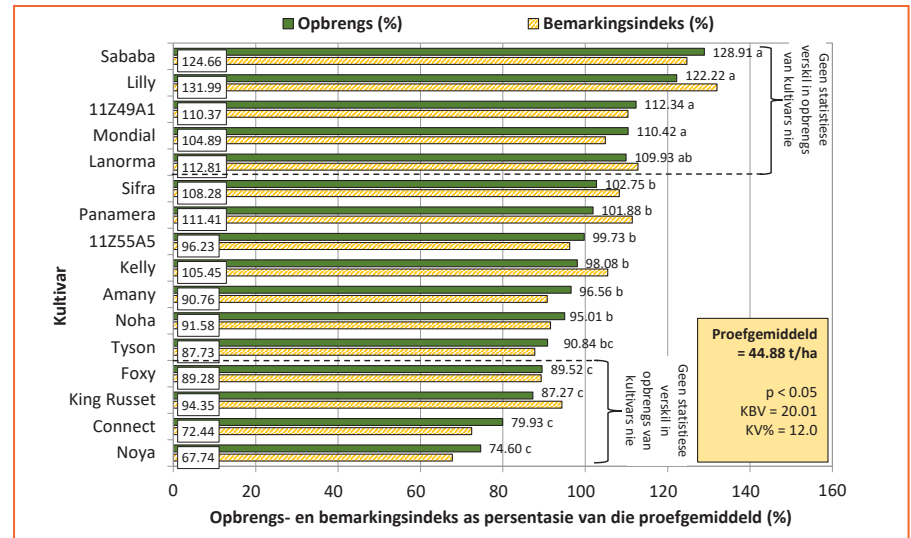
Die versameling van hitte-eenhede gedurende 'n groeitydperk is 'n belangrike faktor in die ontwikkeling van 'n plant. Die tendens van hitte-eenhede beskikbaar vir die kultivarproef van hierdie betrokke seisoen, blyk ietwat hoër as die tendens van langtermyn hitte-eenhede te wees (Figuur 4).

Die opbrengsindeks

Opbrengsdata versamel tydens oesdag 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 hierdie betrokke proef (Figuur 5) was statisties beduidend ($p < 0.05$) en die koëffisiënt van variasie was aanvaarbaar laag (12%).

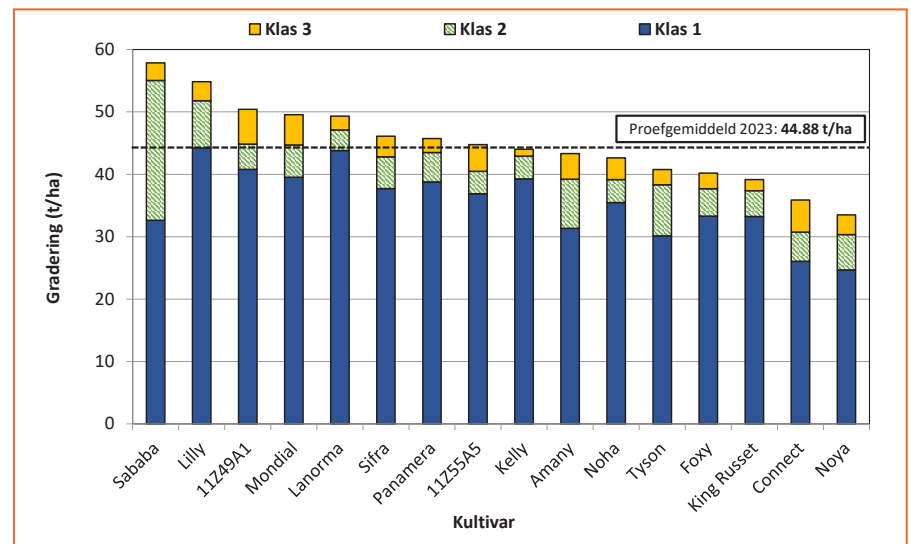
Hierdie faktore dui daarop dat die proef goed uitgevoer is en die resultate derhalwe betroubaar is.

Figuur 5: Totale opbrengs per kultivar as persentasie van die proef-gemiddeld.

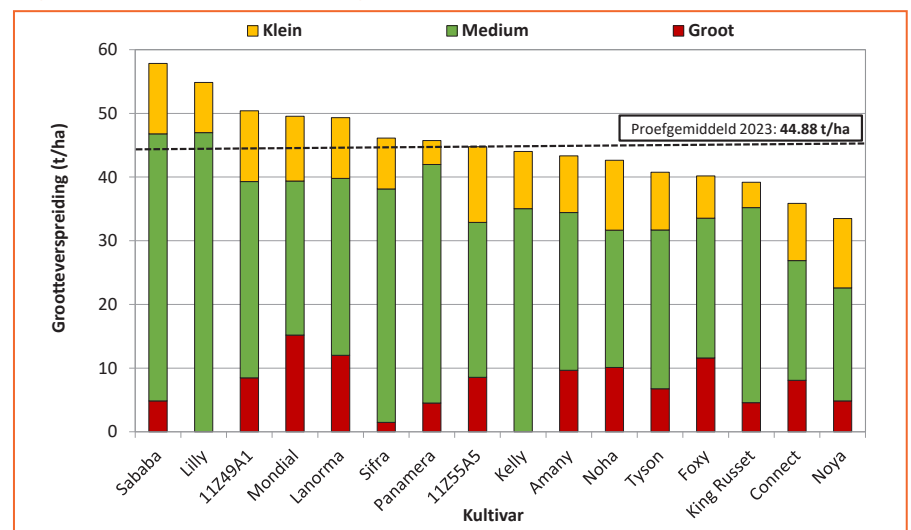


*Waardes gevolg deur dieselfde letter verskil nie beduidend van mekaar nie.

Figuur 6: Gradering van elke betrokke kultivar.



Figuur 7: Grootteverspreiding van elke betrokke kultivar.



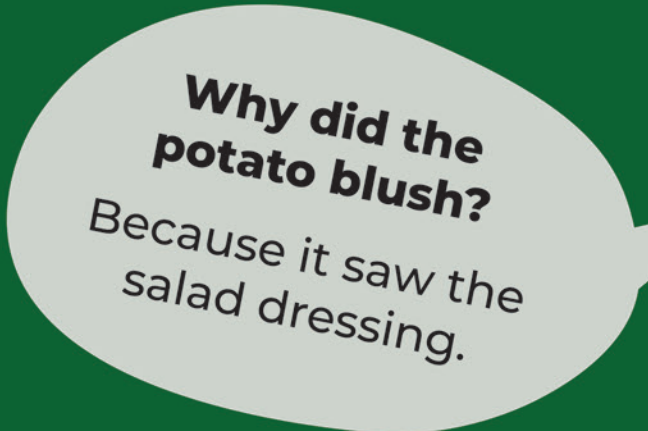


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Tabel 3: Hoofredes vir afgradering.

Kultivar	Misvorming	Rhizoctonia	Sandspleet	Ander splete	Bruinskurf	Silwerskurf	Mot	Insek	Vergroening
11Z49A1					x		x		x
11Z55A5	x			x		x	x		
Amany		x			x		x		x
Connect			x		x		x		x
Foxy						x	x	x	x
Kelly			x	x			x		
King Russet	x			x			x		
Lanorma					x		x	x	x
Lilly					x	x		x	x
Mondial			x	x			x	x	x
Noha		x			x		x	x	
Noya		x			x		x	x	x
Panamera			x					x	x
Sababa		x				x	x		x
Sifra					x		x	x	
Tyson	x		x				x	x	

Tabel 4: Prosesseringseienskappe van kultivars. (Uitgevoer deur die Landbounavorsingsraad – Roodeplaat)

Kultivar	Skyfiekleur ¹	SG ²	DM ³
11Z49A1	60.89	1.065	17.1
11Z55A5	49.77	1.059	15.8
Amany	60.45	1.073	18,7
Connect	59.69	1.068	17.6
Foxy	58.11	1.061	16,1
Kelly	53.99	1.057	1.4
King Russet	52.72	1.075	19.2
Lanorma	62.54	1.064	16.8
Lilly	45.34	1.075	19.2
Mondial	56	1.064	16.9
Noha	51.15	1.065	1.1
Noya	64.70	1.071	18.3
Panamera	55.87	1.070	18.2
Sababa	60.45	1.060	15.9
Sifra	62.19	1.062	16.3
Tyson	50.52	1.068	17.7

¹Skyfiekleur met waarde >50 en sonder defekte is aanvaarbaar vir die droëskyfiebedryf.

²Soortlike gewig van >1.075 is aanvaarbaar vir die prosesseringsbedryf.

³Die persentasie droë materiaal is 'n berekende waarde: DM% = 24.182 + 211.04 * (SG-1.0988). Die werklike persentasiewaarde sal effens verskil tussen variëteite uit hierdie berekeningswaarde.

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 opbrengs-indeks geskep 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 44.88 t/ha. Die kultivars Sababa, Lilly, 11Z49A1, Mondial en Lanorma het statisties betekenisvol die hoogste opbrengs gelewer. Lilly het die hoogste bemarkingsindeks behaal en dit kan toegeskryf word aan 'n goeie opbrengs in medium en knolle, asook min Klas 3-knolle.

In die week van oes, was die markpryse van Klas 1 Medium-grootte aartappels ongeveer R5 hoër as Klas 1 Groot aartappels en dit sal 'n invloed hê op die bemarkingsindeks soos uitgebeeld op die grafiek, waar Lilly die hoogste bemarkingsindeks behaal het. Die hoofredes vir afgradering van elke kultivar (Tabel 3) word ondersoek om te bepaal watter uitdagings die betrokke kultivars gehad het in terme van die kwaliteits-indeks. Motskade, misvorming en bruinskurf was die grootste redes vir afmerking.

Laastens, om te voldoen aan prosesseringsvereistes, moet kultivars aan 'n skyfiekleurnorm van >50 en 'n soortlike gewig (SG) van ≥1.075 voldoen. Slegs King Russet het aan die SG- en skyfiekleurvereistes voldoen (Tabel 4). ©

Spesiale dank aan die betrokke produsent en boerdery, die Noord-Kaap Aartappelwerkgroep asook Anjé Erasmus, Damien da Cal en Dikgetho Mokoena van Aartappels SA. Vir meer inligting, kontak André Prins by andrep@gwk.co.za of Enrike Verster by enrike@potatoes.co.za.



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Malroes: Beskerm jou aartappeloes

Deur Albert Potgieter, landboukundige, Villa Crop Protection

Malroes, ook bekend as *Alternaria alternata*, is 'n bekende siekte in die aartappelbedryf wat jaarliks oesverliese vir produsente tot gevolg het. Die vraag wat algemeen gevra word, is hoe groot die impak van malroes regtig is. Malroes kan uitermatige groot oesverlies tot gevolg hê en kan in uiterste gevalle oesverliese van tot 40% veroorsaak.

Agtergrond

Die Universiteit van Pretoria se aartappelpatologieprogram het *Alternaria alternata* as die organisme verantwoordelik vir malroes geïdentifiseer (Van der Waals *et al.*, 2011). Tans is dit oor al Suid-Afrika se bekende aartappelproduserende gebiede versprei en simptome kan vanaf dag 50 (soms vroeër) ná die opkoms van die aartappel gesien word.

Die simptome sluit klein waterdeurdrenkte letsels aan die onderkant van die blaar in, wat na 'n paar dae ver-groot en aan die bokant van die blaar gesien kan word. Malroesletsels is gewoonlik kleiner as dié van vroeëroes en het ook nie die kenmerkende ringe wat met vroeëroes gepaardgaan nie.

Beheer en bestuur

Daar is tans geen geregistreerde aktiewe in Suid-Afrika vir malroes-beheer nie en dus moet ons verskeie

strategieë implementeer om infeksie te voorkom. Indien besmetting klaar plaasgevind het, moet dit bestuur word. Malroes kom algemeen voor onder warm, vogtige toestande waar blare vir lang tydperke nat bly.

Alternaria alternata-spore oorleef lank in oesreste, grond en onkruid. Infeksie vind gewoonlik plaas nadat natuurlike, meganiese of chemiese aksies die plant beskadig. Die beskadigde area is die perfekte plek vir die spore om in te beweeg en infeksie te veroorsaak. Die verspreiding van die siekte vind primêr deur wind en water plaas, en kan dus oor groot afstande beweeg.

Dit is belangrik om seker te wees dat dit wel malroesinfeksies in die gewas is, aangesien daar baie ander probleme is wat soortgelyke simptome kan toon, soos sekere voedingskorte. Gereelde besoeke aan die aanplantingsareas is belangrik vir beheer, asook gereelde blaarmonsters om voedingstekorte te identifiseer.

Nog 'n kritiese bestuursaspek is die beperking van strestoestande, aangesien daar min tot geen kans vir korrektiewe optredes is indien infeksie reeds plaasgevind het nie. Dit sluit ook skadebeperking aan die plant in, hetsy dit insekverwant, chemies of meganies van aard is.

Alhoewel daar tans geen aktiewe teen malroes in Suid-Afrika geregi-streer is nie, is daar wel sekere aktiewe wat 'n impak op die beheer daarvan het. Kinoon buite-inhibeerders asook die inhibeerders van suksinaat-dehydrogenase swamdoders, word as 'n oplossing aangewend maar geen aktief dien as 'n volledige oplossing nie. Daar is ook sprake van weerstand teen die groepe.

'n Belangrike punt om in ag te neem is die doeltreffende toediening van die chemikalieë wat gebruik word. Genoegsame water met toediening, die regte byvoegmiddels vir die beste bedekking en verspreiding, en



'n Voorbeeld van malroes op plantblare.

die regte benadering in terme van aktiewe speel alles 'n groot rol.

'n Paar ander bestuurspraktyke sluit in:

- Aanplanting van kultivars wat minder vatbaar vir *Alternaria*-spesies is.
- Bekamping van *Alternaria*-gasheerplante soos onkruid en oesreste.
- Wisselbou met nie-gasheerplante (soos mielies en koring).
- Plantgesondheid – swak plante tel infeksies makliker op.

Om saam te vat, malroes is hier om te bly en is iets waarvan alle aartappelprodusente kennis moet dra. Bestuur is 'n belangrike faktor en voorkoming is altyd beter as regstellende optrede. Gereelde inspeksies van landerye en die versameling van blaarmonsters kan probleme vroeër identifiseer. 'n Geïntegreerde spuitprogram is belangrik om eksterne faktore soos insekskade te beperk en plantstres te voorkom. Hou by 'n gebalanseerde bemestingsprogram en voorkom oormatige stikstofgebruik.

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'n Voorbeeld van vroeëroes.

Roots of sustainability: A comparison of long-term crop soil health studies

By Dirk Uys, Potatoes SA

“The soil microbiology is the workhorse of the soil.” Prof Bob Larkin

During the 31st annual Soilborne Plant Disease Symposium hosted in Stellenbosch in 2023, Prof Robert (Bob) Larkin from the United States Department of Agriculture shared his insights into the suppression of soilborne diseases in potatoes through crop rotation. Prof Larkin is based in Orono, Maine and visited South Africa as a guest of well-known vegetable producer, ZZ2. Prof Larkin is a potato plant pathologist who focusses on the soil health of potato production systems.

A visit to Petrus Steyn

During his stay, Prof Larkin along with Wiam Haddad from ZZ2, visited the Potatoes SA long-term crop rotation trial in Petrus Steyn. This project, which is being conducted under the auspices of Prof Martin Steyn of the University of Pretoria, has been showing a similar trend to the work done by Prof Larkin in the United States (US). The similarities serve as proof that multiple rotation programmes do in fact benefit favourable soil organism systems which create disease suppressive soils. It must, however, be recognised that this journey takes time.

His research highlighted the challenge presented by pathogens such as *Rhizoctonia* spp., *Fusarium* spp., *Sclerotinia* spp. and *Verticillium* spp. and their negative impact on potato quality and yield. Crop protection products offer control against specific diseases. Different potato varieties provide varying levels of disease tolerance. To provide future control strategies, Prof Larkin’s research emphasises

the essence of creating a disease suppressive soil by providing an environment in which it is difficult for a pathogen to establish.

Researchers at the Petrus Steyn Potatoes SA long-term rotation trial started noticing an increase in beneficial organisms in the soil. This includes the establishment of beneficial nematode populations as well as indications that rotation treatments can support a population of biological control agents, resulting in a reduction of sclerotia hypocotyl infections in a maize-soya beans-maize-fallow-potatoes-maize rotation system.

Early findings from this local soil health analysis suggest that the inclusion of cover crops in the rotation system has already improved soil microbial diversity and functionality of the soil. Healthy soil is considered stable soil, high in biological diversity with high levels of internal cycling of nutrients.

Outcomes from US-based studies

In Prof Larkin’s studies he compared different hypotheses:

- A basic rotation system consisting of a two-year rotation with barley.
- A soil conservation system consisting of barley, canola and rye.



From the left are Anjé Erasmus, Potatoes SA regional co-ordinator, Dirk Uys, research and innovation manager at Potatoes SA, Wiam Haddad of ZZ2 Ecosystem Services who hosted Prof Larkin, Gert Bester, chairperson of Potatoes SA, and Prof Bob Larkin, United States Department of Agriculture.

- A soil improvement system consisting of compost with barley and canola.
- A disease suppressing system consisting of mustard and barley.
- A continuous potatoes system.

Key outcomes from his work show the value of a focus on creating improved soil, but it is important to note the following:

- The benefits of crop rotation systems do take time. The goal is ultimately to create a soil environment that will establish suppressive soils that slow down the development of diseases.
- Soil health is difficult to define but it does aim to sustain biological productivity, which promotes plant health.
- Crop rotation will replenish soil health by maximising diversity in crop selection which:
 - Breaks disease cycles.
 - Benefits physical, chemical, and biological profiles that stimulate biological activity, creating competition which suppresses the pathogen.
 - Stimulates production of biological compounds that inhibit the target pathogen. This includes bio-fumigation where plants such as Brassicas create metabolites that are toxic to specific pathogens when they are degraded in the soil.

Prof Larkin's research shows that the incorporation of plant material to promote soil health by including crop rotation, cover crops and green manure crops, organic amendments and conservation tillage, does benefit the soil's physical, chemical, and biological properties. Although these management practices will not eliminate diseases, it will certainly reduce it, thus enhancing the long-term sustainability of potato production.

In it for the long run

It was valuable to learn that this research mirrors the existing work done on potatoes in South Africa. Bearing in mind that an investment in soil health is a long-term investment, we do need to take note that pressure on traditional control measures is here to stay.

The integration of control strategies with agronomic systems will become more relevant in future. However, this change will require bold steps combined with a better understanding of the positioning of multiple control strategies adapted for each farm to optimise a return on investment for potato producers. 🍅

For more information,
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Soil is where food begins



Much like the air we breathe and the water we drink, we take the soil in which our food grows for granted too often. World Soil Day, celebrated on 5 December, helps to raise awareness of this life-giving resource. Last year, Syngenta supported the cause by focussing on root health.

The theme for World Soil Day 2023, "Soil: where food begins", tells us most of what we need to know about the vital importance of this natural resource.

The statistics are awe-inspiring and spine-chilling in equal measure, and clearly illustrate the link between soil health, food security and climate change:

- Only about 7.5% of the Earth's surface consists of the agricultural soil on which food can be grown. This fragment competes with humankind's other needs and wants, ranging from housing to entertainment, industrial and military complexes to landfill sites.
- 95% of our food comes from the soil.
- Agricultural production will have to increase by 60% to meet the global food demand in 2050; sustainable soil management could produce up to 58% more food.
- Soils supply 15 of the 18 naturally occurring chemical elements essential to plants.
- 25% of the planet's biodiversity is found in its soils; one teaspoon of soil can contain more living organisms than there are people on the planet.
- Soil is the planet's second largest carbon store.
- 33% of Earth's soils, and more than half of agricultural soils, are degraded.
- It takes more than 1 000 years to grow 1 cm of soil.

Some aspects of the value of soils cannot be expressed in numbers. For instance, the billions of bacteria that live in soils are critical to the development of antibiotics and other medicines. Healthy soils absorb and purify water for human consumption and regulate the impact of excess rainfall by preventing floods. This ecosystem service will only become more important as climate change causes increasingly erratic rainfall patterns.

Looking at food production specifically, healthy soils produce more nutritious food and give plants greater resilience to pests and diseases. Healthy soils hold more water and make it available to plants when rainfall is unreliable. Their ability to absorb heavy rainfall prevents the run-off of vital nutrients from fields.

"Soil health matters a great deal," says Stefan van Zyl from Syngenta Seedcare South Africa. "The reality is that the 10 to 30 cm of topsoil that sustains our ability to grow food could run out in just 60 years. This is a call to action not a single person or company can afford to ignore."

Role of root health

The key to protecting and restoring soil health is a holistic approach. "In agriculture, the problem and indeed the solution lie in what we plant and when, and the cultivation practices used," says Van Zyl. Syngenta Seedcare focusses on the part of crops most intimately in contact with soils, namely the roots.

Far from roots just taking from the soil, the relationship between the two is highly symbiotic. Healthy soils enable and support robust root systems and vice versa.

Plant roots help bind soil particles together which creates a stable soil structure, prevents soil erosion and top-soil loss, improves water infiltration and reduces compaction. Strong root systems also create channels in the soil

that allow air, water and nutrients to penetrate more deeply.

While root systems extract nutrients from the soil, they also release organic compounds that attract beneficial micro-organisms that enhance nutrient cycling and availability. By releasing compounds that feed beneficial soil microbes, roots contribute directly to the ability of soils to suppress harmful pathogens and decompose organic matter. The latter, in turn, improves carbon sequestration.

Roots furthermore release enzymes and compounds that can alter the chemical composition of the soil around them to enhance nutrient solubility and availability. In addition, certain plants release allelopathic compounds that suppress disease-causing organisms in the soil – a natural form of disease control that contributes to healthier soils.

Finally, healthy root systems serve as habitat and sustenance for soil organisms ranging from earthworms to mycorrhizal fungi, which contributes to ecosystem resilience.

The benefits of seed treatments

Syngenta's root health drive focusses on the treatment of seed against fungal infections and nematodes to support the development of crop root systems that are robust and function optimally.

According to Prof Driekie Fourie, nematologist and Syngenta Seedcare team member, nematode pressure increases over time if populations are not managed. Her research also indicates that crop rotation systems currently used in South Africa are conducive to nematode build-up. "A holistic management approach is critical, given that plant-parasitic nematodes often open the door to secondary fungal infections, and these disease-nematode complexes worsen crop damage," she says.

Van Zyl says that seed treatment is the first line of defence against plant-parasitic nematodes, fungal diseases

and insect attacks, but it has to be supported by other management practices such as crop rotation, in-furrow treatment, cultivar selection and weed control.

Soilborne pathogens

“One of the biggest risks growers face is soilborne pathogens that infect seeds at the time of planting or seedlings as soon as they emerge,” notes Van Zyl. As a management tool, treating seed with fungicides significantly reduces the load of pathogenic fungi in the rhizosphere,

or root microbiome, of crops without negatively affecting seed viability. Seed treatment furthermore ensures the chemical is placed exactly where it is needed, namely around the seed and the roots of the developing seedling, hence requiring less product and a smaller application area than in-furrow or foliar applications.

Well-formulated products, such as those from Syngenta’s Seedcare portfolio, not only protect seed and seedlings, but actively promote uniform emergence and healthy

roots to support optimal yield. Seed treatments also target pests, allowing beneficial species to do their good work, and producers can combine a fungicide with a nematicide in a seed treatment to prevent secondary fungal infections.

“By controlling a key component of soilborne-disease complexes, namely pathogenic fungi, seed-applied fungicides support more sustainable and efficient farming practices that promote soil and plant health,” says Van Zyl.

In combination, healthy soils and healthy root systems result in better yields, bringing us closer to the goal of producing more food with less inputs. It is estimated that producers currently give away as much as 30% of their yields to pests and diseases. Better soil management can change this.

Much as food begins with soil, it also begins with roots. The call to action is therefore clear: Producers across the world have to embrace their role and responsibility as the primary caregivers of agricultural soil in the interest of food security and climate change management alike.

For more information, visit www.syngenta.com.



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PRODUKTE WAT WERK VAN MENSE WAT OMGEE



When the chips are down: Do spuds hold the trump card for global food security?

By Philip Steyn, specialist in commercialisation and enterprise development,
ARC-Vegetable, Industrial and Medicinal Plants

Uncertainties in world food supply and demand have placed the potato in the upper echelon of recommended food security crops. Not only does this easy-to-grow crop boost household food supplies, but it is also being cultivated as a cash crop by a growing number of small-scale producers in South Africa.

The versatility of the potato is endless. It can be used as a fresh vegetable to be cooked at home and incorporated as a raw material into food products, starch, alcohol and animal feed. While tubers can be used for next season's crops, we have seen that the demand has been shifting from fresh tubers to processed products such as convenience food and snacks, where new entrants into the processing sector are increasingly seeking advice on the process.

The drivers behind this trend are:

- Urbanisation.
- Rising incomes.
- Diversification of diets.
- Lifestyles that leave less time to prepare fresh produce for consumption.

Potato yields in the small-scale farming sector average around ten to 20 tonnes/ha, which is far below the average yield of 47 tonnes/ha achieved by our commercial producers.

So, what are the major obstacles standing in the way?

Technical factors

- Low seed tuber multiplication rates.
- Technical complexity and costs associated with seed quality through successive multiplications.
- Seed tubers which are bulky and perishable.
- Potatoes with high fertiliser requirements, but low utilisation efficiency.

- Limited technical and managerial expertise.
- Disease and pests as a major constraint.

Socio-economic factors

- High production costs and lack of credit.
- Price instability due to supply and demand in fresh produce markets.
- Inefficiency of local markets when charging market and agent fees.
- Limited access to higher-value markets. Small-scale potato growers need access to profitable domestic markets, but these are mostly restricted to larger contracted producers.
- Export markets that often close to protect local producers from imports, even if a trade agreement is in place.
- Policy and institutional factors.

Neglect of the potato subsector

- Small-scale producers seldom receive public investment.
- In many areas, poor infrastructural facilities and poor access to



South Africa could benefit from empowering small-scale producers by giving them better access to production inputs, credit and markets. The development of this profitable and sustainable potato subsector in South Africa depends on improvements in quality planting material, suitable potato varieties in respect of water use, resistance to insects and diseases, and adaptability to climate change.

markets are major challenges to the expansion of potato production and its profitability for smaller producers.

Inadequate capacity building

- Support for programmes shoring up more new varieties and scaling up existing integrated disease and insect pest management technologies and methodologies is generally inadequate due to the interest of seed houses to supply their protected varieties, rather than open varieties.
- Programmes to upgrade the skills of potato growers need to be matched by government efforts to create, monitor and enforce regulations on pesticide use and the spread of pesticide or fertiliser residues into water supplies – all of which are major constraints to the sustainability of potato production systems.

Support

- Support for potato producer groups and associations, and local entrepreneurship is lacking.
- Seed supplied by seed houses view this sector as the 'dumping ground' for old and poor-quality seed.
- The industry leans strongly towards seed production for commercial varieties due to their popularity and use of breeders' rights.

Good agricultural practices

The term 'good agricultural practices' (GAPs) refers to principles and codes of practice that are applied to on-farm production and post-production processes, aiming at ensuring safe and healthy food and non-food agricultural products, while considering economic, social and environmental sustainability.

GAP concepts and principles are crucial but difficult to enforce among garden or small-scale producers. In general, this sector is less dependent on fertiliser and chemicals due to cost and availability in smaller units. The cost of enforcing it among smaller producers makes it unlikely to gain ground.



Potato production is perhaps the best way for a small-scale producer to work towards financial independence with the following goals in mind: maximum yield achievable with minimum inputs, independence, and protecting the environment for future generations. In the photograph is Tattas Baloy, Mary Maluleke and Madimetja Makgamatho.

Key indicators of sustainable potato production

Biodiversity and varieties

Although South Africa has 133 potato varieties on the national variety list, 90% of all potatoes planted are from fewer than five varieties. Plant breeders' rights on the one side ensured that only a few breeding programmes performed well in breeding good commercial varieties, while ensuring that seed from old varieties are no longer produced and available to smaller growers. Today, production relies heavily on chemical inputs that the smaller grower cannot afford and seldomly understands.

Seed production and quality

South Africa has one of the best certification systems in the world to ensure good quality material in seed production. This system also has a high price tag leading to exclusivity which makes it inaccessible to

smaller producers, in turn making the availability of seed one of the main constraints. A possible answer is that the cost of rapid multiplication systems should be affordable to encourage small enterprises to produce healthy materials. Another possibility is having legislation and accreditation systems in place for seed certification adapted to local conditions of smaller producers.

Currently, the high cost of seed is forcing small-scale producers to accept downgraded seed with either a high virus status or being physiologically old and losing sprouting and growth vigour. To obtain a high-yielding crop, the seed should be at the correct physiological age and sprouting stage at planting, depending on its purpose. Due to the high price of certified seed, these producers will usually obtain farm-saved seed from non-specialised seed growers.

However, producer-based informal seed systems are generally unable to maintain seed quality or eliminate

diseases such as bacterial wilt or viruses. It is therefore crucial that small-scale producers are trained in the seed system and supported by a system that will assure quality affordability.

Soil health and fertility


Potato cultivation, whether cultivated on a large or small scale, usually involves intensive soil tillage throughout the cropping period, which can lead to soil degradation, erosion and leaching of nitrates. It has been found that conservation agriculture promotes soil health and fertility management, which enhances natural biological processes. Sustainable nutrient management involves a set of management practices designed to conserve soil resources, maintain or enhance productivity, and help reduce growers' reliance on inorganic fertilisers.

A good example is the use of well-decomposed manure with potatoes, out of all the field crops, having

shown the best response at a rate of ten tonnes/ha or more. In line with sustainable practices, is the reduction of chemical use to help ensure a safe environment for the producer and farmworker, and a healthy product for the consumer.

Value addition and markets

Small-scale producers enjoy the advantage of selling their produce locally, thus determining the cost structures and eliminating the cost of transport and fees charged by a market and agents. This makes up for lower yields associated with reduced inputs.

It is important, though, that these producers are also encouraged to form producer groups that will ensure the best negotiation on pricing and purchasing power to reduce the cost of inputs. 

For more information send an email to Philip Steyn at SteynP@arc.agric.za.



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Dr Gudani Millicent Managa: A journey of perseverance and success

By Rotondwa Raligidima, Potatoes SA

The Potatoes SA bursary recipient, Dr Gudani Millicent Managa, was born and raised in Itsani, in the heart of Venda in Limpopo.

Her mother, Johanna Managa, is a single parent who strongly believes in the power of education to transform lives as it did with her daughters. Dr Managa's upbringing made her appreciate the value of hard work, dedication and perseverance. Her younger sister, Konanani, shares her passion for science.

Dr Managa is currently a postdoctoral fellow at the University of South Africa, where she contributes to various research projects, publishes articles in journals, supervises and mentors postgraduate students, and shares her knowledge and professional expertise with her colleagues.

A door opened ...

Dr Managa heard of the Potatoes SA bursary programme and became a beneficiary in 2013. At that time, she was studying at Potchefstroom College of Agriculture and pursuing a Diploma in Agriculture, which she completed within three years, graduating at the top of her class.

The Potatoes SA bursary programme played a crucial role in

funding her undergraduate studies, fully covering her tuition, books, accommodation and meals. She indicated that the awarded bursary was a significant turning point in her academic career, leading to her pursuing her postgraduate studies.

The Potatoes SA bursary programme not only assisted her in achieving her academic goals, but also helped her realise her potential as a professional in the field of agriculture.

According to Dr Managa, her journey since being awarded the Potatoes SA bursary has been nothing short of remarkable. Her academic and professional achievements are a testament to her hard work and dedication. After completing her undergraduate degree, she went on to obtain a master's degree (*cum laude*) in 2018 and her PhD in 2021. She obtained both qualifications in agriculture at Tshwane University of Technology.

Cashing in on opportunities

After completing her undergraduate diploma, Potatoes SA placed her at Product Control for Agriculture at the Tshwane Fresh Produce Market to gain workplace exposure. She worked as a product quality inspector specialising in potatoes.

She fondly remembers her first opportunity to attend the Potatoes SA Symposium, hosted in Cape Town. This was a milestone where she gained invaluable knowledge and broadened her network.

Her success in securing multiple scholarships and gaining international exposure is a testament to the programme's impact. During her PhD journey, she was awarded an international mobility scholarship to Université de la Réunion on Réunion Island where she got the opportunity to conduct research on lactic acid bacteria, fermentation of chayote

leaf (*Sechium edule*), and pineapple (*Ananas comosus*) to produce smoothies.

Her contribution to the potato industry is remarkable. She has dedicated a portion of her career to disseminating knowledge regarding various potato cultivars, sharing best practices for growing and marketing potatoes and engaging with small-scale producers. Her work has helped producers improve their yields and profitability while also promoting sustainable practices that protect the environment.

Improving the programme

Dr Managa strongly recommends the Potatoes SA bursary programme to students, especially those from disadvantaged backgrounds, as it greatly reduces the financial burden of education and builds a concrete foundation for unlimited learning through various opportunities. She suggests that Potatoes SA improves its outreach strategies to different communities by providing enhanced mentorship opportunities. The programme should possibly also regularly review bursary expenses per each institution's fee structure to benefit more students.

Dr Managa highlights that, given the high unemployment rate in South Africa, it would be beneficial to invest in integrating Potatoes SA bursary recipients into the South African potato industry upon completion of their studies.

Her story serves as an inspiration to many, highlighting the importance of initiatives that empower aspiring individuals to achieve their academic and professional dreams. 🌱

For more information about the Potatoes SA bursary programme, email rotondwa@potatoes.co.za.



Dr Gudani Managa during her PhD graduation at the Tshwane University of Technology in 2021.

Empowering communities through small-grower programmes

By Dikgetho Kganye Mokoena, project co-ordinator, and Billy Pholoso Mampa, transformation and research intern, Potatoes SA

South Africa ranks among the countries with the highest rate of income inequality in the world, compared to other middle-income countries. This means extremely high levels of absolute poverty. While the country may be food secure, a large number of South African households are food insecure. Potato farming plays a significant role in ensuring food security and economic growth.

Recognising its importance, Potatoes SA manages the small-grower development programme to empower communities, aspiring potato producers and the youth. As part of this transformative initiative, potato trials were conducted in Mpumalanga, Gauteng, KwaZulu-Natal and the Eastern Cape.

Importance of small growers

Small-scale and subsistence agricultural production is a contributor to food security. It seems counter-intuitive to promote subsistence or small-scale agricultural production in a semi-industrialised economy such as South Africa. However, rising food prices, particularly that of maize, wheat, and now potatoes which form a staple diet of the poor in South

Africa, pose serious problems for the urban and rural poor as most are net buyers of food.

Demonstrations aim to teach potato production, promote food security, encourage commercialisation and foster engagement among stakeholders. The programme is an ambitious endeavour aimed at promoting inclusivity and sustainable agriculture. By providing training and support to communities, aspiring producers and the youth, the programme seeks to uplift individuals by equipping them with the necessary skills and knowledge in potato farming. Through these initiatives, Potatoes SA aims to foster economic empowerment, food security and job creation.

Stakeholder engagement

To ensure the success and effectiveness of the potato planting trials, engagement with relevant stakeholders is crucial. Collaboration with stakeholders allows participants to benefit from the knowledge and resources provided by government agencies, enhancing their understanding of best practices in potato production.

The potato planting trials



The application of fertiliser demonstrated to producers and the community of Katkop in Maclear in the Eastern Cape.

are not only aimed at teaching farming techniques but also focus on community involvement and participation. The trials create a platform for knowledge-sharing, networking, and collective learning. This communal approach fosters a sense of ownership and helps build strong relationships within the agricultural sector.

The potato planting trials thus far conducted under the small-grower development programme yielded fruitful results. Participants gained practical experience, learned about market access, and gained insight into



A potato seed planting demonstration in Witklip in Mpumalanga.



Thembisile Hani local municipality officials, community and neighbouring producers planting seed potatoes



Steve Tshwete local municipality officials, community and neighbouring producers in Delmas in Mpumalanga.



Maclear local municipality officials, community and neighbouring producers in the Eastern Cape.


the commercialisation process. The knowledge gained from the trials will empower individuals to pursue potato farming as a sustainable livelihood option and contribute to the overall development of the agricultural sector.

Moving forward

It is essential to build upon the success of these potato planting trials. Continued support, training, and mentorship should be provided to the participants. Furthermore, expanding

the programme to reach more communities and aspiring producers is crucial for creating a sustainable and inclusive potato farming industry in South Africa.

Potato planting trials held under the programme have demonstrated the transformative power of agricultural initiatives. By providing knowledge and resources, Potatoes SA is fostering economic empowerment, promoting food security and encouraging

sustainable agricultural practices. The collaboration with stakeholders supports the comprehensive engagement in driving agricultural development. 

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

POTATO

SOIL APPLIED (Pivot or high volume boom spray)



Weeks after emergence	PLANTING	1	3	5	7	9	11	13	TOTAL KG/L PER HA
 BIOCEL	1 L/Ha								1 L/Ha
 COSMOROOT	4 Kg/Ha								4 Kg/Ha
 BARRIKAT	2 L/Ha								2 L/Ha
 H-85	1 Kg/Ha	1 Kg/Ha	1 Kg/Ha	1 Kg/Ha	1 Kg/Ha	1 Kg/Ha	1 Kg/Ha	1 Kg/Ha	7 Kg/Ha
 MAINSTAY CALCIO	4 L/Ha	4 L/Ha	4 L/Ha	4 L/Ha	4 L/Ha	4 L/Ha	4 L/Ha	4 L/Ha	28 L/Ha
 MAINSTAY MAGNESIO	2 L/Ha	2 L/Ha	2 L/Ha	2 L/Ha	2 L/Ha	2 L/Ha	2 L/Ha	2 L/Ha	14 L/Ha



NUTRITIONAL PROGRAM **BENEFITS:**

1. Increase yield potential by increasing stems and tubers
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5. Increases **quality and shelf life** of potatoes

For more information regarding this program, please visit our website www.cosmocel.co.za and get in touch with one of our representatives

Reflecting on transformation activities in 2023

By Rendani Murovhi, transformation manager, Potatoes SA

Potatoes SA's commitment to the transformation agenda is unapologetic and 2023 was marked by successful initiatives and achievements. The foundation and systems aimed at empowering, commercialisation, and inclusivity of black producers into the overly-developed potato industry are yielding significant outcomes.

Transformation collaborators

Despite the cost containment measures in place, amid the limited levy which is the main funding source for the transformation programmes, the multifaceted stakeholder relations strategy has yielded positively, securing co-funding for the Enterprise Development Programme (EDP).

Among other stakeholders, a Nedbank-funded initiative implemented by Agri Enterprises, followed by the Department of Agriculture Land Reform and Rural Development (DALRRD) forms part of the partners that have contributed to the transformation deliverables.

On 30 November 2023, Nedbank hosted the Nedbank Green Economy CSI Awards. Solomon Makobela, an EDP producer from Limpopo, walked away with the Green Thumbs award for an outstanding project reflecting growth and sustainability. Makobela forms part of a group of 22 EDP producers that were co-funded by DALRRD. He runs a multi-diversified business, comprising potatoes, peppadew, cucurbits, livestock and grains on a 100 ha farm. His project contributes to the socio-economic needs of his community including employment in the surrounding villages of Avon, Indermark, Pex and Bochum.

The mandate, namely to 'fast track' the transformation goals and commercialise black potato producers is clear and shared by the various industry role-players.

Skills development

Potato Seed Production (PSP) and Prokon SA are among many role-players that have consistently offered workplace experience and transferred potato



Rendani Murovhi interacted with the students and mentors during the site visit at Nelspruit Fresh Produce Market in Mpumalanga.



Producers during a seed trial and demonstration.



Producers during a seed training session in Christiania.

production skills to undergraduate students, forming part of the Potatoes SA tertiary pipeline bursary.

The workplace experience is a compulsory practical programme required by the technikons and colleges for a student to be granted a junior diploma, and plays a key role in introducing soft skills to their theoretical agricultural studies. On 22 November, the transformation team visited the students placed under PSP to assess their performance and progress. Lesedi Motsemme and Makgabo Maswinyane, two beneficiaries of the Potatoes SA undergraduate bursary who study at Potchefstroom College of Agriculture, were visited.

On the second day, the transformation team visited a former PSP student, Olivia Mariri, who recently received a diploma in mixed farming from the Potchefstroom College of Agriculture and is now pursuing an internship at the Nelspruit Fresh Produce market under Prokon SA. The vibrant and ambitious young lady continues to showcase her commitment and is now a qualified inspector. Collen Masiya, her supervisor, is pleased with her progress and work ethic. Mariri's journey under the Potatoes SA bursary was covered in the



Rotondwa Raligidima interacted with students and mentors during the site visit in Lydenburg, Mpumalanga.

November/December 2023 issue of CHIPS.

Seed production training

Potatoes SA has maintained its standards by providing new potato producers, under various developmental/transformation programmes, with relevant industry information and linkage to stakeholders. Wesgrow hosted the new EDP producers on a two-day excursion, demonstrating the laboratory seed multiplication process at Rascal Seed Research Laboratories, the undercover seed production systems and seed trials at Christiana.

Lessons learnt

The exposure visit created enthusiasm among the producers and their confidence increased. The timing of the visit was perfect as all seed production operations could be observed in the field and at the laboratory. The visit provided an opportunity for one-on-one interaction with the seed role-players and engagements with other producers from other provinces.

The most important lesson learned was that the exposure visit, besides increasing knowledge, acts as a medium for building confidence and understanding and validates the importance of utilising certified seeds.

The provision of practical learning or industry-related soft skills creates a pool of experienced and marketable agricultural graduates and gives them a competitive advantage for employment security. Co-funders play a crucial role towards the sustainability of Potatoes SA's development programmes.

Recognition of producers that perform exceptionally well boosts confidence and plays a role in encouraging other producers in the pipeline and South Africa as a whole.

For more information, contact Rendani Murovhi at rendani@potatoes.co.za.

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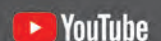


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02/2012

Potato milk: The cream of the crop

By Lize Theunissen, Courtney Hildebrandt, Lara Havenga, Ilke Olivier, Zàn-Mari Roth, Christopher Doms and Elzaan Louw, Kapôkí developers and students from the Department of Food Science at Stellenbosch University

Students from the Department of Food Science at Stellenbosch University have developed a potato milk alternative called Kapôkí as part of the department's new product development project for 2023. The challenge, 'Pantry Party – Unnovate to Innovate', was to create a product that is suitable for storage at an ambient temperature with a minimum shelf life of 14 days. We decided to develop potato milk.

It is an affordable, minimal labour input, low-fat, plant-based, shelf-stable 'milk', that is free of soya bean, tree nuts, gluten, dairy and lactose. Therefore, it can become a staple in homes – even for South Africans without refrigerators.

'Unnovation' entails thinking laterally to solve new problems with existing technology and systems. Unnovation in this instance meant that we needed to utilise tried and tested methods of production. That is why we decided to use retort sterilisation, a method used for thermal processing to ensure that Kapôkí remained stable for the required 14-day shelf life. Retort sterilisation is based on the principles of the traditional canning preservation method, which dates to 1790.

The potato has been cultivated and consumed by humans for 8 000 years and was used as one of the main ingredients in Kapôkí. Potatoes are a staple in many nations' diets because it is nutrient-dense, easily cultivated and versatile. By using functional ingredients such as flavour masking agents, emulsifiers, and flavourings we were able to create a final product that imitates cow's milk in taste, appearance and mouthfeel.

Affordable milk alternative

The target market for this product would be individuals who prefer an alternative product to dairy milk. This market has massive growth potential.

Global market insights estimate that the dairy alternative market already exceeded US\$27.5 billion in 2022 and projected a compound annual growth rate of 9% between 2023 and 2030.

Market research was done in the form of research forms using the Internet platform, Google. From the responses of 50 respondents, it was evident that affordability was a major concern among regular consumers of plant-based milk, especially in respect of existing products. We learnt that there was a gap in the market for an affordable product. Most of the raw ingredients used in the potato-based milk were more affordable than those used to make nut and oat milk.

Additional factors driving the potential success and motivation to develop Kapôkí, include lactose (or milk sugar) intolerance, allergies to cow's milk, nuts, soya, and gluten as well as sustainability.

According to a local study performed by international vegetable wholesaler, ProVeg, more than 75% of adults globally are intolerant to ingested dietary lactose. A similar study conducted in 1983 revealed that 78% of black South Africans are lactose intolerant. Providing this large population group access to affordable plant-based milk free from lactose could be profitable.

As potatoes are naturally free from lactose, dairy, tree nuts, soya, and lactose – no additional processing and input costs will be necessary to eliminate these substances.

Apart from its allergy-free benefits, Kapôkí can expand the world of alternative milk to lower socio-economic measure (LSM) groups. By using a more cost-effective ingredient (potatoes) as opposed to expensive almonds or oats, the input costs and



Kapôkí is a new milk alternative made from potatoes.

final selling price of this product were reduced.

Sustainability factors

This product aims to be more sustainable and environmentally friendly than its alternative milk competitors. Existing milk alternatives contribute significantly to greenhouse gas emissions and water usage. To produce 1 l of oat milk and 1 l of almond milk, 0.9 and 0.7 kg of carbon dioxide (CO₂ gas) are produced respectively, compared to potato milk which only produces 0.27 kg of CO₂ gas/l.

Additionally, potato cultivation uses significantly less water than almonds and oats. Only 287 l water is required to produce a kilogram of potatoes, which is significantly less than almonds, which require 7 195 l water to produce a kilogram of almonds, and oats which require 3 800 l for a kilogram of nuts.

Kapôki's carbon footprint will also be smaller than imported produce because locally sourced potatoes can be used.

The South African food industry wastes ten million tonnes of food every year. A large portion of

wasted food ends up in landfills which ultimately leads to large emissions of greenhouse gases – like methane and carbon dioxide gas. Common by-products that result from industrial potato processing are rejected potatoes and potato pulp. The production process of Kapôki can utilise rejected potatoes and potato pulp by incorporating it into its formulation to minimise food wastage.

Kapôki can be produced with a resource-efficient mentality by producing as little waste as possible. Apart from packaging material, the only waste generated during the production process of this product would be the potato peels. Cooked potato peels can be fed to pigs as they are a source of fibre and easily digestible. Alternatively, the potato peels can be added to compost heaps and used as organic fertiliser on farms.

Production and taste

Sifra, a potato cultivar that is available throughout the year across South Africa, was initially used to produce Kapôki during our product development phase.

To make the potato milk, the potatoes are first processed into a powder. The raw potatoes are washed, peeled, and sliced. The cut potatoes are then boiled until soft and strained to remove the excess water. Once boiled, the potatoes are then mashed and spread thinly on a baking tray. It is then dehydrated and ground into a fine powder using a high-speed blender.

The potato milk is then produced by blending the potato powder and water in a high-speed blender. An emulsifier with added minerals

is added to the potato and water mixture and blended again. The remaining ingredients are added which include canola oil, a flavour-masking agent, fructose, salt, flavourings, and a sweetness enhancer. The mixture is blended again and ready to be bottled. The potato milk is bottled, sealed, and taken to a facility for in-pack retort sterilisation.

Ultimately, this process leads to the manufacturing of plant-based milk with a faint potato flavour and an off-white colour. It has a neutral taste and is not predominantly sweet or savoury. The flavour, colour and aroma of cow's milk were used as a reference during the development of Kapôki.

The nutritional composition was analysed by Microchem Lab Services. The typical nutritional information can be found in *Table 1*.

Commercial possibilities

Kapôki could be mass-produced. The ingredients used are relatively inexpensive, the raw ingredient (Sifra potatoes) is available year-round in large supply, and large-scale production won't be labour-intensive.



A group of students from Stellenbosch University developed the new milk alternative, Kapôki.



The potato milk is bottled, sealed, and taken to a facility for in-pack retort sterilisation.

However, processing would require some expensive equipment. The necessary equipment includes a homogeniser, decanter, ultra-high-temperature pasteuriser, mixing vessels, dehydrator, milling machine and an industrial roller to mash the potatoes into a thin sheet.

Kapòkí could be sold to retailers at an estimated price of just over R20/ℓ when produced on a small scale. However, this price will decrease significantly if the product is produced on a larger scale. When comparing the estimated price to existing plant-based milk alternatives

in the South African market, the production of Kapòkí proves to be less expensive.

A clever marketing proposal from the group is to set up a stall on Stellenbosch University's Rooi Plain (outside the Neelsie student centre) and hand out Kapòkí samples to students. They can in turn post a picture of themselves consuming Kapòkí to win a prize.


Kapòkí stalls can be set up at grocery stores to hand out samples to shoppers. Most local retailers have social pages. Kapòkí could be advertised on these platforms, creating awareness of this new product. 

Table 1: Typical nutritional information (as packed).

	Per 100 ml	Per serving (250 ml)	% NRV*
Energy (kJ)	66	165	
Protein (g)	0.5	1.2	2
Glaecemic carbohydrate	2	5	
of which total sugar	0.2	0.5	
Total fat (g)	0.7	1.7	
of which saturated fat (g)	0.1	0.2	
Transfat (g)	0.0	0.0	
Monounsaturated (g)	0.4	1.0	
Polyunsaturated(g)	0.2	0.5	
Cholesterol (mg)	<5	<12	
Dietary fibre# (g)	<0.2	<0.5	
Total sodium (mg)	47	117	
Calcium (mg)	34.4	86	7

*Nutrient reference values (NRVs) for individuals four years and older. #Analysed using the AOAC 991.43 method.

For more information, contact
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Illegal foreigners in your employment

By Christiaan Swart, senior legal advisor, LWO Employers Organisation

Employers are prohibited from employing any illegal foreign nationals in terms of the *Immigration Act, 2002 (Act 13 of 2002)*. Where an employer is found guilty of contravening this act, the employer will face imprisonment of no longer than one year, for a first offence, or can be fined.

Employers should ensure that potential employees are in possession of a valid work permit/visa. Be sure to conclude a fixed-term contract with such a person, clearly stating that the contract is valid for the duration of the valid work documentation.

Where the foreign national is employed on a permanent contract, or without any contract, the employer must follow a fair procedure before terminating employment. Take note that South African labour legislation protects foreign nationals, even if they don't possess a valid work permit/visa. This means foreign nationals can also approach the Commission for Conciliation, Mediation and Arbitration and lodge a claim for unfair dismissal if the employer does not follow a fair procedure.

Steps to take

The employer must act as soon as he/she becomes aware of the fact that the employee's work documentation has expired by informing the employee that legislation prohibits the employment of illegal foreign nationals and that it is therefore a requirement to continue employment. Should he/she fail to produce a valid work permit/visa within a reasonable time, it could lead to the termination of employment.

The employer must provide the employee with the opportunity to obtain the required valid work permit/visa. This could entail giving the employee time off in order to obtain the documentation, and even assistance with the application. If the employee fails to produce the required valid work permit/visa, the employer must follow the proper incapacity procedure to terminate employment and dismiss the employee.

The incapacity procedure


Issue a notice of an incapacity consultation. This notice must set out that the issue regarding the employee's valid work permit/visa will be discussed as he/she is operationally unable to perform his/her contractual obligation. Should he/she fail to provide the required valid documentation, it could lead to termination of employment.

Consult with the employee and discuss the notice in full. Provide the employee with the opportunity to respond to the allegations of not being in possession of the required

valid documentation. Discuss any possible assistance that can be offered to the employee. Warn the employee that, if the valid documentation is not provided, it could lead to termination of employment.

Should the employee fail to provide the required valid documentation, issue the employee with a notice to attend an incapacity hearing. During the hearing, provide all the facts/documents/evidence to the chairperson. The employee will also be given the opportunity to state his/her case before the chairperson. The chairperson may recommend dismissal.

UIF registration

Employers must also ensure that foreign employees are registered with the Unemployment Insurance Fund (UIF). The only exception where the employer does not have to register the employee for UIF, is when the employee is appointed on a fixed-term employment contract and will return to his/her country of origin after the contract expires. 



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Bespaar belasting en bou welvaart

Deur Johan du Plessis, PSG Wealth-adviseur

Elke jaar dié tyd, naby die einde van die finansiële boekjaar, sien ons hoe kliënte belasting probeer verminder deur bates aan te koop. Ongelukkig gebeur dit ook dikwels dat geld dan bestee word aan bates wat jaarliks in waarde verminder en nie regtig noodsaaklik is nie, maar bloot gekoop word met die hoop op 'n moontlike belastingbesparing. Die harde werklikheid is egter dat dit jou welvaart oor die lang termyn sal verminder.

Om welvaart op te bou en belasting te bespaar is wel 'n realistiese moontlikheid, maar dan moet die regte finansiële instrumente daarvoor ingespan word. Uittree-annuïteite het oor die jare 'n slegte naam as gevolg van hoë koste en beperkings op beleggingskeuses gekry. Deur die jare het die beskikbare produkte by beleggingsfirmas egter baie verander en regulasies oor hoe die geld belê mag word, is ook verslap.

Dus het dié instrumente weer aantreklik geraak vir finansiële beplanningsoeïndes om sodoende welvaart op te bou en die nodige beskerming te kry.

Bydraes tot 'n uittree-annuïteit

Die Suid-Afrikaanse Inkomstediens (SAID) se vergunning sê eenvoudig dat alle bydraes wat in 'n belastingjaar gemaak word, belastingaftrekbaar sal wees tot 'n maksimum van 27.5% van jou belasbare inkomste, en hoogstens R350 000 se bydraes vir die betrokke belastingjaar. As jou belasbare inkomste dus meer as R1 272 727 is, sal jy beperk word tot totale bydraes van R350 000.

Hier is 'n voorbeeld ter illustrasie. As jy 'n belasbare inkomste van R1 miljoen per jaar verklaar, sal jou belasting betaalbaar vir die 2024-belastingjaar R292 284 wees. As jy 'n bydrae van R275 000 aan 'n

annuïteit lewer, sal die belasbare inkomste waarop die SAID jou belasting bereken, afneem van R1 miljoen na R725 000 (R1 miljoen minus R275 000 se bydraes). Dus sal jou nuwe belasting betaalbaar vir dié jaar R182 192 wees.

Om welvaart op te bou en belasting te bespaar is wel 'n realistiese moontlikheid, maar dan moet die regte finansiële instrumente daarvoor ingespan word.

In hierdie voorbeeld is dit 'n belastingbesparing van R110 092 wat beteken jy het nie net belasting bespaar nie, maar jou welvaart het ook gegroei. Deur R275 000 te belê in 'n produk wat jou welvaart vermeerder en wat met die regte beleggingskeuses dus nie 'n waardeverminderende bate is nie, het jy reeds jou welvaart met R110 092 verbeter. Op R275 000 verteenwoordig dit groei van 40% wat geen ander belegging bied nie.

Verdere voordele

Geen belasting sal op enige kapitale groei of inkomste gehef word wat binne annuïteite verdien word nie. Dus sal jou belegging in 'n annuïteit beter groei toon as enige ander belegging, aangesien jy geen belasting binne die produk betaal nie. Verder is uittree-annuïteite ook vrygestel van boedelbelasting en eksekuteursfooie, wat natuurlik verdere welvaart vir die erfgename verseker.

Uittree-annuïteite bied veilige beskerming teen skuldeisers. Indien jou toekomsplanne nie uitwerk nie, sal geen skuldeiser kan aanspraak maak op geld wat binne uittree-annuïteite belê is nie. Regulasie 28

van die *Wet op Pensioenfondse, 1956 (Wet 24 van 1956)* is ingestel om jou geld te beskerm deur te bepaal hoe jou portefeulje gediversifiseer kan word. Alhoewel dit dikwels as 'n beperking op beleggingskeuses beskou word, is die belastingaftrekking steeds 'n beter voordeel wat swaarder weeg as die beperkings van Regulasie 28.

In teenstelling met die ou-generasie produkte wat beskikbaar was, maak die nuwe-generasie produkte dit aansienlik eenvoudiger om in 'n annuïteit te belê. Geen verpligte maandelikse bydraes is meer nodig nie en jy kan begin met bydraes van selfs net R500 per maand. Enkelbedragbydraes kan ook gelewer word. Dit is dus nou 'n baie aantrekliker opsie in die onsekere wêreld waarin ons vandag leef.

Uittree-annuïteite is vandag deursigtiger wat koste betref en is steeds 'n uitstekende produk om te gebruik om jou welvaart te bou en vir aftrede te spaar. 📍

Die inligting in hierdie artikel is nie finansiële, belasting-, regs- of beleggingsadvies nie en die maatskappye in die PSG Konsult Groep waarborg nie die geskiktheid of potensiële waarde daarvan nie. Aangesien individuele behoeftes en risikoprofiel verskil, stel ons voor dat jy jou gekwalifiseerde finansiële adviseur raadpleeg indien nodig. PSG Wealth Financial Planning (Pty) Ltd is 'n gemagtigde finansiële diensverskaffer (FDV 728).

Vir meer inligting kontak:
Johan du Plessis (PSG Wealth Bloemfontein, Deale Road) by
johan.duplessis@psg.co.za of
072 3861 802.



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

Average percentage downgraded: **4.44%**.

Total number of bags delivered from 13 regions and non-producing suppliers and inspected at the fresh produce markets: **12 332 536**.

Figure 1: Classes of potato bags inspected during Oct/Nov 2023 at all fresh produce markets.

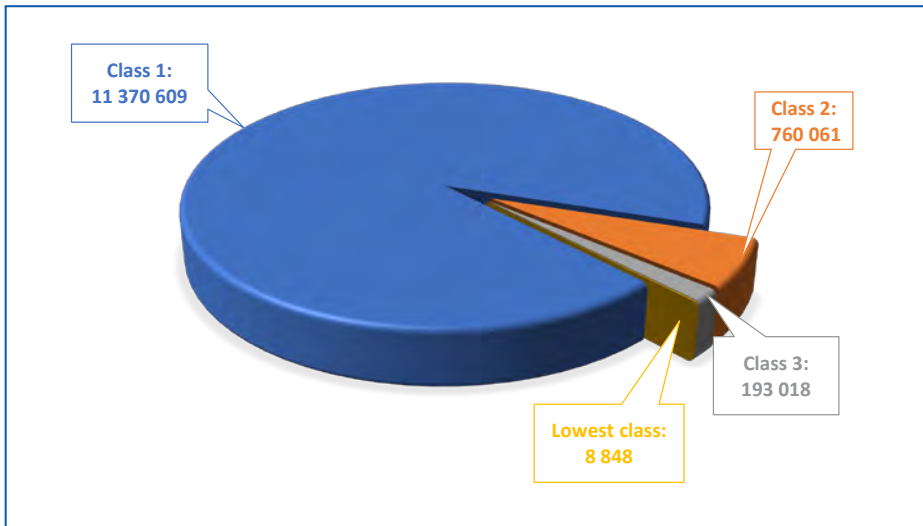


Figure 2: Classes of potato bags downgraded (total 547 314) at all fresh produce markets during Oct/Nov 2023.

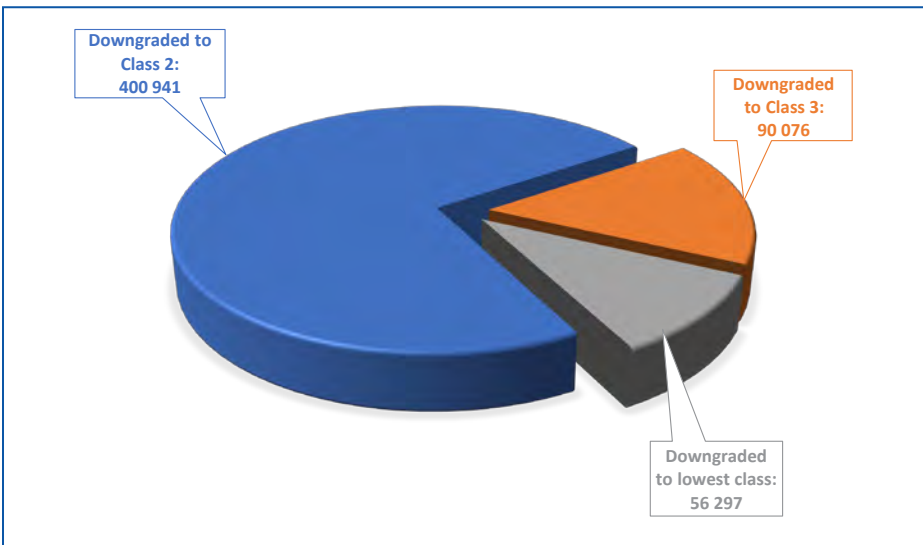


Figure 3: Potato bags downgraded (%) per region at all fresh produce markets during Oct/Nov 2023.

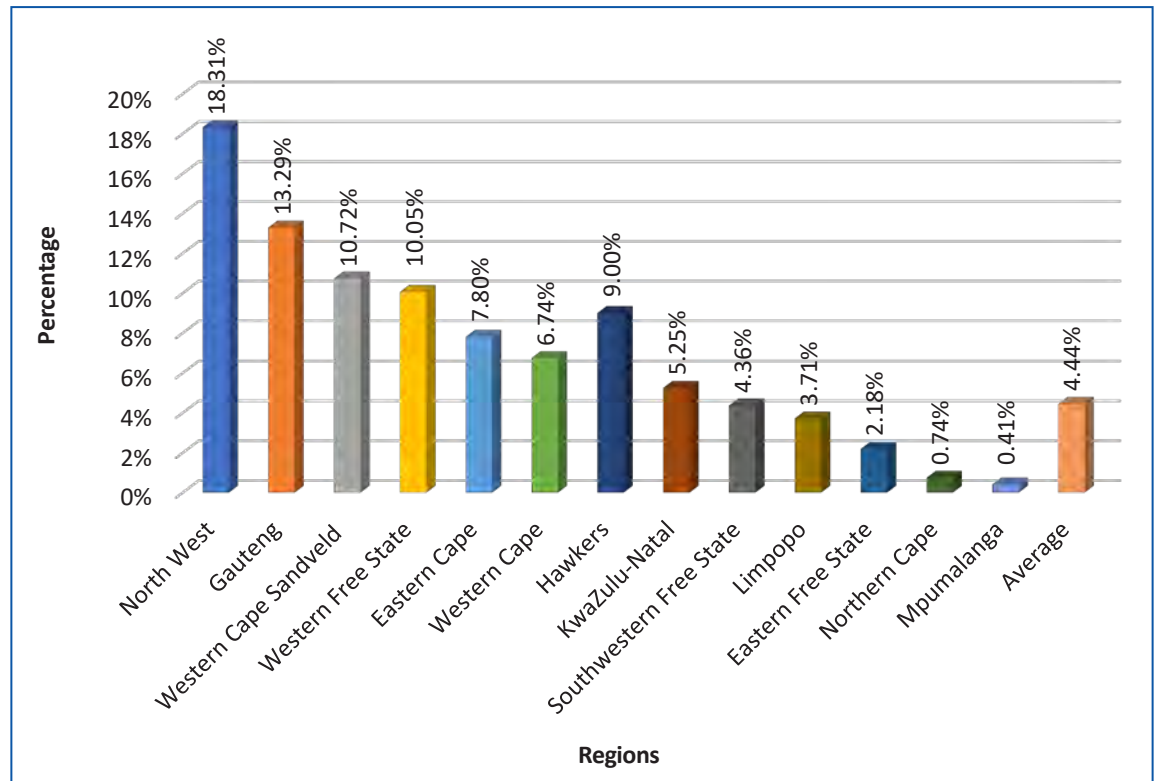
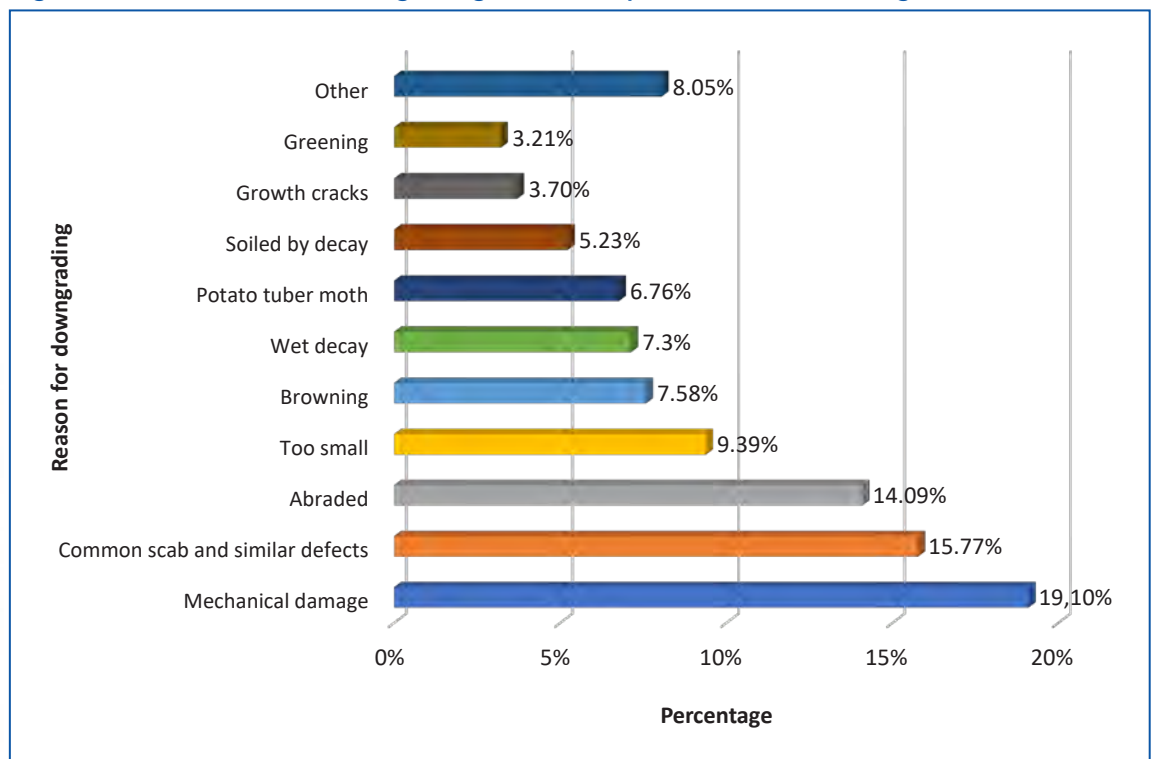
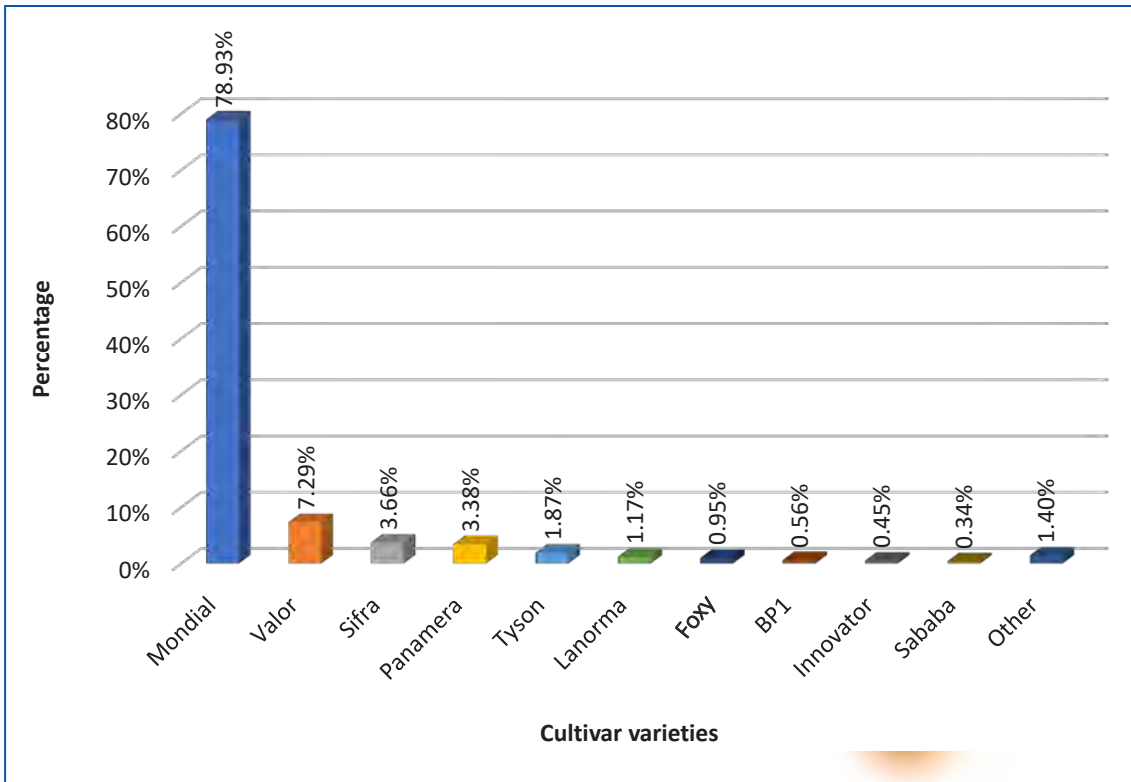


Figure 4: Main reasons for downgrading at all fresh produce markets during Oct/Nov 2023.



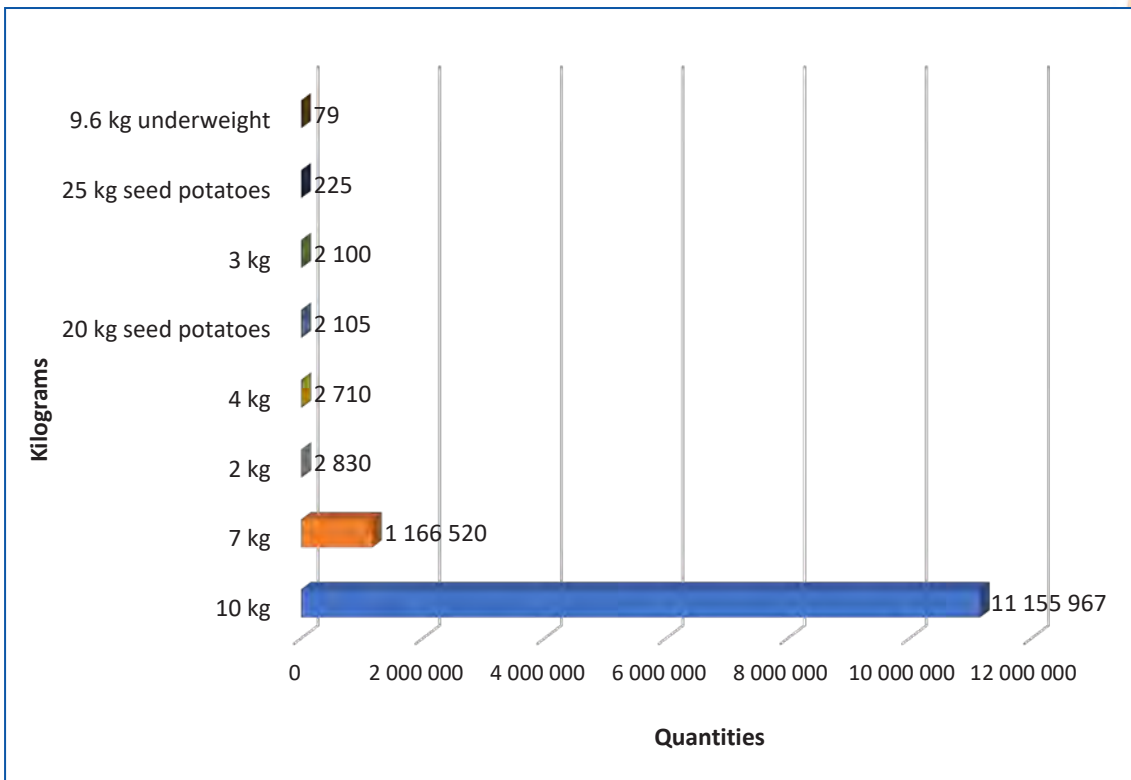
Other include: Wilt, insect damage, broken and cut tubers, skin eelworm, sprouts, glassiness/watery, heat damage, hollow heart, eelworm, collectively too big and small, brown fleck, dry stem-end, too big, Rhizoctonia, wet by decayed tubers, cold damage, soiled by decayed tubers, watergrass damage (ext) and foreign matter.

Figure 5: Cultivar varieties inspected at all fresh produce markets during Oct/Nov 2023.



Other include: Sound, Mondeo, Up-to-Date, El Mundo, Hertha, Avalanche, Markies, Belmonda, Electra, Taisiya, Apache (POWW), Abby and Nicola.

Figure 6: Volumes of different potato bags inspected at all fresh produce markets during Oct/Nov 2023.



2024 ADVERTISING RATES

CHIPS

EDITOR AND CEO, PLAAS MEDIA: LYNETTE LOUW

084 580 5120 | lynette@plaasmedia.co.za

SALES MANAGER: MARNÉ ANDERSON

072 639 1805 | marne@plaasmedia.co.za

Published on behalf of Potatoes SA

ADVERTISING

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SUSAN STEYN 082 657 1262 | susan@plaasmedia.co.za

ZONA HAASBROEK 082 960 7988 | zona@plaasmedia.co.za

ADVERTISING PACKAGES

- » One-year pre-planned booking.
- » Added value: Editorial and interviews.
- » 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
Third page (portrait)	R4 860	237mm (h) x 62mm (w); no bleed
Quarter page (portrait)	R2 565	115mm (h) x 85mm (w); no bleed
Banner/strip ad (fifth page landscape)	R2 592	56mm (h) x 180mm (w); no bleed

Rates exclude package discounts, VAT and agency commission.

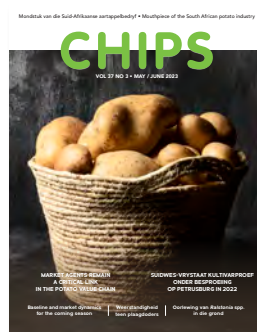
PAYMENT TERMS:
Existing clients – strictly 30 days after invoice date.
New clients – 14 days prior to placement.

2024 DEADLINES

Deadline for advertorials

Deadline for ready advertisements (PDF/Jpeg/TIFF)

Jan/Feb 2024	Mar/Apr 2024	May/June 2024	Jul/Aug 2024	Sep/Oct 2024	Nov/Dec 2024	Jan/Feb 2025
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



Kies 'n aartappel wat die hitte kan weerstaan - op die land en in die kombuis. #LekkerLanorma

GWK Aartappels



Die proses om 'n perfekte aartappel te kweek vat tyd en sorg. Laat GWK Aartappels jou bystaan om beter te beplan vir optimale opbrengste en sukses. Kontak ons span:

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Fanus van Zyl | Wes-Vrystaat/Noordwes | 082 554 7652
Attie van den Berg | Oos-Vrystaat/KwaZulu-Natal | 082 878 9490
Birtie Myburgh | Suidwes-Vrystaat | 082 372 7875
Danie van Heerden | Oos-Kaap/Suid-Kaap | 082 415 3666
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