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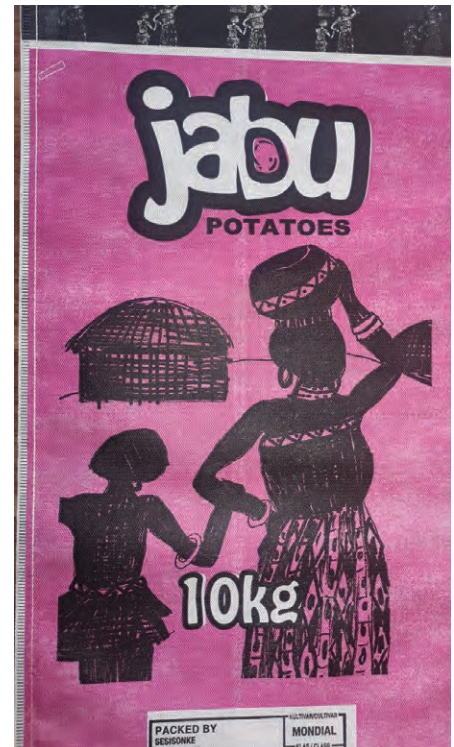


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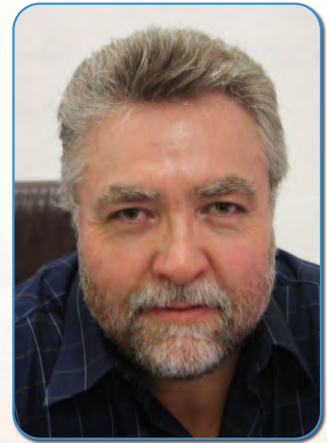


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Koop plaaslik en ondersteun 'n bedryf met klas

Deur Willie Jacobs, HUB van Aartappels SA



Producente sal teen hierdie tyd deeglik bewus wees van Aartappels SA (ASA) se pogings om Suid-Afrikaanse verbruikers te oortuig om plaaslike aartappelprodukte te koop, pleks van die bevrore produkte wat deur lande soos Nederland en België, hier gestort word.

Storting is 'n deurlopende proses wat onderworpe is aan markkragte. Die storting-scenario waaraan Suid-Afrika tans blootgestel is, kan op 'n kombinasie van hoë volumes en lae pryse neerkom, hoewel huidige statistiek gekenmerk word deur lae pryse, terwyl volumes matige stygings toon. Gegewe die lae pryse waarteen hierdie produkte in die kleinhandel aangebied word, is dit 'n natuurlike reaksie by 'n huisvoos verbruiker of sukkelende restaurantbedryf om die meer bekostigbare produkte aan te koop.

Die uitdaging is dus om hierdie verbruikers in te lig waarom hierdie storting in die eerste plek plaasvind, en wat dit aan ons plaaslike produsente en ekonomie doen ... en hulle dan te oortuig om eerder plaaslik te koop en verseker te wees van topgehalte produkte.

Rimpeleffek op plaaslike bedryf

'n Belangrike beginsel wat ons moet oordra, is waarom ons produkte duurder is as dié wat hier gestort word. Dit is algemene kennis dat produsente in Europa deur hul regerings gesubsidieer word en derhalwe goedkoper kan

produseer. Die Suid-Afrikaanse regering is een van die min wat nie hulle landbouprodusente subsidieer nie. Produksie in Suid-Afrika is dus onderworpe aan hoë produksiekoste wat deur die produsent alleen gedra moet word.

Op 'n praktiese vlak is dit ook belangrik dat verbruikers en selfs insetverskaffers, die rimpeleffek van storting verstaan. Bevrore skyfies wat die land binnekom word meestal aan die groothandel bemark, wat dan die skyfies herverpak en aan die kleinhandel, sowel as die restaurant- en gasvryheidsbedryf verskaf. Dit beteken dat ons plaaslike bevrore skyfieverkaffers onmiddellik 'n nekslag toegedien word. Dit is bykans onmoontlik om met die laer prys van die gestorte produk te kompeteer, en dit is eweneens baie moeilik om die afset daarvan te monitor.

As 'n natuurlike gevolg, verlaag die verwerker se vraag aan die produsent. Die meeste van ons plaaslike produsente wat afhanklik is van die verwerkingsbedryf, is dié wat nie pak- en stoorfasiliteite het nie. Ons ontwikkelende boere word dus swaar getref. Die oorskot plaaslike produkte wat andersins na die verwerkingsektor sou gaan, moet nou 'n ander afsetpunt kry, en dit is ons plaaslike varsproduktemarkte. Die groter aanbod op die markte plaas weer afwaartse druk op prys, met die gevolg dat produsente nie 'n goeie prys vir hul aartappels ontvang nie.

Dit alles kom terug na die konstante stryd tussen volhoubaarheid en nie-volhoubaarheid. 'n Bedryf kan

nie volhoubaar voortbestaan indien goeie pryse nie gerealiseer kan word nie. Groot volumes gestorte produkte op 'n gegewe tyd, kan ook beteken dat die produksieseisoen in 'n hele aartappelproduksiegebied geaffekteer kan word. Hoewel dit nie tans die geval is nie, bestaan die vrees dat dit uiteindelik wel op so 'n ramp kan afstuur.

Samewerking is noodsaaklik

Dit is ons elkeen – van ASA tot aartappelprodusente en bedryfsrolspelers, en veral die media – se plig om die verbruiker in te lig oor die uitstaande gehalte van die aartappels wat in ons land geproduseer word, en die bevrore skyfies wat daarvan gemaak word. Ek kan skaamteloos sê dat dit van beter gehalte is as die produkte wat hier gestort word. Die verskil, om die waarheid te sê, is opmerklik. Verbruikers moet aangemoedig word om veral na die verpakking te kyk en hulself te vergewis van die afkoms van die produk (land van oorsprong) wat hulle koop.

Ons is baie trots op die gehalte van ons aartappels en die produsente wat dit voortbring, en ons gaan hierdie topklas-bedryf slegs in stand kan hou met behulp van voortgesette verbruikersondersteuning. Maar dan moet ons verbruikers wéét wat hulle koop.

ASA sal onverpoos voortgaan met sy projekte en pogings om ons bedryf te bevorder en verbruikers ingelig te hou, maar ons het die ondersteuning van die totale waardeketting nodig om werklik sukses te bereik. **G**

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Humility amid greatness

Ever wonder why the potato is often referred to as 'humble'? The words 'humble' and 'potato' are almost always associated with each other or used together. In some contexts, these words even have other meanings which have nothing to do with food, e.g., a humble potato can refer to an unattractive girl who is looking for a boyfriend.

Perhaps 'humble' refers to the look of the potato – not as attractive as many other colourful vegetables. Perhaps it does not look as glamorous on a plate as many other foods. Or perhaps the potato is more of an 'unassuming' food, which does not need dressing up and taking to the limelight.

A majestic food in the least

The fact is potatoes are anything but humble. In fact, the potato is a majestic food crop. When it comes to cooking and consumption, it is versatile, nutritious and affordable. In terms of production, potato producers admire its hardiness, yield and ability to withstand many of nature's challenges. It is tuber royalty and has



been feeding the world for hundreds of years, being lauded for its potential to address and alleviate food crises across the world.

This issue of *CHIPS* carries a clear message across its content: the potato is a hero. In South Africa, it is a well-researched crop that offers cultivation solutions where many others can't. It is endorsed by the Heart and Stroke Foundation of South Africa for its nutritious properties and is found in many forms in almost every household across South Africa, fresh or processed. A fresh potato can be as attractive and classy as any other food product.

Potato production is increasing across the world. This, of course, includes South Africa where especially developing farmers are being equipped with the tools to produce this amazing crop. Potato is a highly competitive crop and fresh produce markets are testament to the varieties of potatoes and the demand for it.

All of these aspects and many more are addressed in this latest issue of *CHIPS*. Be sure to read and digest every page, and by the end of it you will be as convinced as I am that the majestic potato is the go-to food of our time. Perhaps humble in its appearance, but magnificent in its impact on the world we live in.

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World's first potato-based plant milk

Based in Sweden, the newly launched vegan dairy brand, Dug, developed the world's first potato-based plant milk. According to the start-up, it doesn't only foam like real dairy – it is far more sustainable, even when compared to competitor plant-based milk on the market.

Using a base of potatoes, the formulation contains pea protein, maltodextrin, chicory fibre, rapeseed oil and natural flavourings. Dug is also fortified with vitamins including Vitamin D, Vitamin B12 and folic acid.

The brand's potato milk boasts an impressively low carbon footprint, estimated at around 0.27 t to 0.31 kg of CO₂e/kg. It also uses up far less land, requiring half the amount needed to produce oats. In terms of water use, production of Dug requires 56 times less water than almond milk. – *Potato Business*

Potatoes offer higher quality diet for teens

A recent study conducted among children aged nine to 18 years has suggested that eating potatoes can be an effective strategy to moderately improve intake of key shortfall nutrients. Compared to no potato consumption, results showed that eating potatoes in any form (baked, boiled, mashed, in mixed dishes and fried) was associated with higher intakes of several essential nutrients, including dietary fibre and potassium – two nutrients of public health concern – and improved nutrient adequacy.

"Given their popularity, more than half (56%) of those surveyed reported eating some form of potatoes, as there are opportunities to lean into these findings to make it easier for young people to find, cook and enjoy potatoes as part of a healthy dietary pattern," says Victor Fulgoni, co-author of the study. – *Potato News Today*

Amylose – potatoes' secret to lower GI

A combined team of six scientists from Montana State University and North Dakota State University recently published a paper with a promising conclusion regarding the consumption of potatoes with higher concentrations of amylose.

New nutrition data suggests that consumption of potatoes with higher concentrations of amylose, could result in a lower glycemic index (GI) and could be expected to offer health benefits to people who have prediabetes, diabetes and/or obesity.

Most commercially produced potatoes have a high content of highly branched amylopectin starch, which generally results in a high GI. Some potato cultivars with lower rapidly digestible amylopectin levels have previously been identified and are commercially available in niche markets in some countries, but are relatively unavailable in the United States and Latin America. – *Potato Business*

RNA manipulations could boost yield

Manipulating RNA could allow plants to yield dramatically more crops, as well as increase drought tolerance, says a group of scientists from the University of Chicago, Peking University and Guizhou University.

With initial tests, adding a gene encoding for a protein called FTO to both rice and potato plants, increased their yield by 50% in field tests. The plants grew significantly larger, produced longer root systems and were better able to tolerate drought stress. Analysis also showed that the plants had increased their rate of photosynthesis. – *UChicago News*

'Kragspan' now even more powerful

The IntelliGro/VKB 'Kragspan', which was launched in the 2020/2021 season for summer row crops, introduced its commercial offer for the 2021/2022 season during an online event.

The offer, which has been extended to Limpopo and now includes crop solutions for potatoes, addresses the critical factors of cost-effectiveness and product availability. The commercial offer allows producers access to crop-specific solutions that are aimed at optimising yield and maximising profit, which is supported by a highly beneficial commercial offer.

Key aspects of the various commercial offers for both summer row crops and potatoes include discounts on DEKALB seed, Multi Green fertiliser and IntelliGro crop solutions, as well as a period of up to six months in which no interest is levied on accounts with VKB. – *Press release, IntelliGro*



From the left are Johan Nienaber (regional director, IntelliGro), Junior Ferreira (producer), Janet Lawless (IntelliGro), Francois Swanepoel (VKB), Izak Dreyer (producer) and Niel Kruger (marketing director, IntelliGro).

Zylem seed potatoes trading as RegenZ

Zylem, the supplier of bulk seed potatoes based in KwaZulu-Natal, has transferred its seed potato business to a new trading entity called RegenZ. According to Justin Platt, managing director of Zylem, the decision to create a separate trading entity for the seed potato business was taken by the directors of Zylem in early 2021.

It was done to prioritise the needs of the company's various industries, namely the seed potato and soil health products and services they offer. "With the different requirements and conditions of the two departments, it makes more practical and commercial sense to create dedicated vehicles to handle the respective operations," says Platt.

RegenZ will assume all of Zylem's potato-related business activities. The ownership and direction of RegenZ is the same as Zylem. Platt will also serve as MD of RegenZ. For any enquiries, send an email to admin@zylemsa.co.za. – Ursula Human, CHIPS

Early maturing varieties a success in Asia

Across Asia, 170 potato varieties have been released either through the International Potato Centre (CIP)'s breeding programme over the last four decades, or by using germplasm held in its collections. These varieties are bred to be climate-smart and to help fight off potato pests and diseases, contributing to the food and nutrition security, as well as the livelihoods of ten million people across Asia.

This success is largely due to the use of improved potato varieties, including those that come from CIP's breeding programme.

"Across Asia, the effects of climate change increase longer drought spells, and pest and disease outbreaks. This means that we need to breed more climate-smart varieties that can resist existing and novel diseases and can work in different local conditions," says Marcel Gatto, an agricultural economist from CIP, based in Vietnam. – *Potato Pro*

SA welcomes sixth IPCC assessment

"South Africa welcomes the long-awaited sixth assessment by the Intergovernmental Panel on Climate Change (IPCC). This is an important contribution to enhancing scientific understanding on climate change, that must inform international policy at the United Nations Framework Convention on Climate Change (UNFCCC)'s COP26 in Glasgow, Scotland, in November," says minister of forestry, fisheries and the environment, Barbara Creecy.

The report also highlights and analyses the detail available in terms of climate change in Southern Africa, reinforcing existing scientific evidence that the region is likely to become drier, and reductions in precipitation can already be detected.

The report states that droughts will become more frequent at 1.5°C of global warming. It has also long been known that the region is warming drastically, at about twice the global rate of warming. – *Press release, Department of Forestry, Fisheries and the Environment*

Possible shortages in UK as floods ruin crops

Chips and roast potatoes could be in short supply in the United Kingdom (UK) for the rest of the year due to flooded crops in Europe. Unprecedented weather on the continent has affected potato producers and processors in the region, with particularly varieties grown for frozen chips affected.


Potatoes are not the only staple being affected this year, as a 'perfect storm' of labour shortages, Brexit, higher distribution and fuel costs, as well as the continuing impact of the Covid-19 pandemic are combining to create the most serious challenge the industry has faced in years.

Prices are also likely to increase across the board as the issues could drive up inflation by 4%. Belgium, Germany and the Netherlands all saw major flooding and thousands of hectares of farmland were destroyed. – *Metro*

Agriculture mourns loss of exemplary leader

It is with deepest sympathy that Potatoes South Africa (PSA) shared the loss of Frank Lawrence, who passed away due to a farming accident at a time when he was still offering so much to so many in the agricultural industry.

Frank made a significant and valuable contribution to the potato industry and will be sorely missed. PSA acknowledges and appreciates Frank's selflessness. As a donor involved in the establishment of the Potato Industry Development Trust (PIDT) in 2004, Frank set the journey of the potato industry in motion through his exemplary leadership.

To Frank's family, friends and colleagues, you are in our prayers. May God give you consolation during this time of loss and may you always remember the good that Frank has done. – *Potatoes SA* 



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Aartappelreus roep die PIDT vaarwel

Deur Elmarie Helberg

Ernst Yzel is 'n aartappelboer, maar dit is nie ál nie. Vir bykans tien jaar het Ernst met ywer die leiding geneem as voorsitter van Aartappels SA (ASA) se Aartappelbedryfsontwikkelingstrust (PIDT) om 'n verskil in die bedryf te maak. Hy het egter onlangs besluit om hierdie hoofstuk van sy loopbaan af te sluit. Volgens dr Ben Pieterse, wie sedert 1 Julie vanjaar die leiers by hom oorgeneem het, is Ernst 'n man wat die PIDT en ASA met dieselfde respek gedien het as wat hy sy eie grond hanteer.

Ernst se boerderyloopbaan het in 1981 vlam gevat. As aartappelboer wat vir langer as 24 jaar op droëland in Marquard in die Oos-Vrystaat geboer het, het Ernst deurlopend respek vir sy grond getoon. Waar produsente dikwels elke drie jaar aartappels plant, hou Yzel Boerdery by 'n rotasieskedule van vyf tot ses jaar. "Gedurende hierdie tyd was aartappels baie goed vir my," vertel Ernst.

'n Integrale deel van die PIDT

Ernst is al sedert die PIDT se ontstaan in 2004 deel van die prentjie. Die trust het hoofsaaklik ten doel om bedryfsheffings in te vorder en te bestuur ingevolge statutêre strategieë. Volgens sy kollegas, het hy in sy tyd by die PIDT verseker dat die doel van die PIDT gedurende elke statutêre tydperk verwesenlik word, en dat die projekte wat deur die trust goedgekeur is, die totale aartappelbedryf bevoordeel.

Wanneer daar oor leierskap gepraat word, is Ernst van mening dat 'n mens nie kan verwag om deel te wees van 'n lekker gemeenskap as

hy nie bereid is om 'n bydrae te lewer nie. Hy het van 'n jong ouderdom af reeds leierskapsposisies ingeneem en het op verskeie koöperasies se direksies gedien. "Net toe ek dink ek is klaar, toe betree ek die aartappelbedryf, wat op daardie stadium baie swaar getrek het."

Na 'n besluit deur aartappelprodusente om die rigting van 'n statutêre heffing in te slaan, het die Suid-Afrikaanse aartappelbedryf 'n totale nuwe wêreld betree. "Ons kon uiteindelik met ander lande saamwerk. Die sinergie wat daaruit voortgevloei het, het ASA in 'n wêreldklas-organisasie omskep," sê Ernst.

Intussen het die plaaslike aartappelbedryf aanhou gegroei, met produksie wat die afgelope dekade bykans verdubbel het.

'n Wyd gerespekteerde voorsitter

Ernst was gedrewe deur ASA se doel om 'n produsente-organisasie van wêreldklasgehalte te wees, met streng finansiële dissipline, goeie dienslewering en deursigtigheid wat ononderhandelbaar is.

Dr Pieterse meen Ernst het 'n stewige fondament gelê, met genoeg ruimte vir hom om as voorsitter daarop voort te bou, ongeag of die aartappelbedryf voorspoed geniet of uitdagende tye moet oorkom. "Ek het die voorreg gehad om saam met Ernst te werk en verskeie vergaderings met plaaslike en buitelandse produsente en wetenskaplikes by te woon," sê hy.

"Ek was altyd beïndruk met die manier waarop Ernst enige aspek van aartappelproduksie of breër landbou met 'n plaaslike óf buitelandse



Ernst Yzel, voormalige voorsitter van die PIDT.

gehoor kon bespreek. Sy kennis en insig het van hom 'n waardevolle en gerespekteerde voorsitter van die ASA-raad sowel as die PIDT gemaak. Ons is dankbaar vir sy monumentale bydrae tot die aartappelbedryf."

Ernst is allermins nie klaar met aartappels nie. Hy sal steeds 'n belangrike rol as trustee van die PIDT vervul. Hy is ook intussen deur die minister van landbou, Thoko Didiza, as die voorsitter van die Vegetable Value Chain Roundtable, aangestel.

"Ek en dr Pieterse kom al 'n lang pad," sê Ernst. "Hy is 'n aartappelman in murg en been en is beslis baie bekwaam. Ek het geen twyfel dat hy die PIDT na nuwe hoogtes sal neem nie." ©

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Potato maestro fills PIDT chair

By Elmarie Helberg

A thought leader and prominent figure in the potato industry has a challenging new task at hand – taking the Potato Industry Development Trust (PIDT) to new heights. Dr Ben Pieterse, whose illustrious career in the agricultural sector has spanned close to four decades, recently took over the reins from Ernst Yzel as chairperson of the PIDT.

Dr Pieterse's career started in 1981 as a potato researcher at the Agricultural Research Council (ARC). His involvement in potato research started when he worked as an undergraduate student on a project for Potatoes South Africa (PSA) with Prof Hans-Peter Hammes of the University of Pretoria.

This piqued his interest in potatoes and, as they say, the rest is history. The project was the beginning of a year-long

commitment to the potato industry. Dr Pieterse was then appointed research manager at PSA in 2004. In 2011, he made another move and accepted a position as agronomy manager at McCain Foods until his recent retirement.

An invaluable contribution

Dr Pieterse was awarded the Solanum Tuberosum Meritum Award for excellent performance. This is the highest accolade awarded in the South African potato industry. The award is given to individuals or organisations who make a significant contribution to the success of the potato industry and strive to play a leadership role in sustainable potato production in South Africa.

The PIDT is tasked with receiving and applying statutory levies as prescribed by the relevant legislation. These goals include research, transformation, information and marketing projects that are all critical to the sustainability of the potato industry.

According to Dr Pieterse, the PIDT finds itself in the middle of this process and is an important driver of the pursuit of sustainability. Trustees of the PIDT have come a long way in the potato industry, and their skills and expertise make their involvement a critical component of the ongoing development process.

"My involvement in the potato industry has created many opportunities for which I will always be very grateful. I was also privileged to work with excellent scientists and was able to learn from outstanding agricultural leaders. I believe that the opportunity to be involved as a

trustee will be yet another highlight for me," Dr Pieterse says.


Committed to prosperity

According to chief executive officer of PSA, Willie Jacobs, Dr Pieterse brings a wealth of highly relevant experience to the current work of the PIDT. "He is well positioned to support PSA in its mission to provide strategic support services to a dynamic industry and catapult it to even greater success," says Jacobs.

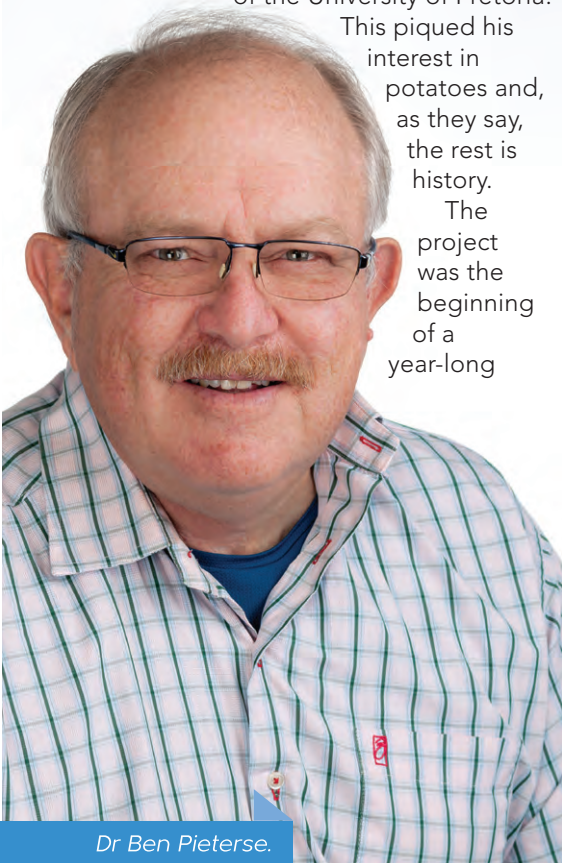
"I know the management team at PSA as professionals who are knowledgeable in their respective fields and have the prosperity of the industry at heart. I look forward to supporting them within the mandate of the PIDT," Dr Pieterse mentions.

"I also learned early on that there is a great source of expertise among producers and that it is essential to promote liaison with them. This co-operation is an indispensable source of knowledge that will make a major contribution to sustainability."

Regarding his predecessor, Dr Pieterse says Yzel played an instrumental role in instituting a competitive industry with the establishment of programmes. "I am excited to continue building on these successes with Yzel and the rest of the trustees.

"Enhancing the sustainability of the potato industry in South Africa is not only a passion, but an ideal I am committed to achieving. I look forward to making a meaningful, tangible and groundbreaking contribution in my duties," Dr Pieterse says. 

To find out more about the PIDT, contact Potatoes SA at email info@potatoes.co.za or 012 349 1906.



Dr Ben Pieterse.



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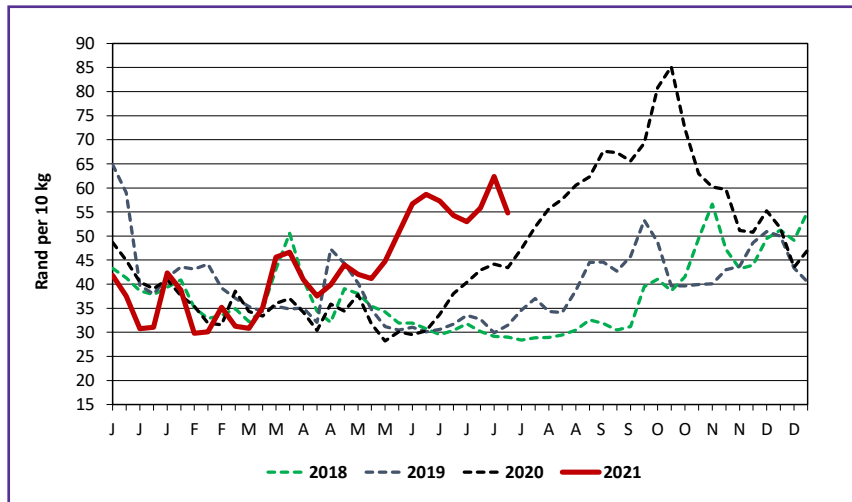
Markmonitor: Die eerste 30 weke van 2021 op varsproduktemarkte

Deur Janó Bezuidenhout, Aartappels SA

Die gemiddelde weekprys op varsproduktemarkte (VPM'e) toon steeds 'n opwaartse tendens. *Figuur 1* dui die weeklikse gemiddelde prys op alle markte vir alle klasse aan. Voorraad- en gehalteprobleme het pryse van Januarie tot middel Maart onder druk geplaas. Daarna was voorraad vir drie weke laag, wat veroorsaak het dat daar opwaartse druk op die gemiddelde weekprys was (*Figuur 2*).

Vanaf middel April het voorraadvlakke 'n afwaartse tendens begin volg tot in die tweede week van Junie 2021. Van daar af het die voorraadvlakke se tendens opwaarts begin beweeg. Die effek van die onlangse onluste in Suid-Afrika kan gesien word in die skielike daling in voorraadvlakke in Julie 2021.

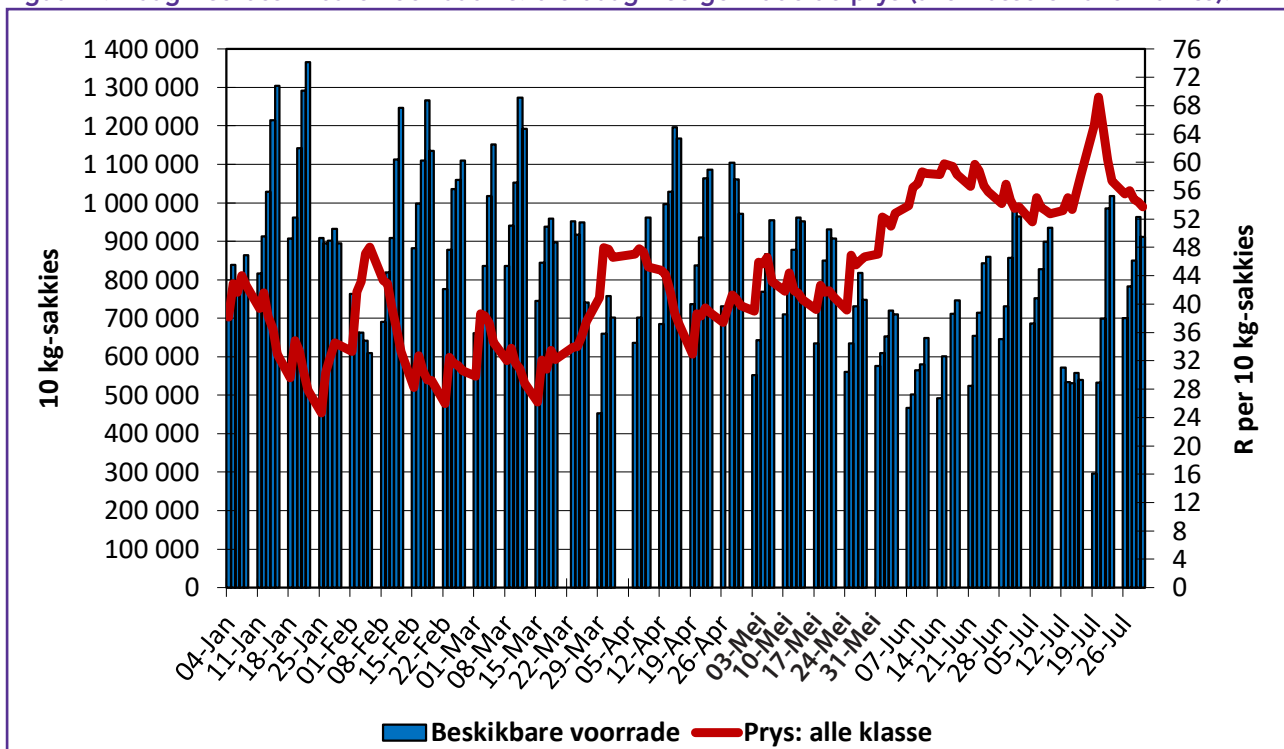
Figuur 1: Weeklikse gemiddelde pryse – alle markte en alle klasse.



Hierdie skielike daling in voorraad het veroorsaak dat paniek-aankope ontstaan het, wat die pryse opwaarts

gedruk het. Die voorraad het die week daarna relatief vinnig na 'normale' vlakke teruggekeer.

Figuur 2: Daaglikse beskikbare voorraad vs. die daaglikse gemiddelde prys (alle klasse en alle markte).



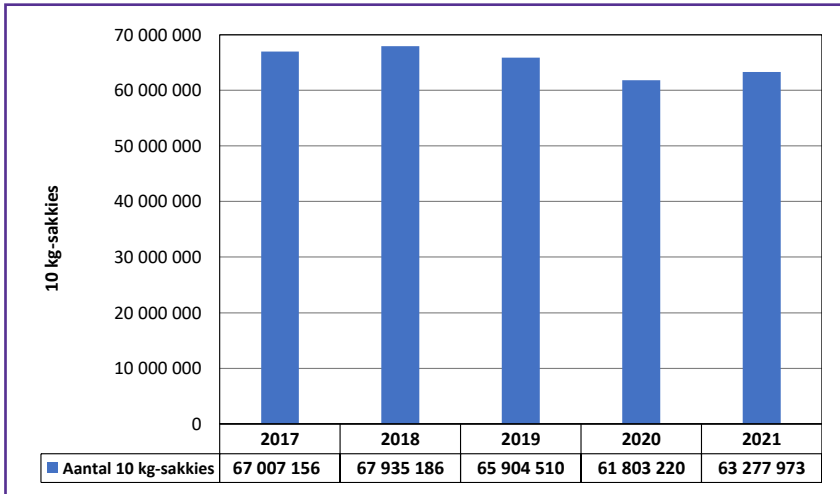
Tabel 1: Verkope op VPM'e tot week 30 van 2021.

| Mark | Aantal 10 kg-sakkies | % van totaal | Gem. prys (R/10 kg) | % van verkope op VPM'e | | | |
|-----------------------|----------------------|--------------|---------------------|------------------------|--------|-------------|----------|
| | | | | Klas 1 | Klas 2 | Klas 3 en 4 | Klas 1 M |
| Johannesburg-mark | 24 856 356 | 39.3% | 42.35 | 78% | 15% | 7% | 19% |
| Tshwane-mark | 12 185 330 | 19.3% | 42.8 | 67% | 24% | 9% | 17% |
| Durban-mark | 5 810 148 | 9.2% | 43.17 | 73% | 16% | 11% | 23% |
| Kaapstad-mark | 5 287 873 | 8.4% | 46 | 73% | 21% | 5% | 22% |
| Springs-mark | 3 188 704 | 5% | 39.7 | 65% | 24% | 11% | 14% |
| Klerksdorp-mark | 2 041 933 | 3.2% | 38.58 | 61% | 26% | 13% | 15% |
| Oos-Londen-mark | 1 836 712 | 2.9% | 45.62 | 70% | 20% | 10% | 23% |
| Port Elizabeth-mark | 1 774 570 | 2.8% | 42.28 | 68% | 21% | 11% | 24% |
| Bloemfontein-mark | 1 632 494 | 2.6% | 42.71 | 62% | 23% | 15% | 16% |
| Pietermaritzburg-mark | 1 539 988 | 2.4% | 38.65 | 58% | 25% | 18% | 16% |
| Welkom-mark | 1 246 884 | 2% | 41.23 | 64% | 21% | 16% | 15% |
| Vereeniging-mark | 602 042 | 1% | 36.63 | 73% | 18% | 10% | 15% |
| Witbank-mark | 378 703 | 0.6% | 45.27 | 70% | 21% | 9% | 13% |
| Mpumalanga-mark | 352 362 | 0.6% | 48.73 | 68% | 24% | 8% | 7% |
| Nelspruit-mark | 189 216 | 0.3% | 48.79 | 65% | 21% | 15% | 5% |
| George-mark | 186 742 | 0.3% | 42.86 | 62% | 23% | 15% | 14% |
| Kimberley-mark | 86 413 | 0.1% | 39.31 | 68% | 18% | 14% | 16% |
| Kei-mark (Umtata) | 81 564 | 0.1% | 34.55 | 35% | 30% | 36% | 5% |
| Totaal | 63 278 034 | 100% | 42.56 | 72% | 19% | 9% | 19% |

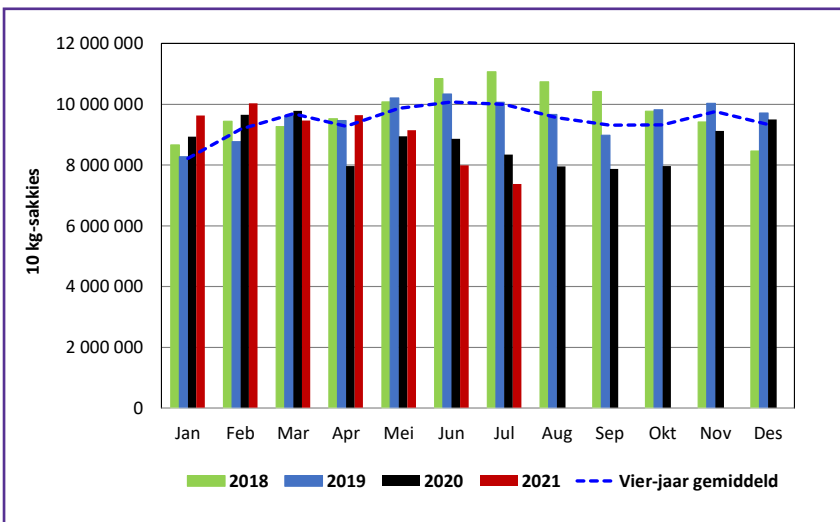
Tabel 2: Voorsiening aan VPM'e tot week 30 van 2021.

| Streek | Aantal 10 kg-sakkies | % van totaal | Gem. prys (R/10 kg) | % van verkope op VPM'e | | | |
|------------------|----------------------|--------------|---------------------|------------------------|--------|-------------|----------|
| | | | | Klas 1 | Klas 2 | Klas 3 en 4 | Klas 1 M |
| Oos-Vrystaat | 17 678 901 | 28% | 42.4 | 67% | 21% | 12% | 14% |
| Wes-Vrystaat | 12 855 925 | 20% | 45.29 | 68% | 23% | 9% | 22% |
| Suidwes-Vrystaat | 6 162 517 | 10% | 37.51 | 77% | 14% | 9% | 23% |
| Noordwes | 5 636 968 | 9% | 38.56 | 81% | 12% | 8% | 17% |
| KwaZulu-Natal | 3 872 182 | 6% | 40.73 | 74% | 20% | 7% | 16% |
| Sandveld | 3 829 469 | 6% | 45.06 | 76% | 22% | 2% | 22% |
| Gauteng | 2 261 179 | 4% | 33.39 | 84% | 12% | 4% | 27% |
| Noord-Kaap | 3 638 597 | 6% | 47.54 | 60% | 22% | 18% | 18% |
| Noordoos-Kaap | 1 535 050 | 2% | 40.59 | 67% | 24% | 9% | 22% |
| Limpopo | 3 980 696 | 6% | 50.47 | 82% | 14% | 3% | 17% |
| Mpumalanga | 843 662 | 1% | 33.19 | 70% | 25% | 5% | 14% |
| Ceres | 785 581 | 1% | 44.53 | 85% | 8% | 7% | 29% |
| Oos-Kaap | 118 953 | 0.19% | 39.15 | 69% | 20% | 11% | 23% |
| Suidwes-Kaap | 45 039 | 0.07% | 41.11 | 83% | 16% | 1% | 23% |
| Suid-Kaap | 33 315 | 0.05% | 34.77 | 54% | 44% | 2% | 21% |
| Totaal | 63 278 034 | 100% | 42.56 | 72% | 19% | 9% | 19% |

Figuur 3: Kumulatiewe hoeveelheid 10 kg-sakkies verkoop op markte tot week 30 van elke jaar.



Figuur 4: Maandelikse verkope op markte – 2018 tot 2021 (alle verpakkings omskakel na 10 kg-sakkies).



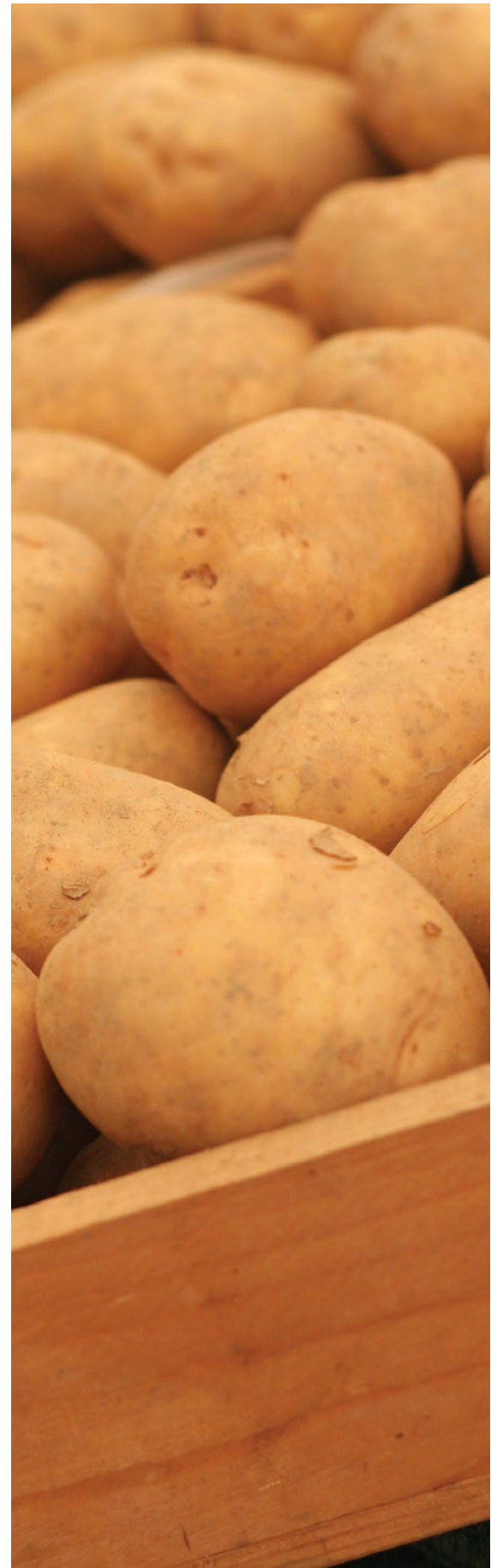
'n Afwaartse tendens sedert April 2021

In die eerste 30 weke van 2021 het verkope op varsprouktemarke (VPM'e) met 2.4% verhoog van 2020 se ooreenstemmende syfer, aldus *Figuur 3*. Let ook op dat 2021 nou nie meer die hoogste verkoopsyfer vir die afgelope vyf jaar gerealiseer het, soos in die eerste twee mark-monitor-artikels in *CHIPS* genoem is nie. Die verkope is nou die tweede laagste in die afgelope vyf jaar, wat 2.4 miljoen sakkies minder is as die vier-jaar gemiddeld.

Figuur 4 illustreer die maandelikse verkope op VPM'e sedert 2018. Hier kan gesien word dat daar sedert April 2021 'n afwaartse tendens in maandelikse verkope

is. Die maandelikse verkope het sedert Mei 2021 onder die vier-jaar gemiddeld inbeweeg, terwyl voorraadvlakke ook soortgelyke afwaartse tendense getoon het. Dit kan gesien word deur die styging in pryse, wat kommerwekkend kan wees, sou voorrade laag bly.

Tabel 1 bevat die aantal sakkies wat in die eerste 30 weke van 2021 deur die verskeie markte verkoop is. Die vyf grootste markte was in hierdie tydperk gesamentlik verantwoordelik vir 81% van die land se verkope. Die gemiddelde prys (alle klasse en groottes) vir elke mark verskyn ook in *Tabel 1*. Die gemiddelde prys het met 12.5% gestyg tot R42.56 per 10 kg-sakkie.





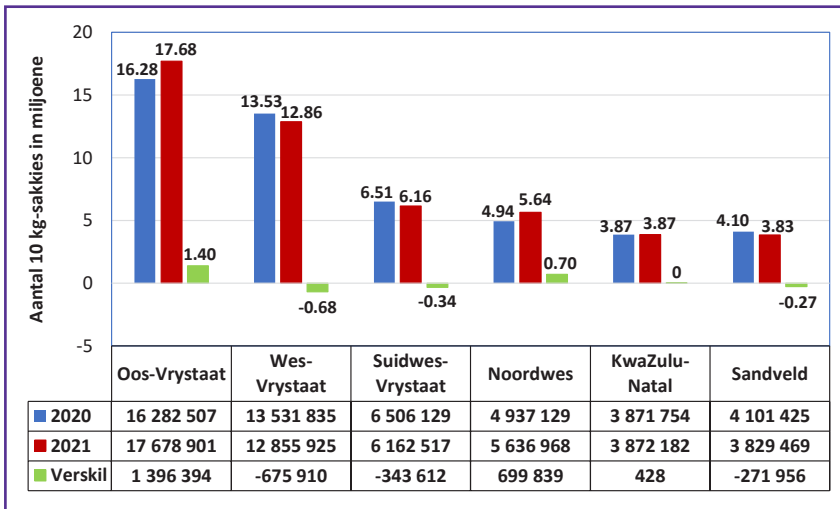
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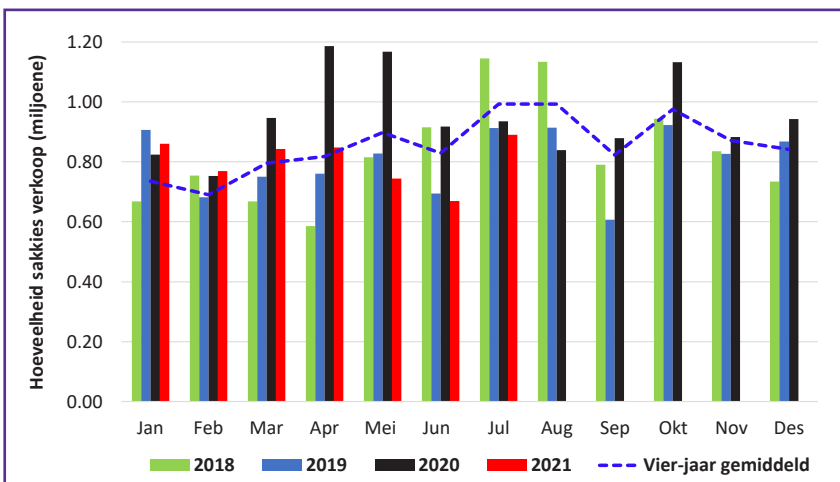
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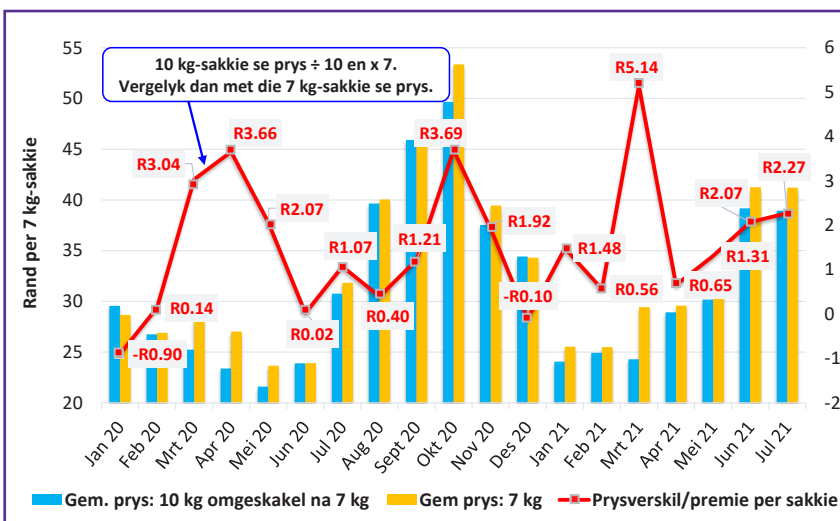
Figuur 5: Aantal 10 kg-sakkies verkoop (eerste 30 weke) per streek vir 2021 vs. 2020.



Figuur 6: Maandelikse verkope van 7 kg-sakkies op markte van 2018 tot 2021.



Figuur 7: Johannesburg-mark 2021: Gemiddelde maandelikse prys per 7 en 10 kg-sakkie (omgeskakel na 7 kg), asook 'premie' verdien op 'n 7 kg-sakkie.



Uit die vyf grootste markte was die Johannesburg- en Springsmarkte se gemiddeld pryse weer eens laer as Suid-Afrika se gemiddelde prys, ten spyte daarvan dat die Johannesburg-mark se totale verkope 78% Klas 1-sakkies – die hoogste van alle markte – was. Hierdie is ook in die vorige twee markmonitor-artikels in *CHIPS* waargeneem.

Grootste streke verkoop meer as 50%

Die drie grootste streke wat in hierdie tydperk in die mark was, het steeds 58% van die aartappels op markte verkoop, aldus *Tabel 2*. Die Limpopo- en Noord-Kaap-markte het van die hoogste gemiddelde pryse (alle klasse en groottes) vir hierdie tydperk gerealiseer. *Tabel 2* illustreer ook die persentasiesamestelling van elke streek se Klas 1, 2, 3 en 4 wat in hierdie tydperk voorsien is.

Indien ons die ses grootste streke se voorsiening vir 2021 met 2020 vergelyk, sal gesien word dat drie streke in die eerste 30 weke meer, en die ander minder as die vorige jaar gelewer het (*Figuur 5*). Die Oos-Vrystaat het vanjaar tot dusver 1.4 miljoen sakkies meer gelewer as dieselfde tyd verlede jaar, en Noordwes ongeveer 700 000 sakkies meer (*Figuur 5*).

Figuur 6 dui die maandelikse verkope van 7 kg-sakkies sedert 2018 aan. In 2021 se eerste drie maande was die aantal 7 kg-sakkies se verkope meer as die vier-jaar gemiddelde syfer. Vanaf April 2021 het die markte minder 7 kg-sakkies begin verkoop en het die verkope onder die vier-jaar gemiddeld inbeweeg. In Junie het die verkope van 7 kg-sakkies verder verlaag, maar in Julie 2021 het die verkope verhoog.

Figuur 7 dui weer aan wat die premie vir 'n 7 kg-sakkie op die Johannesburg-mark vir die vyf maande is. In Junie en Julie 2021 het die premie bo die R2 per 7 kg-sakkie inbeweeg. ©

Vir meer inligting, kontak Janó Bezuidenhout by jano@potatoes.co.za.

Kultivars wat die afgelope tyd op varsproduktemarkte presteer

Deur Jano Bezuidenhout en FP Coetzee

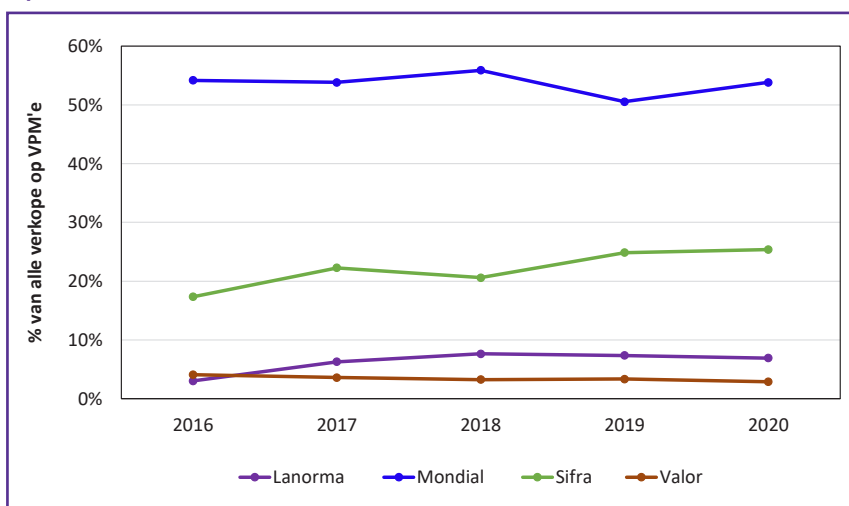
Een van die belangrikste besluite wat 'n aartappelprodusent moet maak, is die tipe kultivar om te plant. Hierdie besluit word deur verskeie faktore beïnvloed, waaronder kultivareienskappe, klimaat, produksiegebied, verbruikersvoorkeure, insetkoste en so meer. Baie van hierdie kultivareienskappe word deur die kultivarproewe wat deur Aartappel SA (ASA) se navorsingsafdeling gedoen word, geïllustreer. In hierdie artikel word gekyk na hoe sekere kultivars op varsproduktemarkte (VPM'e) presteer. Die afgelope paar jaar domineer Mondial-verkope op VPM'e. Mondial is verantwoordelik vir ongeveer 55% van alle aartappels wat op VPM'e verkoop word.

Tendense van die hoof kultivars

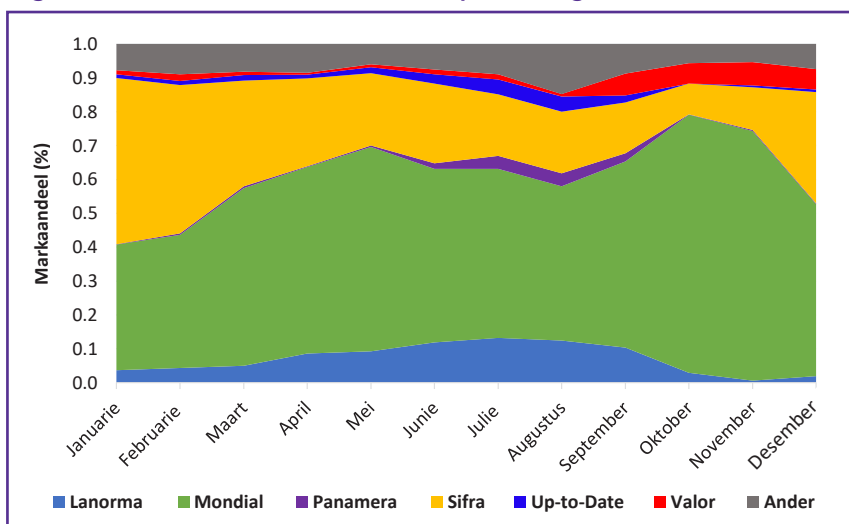
In *Figuur 1* word die top vier kultivars van die laaste vyf jaar uitgebeeld. Uit hierdie vier kultivars, is Sifra die enigste wat 'n opwaartse tendens oor tyd toon, terwyl die ander drie sywaartse of effens afwaartse tendense toon. Mondial het die afgelope jaar weer 'n opwaartse tendens getoon.

Mondial en Sifra het regdeur die jaar 'n gemiddelde marktaandeel van onderskeidelik 54 en 25% op VPM'e gehad (*Figuur 2*). Lanorma, die derde grootste kultivar op VPM'e, se marktaandeel begin in Januarie toeneem, tot en met September, vanwaar dit geleidelik

Figuur 1: Die top vier kultivars gebaseer op die persentasie verkope op VPM'e sedert 2016.

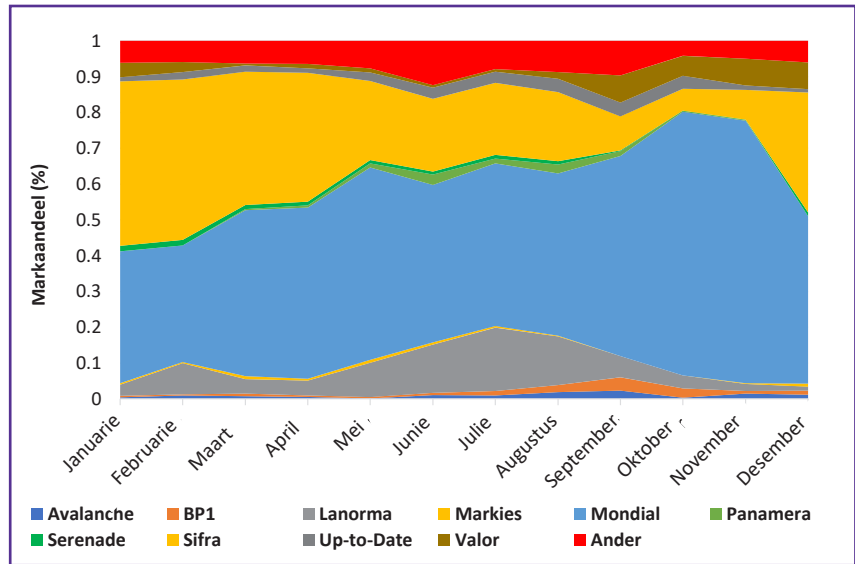


Figuur 2: Marktaandeel van kultivars op VPM'e gedurende 2020.





Figuur 3: Markaandeel van kultivars op VPM'e gedurende 2019.

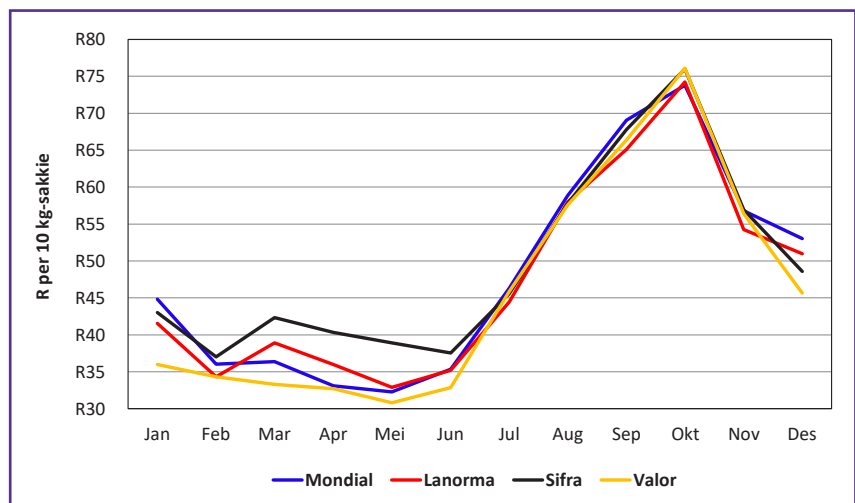


begin afneem. Hierdie afname in die marktaandeel van Lanorma is merendeels streeksgebonde.

Tussen Junie en September 2020 het Lanorma meer as 10% van die marktaandeel geniet. Valor, aan die ander hand, verteenwoordig ongeveer 6% van VPM'e se verkope vanaf September tot Desember. Panamera se marktaandeel het in Junie en September 'n piek bereik, waar die kultivar 'n maksimum van 4% van verkope op VPM'e verteenwoordig het. Up-to-Date het vir nege maande minstens 1% van die verkope verteenwoordig.

Figuur 3 dui die marktaandeel van die kultivars in 2019 aan. Indien 2019 met 2020 vergelyk word, word daar gesien dat Panamera en Up-to-Date beide hul marktaandeel in Julie en Augustus 2020 effens vermeerder het. Lanorma het in Februarie en Julie 2020 sy marktaandeel verloor, maar dit weer in September verhoog. Mondial het ook sy marktaandeel tussen Februarie en Julie 2020

Figuur 4: Gemiddelde kultivarpryse (Klas 1, alle groottes) per 10 kg-sakkie.



verhoog teenoor dieselfde tyd in 2019.

Pryverskille

Die jaarlikse gemiddelde pryse vir hierdie kultivars word in Tabel 1 uitgebeeld. Figuur 4 bevat die gemiddelde prys per 10 kg-sakkie

per maand oor alle groottes (Klas 1). Die kultivarpryse verskil redelik tot Junie 2020, en vanaf Julie tot November 2020 is daar kleiner verskille tussen die kultivarpryse.

Die grootste gemiddelde prysverskil (Klas 1, alle groottes) van R9.07 per 10 kg-sakkie, was tussen Sifra en Valor gedurende Maart 2020. Volgens Tabel 1 blyk dit of die verskil in prys vir Klas 2 minder is as dié van Klas 1 en 3 vir die onderskeie kultivars. 📍

Tabel 1: Jaarlikse gemiddelde pryse per 10 kg-sakkie per klas vir alle groottes.

| Kultivar | Klas 1 | Klas 2 | Klas 3 |
|----------|--------|--------|--------|
| Sifra | R45.40 | R37.80 | R28.17 |
| Mondial | R50.54 | R39.39 | R29.27 |
| Lanorma | R44.49 | R41.99 | R33.59 |
| Valor | R55.28 | R41.36 | R35.31 |

Vir meer inligting, kontak Jano Bezuidenhout by jano@potatoes.co.za of FP Coetzee by fp@potatoes.co.za.

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Aartappelpakmasjiën (140 kratte/dag), sorteer vyf groottes en klasse. Twee stikmasjiene met vervoerband ingesluit. GOEIE TOESTAND



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Vergelyk jou weeklikse markpryse met ander produsente s'n

Deur Janó Bezuidenhout, Aartappels SA

Die Inligtingsafdeling by Aartappels Suid-Afrika (ASA) het 'n projek van stapel gestuur om produsente in staat te stel om hul gemiddelde weekpryse per kultivar, met dié van produsente in dieselfde streek te kan vergelyk.

Die projek is geloods tydens die Oos-Vrystaat se bemarkingseisoen en is reeds na ander streke uitgerol. Tans word Johannesburg-, Durban- en Tshwane-markte se data verwerk. Hierdie data word per mark uitgebeeld en dan ook per kultivar (Mondial, Sifra en Lanorma).

Produsente gee skriftelik toestemming dat ASA hul prysdata by markte mag trek. Hierdie inligting word vertroulik hanteer en 'n nom-

mer vir die seisoen word aan elke medewerker toegeken. Die produsent ontvang dan op 'n weeklikse basis die grafieke via WhatsApp.


Uitbeelding van data

Figuur 1 bied 'n voorbeeld van hoe hierdie data uitgebeeld word. Hierdie figuur bied 'n oorsig van Johannesburg-mark se Mondial-prysdata vir die week geëindig 4 September 2020.

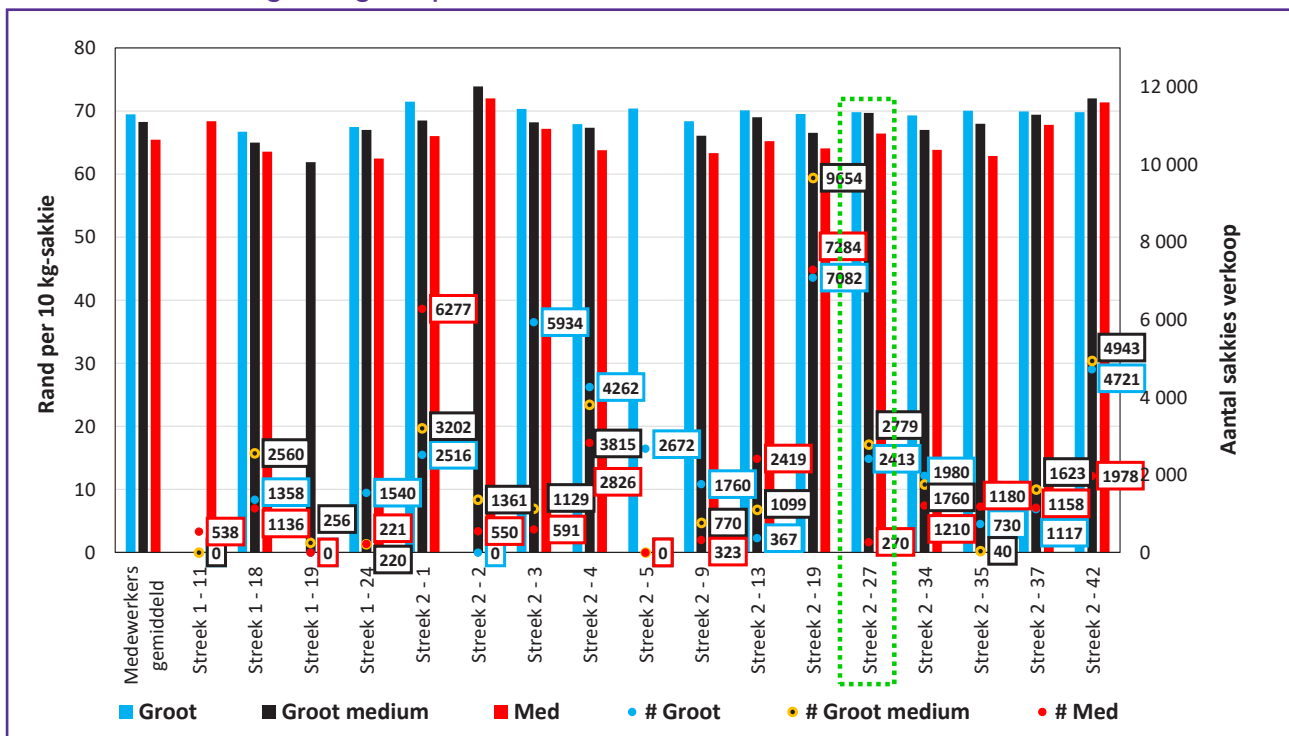
Om die grafiek te verduidelik, word medewerker 'Streek 2 - 27' se data gebruik en in die groen blok aangedui. Die blou staaf dui die produsent se gemiddelde weekprys van R69.82 vir 'n Klas 1 Mondial Groot 10 kg-sakkie aan. Die klein blou vierkant met die syfer 2 413, dui aan hoeveel Mondial Groot

10 kg-sakkies die produsent tydens die spesifieke week verkoop het, nadat al sy verpakings omgeskakel is na 10 kg-sakkies.

Die swart staaf en klein swart vierkant (2 779) dui die medewerker se gemiddelde weekprys en aantal verkope van sy Mondial Groot Medium, Klas 1, 10 kg-sakkie aan. Die rooi staaf en klein rooi vierkant dui die medewerker se medium-grootte sakkies se data aan. Daar word daar ook weekliks vir Sifra en Lanorma figure opgestel.

Produsente kan dus hul eie prysdata teen ander produsente in hul eie streek s'n, en ook teen ander streke se medewerkers s'n vergelyk. Die syfer heel links is die mark se gemiddelde weekpryse. 

Figuur 1: Voorstelling van data-uitbeelding van weeklikse markprysvergelykings: Johannesburg-mark, Mondial Klas 1, week geëindig 4 September 2020.



Indien produsente belangstel om deel te neem aan hierdie projek, kan hulle een van die volgende ASA-personeellede skakel: Janó Bezuidenhout by epos jano@potatoes.co.za of sel. 083 287 9009 of FP Coetzee by epos fp@potatoes.co.za of sel. 071 606 9675.



Span weerdata in vir besproeiingskedulering

Deur prof Martin Steyn, Universiteit van Pretoria

Verskillende benaderings kan gevolg word om 'n gewas se waterbehoefte te beraam. Skeduleringshulpmiddels word gewoonlik op metings van die grond, plant of die atmosfeer gebaseer. Grond- en atmosferiese metodes word meestal op plaasvlak gebruik en 'n verskeidenheid hulpmiddels wat vir dié benaderings ingespan word, is in die handel beskikbaar.

In hierdie artikel kyk ons spesifiek na hoe produsente weerdata kan gebruik om aartappels se besproeiingsbehoefte te skat.

Waterbehoefte en verdamping

Die waterbehoefte van gewasse word hoofsaaklik deur die volgende bepaal:

- Wat is die atmosferiese verdampingsaanvraag?
- Hoe groot is die gewas se loofbedekking (LB)?
- Hoeveel grondwater is beskikbaar vir opname deur plante?

Atmosferiese verdampingsaanvraag is die dryfkrag vir waterverbruik (ET) deur plante en hang van die heersende weerstoestand op 'n gegewe dag af. Die volgende weer veranderlikes beïnvloed die atmosferiese verdampingsaanvraag:

- *Lugtemperatuur*: Dit voorsien energie vir verdamping, dus lei 'n styging in temperatuur tot 'n hoër verdamping.
- *Sonstraling*: Dit verskaf die meeste energie vir verdamping. Hoë ligintensiteit en lang dae verhoog dus verdamping.
- *Humiditeit van die lug*: Dit dui die hoeveelheid vog in die lug aan. Verdamping is hoër by laer humiditeit.
- *Windspoed*: Dit vervoer vogtige lug weg van die blare af. Transpirasie is dus aansienlik hoër op 'n winderige dag as op 'n windstil dag.

Hiervolgens sal die verdampingsaanvraag dus hoër wees op 'n warm, sonnige en winderige dag

as wanneer dit koel, bewolk en windstil is. Dit is dus duidelik dat waterbehoefte van gewasse aansienlik van dag tot dag kan wissel, na gelang van die heersende weerstoestand.

Berekening van evapotranspirasie

Automatiese weerstasies is vandag redelik algemeen in landelike gebiede en selfs op individuele plase beskikbaar, en weerdata is vrylik verkrygbaar. Sulke weerstasies meet gewoonlik algemene veranderlikes (temperatuur, windspoed, straling, humiditeit en reënval), maar kan dikwels ook die atmosferiese verdampingsaanvraag of verwysings-evapotranspirasie (ET_o) bereken.

Die grootte van die blaredak of LB hang van die gewas se groeistadium af. Vroeg in die groeiseisoen is die LB laag, maar dit styg namate die seisoen vorder en die grootte van die loof toeneem (*Figuur 1*). Sodra blare begin afsterf en die loof weer kleiner word, daal die bedekking weer.

Die LB kan uitgedruk word as 'n persentasie van die grondoppervlak wat deur blare bedek word, wanneer daar direk van bo die gewas na die grond gekyk word. Dit kan met 'n instrument soos 'n septometer gemeet, of met die oog geskat word (Figuur 2).

Hierdie geskatte LB-waardes kan dan in kombinasie met die ETo vanaf 'n weerstasie gebruik word om daaglikse ET van die gewas te bereken, soos in Stap 1 van die voorbeeld hieronder verduidelik word.

Stap 1: Berekening van daaglikse ET vanaf ETo en die persentasie LB

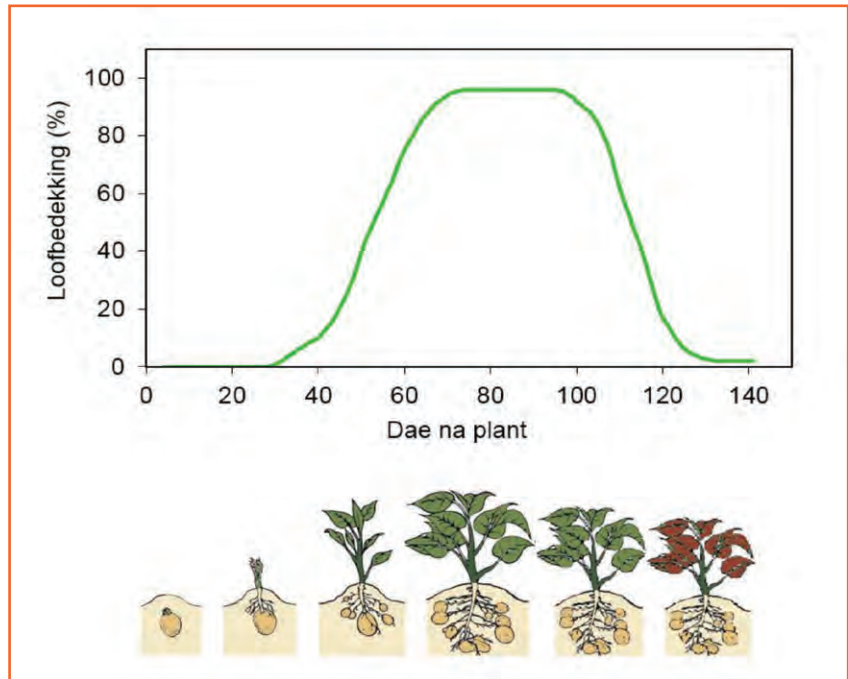
Vir praktiese doeleindes gebruik ons die volgende eenvoudige formule om die gewas se ET of waterverbruik te bereken:

$$ET = ETo \times LB\%/100$$

In hierdie berekening is ETo die daaglikse verdampingsaanvraag en LB% die loofbedekking op 'n spesifieke groeistadium.

Gestel op 90 dae ná plant, is die ETo 8 mm en die LB is 80%. Die

Figuur 1: Grafiese voorstelling van hoe die gewas se loofbedekking met verloop van die groeiseisoen verander.



daaglikse waterverbruik word dan soos volg bereken:

$$\begin{aligned} ET &= ETo \times LB\%/100 \\ &= 8 \text{ mm} \times 80/100 \\ &= 6.4 \text{ mm} \end{aligned}$$

Die aartappelplante het dus op dag 90 ná plant 6.4 mm water gebruik.

Die hoeveelheid grondwater beskikbaar vir opname hang van die grond se waterinhoud af, maar ook van die tipe grond en die gewas se worteldiepte (WD). Om te verseker dat plante nie waterstremming ondervind nie, gebruik ons 'n duimreël waarvolgens nie meer as die helfte van die plant-beskikbare water (PBW) uit die wortelsone onttrek mag word nie.

Die PBW van leem- en kleigrond wissel gewoonlik tussen

100 en 120 mm/m gronddiepte, terwyl dit vir growwe sande tot so laag as 30 mm/m kan wees. Die toelaatbare onttrekking word dan volgens Stap 2 bereken.

Stap 2: Berekening van toelaatbare onttrekking

Aartappels word op leemgrond met 120 mm/m PBW verbou en 50% onttrekking van PBW uit die wortelsone word toegelaat. Gestel op 90 dae ná plant is die worteldiepte 0.5 m. Om stremming te voorkom, moet die gewas dus besproei word sodra die volgende hoeveelheid water uit die profiel onttrek is:

$$\begin{aligned} \text{Toelaatbare onttrekking} &= 50\% \times \text{PBW} \times \text{WD} \\ &= 50\% \times 120 \text{ mm/m} \times 0.5 \text{ m} \\ &= 30 \text{ mm} \end{aligned}$$

Figuur 2: Voorbeelde van die geskatte loofbedekking van aartappels in verskillende groeistadiums.



Automatiese weerstasies meet gewoonlik veranderlikes soos temperatuur, windspoed, straling, humiditeit en reënval, maar kan ook die atmosferiese verdampingsaanvraag (ETo) bereken. (Foto: Martin Steyn)



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Met die inligting hierbo kan ons nou daaglikse boekhou van die gewas se waterverbruik (soos in Stap 3 aangedui) en betyds besproei, voordat die toelaatbare onttrekking oorskry word.

Stap 3: Rekordhouding van daaglikse gewaswaterverbruik

Dieselfde berekening as in Stap 1 word vir elke daaropvolgende dag gedoen en die waterverbruik word bymekaar getel totdat die toelaatbare onttrekkingsyfer (30 mm) bereik word, wanneer weer besproei moet word.

As dit op enige stadium reën, word die hoeveelheid reën van die kumulatiewe tekort afgetrek. In Tabel 1, byvoorbeeld, word die maksimum toelaatbare onttrekking van 30 mm op 96 dae ná plant (DNP) bereik.

Daar moet in ag geneem word dat die kumulatiewe tekort in Stap 3 die netto besproeiingsbehoefte is en dat daar voorsiening gemaak moet word vir stelselverliese, onder andere as gevolg van wind en verdamping.

Spilpuntstelsels het tipies 'n toedieningsdoeltreffendheid van 80 tot 90%, wat beteken dat daar effens meer besproei moet word om te verseker dat voldoende water die wortelsone bereik. Die bruto besproeiingsbehoefte kan volgens Stap 4 bereken word.

Stap 4: Berekening van bruto besproeiingshoeveelheid

Gestel aartappels word onder 'n spilpunt verbou waarvan die toedieningsdoeltreffendheid 85% is. Vir 'n netto besproeiing van 30 mm soos bereken in Stappe 2 en 3, word die bruto besproeiingshoeveelheid soos volg bereken:

- Bruto besproeiingsbehoefte
- = Netto behoefte/stelseldoeltreffendheid
- = 30 mm/0.85
- = 35.2 mm

Bogenoemde daaglikse berekeninge kan met 'n sigblad soos Microsoft Excel bygehou word om die boekhouding te vergemaklik.

Tabel 1: Rekordhouding van ETo, LB, ET, reën en kumulatiewe tekort op 'n sekere aantal dae ná plant.

| DNP | ETo (mm/dag) | LB% | ET ¹ (mm) | Reën ² (mm) | Kumulatiewe tekort (mm) |
|-----|--------------|-----|----------------------|------------------------|-------------------------|
| 90 | 8 | 80 | 6.4 | – | 6.4 |
| 91 | 7 | 80 | 5.6 | – | 12 |
| 92 | 6 | 90 | 5.4 | 20 | – |
| 93 | 8 | 90 | 7.2 | – | 7.2 |
| 94 | 8.5 | 90 | 7.7 | – | 14.9 |
| 95 | 8 | 90 | 7.2 | – | 22.1 |
| 96 | 9 | 90 | 8.1 | – | 30.2 |
| 97 | – | – | – | – | – |

¹ET = ETo x LB%/100.

²Reënval onder 5 mm word as ondoeltreffend beskou en geïgnoreer.

Tabel 2: Besonderhede van weerstasies in die verskillende produksiestreke.

| Stasie | Distrik en streek | Koördinate |
|--------|-----------------------------------|-----------------------------|
| 1 | Polokwane, Limpopo | 23°42'30.74"S 29°28'35.73"E |
| 2 | Dendron, Limpopo | 23°27'38.85"S 29°13'57.73"E |
| 3 | Blouberg, Limpopo | 23°01'50.06"S 29°08'59.00"E |
| 4 | Tom Burke, Limpopo | 23°06'32.26"S 28°04'36.40"E |
| 5 | Petrus Steyn, Oos-Vrystaat | 27°53'46.53"S 28°12'56.57"E |
| 6 | Aurora/Bergrivier, Sandveld | 32°50'44.56"S 18°32'52.35"E |
| 7 | Aurora, Sandveld | 32°38'40.20"S 18°28'18.92"E |
| 8 | Elandsbaai/Dwarskersbos, Sandveld | 32°25'13.04"S 18°20'17.43"E |
| 9 | Langvlei, Sandveld | 32°22'29.21"S 18°41'24.03"E |

Rekenaarsimulasiemodelle vir die berekening van gewaswaterbehoefte, raak toenemend beskikbaar en kan ook gebruik word om gewasgroeï en waterverbruik vanaf daaglikse weerdata te bereken, soortgelyk aan die eenvoudige metode wat in die voorbeeld hierbo bespreek is.

Aartappels Suid-Afrika (ASA) en die Universiteit van Pretoria het 'n aantal weerstasies by proefpersele in sommige produksiestreke geïnstalleer. Die inligting van hierdie weerstasies is gratis aan aartappelprodusente beskikbaar en kan vir skeduleringsdoelendes gebruik word.

Tabel 2 toon die lokaliteite van hierdie stasies in die verskillende streke aan. ASA is in die proses om addisionele weerstasies te bekom vir gebruik op plase waar werks-groepe gereeld evaluasieproewe op kultivars uitvoer. 📍

Om toegang tot daaglikse weerdata te verkry, skakel Chantel du Raan by chantelr@potatoes.co.za. Vir enige bykomende inligting, kontak prof Martin Steyn by 012 420 3880 of martin.steyn@up.ac.za.

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Ons Croplife geakkrediteerde gewasadviseurs spesialiseer in verskeie gewasse. Hulle vorm deel van die omvattende span interne gewasspesialiste wat bygestaan word deur spesialiste van bedryfsliggame en internasionale en plaaslike verskaffers.

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Is *Tuta absoluta* weerstandbiedend teen insekdoders in Suid-Afrika?

Deur prof Hannalene du Plessis, Eenheid vir Omgewingswetenskappe en Bestuur, Noordwes-Universiteit

Die Suid-Amerikaanse tamatieblaarmyner (*Tuta absoluta*) is 'n indringerplaag wat veral op tamaties, maar ook op aartappels voorkom. Dié insekte is reeds in 2008 in lande in Noord-Afrika aangeteken en het Suid-Afrika teen 2016 binnegedring.

Die plaag rig groot ekonomiese skade aan en kan selfs 100% oesverliese op tamaties tot gevolg hê. *Tuta absoluta* verkies tamaties bo aartappels, maar indien die tamatieplante van 'n land verwyder word en 'n aartappelland in die omgewing is, sal die plaag na die aartappels oorbeweeg.

Die ekonomiese plaagstatus van *T. absoluta* word veral aan die volgende toegeskryf:

- Die kort tydperk waarin 'n generasie voltooi word.
- Die relatief wye reeks gasheerplante waarop die insek kan oorleef.
- Die vermoë om goed by 'n wye reeks temperature aan te pas.
- Die vinnige tempo waarteen insekdoderweerstandigheid ontwikkel.

Weerstand teen insekdoders

Daar is verskeie faktore wat bydra tot die ontwikkeling van weerstandigheid, byvoorbeeld hoe gereeld insekdoders toegedien word, of daar reeds weerstandigene in die insekpopulasie voorkom, sowel as die dosis van die insekdoder wat toegedien word.

Die ontwikkeling van weerstand is dus 'n hoë risiko, veral by *T. absoluta*, wat reeds 'n geskiedenis van weerstandigheid teen verskeie

insekdoders toon. Tabel 1 verskaf 'n opsomming van gerapporteerde gevalle van *T. absoluta*-weerstand teen insekdoders.

Tuta absoluta word met dieselfde insekdoders op tamaties en aartappels beheer. Aangesien *T. absoluta* na aartappelaanplantings beweeg indien dit nie meer op ou tamatie-aanplantings beheer word nie, of wanneer die tamatieplante van 'n land verwyder word, beïnvloed die spuitprogramme wat

op tamatie-aanplantings uitgevoer word, ook die beheer van die plaag op aartappelaanplantings.

Die aartappelbedryf het derhalwe fondse beskikbaar gestel om die vatbaarheidsvlakke van die *T. absoluta*-populasies vir insekdoders wat geregistreer is vir die beheer van die plaag in Suid-Afrika, vas te stel.

Middels van slegs sewe groepe van die aksiekomitee vir insekdoderweerstand (IRAC), se metodes van

Tabel 1: Insekdoders waarteen *T. absoluta* weerstand ontwikkel het asook die land en jaartal waarin insekdoderweerstand aangeteken is.

| Insekdoder en IRAC-metode van werkgroep | Land van voorkoms | Jaar waarin gerapporteer is |
|---|----------------------|-----------------------------|
| Abamektien (6) | Brasilië | 2001 |
| Bifentrien (3A) | Brasilië | 2011 |
| Kartap (14) | Brasilië | 2000 |
| *Chlorantranilipool (28) | Verenigde Koninkryk | 2019 |
| Beta-siflutrien (3A) | Brasilië | 2014 |
| Alfa-sipermetrien (3A) | Brasilië | 2015 |
| Deltametrien (3A) | Argentinië | 2005 |
| Diflubenzeroon (15) | Brasilië | 2011 |
| Etofenprox (3A) | Brasilië | 2014 |
| *Flubendiamied en chlorantranilipool (28) | Italië en Griekeland | 2014 |
| * Indoksakarb (22A) | Brasilië | 2011 |
| Metaflumizoon (22B) | Brasilië | 2016 |
| Permetrien (3A) | Brasilë | 2011, 2014 |
| *Spinosad (5) | Chili | 2012 |
| *Spinosad (5) | Brasilië | 2015, 2016 |
| *Spinosad (5) | Verenigde Koninkryk | 2019 |
| Teflubenzuron (15) | Brasilië | 2011 |
| Triflumuroon (15) | Brasilië | 2011 |

*Hierdie middels was ook in die projek wat deur Aartappels SA (ASA) befonds word, getoets om te bepaal of *T. absoluta* reeds weerstand teen hierdie middels ontwikkel het.

werking is in Suid-Afrika geregistreer. Die risiko vir weerstandsonwikkeling verhoog noemenswaardig wanneer chemiese beheer van 'n plaaginsek op die gebruik van slegs 'n paar middels gebaseer word.

Indien die metode van werking van hierdie insekdoders beperk is, lei dit daartoe dat dieselfde insekdoder meer gereeld toegedien word, wat die seleksiedruk vir weerstandigheid teen sodanige insekdoder verhoog. Dit is ongelukkig die geval in Suid-Afrika, omdat die geregistreerde insekdoders slegs sewe verskillende metodes van werking het.

Die aktiewe bestanddele van die geregistreerde insekdoders, ingedeel in groepe volgens hul metodes van werking, is soos volg:

- Chlorantraniliproot: Groep 28.
- Flubendiamied: Groep 28.
- Emamektienbenzoaat: Groep 6.
- Indoksakarb: Groep 22A.
- Pyridalief dikloropropen-aflleiding: Groep UN.
- Spinetoram: Groep 5.
- Spinosad: Groep 5.

- *Bacillus thuringiensis*: Groep 11A.
- *Beauveria bassiana*: Groep UNF.

'n Insekdoder bestaande uit 'n kombinasie van twee aktiewe bestanddele – chlorantraniliproot (Groep 28) en lambda-cyhalotrien (Groep 3A) – is ook geregistreer.

Insekdodervatbaarheid in Suid-Afrika

Om te bepaal of die *T. absoluta*-populasies wat Suid-Afrika aanvanklik binnegekome het, reeds weerstandsgene teen sommige van die insekdoders gehad het, is insekdodervatbaarheidstoetse gedoen op *T. absoluta*-populasies wat in 2019 versamel is. Geregistreerde insekdoders is in hierdie studies geëvalueer.

Die insekte is by Swartwater (2019), Mareetsane (2019) en Polokwane (2019) versamel. In 2020 en 2021 is *T. absoluta* by Brits (2020), Polokwane (2020) en Bela-Bela (2021) versamel. Laasgenoemde populasies is gebruik om te evalueer of daar 'n verskuiwing in die aanvanklike vatbaarheidsvlakke



Tuta absoluta veroorsaak skade aan tamaties wat tot 100% oesverliese kan lei.

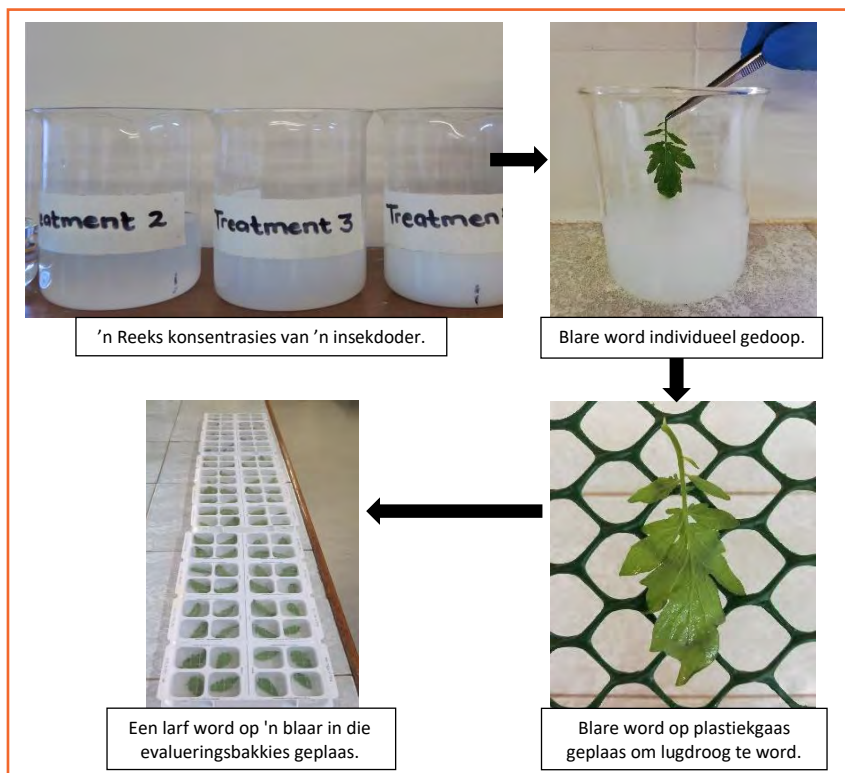
vir die betrokke insekdoders plaasgevind het.

Die toetse is in 'n laboratorium by die Noordwes-Universiteit, volgens die erkende protokol van die internasionale IRAC, uitgevoer. 'n Reeks toetse is vooraf vir elke insekdoder per populasie uitgevoer, om die insekdoderkonsentrasiereeks vir gebruik in die finale toetse te bepaal.

Volgens die protokol word blare in die insekdoders, wat teen 'n spesifieke konsentrasie opgemaak is, gedoop. Wanneer die insekdoders lugdroog is, word die blare in die evaluasiehouers geplaas, tesame met 'n enkele *T. absoluta*-larf in 'n spesifieke ontwikkelingsfase (Figuur 1).

Vir elke konsentrasie in die reeks is 'n minimum van 92 larwes getoets. Dus is sowat 920 larwes van elke populasie per insekdoder in die finale toetse gebruik. Die aantal larwes wat ná 'n sekere tydperk by die verskillende insekdoderkonsentrasies dood is, is bepaal, en daarvolgens is die vatbaarheid van die onderskeie populasies vir die insekdoders bepaal.

Figuur 1: Visuele voorstelling van die insekdodervatbaarheidstoetse wat uitgevoer is.



Die resultate van hierdie studie toon dat die populasies wat Suid-Afrika aanvanklik binnegedring het, nie weerstand teen enige van die geregistreerde insekdoders in Suid-Afrika gehad het nie. Geen weerstand kon ook in die opvolgevaluasies teen enige van die insekdoders gevind word nie.

Die onsuksesvolle beheer wat deur produsente in die areas van waar die populasies versamel is, met die toediening van die insekdoders in hierdie tyd ondervind is, kan dus nie aan weerstandigheid van *T. absoluta* teen dié insekdoders toegeskryf word nie.

Geïntegreerde plaagbeheer


Die ontdekking en ontwikkeling van nuwe insekdoders is 'n baie langsame, moeilike en duur proses. Dit is dus belangrik om strategieë te implementeer om die vinnige ontwikkeling van weerstandigheid teen

nuwe én bestaande insekdoders teë te werk.

Alle weerstandsbestuurstrategieë van insekdoders moet proaktief wees, omdat daar 'n hoë waarskynlikheid is dat weerstand sal ontwikkel indien stappe nié geneem word om dit te voorkom nie. Daar word geselekteer vir insekdoderweerstandigheid deur die herhaalde gebruik van insekdoders met dieselfde metode van werking oor baie insekgenerasies.

Daar moet dus gepoog word om 'n geïntegreerde plaagbeheerstrategie toe te pas, waar alternatiewe beheerstrategieë ingesluit word. Dit kan kulturele beheermetodes soos goeie sanitasie, onkruidbeheer en gewasrotasie insluit. Gedragsgebaseerde beheer met behulp van feromone en gekleurde valle, sowel as biologiese beheer deur predatore, parasitoïede en patogene, kan toegevoeg word.

Indien een of meer van die alternatiewe metodes gebruik word, verlig dit die seleksiedruk op die plaagpopulasie. In die geval van *T. absoluta*, bly chemiese beheer die primêre metode van beheer en moet dit daarom geoptimaliseer word. Aan die basis hiervan lê korrekte toediening en afwisseling van insekdoders met dieselfde metode van werking in 'n spuitprogram.

Die tyd wat dit neem vir die insek om een generasie te voltooi, moet in ag geneem word by die samestelling van 'n spuitprogram om, sover moontlik, nie opeenvolgende generasies aanhoudend aan insekdoders met dieselfde metode van werking bloot te stel nie. 

Vir meer inligting, kontak prof Hannalene du Plessis by hannalene.duplessis@nwu.ac.za.



InteliGro is aktief besig met langtermyn aartappel moniteringsprojekte wat effektiewe besluitneming ondersteun en het geslaag om die afgelope paar jaar dramatiese aanpassings te maak in ons insekbeheerbenadering. Hierdie aanpassings is gegrond op data, langtermyn tendense en intensiewe betrokkenheid op die plaas.

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Responsibility of role-players in the pesticide value chain to strictly adhere to label instructions

By Dr Gerhard Verdoorn, principal author, and Dr Fienie Niederwieser, Roleen la Grange and Desirée van Heerden, contributors

The label is the legal document of a pesticide. Regulation No R1716 of 26 July 1991, of the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No 36 of 1947) stipulates that a pesticide must be used strictly according to label instructions. This means that a pesticide may only be used for the crop or situation indicated on the label; for the pest, disease or weed indicated; in the dosage indicated; and by the application methods indicated on the label.

Pesticide usage recommendations

Whether verbal, written, printed or electronic, recommendations for the use of a pesticide made by any person or institution of whatever nature, must be strictly according to the label instructions. No person may offer advice, guidance, or recommendations on pesticides contrary to their label instructions.

Manufacturers, registration holders, distributors, agents, crop advisors, technical

advisors, consultants, co-operative personnel, retail personnel or any person in whatever capacity, may only advise producers on the use of pesticides according to the label instructions of the products.

Sales and application

Pesticides may only be sold or offered for sale for the purposes and applications as directed by the label instructions. No person in whatever capacity may sell or offer a pesticide for sale for any other purposes, or for any other application methods, than those instructed by the label.

A pesticide may only be applied for the purposes and by the application methods as instructed by the label. A producer who experiences poor pesticide performance or whose crops suffer damage due to applying pesticides contrary to label instructions (off-label) of his or her own accord, or whether upon the advice, guidance or recommendation of any other

person or institution, has no claim against any other party, since the producer contravened Regulation No R1716 of the Act.

Any person who advises, guides, or recommends the use of a pesticide to a producer, 'sells' the pesticide to the producer because the definition of 'sell' in Act No 36 of 1947 covers all forms of promoting the use of a pesticide.

A consultant, distributor, crop advisor, agent, sales representative or any person or institution of whatever nature who advises, guides, or recommends the use of a pesticide, or sells such a pesticide contrary to its label instructions, contravenes Regulation No R1716.

Producers' responsibility

It is the producer's duty to ascertain whether the advice, guidance or recommendation offered by any person or institution of whatever nature, corresponds with the label instructions of the pesticide for which such advice, guidance or recommendation is offered. It is also the producer's duty to check whether pesticides offered for sale are offered according to the purposes and application methods as directed by the label instructions.

Common contraventions

Some of the most common contraventions of Regulation No R1716 include:

- Offering advice, making recommendations, or offering guidance contrary to label instructions of the pesticide.



- Accepting off-label advice, guidance or recommendations from any person or institution, and implementing such advice, guidance or recommendations when applying the pesticide.
- Selling or offering a pesticide for sale for purposes or application methods not indicated on the label.
- Disposing of (giving away or donating) a pesticide for purposes or application methods other than those directed by the label instructions.

Pesticides are developed for specific purposes and specific application methods. The data is submitted by the manufacturer or supplier to the Registrar of Act 36 of 1947, who registers pesticides for the purposes and application methods as applied for, based on the data submitted.

Any other purposes or application methods can therefore not be verified or validated and are not approved by the Registrar, since the Registrar

cannot evaluate any purposes or application methods that have not been submitted for evaluation.

Consequences of off-label use

Most cases of crop damage and poor pesticide performance can be traced back to off-label use. Producers who apply pesticides off-label are at great risk of crop damage or losses due to poor pesticide performance or phytotoxicity.

Apart from pesticide performance failure and crop damage due to off-label use, the Registrar is mandated in terms of Act 36 of 1947 to impose certain conditions upon any registered pesticide, such as restricting its use to pest control operators.

The Registrar may also cancel the registration of any pesticide if he is of the opinion that the pesticide is being misused, such as for off-label use. This means that off-label use of a pesticide may result in the pesticide being cancelled and no longer being made available to

farmers, or being restricted for usage by pest control operators only. ☹

This article is Monograph 3 of the Potato Production Stewardship Programme – A collaborative initiative of Potatoes South Africa, CropLife South Africa and the Insecticide Resistance Action Committee. For more information, contact Dr Verdoorn at gerhard@CropLife.co.za. Producers can subscribe to CropLife Agri-Intel by visiting www.agri-intel.com.



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- ✓ Adequacy of starch accumulation in tubers

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Foto: Piet Brink

Sandveld-kultivarproef onder besproeiing op Aurora in 2020/2021

Deur Chantel du Raan en Terence Brown, Aartappels Suid-Afrika, Piet Brink, Sandveld-werkgroep, en Albert de Villiers, produsent

Die Sandveld-produksiestreek produseer sowat 10% (gebaseer op die 2019-oesjaar) van die totale aartappelproduksie in Suid-Afrika. Hierdie streek voorsien aartappels aan die totale spektrum van die voorsieningsketting (uitvoere, moere, tafel- en verwerkingsaartappels).

Die uitvoer van tafelaartappels is hoofsaaklik na Angola en moere na Mosambiek. Die streek se bydrae tot die verwerkingsbedryf beloop sowat 14%. Die hoof tafel- en verwerkingsaartappels sluit in Mondial, Sifra, Avalanche en FL2108 in beide somer- en winteraanplantings.

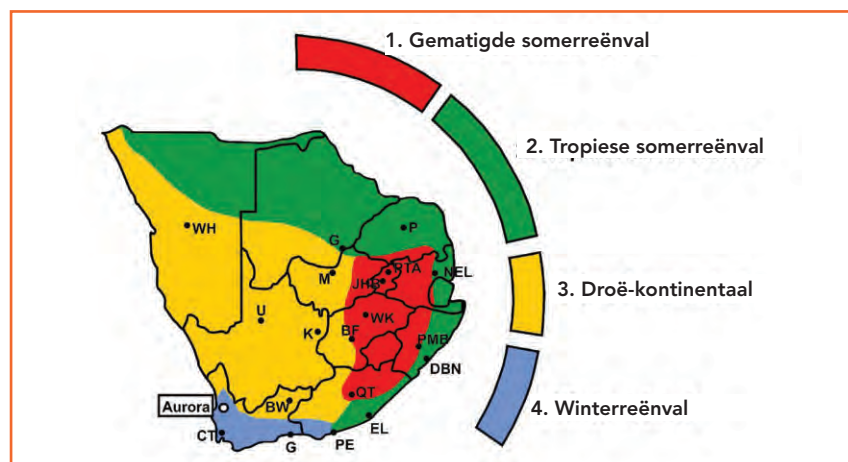
Die proef is op die plaas Rietfontein in die Aurora-omgewing uitgevoer. Die plaas lê aan die voet van die westelike kant van die Piketberg – 'n tipiese Sandveldse dorpie. Dit is 'n winterreënvalstreek (Figuur 1) met 'n jaarlikse gemiddelde reënval van tussen 249 en 271 mm/jaar.

'n Mediterreense klimaat met warm somers kom voor, terwyl die winters koud en nat

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

| | |
|----------------------|--------------------------|
| Plaas | Fisantevlug, Rietfontein |
| Boer | Albert de Villiers |
| Plantdatum | 29 September 2020 |
| Oesdatum | 23 Februarie 2021 |
| Besproeiing/droëland | Besproeiing |
| Dubbel- of enkelrye | Dubbelrye |
| Tussenry-spasiëring | 0.75 m |
| Inry-spasiëring | 0.30 m |
| Plotgrootte | 17.5 m ² |
| Plantestand | 41 666 plante/ha |

Figuur 1: Ligging van Aurora in die Sandveld-produksiegebied.



is. Die aanplantingstyd vir die produksiegebied is uniek, aangesien aartappels regdeur die jaar geplant kan word. Die meeste aartappels word egter in Februarie en Junie geplant.

Die proefperseel bestaan uit sandleemgrond en die proef is uitgelê in 'n ewekansige blok-ontwerp met drie herhalings. Verdere tegniese inligting rakende die proefperseel en uitleg is opgesom in *Tabel 1*.

Verteenwoordigende grondmonsters is voor plant geneem en ontleed om die grondvoedingstatus van die proefperseel te bepaal. Die resultate van die grondontleding vir hierdie proef word in *Tabel 2* aangedui, en die bemestingsprogram in *Tabel 3*.

Groeitydperk en opbrengs

Dit is belangrik om daarop te let dat groeitydperke die opbrengs van kultivars kan beïnvloed. Groeitydperke word omskryf as die aantal dae vanaf opkoms tot natuurlike loofafsterwe, afhangend van die seisoen.

Die presiese tydsberekening van die vyf groeifases (spruitontwikkeling, vegetatiewe groei, knolinisiasie, knolvulling en volwassenheid) hang af van die omgewing en die bestuurspraktyke, wat tussen lokaliteite asook kultivars wissel, onder andere as gevolg van verskillende groeitydperke (*Tabel 4*).

Temperatuur, dagliglengte en water is 'n paar voorbeelde van die belangrikste abiotiese faktore wat die groeipatroon, opbrengs en gehalte van aartappels beïnvloed en in die proewe ondersoek is.

Om te bepaal wat die aanpassingsvermoë van nuwe kultivars in die Aurora-omgewing is, is dit belangrik om hierdie faktore in aanmerking te neem wanneer die prestasie van verskillende kultivars geëvalueer word. Dit is ook belangrik dat die kultivars vir 'n aantal seisoene geëvalueer word, omdat klimaat van seisoen tot seisoen verskil. Die daaglikse weerdata was verkry vanaf 'n weerstasie wat op die perseel geleë is.



Die aanplantingstyd vir die produksiegebied is uniek, aangesien aartappels regdeur die jaar geplant kan word. Die meeste aartappels word egter in Februarie en Junie geplant.

Tabel 2: Grondontledingsresultate vir die Aurora-kultivarproef (2020/2021) voor plant.

| Digtheid (g/cm ³) | pH (KCl) | P-Bray I | Ammonium-asetaat | | | | % van KUK ¹ | | | |
|-------------------------------|----------|----------|------------------|---------|---------|---------|------------------------|------|------|-----|
| | | P | K | Ca | Mg | Na | K | Ca | Mg | Na |
| | | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | % | % | % | % |
| 1.651 | 5.7 | 13 | 6 | 4 | 72 | 14 | 3 | 70.1 | 23.4 | 3.6 |

¹KUK = Kation-uitruilkapasiteit.

Tabel 3: Opsomming van bemestingsprogram ten opsigte van die proefperseel en uitleg.

| | Bemestingsprogram | | | | | |
|------------|-------------------|-----------|-----------|------------|------------|-----------|
| | Voedingswaarde | | | | | |
| | N (kg/ha) | P (kg/ha) | K (kg/ha) | Ca (kg/ha) | Mg (kg/ha) | S (kg/ha) |
| Voor plant | 55.5 | 102.5 | 134.3 | 162 | 22.2 | 125 |
| Week 1 | 26.39 | 4.14 | 27.43 | 0 | 1.55 | 0 |
| Week 2 | 26.39 | 4.14 | 27.43 | 0 | 1.55 | 0 |
| Week 3 | 26.39 | 4.14 | 27.43 | 0 | 1.55 | 0 |
| Week 4 | 12.99 | 4.48 | 26.88 | 0 | 1.34 | 0 |
| Week 5 | 14.8 | 0 | 0 | 18.1 | 0 | 0 |
| Week 6 | 18.19 | 6.272 | 37.63 | 0 | 1.88 | 0 |
| Week 7 | 12.99 | 4.48 | 26.88 | 0 | 1.34 | 0 |
| Week 8 | 14.8 | 0 | 0 | 18.1 | 0 | 0 |
| Week 9 | 18.19 | 6.272 | 37.63 | 0 | 1.88 | 0 |
| Week 10 | 12.99 | 4.48 | 26.88 | 0 | 1.34 | 0 |
| Week 11 | 14.8 | 0 | 0 | 18.1 | 0 | 0 |
| Week 12 | 14.62 | 5.04 | 30.24 | 0 | 1.51 | 0 |
| Totaal | 312.9 | 161.1 | 493.5 | 216 | 40.7 | 125 |

*Nota: 3 ton gips/ha voor plant.

Die langtermynweerderdata is vanaf die Landbounavorsingsraad (LNR) se weerstasie, Sand (-32.55974, 18.5168), verkry. Wat die kumulatiewe reënval regdeur die groeiseisoen betref, het daar aansienlik minder reënval (29.4 mm) geval in vergelyking met vorige jare (48.9 mm) (Figuur 2).

Die minimum en maksimum temperature (Figuur 3) vir die 2020/2021-groeiseisoen het dieselfde patroon as vorige jare gevolg, met die uitsondering dat die maksimum temperature tydens Oktober en November hoër vertoon het in vergelyking met die langtermyn data. Die maksimum temperature het aansienlik gewissel gedurende die groeiseisoen en was vir 22 dae gedurende die groeiseisoen bo 35°C en vir 72 dae bo 30°C.

Hitte-eenhede is nog 'n belangrike faktor om in ag te neem, aangesien die ontwikkeling van die plant hoofsaaklik op die versameling van hitte-eenhede gebaseer is. Daar word dus aanvaar dat die plant 'n sekere aantal hitte-eenhede moet versamel om 'n ontwikkelingsfase te voltooi.

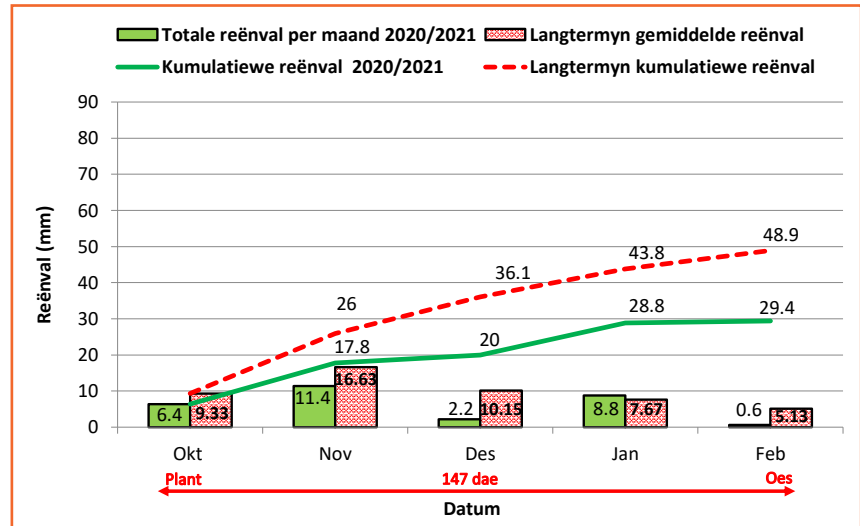
Die hitte-eenhede van die 2020/2021-groeiseisoen was regdeur die seisoen hoër in vergelyking met die vorige jare (Figuur 4). Aan die einde van die groeiseisoen was die kumulatiewe hitte-eenhede 31.5% hoër as die langtermyn kumulatiewe hitte-eenhede.

Statistiese verwerking van data

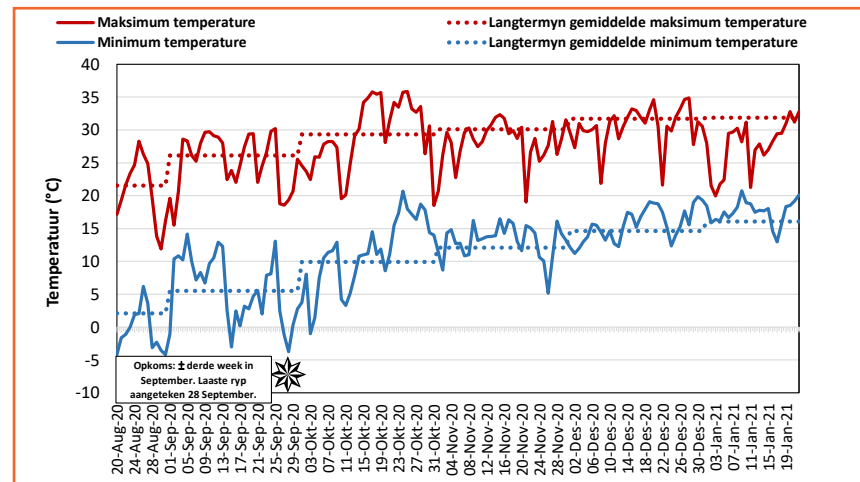
Die opbrengsdata is statisties verwerk met behulp van die GenStat®-program en die gemiddelde is geskei deur gebruik te maak van die Tukey-toets van kleinste betekenisvolle verskille (KBV). Die kultivareffek gedurende die 2020/2021-proef (Figuur 5) was statisties hoogs beduidend ten opsigte van opbrengs, terwyl die koëffisiënt van variasie (KV) baie laag was (13%).

Die gemiddelde opbrengs (102.7 t/ha) vir die 2020/2021-groeiseisoen was effens laer in vergelyking met die proefgemiddeld van die vorige drie jare (109.8 t/ha). Ten opsigte van die 2020/2021-proef (Figuur 5)

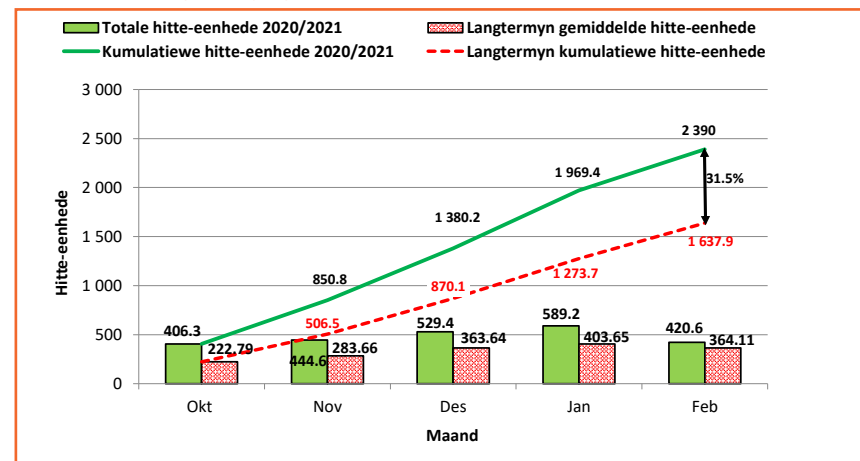
Figuur 2: Reënval gedurende die groeiseisoen (2020/2021) asook die langtermyn gemiddelde reënval.



Figuur 3: Minimum en maksimum temperature (°C) gedurende die groeiseisoen (2020/2021) asook oor die langtermyn.

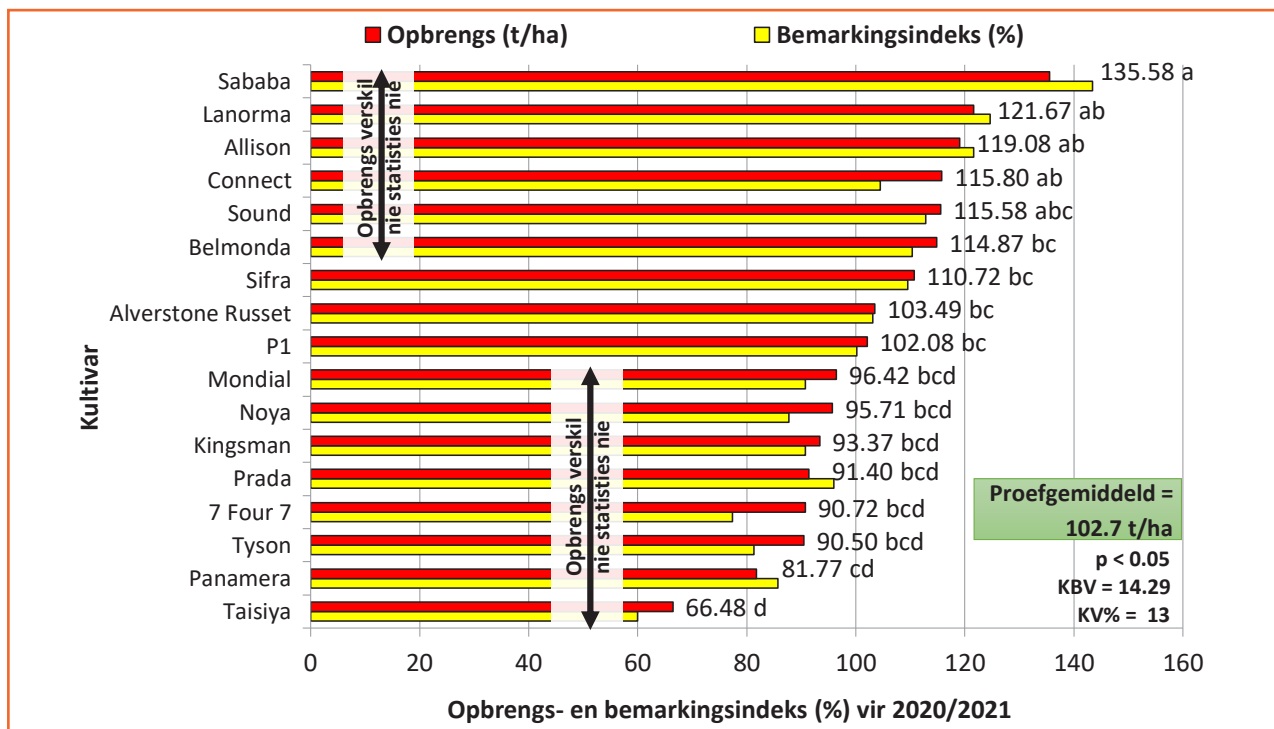


Figuur 4: Hitte-eenhede gedurende die groeiseisoen (2020/2021) asook die langtermyn gemiddeld.



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

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



*Waardes gevolg deur dieselfde letter is nie beduidend verskillend van mekaar nie.

Tabel 4: Karaktereienskappe rakende groeitydperk, plantgereedheid, stand (%) en halmtellings vir elke kultivar in 2020/2021.

| Eienaar | Kultivar | Groeitydperk (Dae) ¹ | | Plant-gereedheid ² | Stand (%) | Halms per plant | Halms per ha |
|---------|-------------------|---------------------------------|-----------|-------------------------------|-----------|-----------------|--------------|
| | Allison | Medium tot lank | (110-115) | 2 | 90 | 3.3 | 122 401 |
| | Alverstone Russet | Medium tot lank | (110-115) | 3 | 100 | 3.6 | 148 282 |
| | Belmonda | Kort tot medium | (90-100) | 4 | 94 | 2.8 | 110 208 |
| | Connect | Medium tot lank | (120) | 2 | 100 | 3.9 | 161 149 |
| | Kingsman | Medium | (100-110) | 1 | 93 | 1.7 | 66 756 |
| | Lanorma | Kort | (80-90) | 3 | 85 | 2.8 | 100 227 |
| | Mondial | Medium tot lank | (110-115) | 3 | 91 | 3.4 | 128 413 |
| | Noya | Medium tot lank | (120) | 1 | 93 | 2.8 | 108 087 |
| | P1 | – | – | 3 | 94 | 3.3 | 129 900 |
| | Panamera | Lank | (120-125) | 3 | 90 | 2 | 76 000 |
| | Prada | Kort | (70) | 2 | 88 | 2.6 | 97 234 |
| | Sababa | Medium tot lank | (110-115) | 3 | 97 | 2.6 | 106 616 |
| | 7 Four 7 | Kort | (80) | 3 | 85 | 3.4 | 121 934 |
| | Sifra | Kort tot medium | (90-100) | 1 | 87 | 3.1 | 112 651 |
| | Sound | Medium | (100) | 4 | 90 | 5.4 | 201 263 |
| | Taisiya | Kort tot medium | (90) | 3 | 62 | 2.3 | 58 839 |
| | Tyson | Kort tot medium | (90-100) | 4 | 94 | 2 | 78 066 |

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

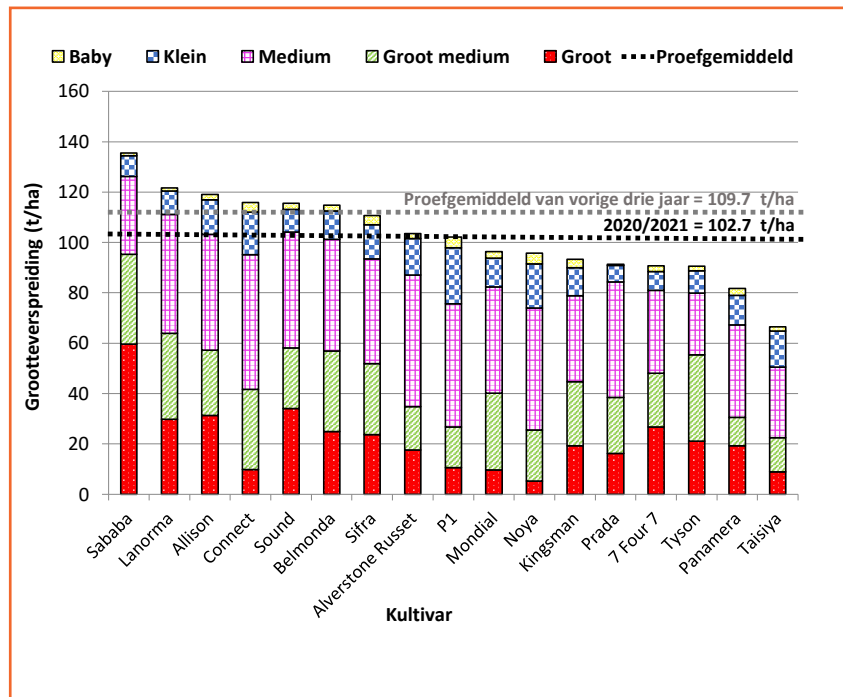
²Plantgereedheid van moere: 1 – vars, 2 – effens vars, 3 – plantgereed, 4 – effens oud, 5 – oud.

het die kultivars Sababa, Allison, Sifra, Sound, Manhattan, Mondial, Panamera en Belmonda die hoogste opbrengs gelewer, asook 'n hoër opbrengs as die proefgemiddeld (102.7 t/ha).

Ten einde die prestasie van die kultivars in terme van opbrengs en gehalte te bepaal, is die opbrengs, groottegroepverspreiding en klas gebruik om teen die gemiddelde markprys vir die betrokke dag 'n bemarkingsindeks te bereken. Die opbrengs, vermenigvuldig met die heersende prys wat deur die groottegroepverspreiding en gradering bepaal word, gee die bemarkingsindeks.

Sababa het, soos verlede jaar, die hoogste bemarkingsindeks getoon (Figuur 5), hoofsaaklik as gevolg van 'n hoë persentasie groot knolle (Figuur 6) en Klas 1-gradering (Figuur 7).

Figuur 6: Groottegroepverspreiding van elke kultivar tydens finale oes.



Tabel 5: Hoofredes vir afgradering tydens die 2020/2021 Aurora-oes.

| Kultivar | Bruinskurf | Meganies | Misvorm | Nerflos | Poeierskurf | Sagtevrot | Sandspleet | Sonskade | Vergroening |
|-------------------|------------|----------|---------|---------|-------------|-----------|------------|----------|-------------|
| Allison | | | | | | | | | |
| Alverstone Russet | | | | | | | | | |
| Belmonda | | | | | | | | | |
| Connect | | | | | | | | | |
| Kingsman | | | | | | | | | |
| Lanorma | | | | | | | | | |
| Mondial | | | | | | | | | |
| Noya | | | | | | | | | |
| P1 | | | | | | | | | |
| Panamera | | | | | | | | | |
| Prada | | | | | | | | | |
| Sababa | | | | | | | | | |
| Sifra | | | | | | | | | |
| Sound | | | | | | | | | |
| 7 Four 7 | | | | | | | | | |
| Taisiya | | | | | | | | | |
| Tyson | | | | | | | | | |

<5% voorkoms 5-15% voorkoms >15% voorkoms

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Dinamies: Verbeter die dinamiese biochemiese prosesse in die plant vir optimale plantselontwikkeling.



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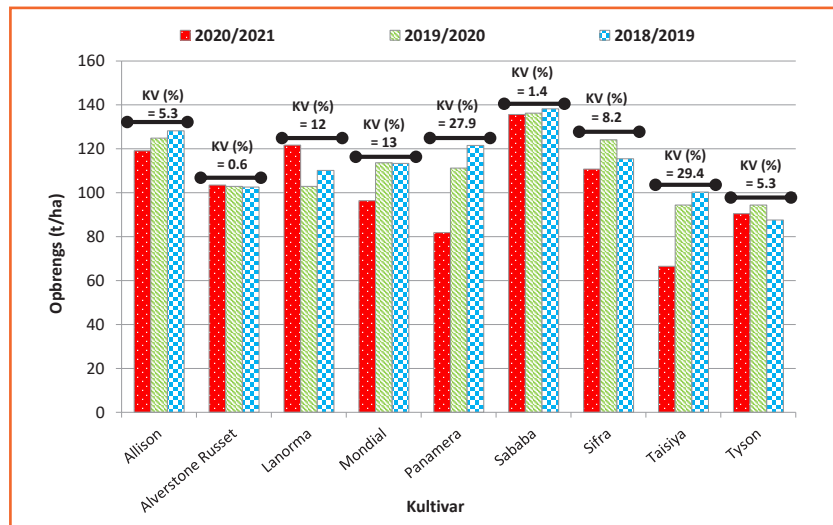


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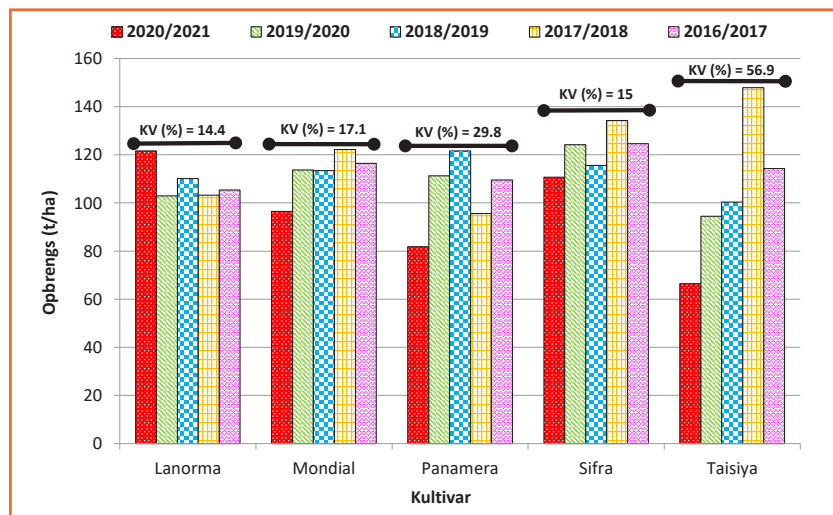
Figuur 7: Gradering van elke kultivar tydens finale oes.



Figuur 8: Prestasie van kultivars oor drie jaar, uitgedruk as persentasie van die proefgemiddeld.



Figuur 9: Prestasie van kultivars oor vyf jaar, uitgedruk as persentasie van die proefgemiddeld.



Taisiya het die laagste bemarkingsindeks behaal. Die rede hiervoor is 'n lae persentasie groot-grootteverspreiding. Die hoofredes vir die afgraderings vir Taisiya is meganiese, nerflos en vergroening.

Groottegroepverspreiding en gradering word ook gebruik om aartappels te klas; daarom is dit 'n belangrike faktor om in ag te neem ten einde 'n optimale ekonomiese bemarkbare opbrengs te verseker. In *Figuur 6* word die groottegroepverspreiding aangetoon, in *Figuur 7* die gradering van die opbrengs en in *Tabel 5* die hoofredes vir die afkeur van die onderskeie kultivars.















Die LINTUL-POTATO-DSS-plantgroeimodel is gebruik om die potensiële opbrengs van die kontrolekultivar, Mondial, te bereken. Potensiële opbrengs kan gedefinieer word as die teoretiese boonste opbrengsgrens in 'n geval waar water, voedingstowwe en biologiese faktore optimaal is vir die seisoen waarin die proef gegroei het. Dié inligting stel ons in staat om te evalueer hoe die werklike opbrengs deur die proef behaal, met gesimuleerde potensiële opbrengste vergelyk.

Die verskil tussen die potensiële opbrengs en werklike proefopbrengs verwys na die opbrengsgaping. Die verhouding tussen werklike opbrengs (96.4 t/ha) en potensiële opbrengs (116 t/ha) is 83% en verteenwoordig 'n klein opbrengsgaping, wat daarop dui dat die beskikbare hulpbronne en die omgewing doeltreffend benut word. Daar is dus slegs beperkte geleenthede vir verdere toename in opbrengste.

Dit is ook belangrik om te let op die kultivars se vermoë om konsekwent te presteer, ongeag fluktuasies in die klimaat oor tyd. In *Figuur 8* word drie jaar se data vir die kultivarproewe in die Aurora-produksiegebied aangetoon. Bo elke kultivar word die KV tussen die drie jaar aangedui.

Hoewel Alverstone Russet slegs 'n variasie van 0.6% toon, is dit 'n prosesvariëteit wat 'n effens laer opbrengs tot gevolg het.

Tabel 6: Vleeskleur en interne gehalte van opbrengs vir 2020/2021 in Aurora.

| | | | | |
|--|---|---|--|--|
|  <p>Allison *Opbrengs (t/ha): 117.1</p> <p>Allison</p> |  <p>Alverstone Russet *Opbrengs (t/ha): 103.5</p> <p>Alverstone Russet</p> |  <p>Belmonda *Opbrengs (t/ha): 114.9</p> <p>Belmonda</p> |  <p>Connect *Opbrengs (t/ha): 115.8</p> <p>Connect</p> |  <p>Kingsman *Opbrengs (t/ha): 93.4</p> <p>Kingsman</p> |
|  <p>Lanorma *Opbrengs (t/ha): 121.7</p> <p>Lanorma</p> |  <p>Mondial *Opbrengs (t/ha): 96.4</p> <p>Mondial</p> |  <p>Noya *Opbrengs (t/ha): 95.7</p> <p>Noya</p> |  <p>P1 *Opbrengs (t/ha): 102.1</p> <p>P1</p> |  <p>Panamera *Opbrengs (t/ha): 81.8</p> <p>Panamera</p> |
|  <p>Prada *Opbrengs (t/ha): 91.4</p> <p>Prada</p> |  <p>Sababa *Opbrengs (t/ha): 135.6</p> <p>Sababa</p> |  <p>Sifra *Opbrengs (t/ha): 110.7</p> <p>Sifra</p> |  <p>Sound *Opbrengs (t/ha): 115.6</p> <p>Sound</p> |  <p>7 Four 7 *Opbrengs (t/ha): 90.7</p> <p>7 Four 7</p> |
|  <p>Taisiya *Opbrengs (t/ha): 66.5</p> <p>Taisiya</p> |  <p>Tyson *Opbrengs (t/ha): 90.5</p> <p>Tyson</p> | | | |



Die hoof tafel- en verwerkingsaartappels wat in die Sandveld geproduseer word, sluit in Mondial, Sifra, Avalanche en FL2108 in beide somer- en winteraanplantings. (Foto deur Sreen Gouws)

Tabel 7: Kook- en prosesseringseienskappe, sowel as interne gehalte van opbrengs vir 2020/2021 (uitgevoer deur LNR-Roodeplaat).

| Kultivar | Skyfiekleur ¹ | SG ² | Droëmateriaal (%) ³ |
|---------------------------------------|--------------------------|---|--------------------------------|
| Allison | 58 | 1.069 | 17.7 |
| Alvertstone Russet | 51 | 1.075 | 19.25 |
| Belmonda | 52 | 1.072 | 18.53 |
| Connect | 56 | 1.067 | 17.46 |
| Kingsman | 54 | 1.069 | 17.86 |
| Lanorma | 61 | 1.068 | 17.59 |
| Mondial | 52 | 1.072 | 18.53 |
| Noya | 52 | 1.077 | 19.59 |
| P1 | 57 | 1.079 | 19.84 |
| Panamera | 51 | 1.076 | 19.39 |
| Prada | 48 | 1.057 | 15.41 |
| Sababa | 49 | 1.068 | 17.63 |
| Sifra | 48 | 1.063 | 16.61 |
| Sound | 53 | 1.067 | 17.44 |
| 7 Four 7 | 39 | 1.057 | 15.26 |
| Taisiya | 40 | 1.057 | 15.28 |
| Tyson | 51 | 1.066 | 17.22 |
| ≥ Norm (Aanvaarbaar vir prosessering) | | < Norm (Onaanvaarbaar vir prosessering) | |

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

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

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

Sababa is kort op sy hakke, met 1.4% variasie asook 'n hoë opbrengs. Op versoek is daar ook na vyf jaar se stabiliteitsdata (Figuur 9) gekyk. Slegs vyf kultivars, naamlik Lanorma, Mondial, Panamera, Sifra en Taisiya, was vir vyf opeenvolgende jare in die proewe getoets. Uit hierdie vyf kultivars was Lanorma (14.4% variasie) en Sifra (15% variasie) die standvastigste oor die vyf jaar.

Interne gehalte

Dit is ook belangrik om op die interne gehalte van die produk te fokus ten einde 'n optimale ekonomies bemerkbare opbrengs, en dus winsgewendheid, te verseker. Dit sluit belangrike faktore in soos die prosesseringseienskappe, soortlike gewig (SG) asook inwendige defekte (holhart, bruinvlek en vaatbundelverkleuring), wat in Tabel 6 en 7 opgesom word.

Gedurende die 2020/2021-groeiseisoen het al die kultivars aan die skyfiekleurnorm van >50 vir prosessering voldoen, behalwe Prada, Sababa, Sifra, 7 Four 7 en Taisiya. Wat SG betref, het slegs die kultivars Alvertstone Russet, Noya, P1 en Panamera aan die norm van ≥1.075 vir prosessering voldoen. In die geval van inwendige defekte, het geen holhart of bruinvlek voorgekom nie. **C**

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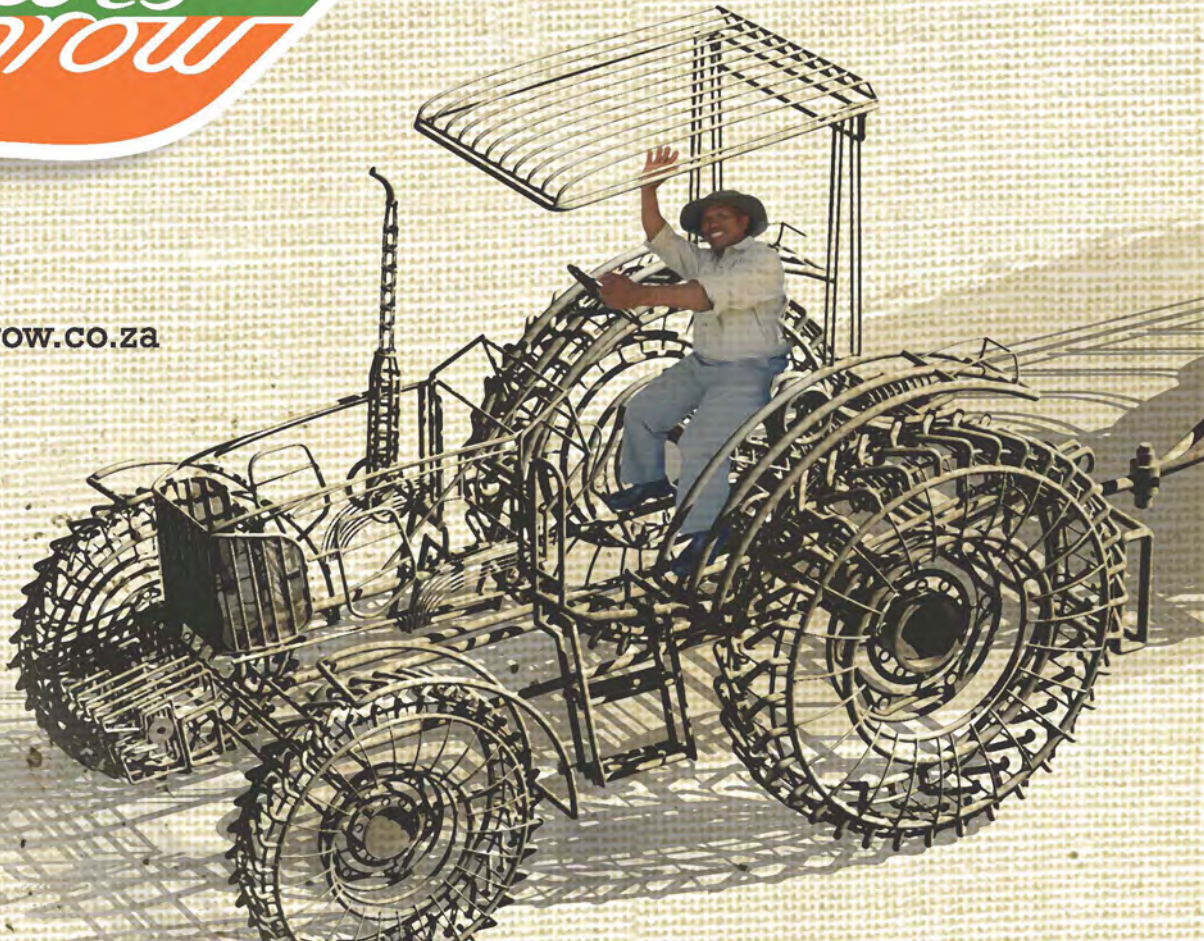
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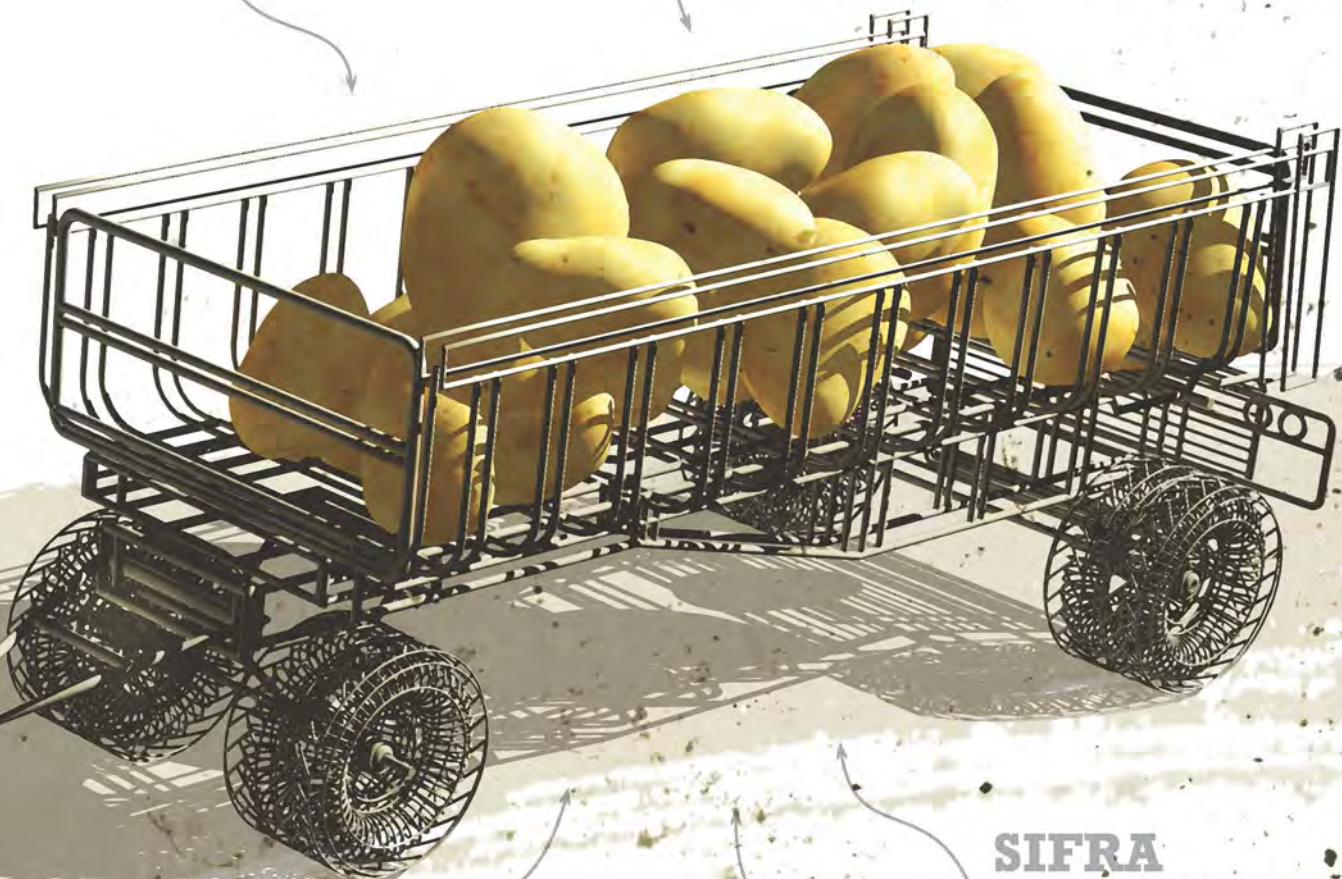
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- * powdery scab resistant
- * very strong foliage
- * blight resistance

TYSON

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- * powdery scab resistance
- * even tuber set, big sizes

ALLISON

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- * strong emergence
- * drought tolerance



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Suidwes-Vrystaatse kultivarproef onder besproeiing op Petrusburg in 2020

Deur Enrike Verster en Herman Haak, Aartappels SA, en Johan Odendal, produsent

Die Suidwes-Vrystaatse aartappelproduksiestreek produseer ongeveer 3% van die land se kommersiële aartappels op 1 473 ha. Die mees prominente kultivars geproduseer vir kommersiële verbruik (tafel en verwerking) in die streek se hoofoes, is Sifra (80%), Innovator (9%) en Mondial (5%).

Petrusburg val in Suid-Afrika se droë-kontinentale gebied (*Figuur 1*) en die plaas waarop die proef geplant is, ontvang die afgelope 21 jaar 'n gemiddelde jaarlikse reënval van 528 mm. Hierdie streek ervaar baie warm somers en koue winters, met ryp wat vanaf Junie tot Augustus kan voorkom. In 2017 was ryp selfs tot in November aangeteken.

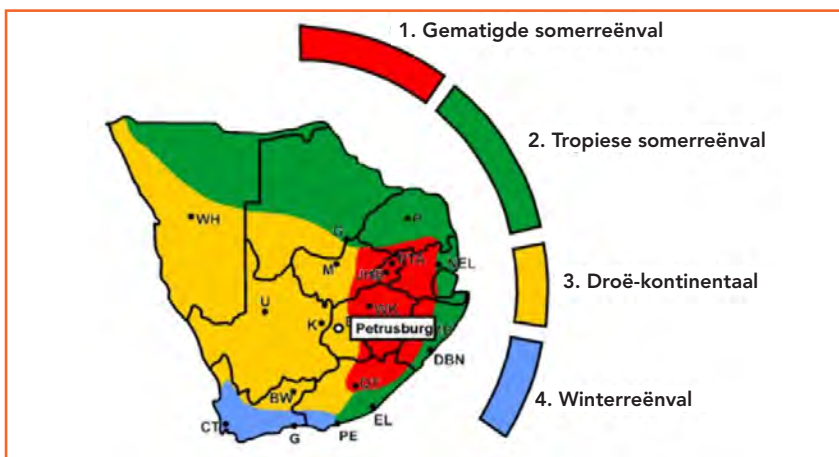
Die kultivarproef op Petrusburg is uitgelê in 'n ewekansige blok-ontwerp met drie herhalings per kultivar. In *Tabel 1* word relevante tegniese inligting rakende die proef aangedui. Grondmonsters is voor plant geneem om die grondvoedingstatus van die proefperseel te bepaal (*Tabel 2*).

Kort en lang groeitydperke

Ingesluit in die kultivarproef is kultivars met beide kort en lang groeitydperke, en derhalwe kan groeitydperke die uiteindelijke opbrengs van sekere kultivars beïnvloed. Die lengte van groeitydperke is onderhewig aan die aard van die seisoen, maar word gesien as die hoeveelheid tyd wat verloop vanaf opkoms tot natuurlike loofafsterwe. Daar kan in *Tabel 3* gesien word hoedat hierdie groeitydperke van kultivar tot kultivar verskil.

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

Figuur 1: Ligging van Petrusburg in die Suidwes-Vrystaatse produksiegebied.



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Plantgereedheid van moere is baie belangrik in hierdie verband, aangesien die ideale plantgereedheid gewoonlik veroorsaak dat moere beter spruit. Plantgereedheid van moere ten tye van die plant van die proef, sowel as standpersentasie en halmtelling wat later in die groeitydperk waargeneem is, word in *Tabel 3* aangedui.

Die evaluering van nuwe kultivars soos in die Petrusburg-kultivarproef, verskaf resultate rakende onder meer 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 tot medium).

In hierdie proef word al drie herhalings bymekaar gegooi, gewas en deur die pakstoor geklas en sorteer. Dienooreenkomstige prysvergelikings word dan gemaak, met markpryse soos verkry ten tye van oes.

Die prestasie van nuwe kultivars kan nie net op die resultate van een bepaalde seisoen geskoei word nie, omdat klimaat en moergehalte van een jaar na die volgende kan wissel. Juis daarom word die kultivars verkieslik oor 'n aantal seisoene getoets.

Temperatuur, water, hitte-eenhede

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

Toepaslike daaglikse data van die betrokke seisoen word vanaf 'n Hortec-weerstasie verkry wat op die plaas waarop die proefperseel geleë is, geïnstalleer is. Langtermyn data word egter steeds vanaf 'n stasie van die Landbounavorsingsraad (LNR) verkry, omdat die Hortec-weerstasie nog nie lank genoeg staan om langtermyn data weer te gee nie. Die betrokke LNR-weerstasie is 9 km vanaf die proefperseel op Petrusburg geleë.

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

| | | | |
|-----------------------------|---------------------------------------|------------------|------------------|
| Plaas | Lushof Boerdery, Theronkop | | |
| Boer | Johan Odendal | | |
| Plantdatum | 20 Augustus 2020 | | |
| Oesdatum | 22 Januarie 2021 | | |
| Besproeiing/droëland | Besproeiing | | |
| Dubbel- of enkelrye | Dubbelrye | | |
| Loofafsterwe | Chemies: tweede week in Januarie 2020 | | |
| Tussenry-spasiëring | 0.75 m | | |
| Inry-spasiëring | 28 cm | | |
| Plantestand | 39 685 plante/ha | | |
| Bemestingsprogram | | | |
| | Voedingswaarde | | |
| | N (kg/ha) | P (kg/ha) | K (kg/ha) |
| Plant en strooi | 250 | 118 | 156 |
| Topbemesting | 30 | - | 19 |

Tabel 2: Grondvoedingstatus van die proefperseel vóór plant.

| Bruto digtheid (kg/m ³) | pH (KCl) | | | | | | % van KUK ¹ | | | |
|-------------------------------------|----------|------------|---------|---------|---------|---------|------------------------|------|------|----|
| | | P (Bray I) | K | Ca | Mg | Na | K | Ca | Mg | Na |
| | | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | % | % | % | % |
| 1 362 | 4.5 | 13.4 | 195.7 | 259 | 122.1 | 8.4 | 16 | 48.8 | 32.2 | 1 |

¹KUK = Kation-uitruilkapasiteit.

Tabel 3: Eienskappe rakende groeitydperk, plantgereedheid, stand (%) en halmtellings vir die betrokke kultivars.

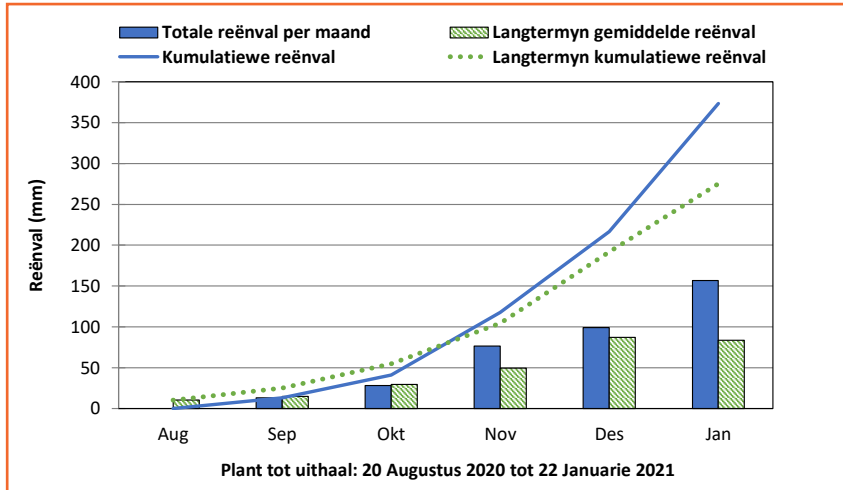
| Kultivar | Groeitydperk (dae) ¹ | | Plantgereedheid ² | Stand (%) | Halms per plant | Halms per ha |
|-----------------|---------------------------------|-----------|------------------------------|-----------|-----------------|--------------|
| 7 Four 7 | Kort | (80) | 3 | 94 | 3.4 | 152 184 |
| Allison | Medium tot lank | (120) | 3 | 893 | 7.6 | 322 081 |
| Belmonda | Medium | (100-110) | 3 | 100 | 4 | 190 468 |
| Connect | Lank | (120) | 2 | 100 | 3.4 | 161 898 |
| Elmundo | Medium | (90-100) | 3 | 100 | 6.2 | 295 225 |
| Kingsman | Medium | (110) | 3 | 100 | 5 | 238 085 |
| Lanorma | Kort | (80-90) | 3 | 94 | 2.6 | 116 376 |
| Mondeo | Medium | (110) | 3 | 100 | 3.6 | 171 421 |
| Mondial | Medium tot lank | (110-115) | 2 | 973 | 3.2 | 147 803 |
| Panamera | Medium | (90-110) | 3 | 92 | 1.8 | 78 854 |
| Sababa | Medium tot lank | (110-115) | 3 | 973 | 3.6 | 166 279 |
| Sifra | Kort tot medium | (90-100) | 2 | 973 | 2.8 | 129 328 |
| Sound | Medium | (110) | 2 | 100 | 5 | 238 085 |
| Tyson | Kort tot medium | (90-100) | 1 | 86 | 1.4 | 57 331 |

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

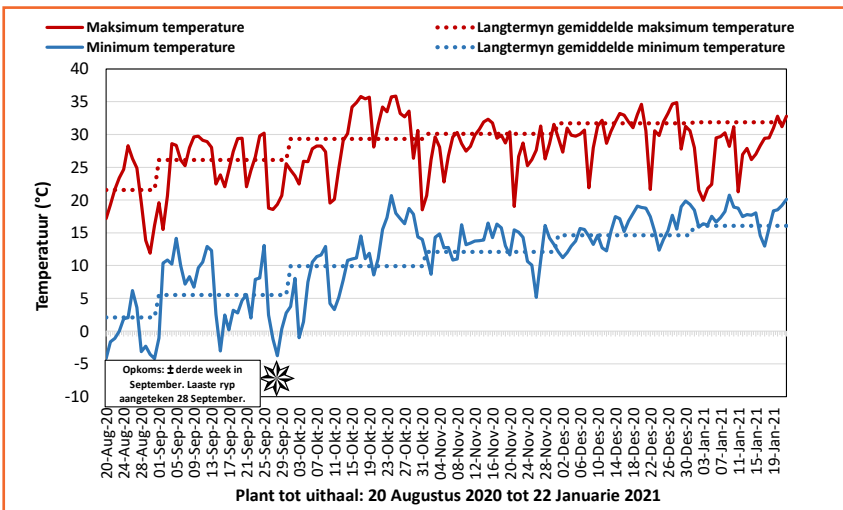
²Plantgereedheid van moere: 1 – vars, 2 – effens vars, 3 – plantgereed, 4 – effens oud, 5 – oud.

³Standpersentasie is bepaal deur te kyk na die herhaling van elke kultivar, wat bestaan uit 36 plante per 10 m-ry per plot.

Figuur 2: Reënval vir die 2020/2021-seisoen en die langtermyn gemiddelde reënval.



Figuur 3: Minimum en maksimum temperature (2020-seisoen) sowel as langtermyn temperature.



Die reënvaltendens vir die 2020/2021-seisoen (Figuur 2) was aanvanklik ondergemiddeld vir die eerste paar weke ná plant. In November tot Januarie was die reënval heelwat hoër as die langtermyn-gemiddeld vir die Petrusburg-gebied aangeteken.

Minimum en maksimum temperature word in Figuur 3 uiteengesit. Vanaf die plantdatum op 20 Augustus is temperature onder vriespunt vir verskeie dae tot 28 September aangeteken, met agtereenvolgende oggende onder vriespunt in die eerste twee weke ná plant.

Opkomsdatum was rondom die derde week in September. Rypskade is in hierdie vroeë stadia van opkoms aangeteken. Vanaf einde September tot en met die oesdag (22 Januarie), is talle dae met temperature bo 30°C, en enkele dae van selfs meer as 35°C, aangeteken.

Die versameling van hitte-eenhede gedurende die groeitydperk is 'n belangrike faktor in die ontwikkeling van 'n plant. Die tendens van hitte-eenhede beskikbaar vir hierdie kultivarproef was konstant hoër as die tendens ten opsigte van die langtermyn-data vir hitte-eenhede (Figuur 4).

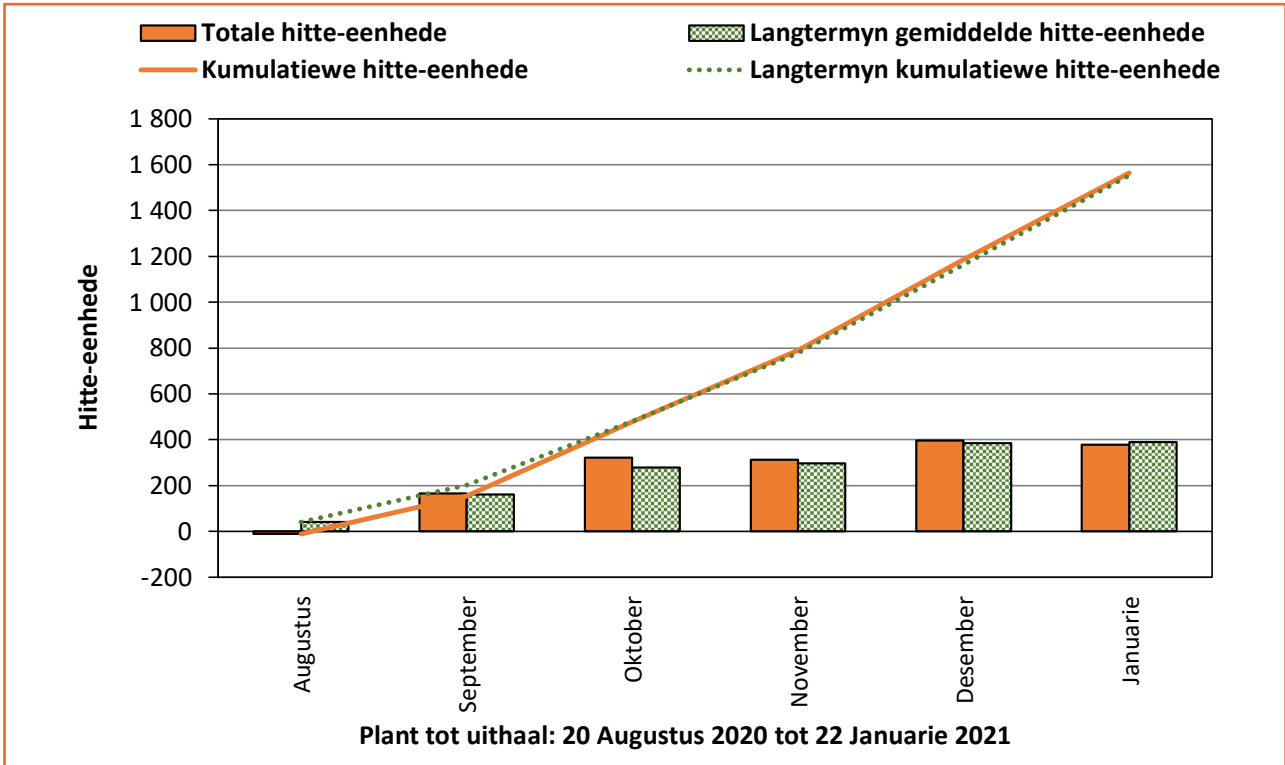
Bogemiddelde prestasie

Opbrengsdata versamel tydens oesdag is statisties verwerk met behulp van die GenStat®-program.



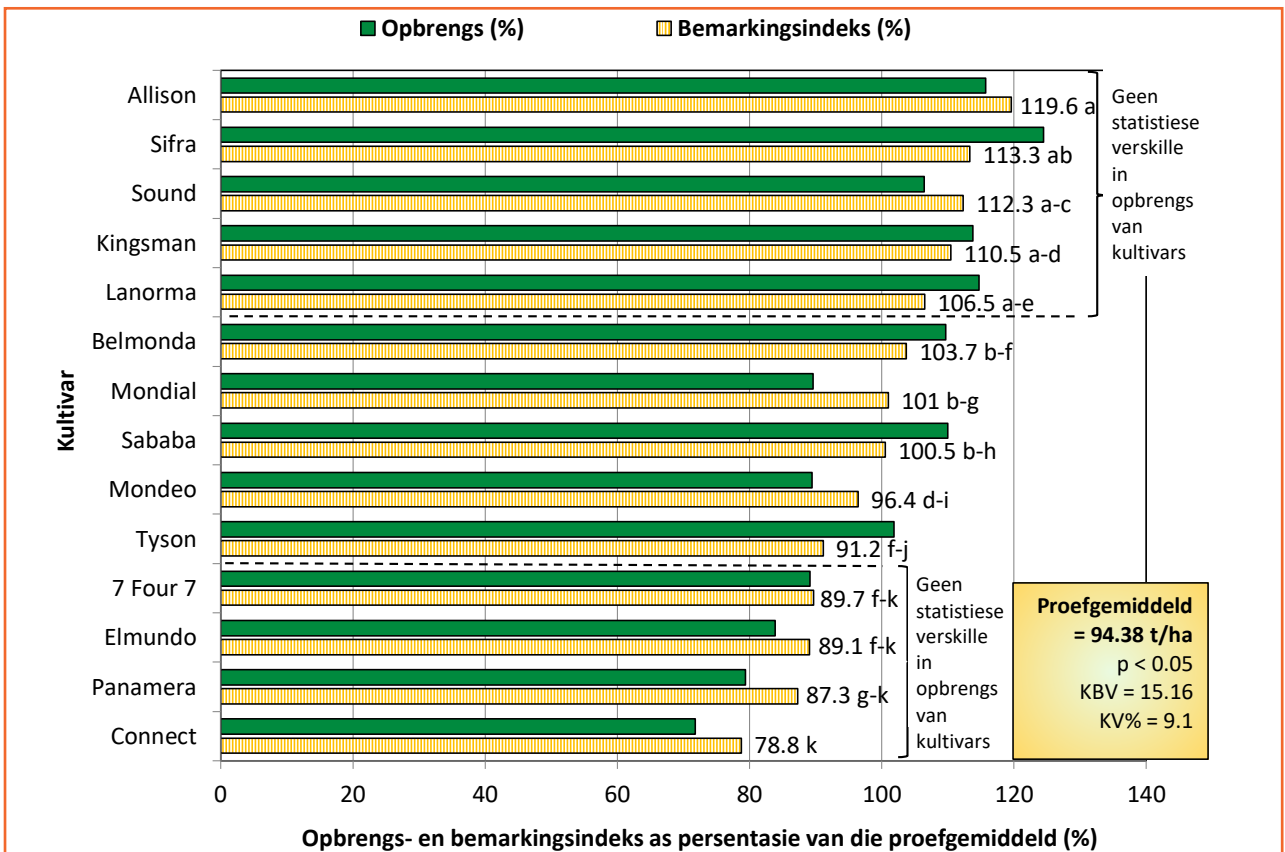
Sifra, Lanorma en Allison het die hoogste bemarkingsindeks behaal, wat aan 'n hoër opbrengs van groot knolle sowel as goeie gehalte in hierdie betrokke kultivars toegeskryf kan word.

Figuur 4: Hitte-eenhede (2020-seisoen) asook langtermyn gemiddelde hitte-eenhede.



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

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



*Waardes gevolg deur dieselfde letter is nie beduidend verskillend van mekaar nie.



Petrusburg val in Suid-Afrika se droë-kontinentale gebied en die plaas waarop die proef geplant is, ontvang die afgelope 21 jaar 'n gemiddelde jaarlikse reënval van 528 mm.

Tabel 4: Hoofredes vir afgradering.

| Kultivar | Sagtevrot | Insekskade | Misvorming | Vergroening | Puntjievrot | Holhart | Bruinvlek |
|----------|-----------|------------|------------|-------------|-------------|---------|-----------|
| 7 Four 7 | x | x | | | | | |
| Allison | x | x | | | | | |
| Belmonda | x | | | x | | | |
| Connect | x | | | | | | |
| Elmundo | x | | | | x | | x |
| Kingsman | x | | | | | | |
| Lanorma | x | x | | | | x | |
| Mondeo | x | | x | | | | |
| Mondial | x | x | x | x | | | |
| Panamera | x | | | | | | |
| Sababa | x | x | x | | | | |
| Sifra | x | x | | | | | |
| Sound | x | | | | | | |
| Tyson | x | | | | | | |

Tabel 5: Prosesseringseienskappe van kultivars (uitgevoer deur LNR Roodeplaat).

| Kultivar | Skyfiekleur ¹ | SG ² | Droëmateriaal (%) ³ |
|----------|--------------------------|-----------------|--------------------------------|
| 7 Four 7 | 48 | 1.057 | 15.51 |
| Allison | 42 | 1.072 | 18.74 |
| Belmonda | 40 | 1.070 | 18.23 |
| Connect | 43 | 1.071 | 18.48 |
| Elmundo | 37 | 1.060 | 16.09 |
| Kingsman | 45 | 1.077 | 19.66 |
| Lanorma | 50 | 1.066 | 17.49 |
| Mondeo | 38 | 1.073 | 18.81 |
| Mondial | 47 | 1.068 | 17.8 |
| Panamera | 44 | 1.072 | 18.65 |
| Sababa | 46 | 1.068 | 17.84 |
| Sifra | 53 | 1.072 | 18.65 |
| Sound | 52 | 1.065 | 17.17 |
| Tyson | 47 | 1.067 | 17.72 |

¹Skyfiekleur met 'n waarde van >50 en sonder defekte, is aanvaarbaar vir die droëskyfiebedryf.

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

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

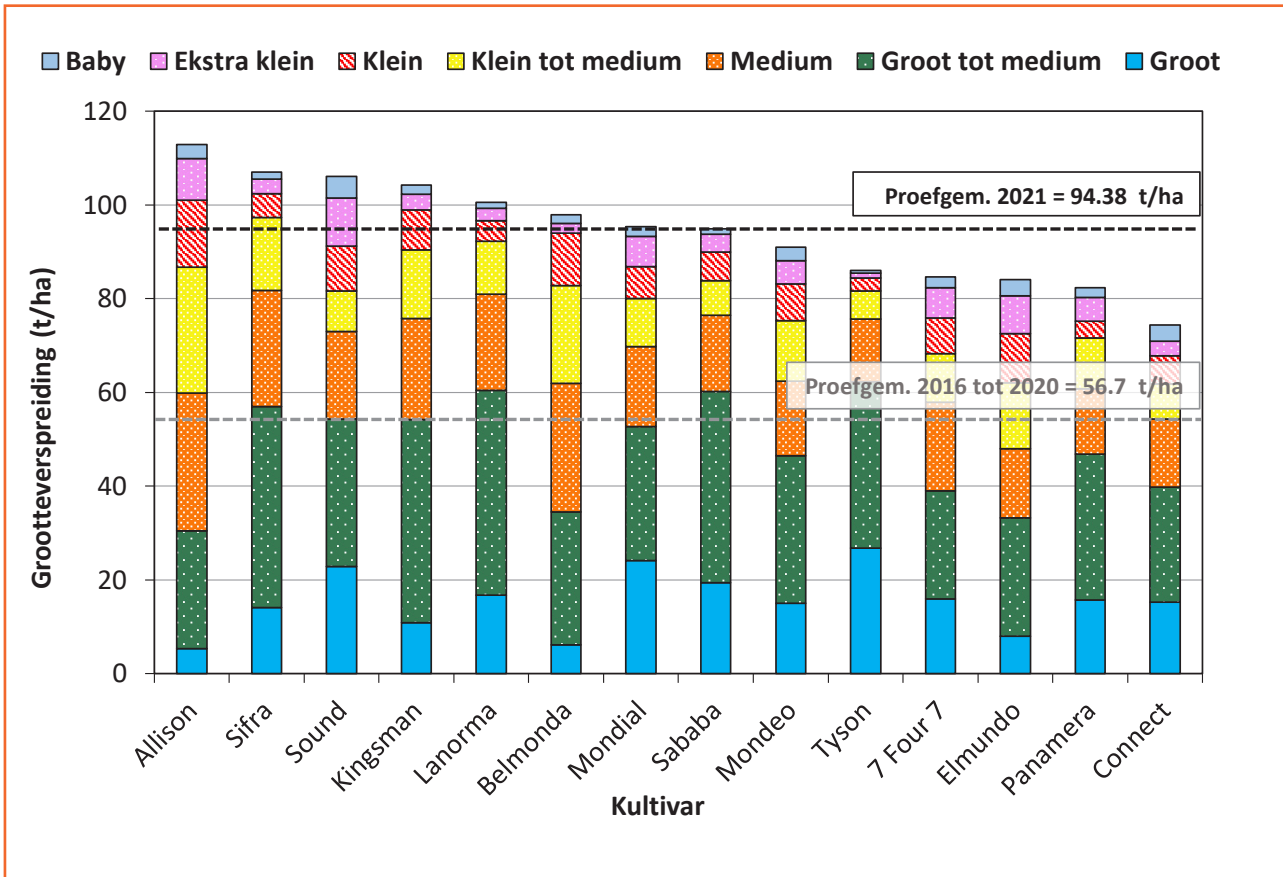
Die Tukey-toets van kleinste betekenisvolle verskille (KBV) is gebruik om die gemiddelde te skei. Die kultivar-effek gedurende hierdie betrokke proef (Figuur 5) was statisties beduidend ($p < 0.05$) en die koëffisiënt van variasie (KV) was laag (9.1%).

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

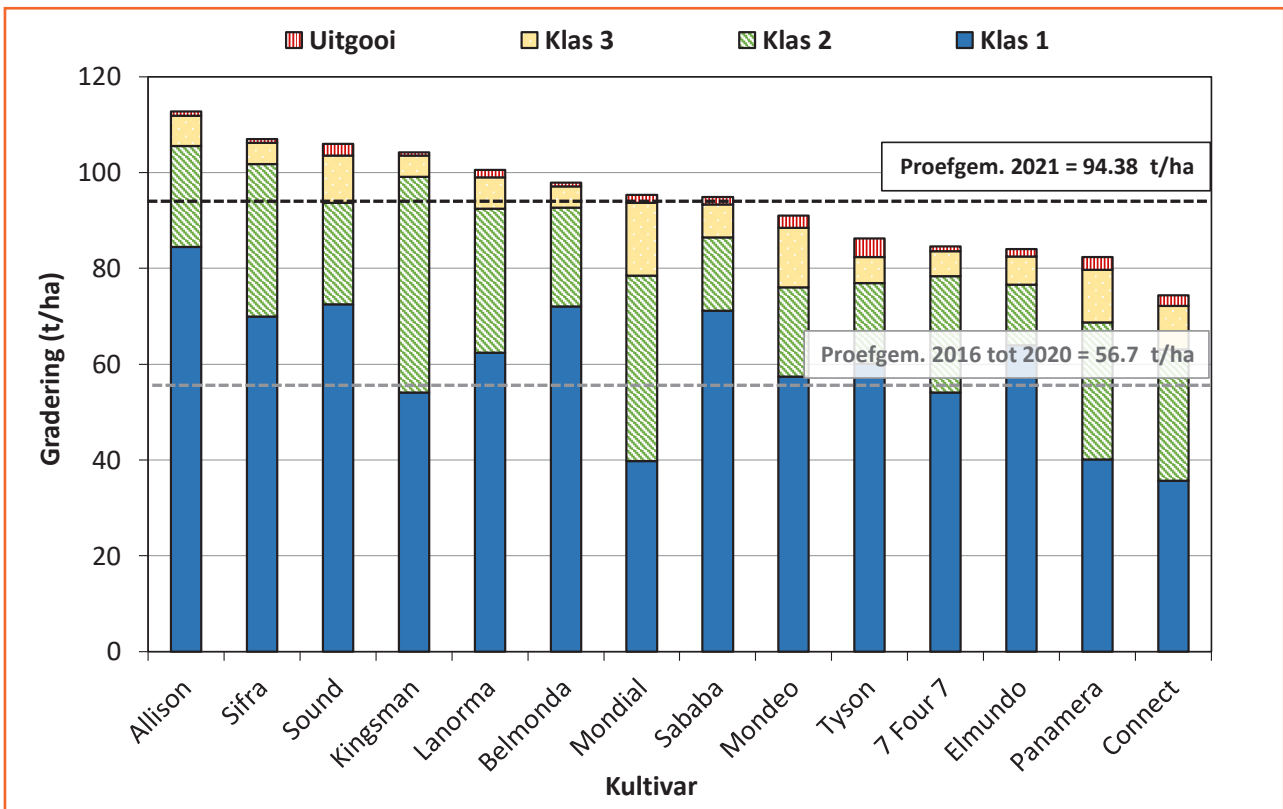
Die opbrengs van elkeen van die kultivars word deur die proefgemiddeld gedeel (die proefgemiddeld van al die kultivars word as 100% geneem). Hierdeur word 'n opbrengs-indeks geskep en word elke kultivar se prestasie in terme van opbrengs as 'n persentasie van die proefgemiddeld gelees.

Die gemiddelde opbrengs van die proef vir die 2020/2021-seisoen is 94.38 t/ha, wat aansienlik hoër is as die proefgemiddeld van die vorige vier kultivarproewe (56.7 t/ha) op

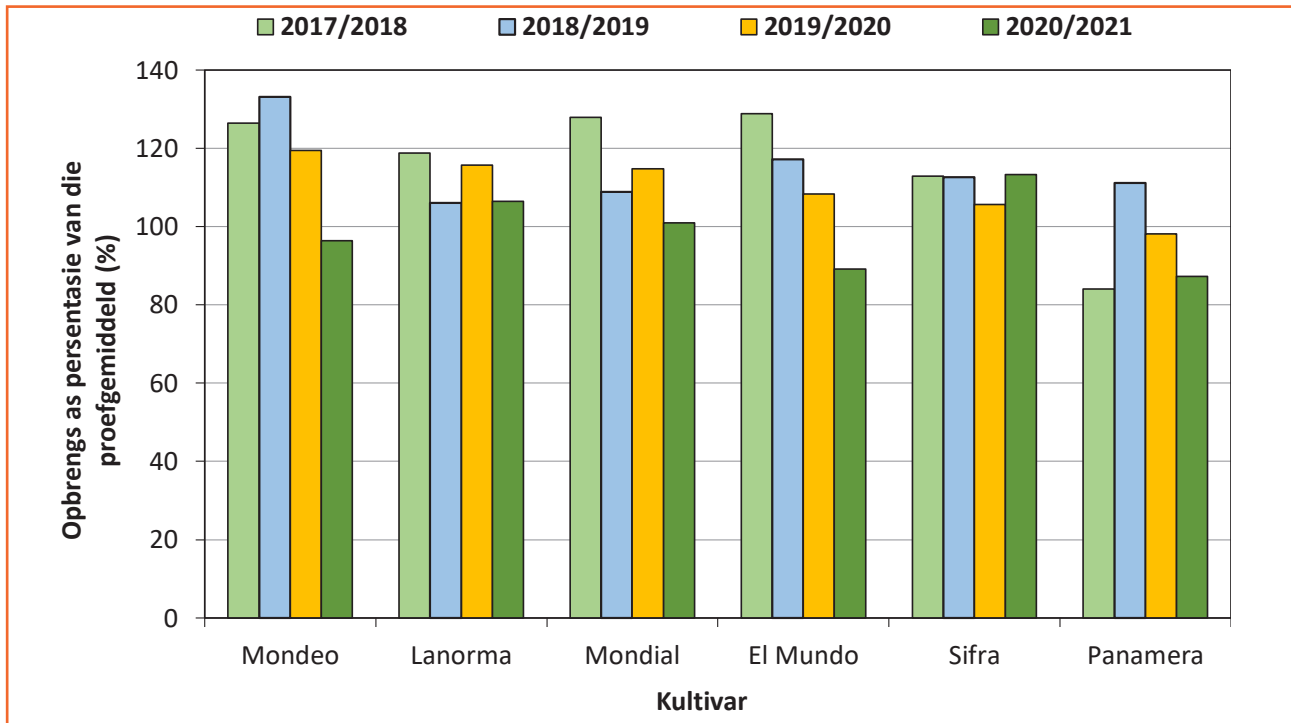
Figuur 6: Groottegroepverspreiding van elke betrokke kultivar.



Figuur 7: Gradering van elke betrokke kultivar.



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



Petrusburg (2016 tot 2020). Die vorige seisoen het ook 'n ver bogemiddelde opbrengs as vorige jare gelewer (109.5 t/ha).

Beide die afgelope twee seisoene se bogemiddelde prestasie kan aan drie faktore toegeskryf word. Eerstens kon die proef vir beide die afgelope twee jare op grond uitgevoer word wat nie 'n geskiedenis van aartappelproduksie het nie. Tweedens is die proewe sedert verlede seisoen teen 'n effens hoër plantestand per hektaar geplant.

Derdens, en waarskynlik die faktor wat die grootste rol gespeel het, was baie goeie watergehalte met 'n aansienlike laer natrium-inhoud as vorige jare se besproeiingswater.

Produsente is afhanklik van ondergrondse water vir besproeiing. By ondergrondse water verskil watergehalte natuurlik tussen die verskeie boorgate. Water met byvoorbeeld 'n hoë natrium-inhoud (hoë elektriese geleidingsvermoë), sal groei negatief beïnvloed, maar volgens die betrokke medewerker se mening, was die watergehalte van die laaste twee seisoene uitstekend.

Min reënval vanaf plantdatum tot Desember beteken baie

sonskyndae, wat gevolglik 'n goeie blaarbedekking gevorm het, met gepaardgaande hoë fotosintese en gesonde groei. Die kultivars Allison, Sifra, Sound, Kingsman en Lanorma het statisties die hoogste opbrengs gelewer (Figuur 5).

Hoë bemarkingsindeks behaal

Sifra, Lanorma en Allison het die hoogste bemarkingsindeks behaal, wat aan 'n hoër opbrengs van groot knolle sowel as goeie gehalte in hierdie betrokke kultivars toegeskryf kan word. Groottegroepverspreiding en gradering (Figuur 6 en 7) is onontbeerlike evaluasies wanneer 'n kultivar se bemarkbaarheid oorweeg word.

Redes vir afgradering word in ag geneem wanneer die aartappels geklas word (Tabel 4). Die grootste redes vir afgradering was sagtevrot en insekshade, wat gelei het tot 'n groter hoeveelheid Klas 2-aartappels. Bruinvlek en holhart is in enkele kultivars opgemerk.

Soos die aard van seisoene is, fluktueer die prestasie van kultivars van seisoen tot seisoen, bloot omdat klimaat van een seisoen na 'n volgende nooit eenders is nie. Derhalwe

is dit belangrik om konsekwente prestasie van 'n kultivar oor 'n aantal seisoene in ag te neem, in plaas daarvan om besluite op een seisoen se goeie prestasie te skoei.

Tans toon Sifra by uitstek die minste variasie vir 2017 tot 2020 in die Petrusburg-kultivarproef, met Lanorma wat ook redelik konsekwent presteer (Figuur 8). Soos reeds genoem, is 80% van die aartappels wat uit die streek bemark word, Sifra.

Laastens, wanneer daar na die interne kwaliteit van aartappels gekyk word, kan prosesserings-eienskappe ook geëvalueer word. Om te voldoen aan prosesseringsvereistes, moet kultivars aan 'n skyfiekleurnorm van >50 en 'n soortlike gewig (SG) van ≥ 1.075 voldoen (Tabel 5).

Slegs Sifra en Sound het aan die skyfiekleurvereistes voldoen en geen kultivars het aan die SG-vereistes voldoen nie. 🍅

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Nuwe projekte spreek knelpunte aan

Deur dr Fienie Niederwieser, Aartappels Suid-Afrika

Die beheer van aartappelmot

Die beheer van aartappelmot het die afgelope paar jaar 'n kopseer vir produsente in verskeie streke veroorsaak. Ondoeltreffende beheer kan die gevolg wees van:

- Insekdoders wat nie hul teiken bereik nie (toedieningsmetodes, digte bo-groei).
- Knolle wat toeganklik vir larwes is (krake in die grond, knolle wat vlak voorkom).
- Insekdoders wat ondoeltreffend is (ongeregistreerde middels of toedieningsmetodes, verlaagde sensitiviteit by aartappelmot vir insekdoders).



Insekdoders wat nie doeltreffend werk nie of knolle wat toeganklik vir larwes is, kan die beheer van aartappelmot belemmer. (Foto: Diedrich Visser, LNR)

- Groot populasies motte wat voorkom (hoë temperatuur, bron van infestasië).

Om te bepaal of aartappelmot weerstandig teen insekdoders raak, is prof Hannalene du Plessis van die Noordwes-Universiteit gekontrakteer om die sensitiviteit van motkolonies van ses verskillende streke teenoor insekdoders van vier verskillende groepe, te toets. Hierdie projek skop 1 September 2021 af en sal in Junie 2023 afgesluit word.

Prof du Plessis is een van slegs 'n paar wetenskaplikes met die kundigheid om insekte ten opsigte van insekdoders sensitiviteit te toets. Vir meer inligting hieroor, lees die artikel, *Is Tuta absoluta weerstandbiedend teen insekdoders in Suid-Afrika?* elders in hierdie uitgawe van CHIPS.

Om ander moontlike oorsake te identifiseer, sal studiegroepe in verskillende streke daargestel word om praktyke wat tot swak beheer kan bydra, te ondersoek.

Indien jy belangstel om aan 'n studiegroep in jou streek deel te neem, of enige verdere inligting benodig, kontak dr Niederwieser by epos_fienie@potatoes.co.za.

Vergelyking van besproeiingstelsels

In die 2020-seisoen is die doeltreffendheid van verskillende besproeiingstelsels (LEPA-, Dragon Line- en driebesproeiing) met die konvensionele oorhoofse draaispielsel vergelyk. Onder leiding van prof Martin Steyn van die Universiteit van Pretoria, is 'n projek in Junie vanjaar geloods om die LEPA- (low energy precision application) en konvensionele stelsels in detail met mekaar te vergelyk.

"In hierdie geval word die konvensionele sproeikoppe met lae-druk sproeikoppe vervang, wat nader aan die grond is (50 tot 80 cm) as dié van die konvensionele stelsel. Die sproeikoppe lewer groter waterdruppels in 'n noue spuit en is daarom nader aan mekaar (80 tot 100 cm). Die doel is om waterverliese weens verdamping te beperk, deur groter druppels toe te dien en die afstand tussen spuitkoppe en plante te verkort.

As die LEPA-stelsel optimaal funksioneer, behoort daar ook 'n besparing aan elektrisiteit te wees, as gevolg van die laer druk waarteen water gelewer word. In die huidige studie sal watergebruiksdoeltreffendheid (kilogramme aartappels goeos per liter besproeiingswater), gelykvormigheid van

toediening, asook elektrisiteitsgebruik van LEPA- en konvensionele stelsels, op vyf plase in Limpopo, vergelyk word.

Die uiteindelijke mikpunt is meer doeltreffende en ekonomiese gebruik van water vir besproeiing. Hierdie navorsing is van toepassing vir besproeiingsgebiede waar die grond redelik gelyk is, byvoorbeeld Wes-Vrystaat, Noordwes, Limpopo en Suidwes-Vrystaat.

Oesverlies by laat aanplantings

Skade aan 5 tot 20% van die verwagte opbrengs van die Junie en Julie aanplantings in Limpopo, het groot verliese en baie kopkrap veroorsaak. In 'n opname wat gedoen is, het produsente aangedui dat plante vroeg afsterf (vroegvrek) wanneer tye van tipiese wintertemperature met hittegolwe afgewissel word, of as dit vinnig warm word ná die winter.

Swak watergehalte word ook as 'n moontlike bydraende faktor gemeld. 'n Span patoloë van die Landbounavorsingsraad (LNR), onder leiding van Estianne Retief, het die moontlikheid ondersoek dat spanning wat deur wisselende temperature veroorsaak word, 'n geleentheid vir patogene en plantparasitiese aalwurms skep.

Plante van verskeie plase in Limpopo is oor twee seisoene versamel en vir patogene ondersoek. 'n Verrassende aantal patogene is uit die siek plante geïsoleer, naamlik *Fusarium*-spesies, *Colletotrichum coccodes* (wat swartspikkel veroorsaak), *Alternaria*, *Rhizoctonia*, *Verticillium* en *Macrophomina*.

Daarenteen was letsel-aalwurm, wat tipies met vroegvrek in die noordelike halfmond geassosieer word, minder volop. Analise van die aalwurmpopulasie het aangedui dat die grond oor die algemeen arm aan biologiese aktiwiteit is.

Om moontlike aanbevelings vir die beperking van vroegvrek te identifiseer, is drie nuwe projekte goedgekeur om meer te wete te kom oor die patogene en aalwurms, sowel as om benaderings tot die vermindering van die effek van spanning, te ondersoek.



Simptome wat deur *Alternaria alternata* veroorsaak word.

Alternaria en swamdoders

Doeltreffende swamdoders is onontbeerlik vir die beheer van blaarsiektes. 'n Studie van *Alternaria*-spesies regoor die land, het drie jaar gelede aanvangs geneem en toon dat naas *Alternaria solani* (vroeëroes) en *A. alternata* (malroes), twee ander *Alternaria*-spesies ook 'roes' veroorsaak. *A. arborescens* veroorsaak simptome soortgelyk aan malroes (*A. alternata*), terwyl *A. grandis* simptome soortgelyk aan vroeëroes (*A. solani*) veroorsaak.

Met behulp van in vitro-toetse, het isolate van die vier *Alternaria*-spesies van regoor die land die moontlikheid van 'n verlies aan sensitiviteit teenoor belangrike swamdoders getoon. Om weerstandigheid egter te bevestig, is 'n verskeidenheid van tydrowende in vitro- en in vivo-toetse nodig.

Befondsing is goedgekeur om molekulêre metodes te ontwikkel vir al vier *Alternaria*-spesies wat in Suid-Afrika voorkom, om verlies aan sensitiviteit teenoor 'n verskeidenheid swamdoders te ontwikkel. Die doel is om gevalle waar weerstandigheid teen swamdoders vermoed word, vinnig te kan bevestig, sodat regstellende aksie in spuitprogramme geneem kan word en waardevolle swamdoders in gebruik kan bly. ©

Vir meer inligting kontak dr Niederwiesser by epos fienie@potatoes.co.za.

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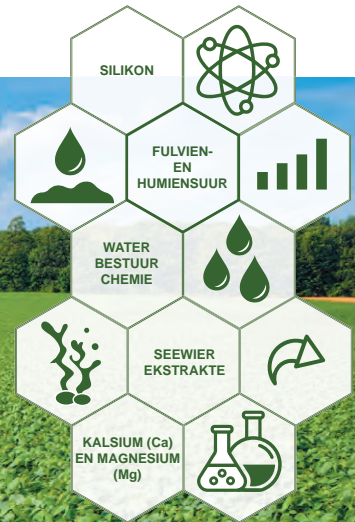
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Deel 4: Sterkrake

Deur dr Fienie Niederwieser, Aartappels Suid-Afrika

Die afgelope paar jaar is verskeie foto's of knolmonsters van verskillende kultivars met vlak, stervormige krakies ontvang. Die vraag is natuurlik, wat is dit? En wat sou die oorsaak daarvan wees?

Die stervormige krake is nie noodwendig uniform nie en knolle waarop die krakies voorkom kan ook ander krake toon, waarvan sommige aan bruinskurf (*Figuur 1*) herinner en ander soos sandspleet (*Figuur 2*) lyk. Of daar 'n verband tussen die verskillende krake bestaan, is onbekend.

Ons neem ook waar dat sterkrake neig om meer op die een kant van knolle voor te kom as op die ander (*Figuur 4*). Dit blyk dat die meeste sterspleete vanaf die lentiselle ontstaan. Sterkrake kan klein wees, of dit kan langer wees en 'n netwerk van krake vorm (*Figuur 3*).

Moontlike oorsake

Krake op knolle kan deur fisiologiese faktore of patogene veroorsaak word. Omdat van die krake aan spleetskurf herinner, word knolmonsters met sterkrake na plantsiekte-diagnostiese laboratoriums gestuur. Geen bekende patogeen is tot dusver daaruit geïsoleer nie. 'n Internetsoektog vir 'n moontlike patogeen-oorsaak het slegs een verwysing opgelewer (www.potato-tuber-blemishes.com), wat die krake beskryf as "star-shaped cracks without a halo. Cause: Unknown".

Dit wil voorkom of die sterspleete 'n tipe groeikraak is wat vorm wanneer klimaatstoestande wisselend is en besproeiingskedulering bemoeilik. Dit kan verklaar waarom die afwyking in dieselfde tydperk by meer as een produsent in 'n spesifieke omgewing waargeneem word.

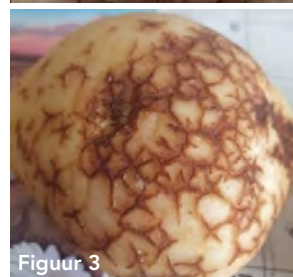
Wanneer plante water opneem ná 'n kort tydperk van effense droë grondtoestande, vergroot die selle in die knol en verhoog die druk sodanig dat die skil kraak. Krakies ontstaan vanuit die lentiselle, wat die swakste plekke in die skil is.



Figuur 1



Figuur 2



Figuur 3



Figuur 4

Die feit dat sterkrake dikwels op die boonste oppervlak van die knol voorkom waar grond makliker uitdroog as aan die onderkant, is nog 'n aanduiding dat wisselende grondvog 'n rol by dié afwyking speel. 📍

Indien produsente knolle met sterkrake raakloop, hoor ons graag van julle. Monsters met bykomende inligting oor produksietoestande, klimaat en ander siektes, sal help om meer sekerheid oor sterkrake te kry. Kontak dr Niederwieser by epos fenie@potatoes.co.za of 083 634 4848.

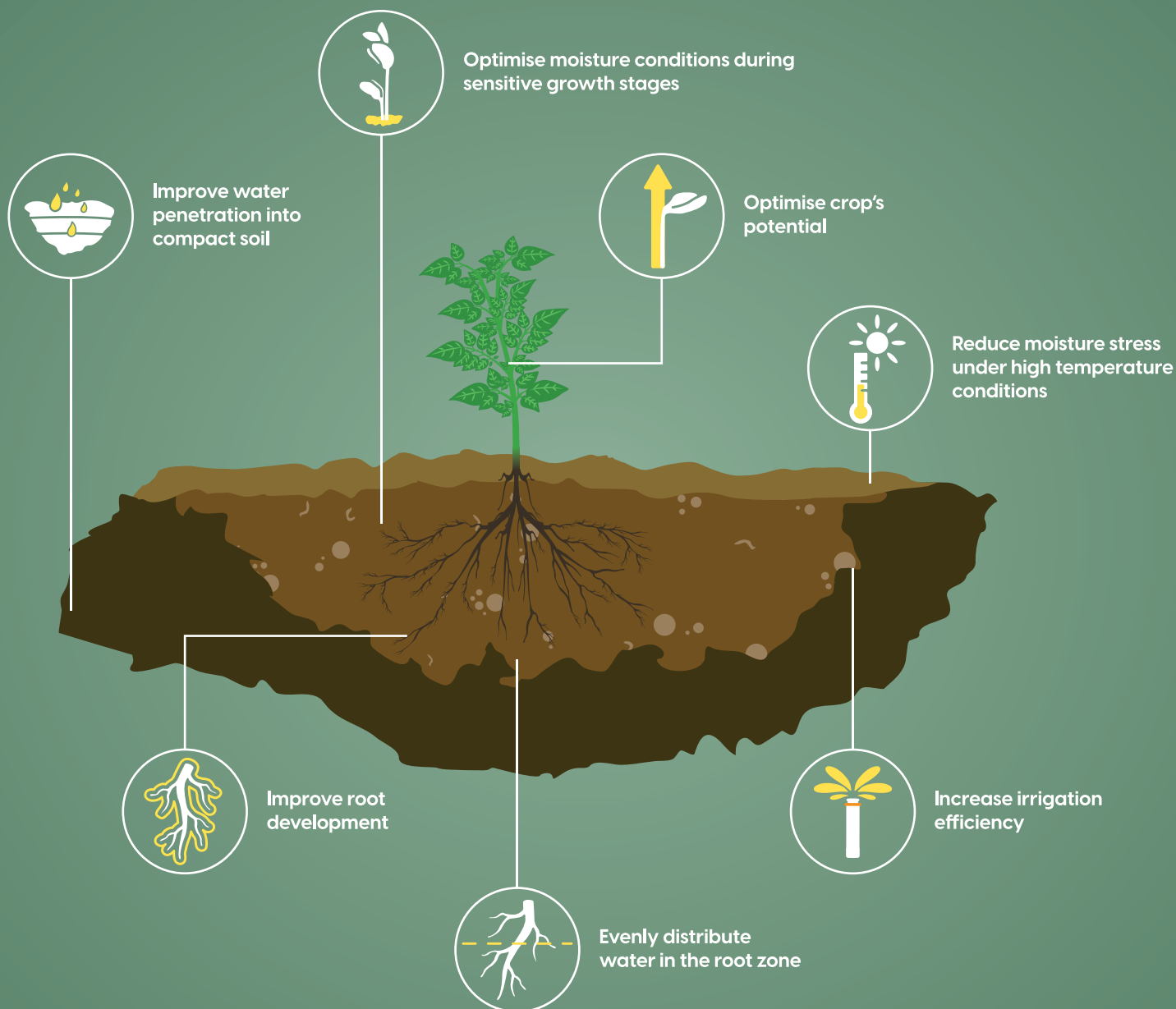


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Soil fertility: Using photosynthesis for regenerative agriculture

By Frank van den Heever, independent soil health consultant



During the last century, the adoption of conventional farming practices resulted in agricultural land being severely depleted of components that uphold soil fertility. Regenerative agriculture aims to rebuild the carbon content of the soil. This can be achieved by optimising photosynthesis in crops so that ample carbohydrates are produced in the plants.

When ample carbohydrates are produced, surplus carbohydrates can be supplied to soil micro-organisms through root exudates. Carbohydrates supplied as root exudates, together with increasing soil micro-organism populations, are potentially the best method for regenerating the soil. Therefore, focussing on regenerating soil fertility and reducing plant stress factors is a logical starting point for regenerative farming.

The dominant component

Soil is a blend of minerals, gases, organic matter, liquids and organisms, which together support plant life. The ratios and quantity of various soil components are very important for improving photosynthesis and reducing factors that influence plant stress. A well-established root system is a direct indication of effective practices.

Certain aspects need to be considered to optimise photosynthesis.

Soil nutrition

For optimised photosynthesis, plants need optimised nutrition. Macro and micro plant nutrients form part of the mineral component of the soil. The ratio and quantity of these elements are essential. The soil pH is significant, as this affects the availability of these nutrients. Uptake of these nutrients from the soil solution are also influenced by the water content of the soil.

Minerals and physical condition

Minerals, soil structure and soil texture can create limitations that may cause stress in crops. Prevalent physical soil limitations include compaction, surface crusting, low infiltration rates and run-off. Oro Agri's TRANSFORMER® can alleviate these limitations.

Aeration

The pore spaces between solid soil components are filled with either water or air. This air is comprised of different gases. Waterlogged soils have poor aeration and low oxygen levels. The oxygen component is crucial for respiration of roots and micro-organisms.

Decreased respiration of plant roots results in reduced water and nutrient uptake. Decreased respiration of micro-organisms will shift the diversity of the microbial population to anaerobic organisms, which are, in many cases, pathogenic to plants. These conditions will reduce photosynthesis.

It is important to maintain an even distribution between spaces filled with water and air. Irrigation

management is therefore a key component of this process, but soil structure and texture have a major influence on irrigation management. TRANSFORMER® is highly effective in re-establishing an even distribution of water and aeration in the soil.

Soil solution

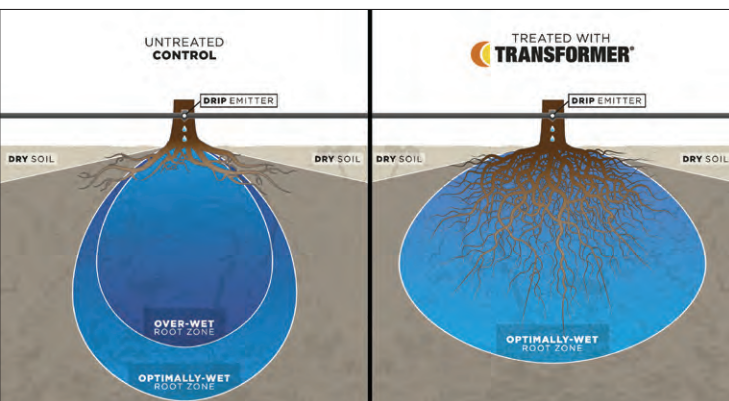
The soil solution is the liquid component of the soil and is comprised of water, dissolved nutrients and dissolved oxygen. The solution is important for transporting substances within the soil, as well as removing substances from the soil. A well-buffered and balanced soil solution contains sufficient water, oxygen and nutrients.

Organic matter

Organic matter should be effectively composted in the soil. Together with surplus carbohydrate exudates from the plant roots of highly photosynthetic-efficient plants, composted organic material significantly increases the soil carbon content.

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Understanding the seed side of potatoes

By Nomvula Xaba

One of the mandates of Potatoes South Africa's (PSA) transformation division is to ensure that the activities that form part of the Enterprise Development Programme (EDP), upskill producers so that they can run their businesses in a sustainable and profitable manner. The main objective of the programme, however, is to ensure the commercialisation of new era farmers.

For quite some time now, the financial support offered to producers has been originating from the provision of seed, which

accounts for approximately 30% of the production cost. The decision to provide seed support was based on the fact that good quality seed is not easy to find, and generally, when producers are recruited to participate in potato production, they have no knowledge of the technicalities involved or the suppliers of seed.

The right seed at the right time

PSA has taken up the role of ensuring that new era farmers have access to the right seed at the right time. When it comes to the selection of cultivars, PSA only presents the performance of the

different cultivars in the different regions, and the percentage of the different cultivars planted by commercial farmers in the area. The final decision in terms of which cultivar to be planted rests solely with the producer, not PSA.

The transformation division recently collaborated with Wesgrow to provide exposure to all the producers participating in the EDP, to the seed production side of potatoes.

All producers, together with the transformation division, attended a well-conducted information session at Wesgrow in Christiana,



Gerhard Posthumus elaborated on some of the cultivars believed to perform well in the future.

North West, where several topics were covered, including:

- The seed certification process.
- Understanding the different seed generations.
- What to look for when planting potatoes for seed production.
- The requirements of becoming a seed farmer.
- Recommended seed storage.
- A tour of the seed production site.

Upon arrival, the group visited Rascal Seed Research Laboratories which specialises in the production of potato mini tubers. Due to Covid-19 regulations and the strict hygienic standards maintained, producers were not able to visit the greenhouses, but viewed the operations on a pre-recorded video.

The visit to the laboratory provided valuable information. Here, producers learned that mini-tuber production is conducted in insect-proof greenhouses, under the strict regulations of the Seed Potato Certification Scheme.

The greenhouses are climate controlled, making it possible to produce mini tubers all year round and to cater for all the different production regions.

The new varieties are occasionally tested through the trials conducted by PSA in different regions.

First-hand experience


The day included a visit to the Wesgrow trial where Gerhard Posthumus guided producers through the various trials to inspect the performance of the different cultivars. He elaborated on trends they were observing and the cultivars they believe will perform well in future.

The producers also visited two seed farms to observe operations from when seed is brought from the field and taken to the packhouse.

They were given first-hand insight into the grading of seed and the quality control process. The seed farm visits generated great interest from the producers.

The visit concluded with a discussion at the Wesgrow headquarters where producers enjoyed an interactive session with WesGrow officials. Producers mainly enquired about the following:

- The best time to order seed so that it arrives when needed.
- Why seed is occasionally too fresh and has to seat long before planting.
- Whether seed of a specific origin can be ordered.
- The difference in pricing for the different generations.

The visit proved to be very informative for all the producers who attended. PSA hopes that this collaboration with seed suppliers will continue in the future, to provide valuable information in understanding the seed side of potato production. 

For more information, contact Nomvula Xaba at nomvula@potatoes.co.za.

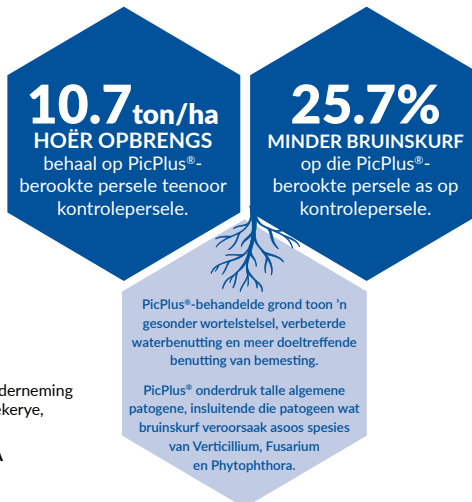


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Producer builds a sustainable enterprise with PSA by his side

By Masabatha Motsoeneng

Robert Chauke was born and bred in Trapoort, a village located in the Vhembe district of Limpopo. Robert currently resides and farms in Avon Village, also known as Marobjane, in the Blouberg Local Municipality in Limpopo. Robert has been participating in the Potatoes South Africa (PSA) Enterprise Development Programme (EDP) for the past three years.



Robert Chauke in his potato field in Avon Village, Limpopo.

Robert relocated from Trapoort to Avon Village in 1985, where he attended high school. After matriculating, he worked as a general labourer at a game farm. Soon after, he got married and was blessed with two daughters. As his family grew, he decided to start his own business and established a hair salon in Avon Village, which operated for six years. He then decided to focus solely on farming.

Humble beginnings

In 2008, Robert became interested in venturing into a farming enterprise. He acquired a PTO (permission to occupy) for 100 ha through the Seakamela Tribal Authority, for the purpose of producing crops. He researched possible crops, the technical aspects of farming, and the markets where he could sell his produce. He recalls interacting with various producers who already had a foot in the door, producing and selling vegetables to various markets.

Robert then started to deforest the land to prepare it for vegetable cultivation, for which he received funding from the Limpopo Department of Agriculture and Rural Development. The funding gave him the start he needed to install water infrastructure, which is one of the most critical inputs in vegetable production. Two boreholes were drilled and equipped, and a 5 ha centre pivot was installed.

"Not having a tractor or implements was very tough," says Robert. "All I had was land, an irrigation system and water. Most of the work was done manually or by hiring machinery from nearby farmers. My first crop was

watermelon because it was what I could afford at that time. The production cost involved was low and manageable."

Support from PSA

In 2018, he partnered with his neighbour and planted 10 ha of Mondial potatoes for the local market. This was his first experience in producing potatoes. His partner, who was already part of the PSA EDP, then introduced him to the programme. "After experiencing the production of potatoes, I knew that I had to contact PSA to join the EDP," says Robert.

He followed the process of applying for approval to participate in the programme. This included completing and submitting the EDP application, along with supporting documentation regarding his business. After this, a pre-feasibility study was conducted, which included an in-depth analysis of his enterprise. A business plan was then prepared and presented for approval of a seed grant, after which a mentor was assigned to him to guide and advise him on the overall production of potatoes.

Robert mentions that the business plan prepared by PSA also unlocked other forms of funding for him. "I first planted potatoes through PSA's EDP in 2019. I planted 2,5 ha of the Innovator and 2,5 ha of the Daisy cultivars, which were sold to McCain Foods."

In 2020, he expanded his potato production to 13,5 ha and planted Sifra, realising a yield of 48 tons/ha, and in July this year, he planted 11 ha of Mondial. He was hoping to expand with another 5 ha, but unfortunately



Robert Chauke's Sifra planting of 2020.

his centre pivots were vandalised and the electrical transformer and cables stolen. Despite this setback, he continued planting potatoes as his primary crop.

"Farming is not easy; it requires one to be focused and to have patience," he says. He elaborates that while he started farming without implements or a tractor, he used the profits generated from


producing potatoes to invest in his business. He purchased two tractors, a potato planter, a disc, ripper, potato harvester and an additional centre pivot.

Growing in leaps and bounds

Through the development programme, PSA has not only provided Robert with a seed grant, mentorship and training, but a

company has also been appointed to assist him with account management for his farming enterprise. The company provides him with guidance on recording transactions with debtors and creditors, and they have assisted him with registering a VAT number.

"All the support I received from PSA has played a big role in setting my business up to operate at a commercial level. The programme has really enabled me to understand the practices that must be applied when planting, monitoring and harvesting potatoes.

"That does not mean I have it all figured out. I make mistakes and I learn from them, and I am still guided by mentors and officials from PSA," Robert adds. 

For more information, contact Masabatha Motsoeneng at masabatha@potatoes.co.za.



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Empangeni farmers get the know-how with development project

By Louis Pretorius

Qinisani Mzimela, a small-scale farmer from Lalaneni near Empangeni, embraced the opportunity to host this year's Empangeni Small Farmer Development Project, also known as the Clanso Farming and Agro-processing Project, planted on 24 May 2021. This small farmer development programme in KwaZulu-Natal is a team effort between Potatoes South Africa (PSA) and the Department of Agriculture, Cedara.

Production issues in the area

The best time to produce potatoes in Empangeni is during winter, in order for the potatoes to be marketed towards the last quarter of the year. During this time, the markets are usually not overstocked. This was one of the key aspects that producers learned from the project.

They also learned that dryland production is not possible during dry winters in Empangeni, and therefore plantings need to be under irrigation under such circumstances. The region is frost-free and is suitable for planting during standard winters. However, the rise in temperatures later in the year is also suitable for good potato production.

The main cultivars planted for this project were Mondial,



Qinisani Mzimela and Louis Pretorius of PSA.

Panamera and Sababa. Other cultivars included Morgana, Allison, Electra, Sifra, El Mundo, Connect and Foxy. The aim of the project was to point out the different traits of the cultivars to the small farmers. The most important aspect for rural regions is resistance to blight. Yield and quality are also crucial.

Marketing day

At harvesting, a market day will be arranged to educate producers on how to sort, grade and pack potatoes. More importantly will be the introduction of available marketing channels to successfully market potatoes. This will address the challenge of inconsistent market opportunities that affect small farmers at present. During the marketing




Attie van den Berg of GWK Seed Potatoes and Qinisani Mzimela.

day, the yield of each cultivar will be determined for comparison.

According to Qinisani, the following important aspects have been addressed in the project thus far:

- How to optimally fertilise a potato crop using soil sample results.
- The water requirements of the potato plant at different stages during the growth cycle and how to irrigate optimally by measuring the amount of irrigation water applied.
- Preventative weed control at planting.
- To alternate active ingredients of pesticides and fungicides to prevent build-up of resistance.
- The importance of crop rotation regarding potatoes.

The Clanso Farming and Agro-processing Project will be harvested in October 2021. 



Spray rows were introduced to prevent plant damage during spraying of chemicals.

For more information, email the author at louis@potatoes.co.za



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Managing crises through public relations: Lapse in anti-dumping duties

By Immaculate Zinde

Crisis management is the process by which an organisation deals with disruptive and unexpected events that threaten to harm the organisation or its stakeholders. It is the most important process in public relations.

Three elements are common to a crisis:

- A threat to the organisation.
- The element of surprise.
- Limited decision-making time.

Since 2006, Potatoes South Africa (PSA) has been undertaking many public relations campaigns aimed at raising awareness regarding pertinent industry issues. As such, public relations, or PR, remains a prominent feature in the mix of promotional elements which PSA and the marketing division deploy to communicate externally.

Sunset review application

In 2019, PSA, through close co-operation with the Potato and Vegetable Processors Forum (PVPF), initiated a sunset review application through the International Trade Administration Commission of South Africa (ITAC). A sunset review is an assessment that is initiated before a definitive anti-dumping duty lapses, so as to determine whether the anti-dumping duties should continue or be terminated.

Between 11 and 13 June 2019, ITAC visited McCain Foods as the main applicant for anti-dumping duties to verify financial and cost information relating to industry's application for a sunset review of

the anti-dumping duties on frozen potato chips, originating in or imported from Belgium and the Netherlands.

After the visit, ITAC presented the information at its commissioners' monthly meeting on 9 July 2019. At this meeting, ITAC took a favourable view of the sunset review application and approved the correctly documented file for official investigation. ITAC officials immediately started preparing the required *Government Gazette* notice to announce the initiation, which appeared on 26 July 2019.

After the gazetting of the investigation in July 2019, the primary activity was engagement between ITAC, European Union (EU) factories and local importers, to obtain their respondent

application forms and related verifications. This process was closely monitored to keep abreast of the matter.

Then, the Covid-19 pandemic broke out during the investigation. However, with ITAC having been classified as an essential service, it confirmed in a letter dated 19 May 2020 that it would still be able to proceed with investigations. "Responses should still be submitted within the prescribed time periods by participating exporters, unless an extension has been granted as provided for in the relevant regulations," it stated.

Managing the crisis

The volumes of frozen French fries imported into South Africa between



The Government Gazette containing the notice to announce the initiation of the sunset review, was published on 26 July 2019.

Figure 1: Anti-dumping application timeline.



Urgent action needed to Protect SA's potato industry

Since 2000/01 potatoes accounted for approximately 45% of total vegetable crops produced in South Africa and contribute around R8.5 billion to the economy. These numbers, however, are under threat due to a surplus of frozen and processed potato products in Europe, as a result of a decreased demand brought on by the COVID-19 pandemic worldwide, and hence significantly depressed prices. As South Africa is a key destination for processed potato product exports from the EU where there is a history of dumping, this is set to have a negative impact on the country's agricultural sector and surrounding communities.

Cognisance must be taken that over and above the normal farm support that EU farmers receive, there was also special COVID-19 support measures afforded to potato producers. This support, combined with low priced surpluses, will drive export prices down further with a significant risk of increasing dumping margins threatening the South African potato industry.

EU potato dumping threatens local industry

The battle between the local potato industry and global importers has a long-standing history, with South Africa (SA) being considered a prime destination for dumping frozen processed potato products. With the recent lapse of anti-dumping duty protection, there is a significant risk that the increased volume of below-cost frozen French fries that land on our shores from the Netherlands and Belgium, will cripple SA producers.

Willie Jacobs, CEO of Potatoes South Africa (PSA), expressed concern for the local potato industry and pleaded for local support. "South African producers have been experiencing many challenges brought on by Covid-19, the cost-price squeeze, rising input costs and most recently, the riots in parts of the country.

"Furthermore, our producers don't benefit from the financial support afforded to farmers in the European Union (EU) by their governments, and simply cannot compete with below-cost

Follow these links to read the full releases: <https://africa.com/urgent-action-needed-to-protect-sas-potato-industry/> and <https://www.agriorbit.com/eu-potato-dumping-threatens-local-industry/>

April and August 2020, were at an all-time low due to the Covid-19 pandemic and the subsequent bans on travel and trade. The volumes imported during this period amounted to 3.8 million kilograms of French fries, compared to 8 million kilograms in 2019, and 10.2 million in 2018 during the same months.

Although this boded well for the local industry, it was evident that once trade regulations had eased and business operations normalised, South Africa would experience an exponential rise in the importation of processed potato products. This would be due to European markets trying to find alternative markets for the oversupply of stocks brought on by Covid-19 and associated trade bans.

South Africa is not the only country plagued by EU dumping practices. Colombia, New Zealand and Australia have all had to deal with dumping. Given the disappointing outcome of the sunset review application, the marketing division of PSA has remained cognisant of the fact that more is required to turn the situation around.

Over and above the ongoing engagement with ITAC and key processing companies in South Africa, PSA, through the PVPF, has submitted letters to the minister of agriculture and the minister of trade and industry. In addition, it implemented two powerful media campaigns.


In September 2020, a media release titled, "*Urgent action needed to protect SA's potato industry*", was distributed. The campaign achieved an advertising value to the equivalent of R2 991 036 and reached 111 431 726 people. Then, in July 2021, another media release titled, "*Local potato industry appeals for support amidst major EU dumping threats*", was distributed. The campaign achieved an advertising value to the equivalent of R2 248 797 and reached 11 711 393 people.

Where are we now?

In a meeting called by ITAC with the PVPF on 12 February 2021, ITAC reported that it was unsuccessful in concluding the investigation within the 18-month time frame under the World Trade Organisation (WTO) rules and ITAC's anti-dumping

regulations. The ITAC report on the investigation of anti-dumping duties did not provide insights into the reasons why the 18-month deadline had been exceeded, regrettably leading to the duties determined not being implemented.

The resilient nature of the local potato industry, however, transcends any possible threat to its sustainability. According to *Metro*, an online news platform, bad weather in Europe, specifically Belgium, Germany and the Netherlands, has destroyed many hectares of potato plants. This resulted in a major shortage of chip and roast potatoes.

The true impact of the defunct anti-dumping duties have not yet been recorded. The latest import statistics will only be available in the first week of September. Only then will the true effect of the lapse in dumping duties be pronounced, if at all. 

For more information, send an email to Immaculate Zinde at immaculate@potatoes.co.za.

The Heart Mark:

The most important statement of approval for potatoes yet

By Immaculate Zinde

It is reported that in May 2012, world leaders committed to reducing global mortality rates resulting from non-communicable diseases (NCDs) by 25% by 2025. At the time, cardiovascular diseases (CVDs) were accountable for nearly half of all NCD deaths, making them the world's number one killer (Figure 1).

With the emergence of Covid-19, CVDs have turned into many people's nightmare. The ideal of reducing NCDs by 25% may just be out of reach in the set timeline. The need for the CVD community to unite in the fight against these diseases and reduce the global disease burden, has become increasingly important.

The Heart Mark endorsement programme is part of ongoing efforts by the Heart and Stroke Foundation of South Africa (HSFSA) to reduce the number of deaths from preventable heart disease and stroke in South Africa. The endorsement programme forms part of a health-enabling environment, offering consumers a tool that makes choosing healthier foods easier.

Heart health matters

Even with robust informative campaigns, the press has still managed to find angles that discredit the goodness of potatoes. For this reason, the endorsement of potatoes by the HSFSA as a heart-healthy product when consumed in a healthy manner, with skin on and dressed in quality herbs and spices,

bodes well in efforts to debunk myths and negative perceptions. In a 2019 consumer study, 66% of respondents said they would consume potatoes more often if they knew they were healthy, while 20% of respondents were indecisive, and 14% of the respondents said they enjoy potatoes regardless.

The marketing division of Potatoes South Africa (PSA) intends to utilise the month of September to create awareness through its multitude of digital assets, about the many nutritional benefits of potatoes, especially those linked to managing and curbing heart disease. This will culminate in a 360-degree marketing communication plan on 29 September – World Heart Day. This year's theme is #UseHeartToConnect.

The theme, #UseHeartToConnect, is about using knowledge, compassion and influence to make sure you, your loved ones and the communities you are a part of have the best chance at living heart-healthy lives. It's about connecting with our own hearts, making sure we're fuelling and nurturing them as best we can, and using the power of



The certificate which confirms that PSA may use the Heart Mark logo on all of its marketing and promotional materials.

digital platforms to connect every heart, everywhere.

PSA's marketing campaign to extract value from the endorsement for 2021 is themed #WeHeartAmazambane which,

Figure 1: Impact of cardiovascular diseases in South Africa. (Source: The Heart and Stroke Foundation of South Africa).



when loosely translated, means “we love potatoes”. The campaign aims to position potatoes as a heart-healthy food to emphasise the importance of a healthy diet, while showing compassion for

those affected by Covid-19. The division is working closely with the HSFSa to align key messages, identify influencers and roll out a digital campaign alongside media engagement and publicity. These


efforts will be supported by radio and television campaigns between 1 and 30 September 2021.

How potatoes improve heart health

The fibre, potassium, Vitamin C and Vitamin B of potatoes, coupled with the lack of cholesterol, help maintain heart health. Potatoes contain more potassium than any other vegetables. Potassium plays a crucial role in regulated heart rate, smooth muscle contraction, blood pressure control, as well as optimal nervous system and heart function. Potatoes contain significant amounts of fibre, which helps lower the total amount of cholesterol in the blood, thereby decreasing the risk of heart disease.

Some evidence suggests that potatoes might help reduce inflammation and constipation. Although it is not proven that inflammation causes CVD, it is common among heart disease and stroke patients and is thought to be a sign or atherogenic response. Potatoes contain several minerals and plant compounds that may help lower blood pressure.

“The shocking statistics that can be decreased if we are mindful of our health, are testament that something needs to be done. We work towards the prevention of heart disease on the one hand and suggest healthy and nutritious food options on the other, further driving conversation around the role potatoes play in heart health,” says Dr Bianca van der Westhuizen, nutrition science manager at the HSFSa.

“Additionally, we have started a drive through which we aim to achieve a 25% reduction in rheumatic heart disease in those under the age of 25 years by 2025,” adds Dr van der Westhuizen. 

For more information and references, contact Immaculate Zinde at email immaculate@potatoes.co.za.



THE HEART
AND STROKE
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Potatoes contain significant amounts of fibre, which helps lower the total amount of cholesterol in the blood, thereby decreasing the risk of heart disease. (Photograph: Rikki Hibbert).



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Potatoes, pomegranate and crispy couscous salad

Serves: 6

Ingredients:

- 2 medium potatoes (360 g), skin on.
- 1 tbs olive oil.
- ½ tsp Himalayan salt.
- Ground black pepper, to taste.
- ½ tsp paprika.
- ¼ cup uncooked wholewheat couscous.
- 1 tbs olive oil.
- 1 small green apple (150 g), diced.
- 1 tbs fresh lemon juice.
- 1 cup baby spinach (30 g).
- ⅓ cup pomegranate seeds.
- ⅓ cup walnuts, toasted.
- ½ cup balsamic vinegar.
- 1 tbs xylitol.
- 1 tbs Dijon mustard
- 1 tsp garlic, minced.
- ¼ tsp cayenne pepper.
- ¼ cup extra virgin olive oil.



Preparation:

1. Preheat the oven to 200°C. Toss potatoes in 1 tbs olive oil, paprika, salt, and pepper. Place on a baking sheet lined with baking paper and roast for 35 to 45 minutes, turning after 20 minutes. Allow to cool slightly.
2. While the potatoes are roasting, combine raw couscous, 1 tbs olive oil, ½ cup water, and black pepper to taste in a pan.
3. Cook over medium heat for ten to 15 minutes, while stirring occasionally, before draining using a paper towel and allowing to cool.
4. Whisk balsamic vinegar, xylitol, Dijon mustard, garlic, cayenne pepper, and oil. Combine diced apple pieces and lemon juice separately in a small bowl.
5. In a large bowl combine spinach, pomegranate seeds, walnuts, and apple.
6. Add the roasted potatoes, crispy couscous and dressing before serving.

This recipe is endorsed by the Heart and Stroke Foundation of South Africa.

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Types of labour inspections and how they differ

By Hannes Latsky, legal advisor, LWO Employers Organisation

There are three types of labour inspections, each focussing on compliance with a different set of legislation, including the:

- *Basic Conditions of Employment Act, 1997 (Act 75 of 1997)* (including Sectoral Determinations and Main Collective Agreements).
- *Employment Equity Act, 1998 (Act 55 of 1998)*.
- *Occupational Health and Safety Act, 1993 (Act 85 of 1993)*.

Employers should take note of the differences between these types of inspections to ensure compliance as a whole. The three types of labour inspections address the following:

Basic Conditions of Employment Act

This inspection focusses on compliance with the minimum terms and conditions of employment which the employer and employee may agree on, including industry specific legislation such as Sectoral Determination 13, which regulates labour law in the agricultural sector.

The inspector will look at employment contracts (written particulars of employment), the attendance register, information regarding remuneration (payslips/envelopes, minimum wage, overtime, paid leave, working hours and more), registration and proof of payments made in respect of the Unemployment Insurance Fund (UIF) and *Compensation for Occupational Injuries and Diseases Act, 1993 (Act 130 of 1993)*, or COIDA, and a list of all employees' names and ID numbers.

In the case of non-compliance, the inspector will issue the employer with a compliance order (dated), after which a monetary penalty or imprisonment may be imposed.

Employment Equity Act

This inspection focusses on compliance with the *Employment Equity Act*, which aims to eliminate unfair discrimination in the workplace and to promote equal opportunity and fair treatment. 'Designated employers' are employers who meet certain criteria. They also have additional obligations. Employers must check whether they are classified as designated employers in order to ensure compliance.

In the case of non-compliance, a designated employer can be fined for the first offence up to R1,5 million or 10% of the employer's annual turnover (whichever is the greatest) and/or ten years' imprisonment.

Occupational Health and Safety Act

This inspection focusses on compliance with health and safety regulations to ensure a safe and healthy workplace.

The inspector will look at the legislative poster, health and safety representative and committee, applicable signage and personal protective equipment, among others.

In the case of non-compliance, the inspector will issue the employer with a compliance order (dated) and/or temporarily shut down business activities, depending on the severity of non-compliance. Continuous non-compliance may result in penalties, imprisonment and possible criminal prosecution.

Be vigilant when giving access

Insist on positive identification of the person who introduces him-/herself as an inspector and verify the information before giving the person access to your farm/premises. No inspector may charge a fee for the inspection, investigation, advice or any assistance.

The Department of Employment and Labour does not delegate any third party to conduct an inspection on its behalf – none of the department's powers may therefore be delegated. In addition, no inspector may sell posters, products or information. 📌

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During June and July 2021, a total of 14 potato producing regions as well as non-producing suppliers delivered potatoes nationally to fresh produce markets.

Average percentage downgraded: **10.01%.**

Total number of bags delivered from 14 regions and non-producing suppliers and inspected on the fresh produce markets: **14 362 508.**

Figure 1: Classes inspected during June/July 2021 at all fresh produce markets.

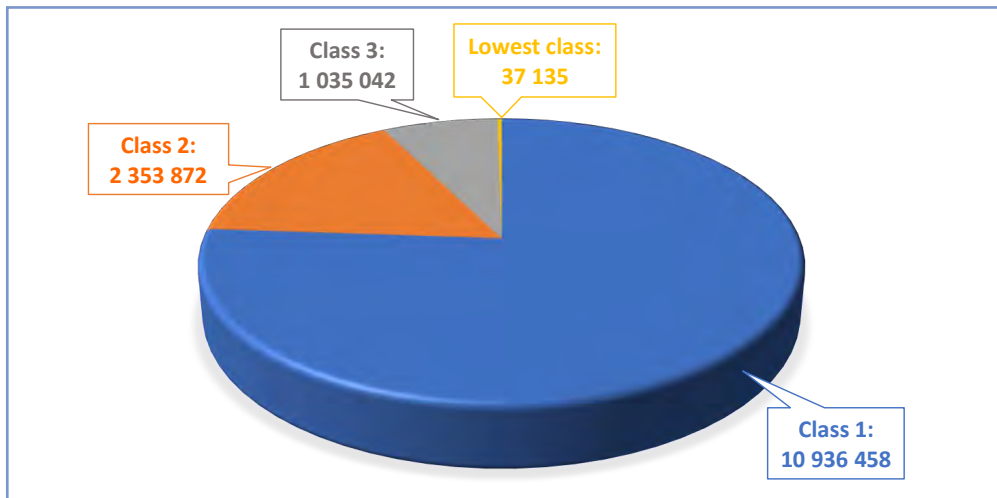


Figure 2: Potatoes downgraded at all fresh produce markets during June/July 2021.

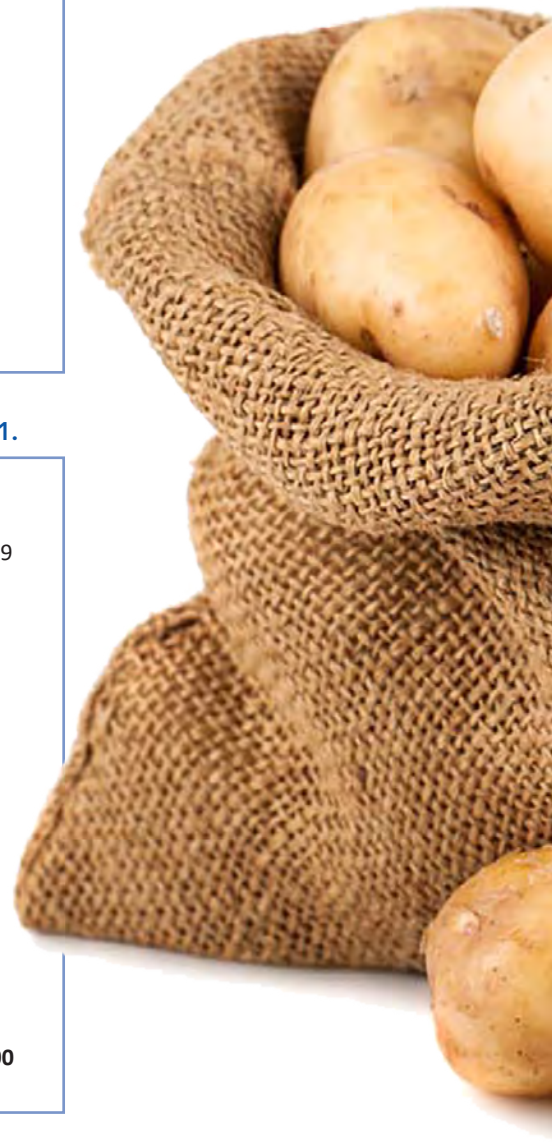
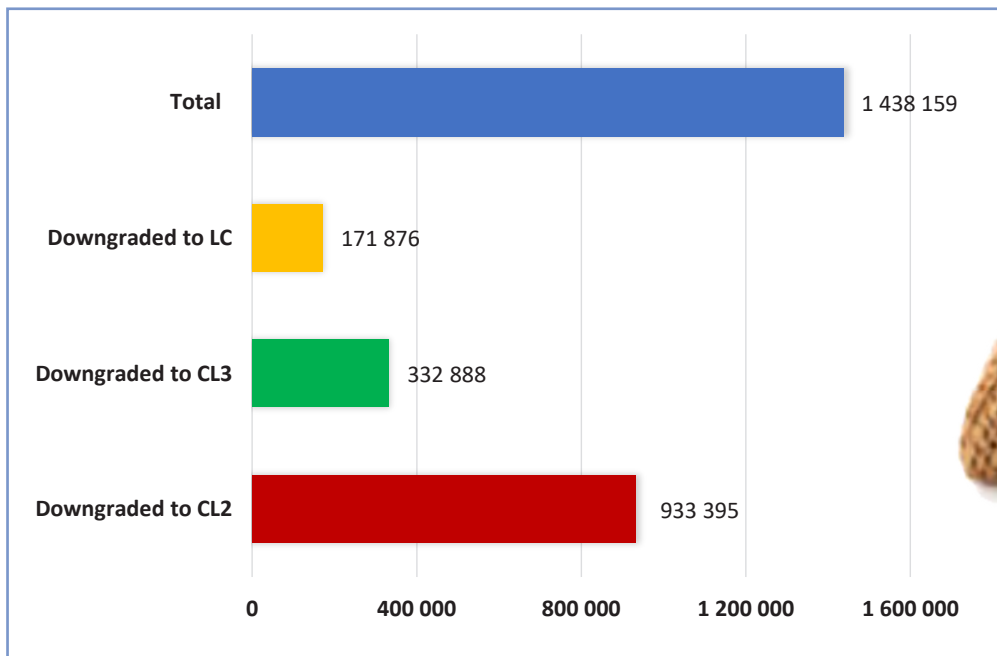


Figure 3: Potatoes downgraded (%) per region at fresh produce markets during June/July 2021.

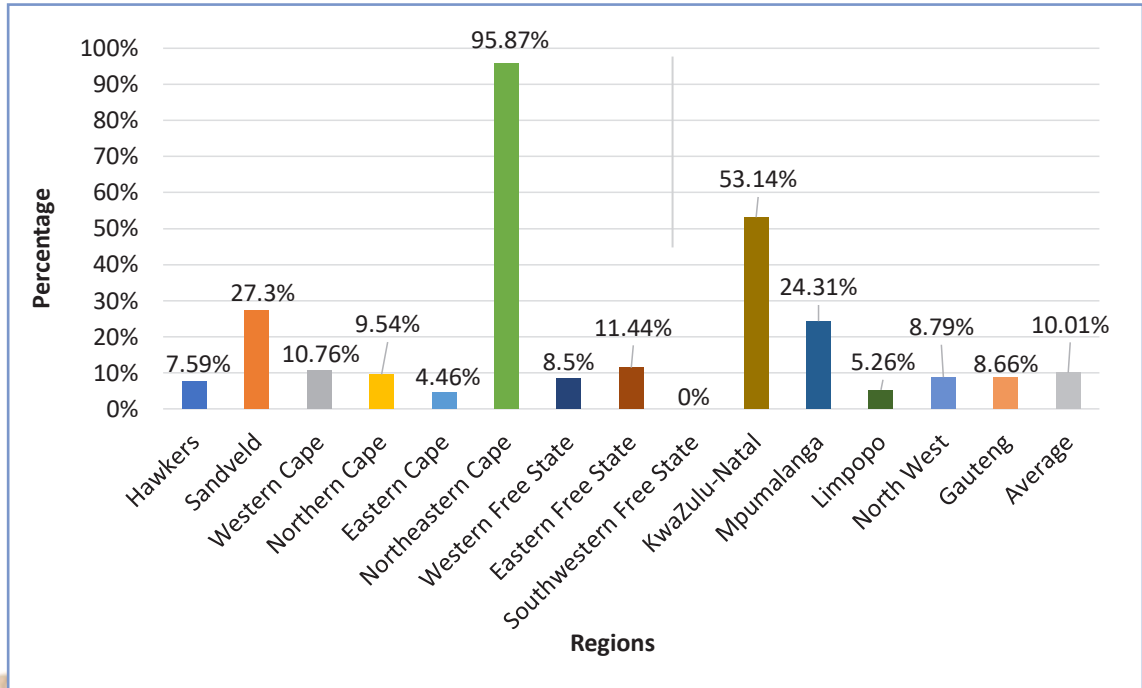
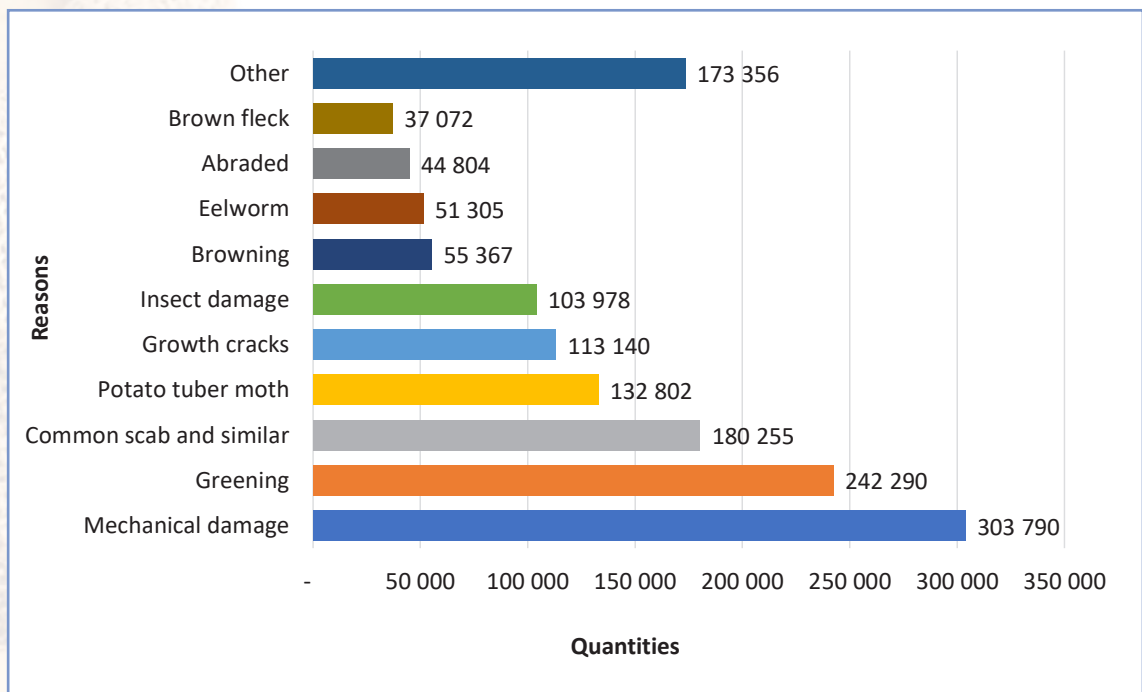


Figure 4: Reasons for downgrading at all fresh produce markets during June/July 2021.



Others include: Soiled, malformed, wilt, skin eelworm, hollow heart, broken and cut tubers, wet decay, dry stem-end, too small, Rhizoctonia, tomato spotted wilt virus, cold damage, vascular browning, wet by decayed tubers, glassiness/watery, too big, soiled by decayed tubers.



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

Delta Market Agency
 Hanly Market Agency
 Port Natal Market Agency
 RSA Coastlands 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

Maverick 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
 Egoly Johannesburg Market Agency
 Exec-U-Fruit Market Agency
 Marco Market Agency
 Matla Market Agency
 Metro Market Agency
 Pula Nala 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

King William's Town 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

Nelspruit Market Agency
 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
 Farm Market
 Federated Farmers
 Fresh Pro
 Fruitways
 Garden Route Fresh Express Market Agency
 Green Network
 Lucerne Fresh
 Multiflora
 RSA Beyond
 RSA Beyond North
 Stargrow
 Subtropico Online
 Westfalia Marketing

VISIT APAC'S WEBSITE REGULARLY

Do you know if your fresh produce agent practise sound financial management? Did your agent received an audit qualification on his last audit report? Does your agent submit their monthly trust reconciliation timeously and has no trust account shortages?

Ensure that you visit our website monthly as it is updated regularly with information on the financial status of agencies.

REGISTRATEUR • REGISTRAR

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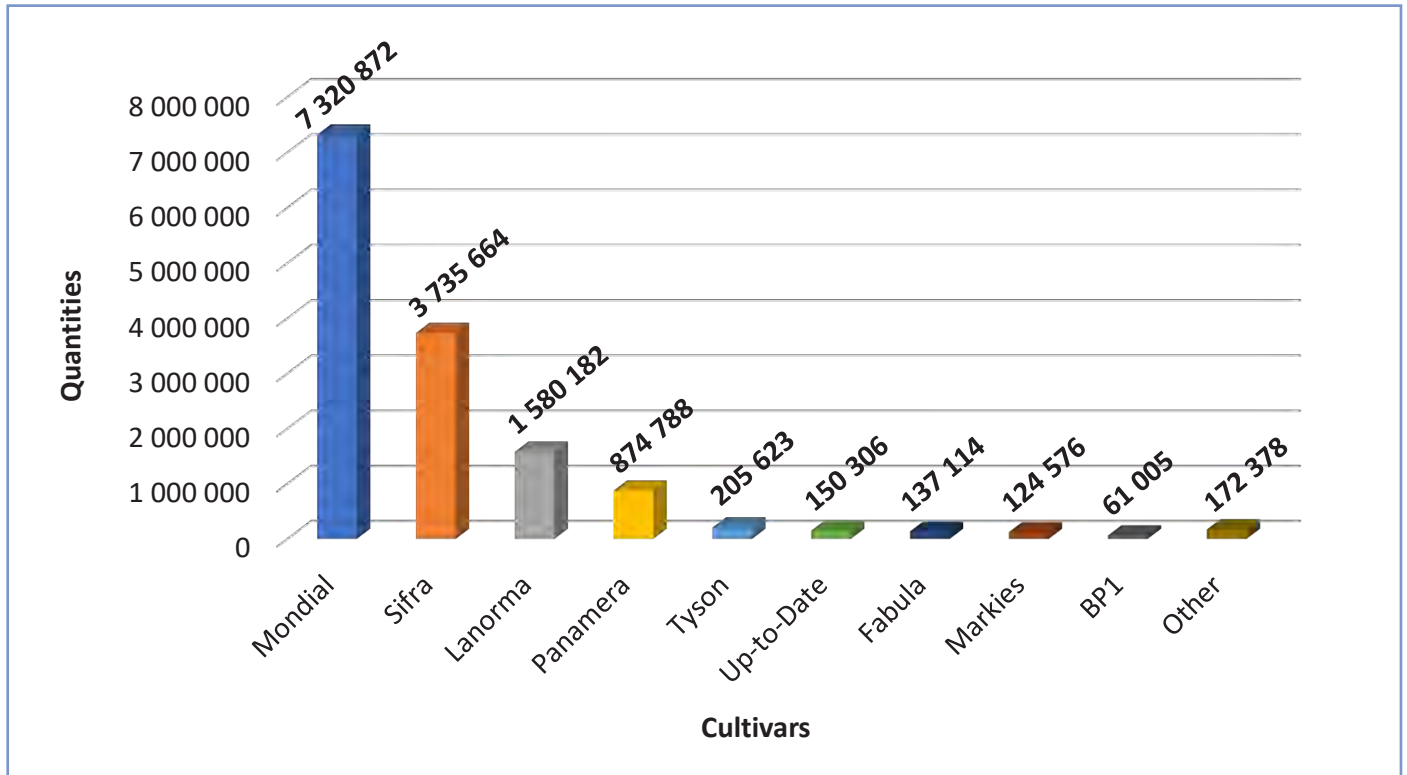
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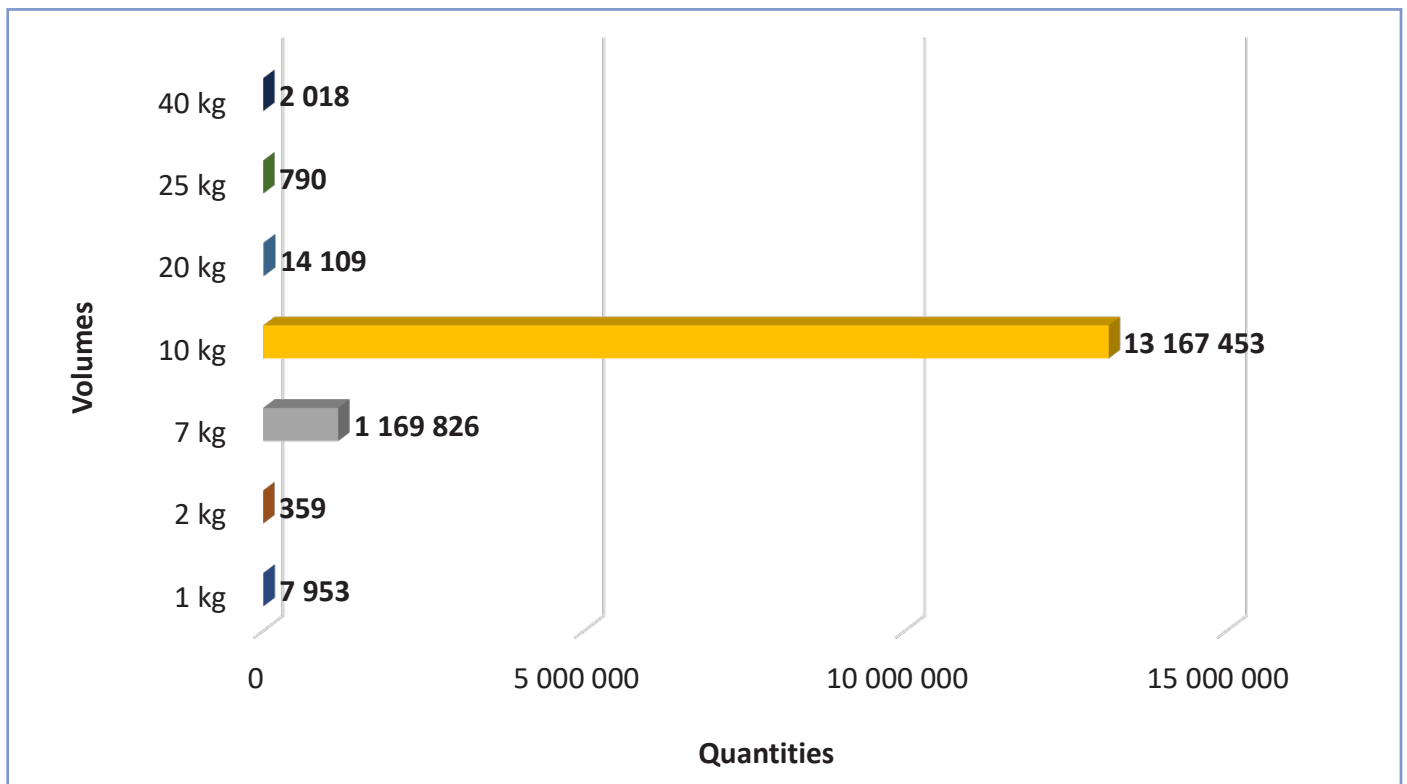
www.apacweb.org.za

Figure 5: Cultivars inspected at all fresh produce markets during June/July 2021.



Others include: Allison, Avalanche, Taisiya, Jelly, Mondeo, Bellini, Nicola, Fandango, Abby, Royal, Labadia, Imola, FL 2108, Columbus, Fianna and Valor.

Figure 6: Volumes inspected at all fresh produce markets during June/July 2021.



Mediasie kan bydra tot volhoubare verhoudinge op die plaas

Deur HJ Moolman, Moolman & Pienaar Ingelyf

Die aard van verhoudinge en interaksie tussen grondeienaars en plaasbewoners, asook alleenlik tussen plaasbewoners, is nie gevrywaar van geskille waarvoor die regstelsel al oor eeue heen meganismes ontwikkel het, en, waar geskille nie opgelos kan word nie, bepaalde hofbevele gegee kon word om in die beste belang van al die partye toe te sien dat die partye se paaie permanent skei.

Die huwelik is die mees intieme verhouding tussen mense, maar by die onherstelbare verbrokkeling daarvan word mense nie regtens verplig om die huwelik voort te sit en binne mekaar se lewensruimte te bly nie.

Uitsetting by geskilbeslegting

Binne hierdie konteks is dit ooplopend dat die *Wet op Uitbreiding van Sekerheid van Verblyfreg, 1997 (Wet 62 van 1997)* en die *Wet op Grondhervorming, 1996 (Wet 3 van 1996)* voorsiening maak dat persone wat op plase woon en kragtens die wetgewing beskerming geniet, afgesit kan word wanneer 'n onherstelbare verhouding tussen hulle en die eienaar sou ontstaan.

Die wetgewing omskryf nie 'n verhouding nie, maar gebruik onder meer elemente van 'n gesonde verhouding as maatstaf om te bepaal of die verhouding onherstelbaar verbrokkel het:

- Wedersydse vertrouwe en respek.
- Kommunikasie.
- Tegemoetkomendheid tot veranderlike omstandighede op plase, byvoorbeeld bystand met die blus van brande of spaarsamige watergebruik tydens droogtes.
- Handhawing van 'n balans in die uitoefening van regte.

- Beheer oor die optrede van *bona fide*-besoekers.
- Nakoming van ooreengekome verblyfsvoorwaardes.

Ten spyte daarvan dat die voorgemelde wetgewing voorsiening maak vir alternatiewe geskilbeslegting wat buite die bestek van die houe en 'n uitsetting val, is daar tans geen geloofwaardige instansies waar sulke geskille tussen grondeienaars en plaasbewoners blywend opgelos kan word nie. Die uiteinde van die meeste geskille is uitsettingsverrigtinge.

Hierdie omstandighede word vererger deur die toetreding van persone en instansies wat, met politieke agendas, konflik op plase stook en geen belang het om verhoudings volhoubaar te herstel nie.

Mediasie by geskilbeslegting

Mediasie raak toenemend deel van ons regstelsel. Kostebevele is al in egskeidingsake toegestaan teen regslui wat namens hul kliënte die hof genader het, sonder dat enige poging aangewend is om die geskil tussen die huweliksgades deur mediasie by te lê. Die reëls van die Hooggeregshof is ook al 'n geruime tyd gelede gewysig om mediasie deel van die oplossing van alle regsgeskille te maak.

Mediasie is 'n proses waar 'n onafhanklike persoon met spesifieke vaardighede en kennis, partye bystaan om 'n balans tussen hul onderskeie belange te bewerkstellig en blywende oplossings vir geskille te vind. Suksesvolle mediasies lei tot 'n wen-wen uitkomst.

Die proses van mediasie

Partye stem in tot mediasie en onderwerp hulle aan die mediasie-proses wat oor 'n dag of meer

plaasvind en waar aktief, onder leiding van die mediator, aan oplossings gewerk word vir elke geskil wat die partye begerig is om te probeer oplos.

Buiten ernstige konflikte en gevalle waar die optrede van 'n party sodanig is dat grondeienaars en plaasbewoners se verhouding nie voortgesit kan word nie, is dit nodig dat meganismes geskep word om minder ernstige geskille tussen grondeienaars en plaasbewoners vreedsaam op te los en verhoudinge te herstel.

Mediasie is sonder twyfel 'n metode van alternatiewe geskilbeslegting wat 'n groot bydrae kan lewer om hierdie geskille op te los en tot meer volhoubare verhoudings kan lei.

Mediasie en grondhervorming

In 'n tyd waar Suid-Afrika met groot uitdagings rakende landelike veiligheid te kampe het, is dit duidelik dat daar herbesin moet word oor menseverhoudings in landelike gebiede. Geen moeite moet ontsien word om beter stelsels in plek te kry en te verseker dat uitsetting die laaste (in plaas van die enigste) uitweg is om geskille tussen grondeienaars en plaasbewoners op te los nie.

Laastens sal so 'n proses ook die toetreding van derde partye met verkeerde motiewe of politieke agendas beperk, omdat die fokus van ernstige konflik en drastiese optrede na 'n fokus op die herstel en instandhouding van verhoudinge sal skuif. 🗣️

Vir meer inligting,
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Online distribution: www.potatoes.co.za/chips-online
www.agriorbit.com • digimags.agriorbit.com

Frequency: Bimonthly (every second month)

Language: English / Afrikaans

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

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opbrengspotensiaal,



hoë bemarkingsindeks,



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