

# SA PECAN

Suid-Afrikaanse Pekanproducente Assosiasie NPC Tydskrif  
South African Pecan Nut Producers Association NPC Magazine

| 2025 | Volume 100

*Celebrating*

100

V O L U M E S



PIETERSE PECAN NUT INDUSTRY

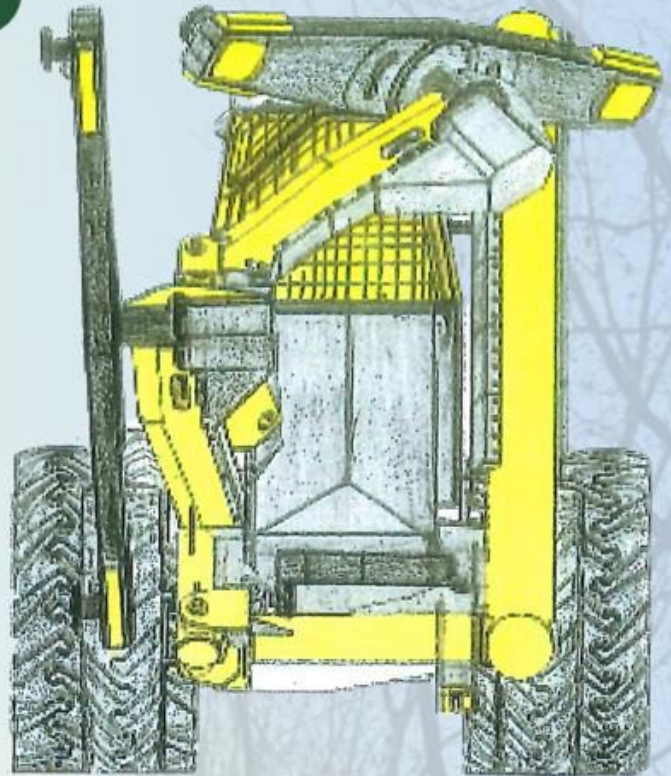


*We lead the way  
for the rest to follow...*

Die vervaardigers  
van meganiese  
boomsnoei  
toerusting.

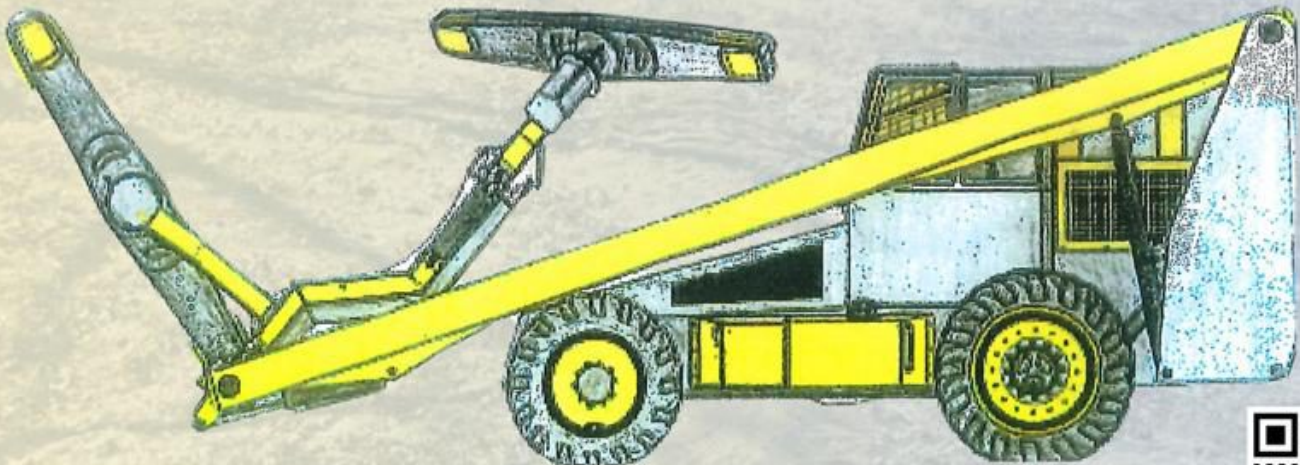
Why choose us?

- Heavy duty cutting heads
- Comfortable cabin
- Designed for 180° visibility
- Easy maneuvering (4 wheel steering)



**Frankie-Reeks**

**“OOM FLIP”**





Vir 'n **volhoubare** toekoms...

**TRUST  
RELATIONSHIPS  
SUSTAINABILITY ...**

with that  
**PERSONAL TOUCH!**

**swissdeligroup**

Pekanhoeck is a member  
of the SwissDeliGroup

Werner Erasmus 083 327 4731 | Jannie Smit 082 948 2422

Office: Toy Bosman 082 901 1615



**OPGEWONDE OOR DIE 2025-SEISOEN**

**STERKTE AAN ONS PRODUSENTE**

**"WHEN YOU LIVE FOR A STRONG PURPOSE,  
THEN HARD WORK ISN'T AN OPTION.  
IT'S A NECESSITY." —STEVE PAVLINA**

**SA Pecans** nooi jou uit om deel te wees van ons storie, waar tradisie en innovasie ontmoet, en Suid-Afrikaanse pekanneute die middelpunt is.

Kontak 'n SA Pecans verkryger vir meer inligting of skakel die kantoor by 053 474 0035.



**Hartswater,  
Northern Cape**

[www.sapecans.co.za](http://www.sapecans.co.za)

 +27 (0)53 474 0035



# The Evolution of the SA Pecan Magazine: A Journey of Growth and Development

*The South African Pecan Producers Association (SAPPA) has come a long way since its formation in 1991, and the SA Pecan newsletter/magazine has been there every step of the way, documenting the milestones and progress of the pecan industry in South Africa. From humble beginnings to becoming a key publication in the pecan industry, here's a look back at the significant moments in SAPPA's history and the evolution of SA Pecan.*

## **The Birth of SAPPA (1991)**

On 3 May 1991, a committee was formed with the goal of establishing the pecan nut industry in South Africa. A decision was made to create an association, and Johan was chosen as the coordinator. The foundation of SAPPA began with a mini-symposium held on 17-18 April 1991. On 18 April, SAPPA was officially founded, and Chris Roux from Hopetown was elected as the chairman. The first meeting of the Council of Representatives took place on 19 March 1992 at the Roodeplaats Research Station, where Annemarie Oosthuizen was appointed as secretary.

## **Early Days of SA Pecan (1992–2000)**

The first SAPPA Newsletter appeared in November 1992. In the early days, creating the newsletter was a labor-intensive process. Annemarie and husband Johan were at the heart of its production, with Annemarie writing the content and Johan arranging printing at ITS&G. The newsletter was physically

# SA PEKAN

Suid-Afrikaanse Pekanproducentse Assosiasie NPC Tydskrif | 2025 | Volume 100  
South African Pecan Nut Producers Association NPC Magazine

Celebrating  
**100**  
V O L U M E S



## - In this ISSUE -

3. The Evolution of the SA Pecan Magazine: A Journey of Growth and Development
6. SAPPA Direkteurs VERSLAG
8. SAPPA Info
9. Marlow Landbouskool Matrieks: SAPPA BORG SEUNS
10. 'n Oorsig & Opsomming van NAVORSINGS Projekte
12. SAPPA Publications
14. U.S. and Mexican PECAN HARVEST - Overview and Market Outlook
15. Cost of Advertisements (excl. Vat)
16. The TALE of WATER
18. GIBBERELIC ACID - A Potential Key Regulator of Pecan Alternate Bearing
23. Addressing THE ROOT CAUSES of Our Problems
28. SOIL APPLIED ZINC - A Valuable Resource for Pecan Farmers
36. EVALUATION of Reproductive and Vegetative Shoots Across Pecan Cultivars to Better Understand Yield Patterns and Nut Drop
40. RECIPE

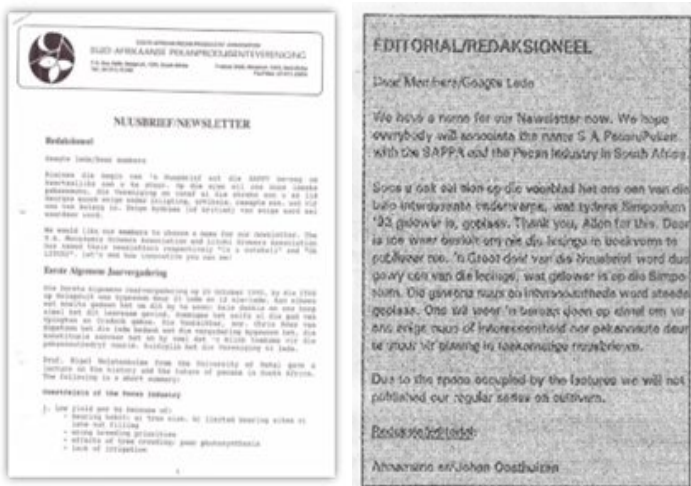


assembled by hand, with photos and illustrations glued onto the pages and Typoset lines used to make edits. Even the Oosthuizen children, from as young as 3 years old, helped fold papers and stuff envelopes for SAPPA members.

propagated and sold to pecan farmers, ultimately improving the overall health and success of the orchards across the country.



In 2000, pecan farmers were receiving between R13.50 and R15.50 per kilogram for their nuts. This reflected the growing demand for South African pecans in the global market and was a sign of the industry's increasing profitability and success.



\*Newsletter 31\* featured research on the newly released Hopi cultivar. This cultivar had been carefully developed and researched, and its release marked a significant step in improving the genetic diversity of South African pecans, offering farmers more options for planting varieties suited to local conditions.

In \*Newsletter 32\*, SAPPA announced the availability of SAPPA-branded hats and licenses for sale. These items were a way to generate additional revenue for the association and also served as a means to promote the identity and unity of the pecan industry in South Africa.

Over the years, the SA Pecan magazine has been a vital record of SAPPA's progress and the development of the pecan industry in South Africa. Below are some significant moments and announcements that have shaped the industry and were featured in the early newsletters.

In June 2002, Annemarie Oosthuizen resigned as secretary after serving SAPPA for a decade. Johan Oosthuizen continued to be an active participant in board meetings, consultations, and providing technical advice until Hardus du Toit took over the role. The association also saw changes in leadership, with Chris Roux stepping down as chairman in 2003 after 11 years of service, and Albert Bouwmeester assuming the chairmanship.



In \*Newsletter 7\*, Johan Oosthuizen wrote about the damage caused to pecan nuts by frost. This was a significant topic for the industry at the time, as understanding and mitigating frost damage has been crucial for maintaining pecan production in South Africa's climate.

In \*Newsletter 13\* (1996), it was announced that rootstock imported from the United States, with Johan's assistance, would be released in South Africa. This was a pivotal moment for the industry, as it marked the introduction of new genetics that would help improve the resilience and productivity of pecan trees in South Africa. From the 18 cultivars planted on Halls, 14 survived, which was a promising success for the future of the industry.

In 2000, SAPPA introduced minimum standards for nursery trees. This was an important step in ensuring that quality, disease-free, and strong trees were being

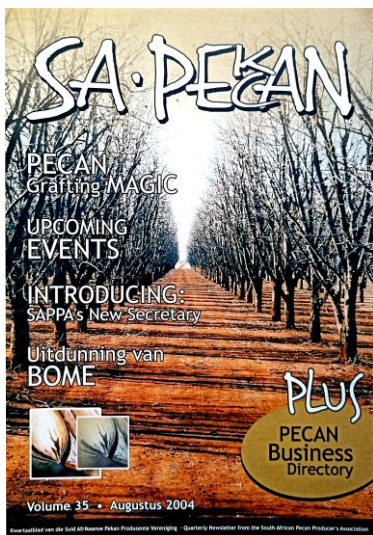
In November 2002, SAPPA launched its official website, [www.sappa.za.org](http://www.sappa.za.org), marking a significant step forward in connecting with members





## Here's to the next chapter in our journey – one that celebrates growth, collaboration, and the enduring success of the South African Pecan Industry!

and the wider industry. In 2004, Henriette van der Linden took over as SAPPA's secretary, bringing new energy to the association's administrative functions. Together with chairman Albert Bouwmeester the **SA Pecan** newsletter saw another transformation, as it continued to evolve into a more visually appealing and informative publication. This new direction helped the magazine resonate more with its readers while maintaining its focus on the industry and its members.



### A New Era: SA Pecan as a Magazine (2004–2025)

By 2004, the SA Pecan had firmly established itself as a trusted publication within the industry. What started as a small, handmade newsletter soon grew into an organized and highly anticipated magazine.

This shift from quarterly to semi-annual publications occurred as SAPPA continued to grow and the South African pecan industry evolved. Advertisements from industry role-players played an essential role in the magazine's success and sustainability, helping fund its operations and providing valuable exposure for stakeholders in the industry.

As the years passed, the content of the SA Pecan magazine adapted and the publication became a platform for sharing industry research, funded studies, and practical articles on cultivation, market trends, and industry best practices. It became an important source of information for pecan farmers and stakeholders alike. As technology advanced, SAPPA leveraged digital tools to further engage its audience. The SA Pecan magazine and SAPPA's website allowed for more efficient communication with members and industry participants.

### Celebrating Milestones:

#### 20 Years of the SA Pecan Magazine

In 2024, SA Pecan celebrated its 20th anniversary in magazine format. It was also the 30th anniversary of the first appearance of SA Pecan in newsletter form. In the editorial for Volume 97, the editorial team reflected on this milestone with pride and gratitude, acknowledging the many contributors who had been part of the journey.

“Looking back on the 2004 issue, we are proud of how our 'baby' has grown over the years. For 20 years, our editorial team – Albert & Mandie Bouwmeester and Ronél de Jong – have worked together to bring you this publication. But we could never have done it alone. A special thanks to Henriëtte van der Linden, Harriët Hofsink, and Andre Coetzee, who have made significant contributions over the years. Thanks to every writer, advertiser, and research group that has helped make this magazine a success.”

The team also extended heartfelt thanks to Ronél de Jong, the graphic designer, for her exceptional work over the years. Her creativity and enthusiasm have made the SA Pecan a publication that both the team and readers cherish.

The editorial team also expressed gratitude to the advertisers and Andre Coetzee, who have worked tirelessly to secure their support. Additionally, they acknowledged the Pecan South Magazine in the USA for allowing SAPPA to use their articles over the years.

**Looking Ahead.** As of 2025 the magazine will be published twice a year. The SA Pecan magazine continues to be a cornerstone of the South African pecan industry. As we move forward, the editorial team remains committed to evolving the publication while staying true to its roots. With a solid foundation, growing industry support, and a dedicated editorial team, we look forward to continuing to bring you the latest updates, research, and stories from the South African pecan industry for years to come. We invite all readers to share their feedback, ideas, and contributions as we work together to shape the future of SA Pecan. ■



# Direkteurs VERSLAG

Deur Ivan Otto, SAPPA Direkteur

*In hierdie 100ste Uitgawe van die SA Pekan Tydskrif wil ek graag die redaksie-span gelukwens met hierdie relevante en insiggewende tydskrif. Julle bydrae tot die opbou van ons bedryf is noemenswaardig.*

**Ons begin met die oes op hande.** Na verlede seisoen se aanjaar, alhoewel Witchita effe teleurgestel het, was die verwagtinge nie heeltemal so positief as wat hierdie seisoen blyk te wees nie.

Daar is definitief 'n groot oes op hande met baie min skade aangerig deur ongunstige weerstoestande. Vroeë oesskattings is vinnig aangepas en alhoewel SAPPA se begroting op 35 000 Ton gedoen word, is daar op die oomblik 'n Breërband vooruitskating van tussen 37 000 en 42 000 Ton. Neem in ag dat hierdie nie uitvoerbare tonne is nie, maar totale tonnemaat waarop heffings betaalbaar sal wees.

**Onseker markstoestande.** Die veranderinge op die internasionale arena, gaan definitief 'n invloed hê op die Pekan Industrie. Amerika voer om-en-by 75% van Mexiko se neute in vir verwerking en verkope. Die negatiewe effek van Amerikaanse tariewe op Mexiko kan egter veroorsaak dat daar verhoogde uitvoere van Mexikaanse Pekanneute na ander markte kan wees.

Alhoewel verhoogde tariewe van Amerika na Sjina wat huidiglik op 32% staan 'n moontlike gunstige effek op Suid-Afrikaanse uitvoere na Sjina kan hê. Die ekstra 10% verhoging kan weer in die teenargument, 'n stremmende effek op Sjina se ekonomie hê, wat sterk steun op uitvoere as bron van BBP en reeds verbruiksbesteding probeer aanhelp.

Verder is die effek op die wisselkoers onseker met handelsverhoudinge tussen Suid-Afrika en Amerika op 'n algehele laagtepunt. Die hoop is egter dat daar eerder geteikende sanksies teen individue sal wees, as byvoorbeeld die verwydering van Suid-Afrika van die lys van begunstigde lande op die AGOA ooreenkoms.

**SAPPA en markontwikkeling.** Tydens 'n onlangse rigtinggewende strategiese sessie is 'n paar kritieke punte en aksies uitgelig. SAPPA gaan met 'n meer holistiese benadering na die bedryf kyk. Dit impliseer dat rolspelers in die bedryf as vennote beskou word en SAPPA, die produsente en verwerkers se interafhanklikheid van mekaar beklemtoon. Die gemeenskaplike doel is die bevordering van die bedryf as geheel.

**Penetrasie vs Diversifikasie of Produk-ontwikkeling vs Markontwikkeling.** Die oogmerk met penetrasie is uitbreiding van ons bestaande mark asook produkontwikkeling in die bestaande mark. Vir hierdie doel word daar begroting goedgekeur vir bemerking deur middel van sosiale media in Sjina. Handelsmerk ontwikkeling van "Pecans from South-Africa" en soos verlede jaar help SAPPA blootstelling gee, deur die bywoning van die Sjina skou in April te orkestreer.

Met Diversifikasie is SAPPA besig om belangstelling in ons kernmark te prikkel, deur gesprekke met Israel en Indië aan te knoop. Soos wat produksie volumes toeneem sal beskibare produk vir die kernmark, kraak en stoor vermoë toeneem. Uit 'n onlangse brief van Dan Zedan het hy die opmerking gemaak dat kern markte agterweë gelaat word. "Sacrificing future market share and stability for easy short-term profit". Stadig maar seker word hier momentum opgebou.

**Voorskotte.** 'n Kommerwekkende verskynsel is die groter-wordende afhanklikheid van die produsent aan voorskotte. My gevoel is dat die wagperiode vir produksie eerstens langer is as wat aanvanklik voor beplan word. Verder ondervind mens af-jare wat dalk meer prominent is as wat verwag word en stygende insetkoste teen 'n vinniger

# Mag julle 'n suksesvolle oesseisoen beleef.

tempo as waarvoor begroot word. Die feit is dat voorskotte sy eie risikos meebring en produsente gaan hul beplanning moet aanpas om afhanklikheid hiervan te verminder. Hierdie jaar glo ek die toename in die opneem van voorskotte hou ook liniêr verband met 'n groter oes.

**Voedselveiligheid.** Alhoewel die pekan industrie verlig is oor die uitstel van die ouditering van voedselveiligheid, is dit iets wat op verwerkings en plaasvlak, op die horison lê. Dit gee die bedryf 'n geleentheid om homself deeglik daarvoor voor te berei.

**Vroeë lewering van Choctaws.** Die vroeë lewering van Choctaws verlaag die risiko van kwaliteits twispunte wat deur laat lewering veroorsaak word. Daar word voorgestel dat lewering van Choctaws voor einde Julie geskied.

Hierdie is om te voorkom dat olie gevlekte neut besendings se kwaliteit afbring.

Ek hoop nie die boodskap word negatief ontvang nie, alhoewel daar altyd uitdagings is, is die glas eerder halfvol as halfleeg en ek dink met hierdie besondere oes op hande en goeie stabiele pryse is daar werklik baie om oor opgewonde te wees. ■

**Voorsitters groete**

Swiss Agro Pekans wil vir al ons lojale produsente en kliënte 'n suksesvolle 2025 oesjaar toewens.



SWISS AGRO (PTY)LTD

- Internasionale Standaard vir Gradering, Verpakking en Versending
- Splinternuwe Savage Skoonmaakaanleg
- Top Verkryging Span

Verkrygers:

Pieter Klopper

Lindi Botha

André Saunders

063 793 8690

072 302 0654

063 788 9442



[southafricapecan@swissgourmet.com](mailto:southafricapecan@swissgourmet.com)

Op die hoek van N18 en R370, Jan Kempdorp, 8550

# Direkteure en Personeel

Voorsitter / Chairman: Ivan Otto  
082 563 6690 | [ivan@kranskoppecans.co.za](mailto:ivan@kranskoppecans.co.za)

Ondervoorsitter / Vice-chairman: Albert Bouwmeester  
083 302 2413 | [elandsdraai.pecans@gmail.com](mailto:elandsdraai.pecans@gmail.com)

Streek / Region 1: Ivan Otto  
082 563 6690 | [ivan@kranskoppecans.co.za](mailto:ivan@kranskoppecans.co.za)

Streek / Region 2: Albert Bouwmeester  
083 302 2413 | [elandsdraai.pecans@gmail.com](mailto:elandsdraai.pecans@gmail.com)

Streek / Region 3: Heiko Meier  
083 282 5301 | [heiko@meier.co.za](mailto:heiko@meier.co.za)

Streek / Region 4: Werner van der Westhuizen  
082 813 6422 | [werner@zoetwater.co.za](mailto:werner@zoetwater.co.za)

Streek / Region 5: Philip Antrobus  
082 560 7696 | [philip@r63.co.za](mailto:philip@r63.co.za)

Streek / Region 6: Lourens Maass  
083 306 2145 | [gpaboer@gmail.com](mailto:gpaboer@gmail.com)

Streek / Region 7: Daniel Bouwer  
079 389 5713 | [bouwer.daniel92@gmail.com](mailto:bouwer.daniel92@gmail.com)

Streek / Region 8: Jannie Smit  
082 948 2422 | [jsmit0233@gmail.com](mailto:jsmit0233@gmail.com)

Streek / Region 9: Herlu Smith  
072 825 6769 | [hsmith.sa@gmail.com](mailto:hsmith.sa@gmail.com)

Markontwikkeling / Market Development:  
David van der Merwe | 082 338 8733  
[david@merwelandgoed.co.za](mailto:david@merwelandgoed.co.za)

Transformasie / Transformation: Dumisani Ndebele  
082 466 8321 | [dumisani.ndebele@pathcare.org](mailto:dumisani.ndebele@pathcare.org)

Transformasie Assistent / Transformation Assistant:  
Kele Botshelo | 083 722 8671 | [kelebogile@sappa.za.org](mailto:kelebogile@sappa.za.org)

Navorsing / Research: Alvin Archer  
082 801 5732 | [alvina@lantic.net](mailto:alvina@lantic.net)

Hoofbestuurder / General Manager: Cobus van Rensburg  
084 875 6633 | [cobus@sappa.za.org](mailto:cobus@sappa.za.org)

Bestuurder: Finansies & Transformasie /  
Manager: Finance & Transformation: Andre Coetzee  
083 271 6577 | [andrec@sappa.za.org](mailto:andrec@sappa.za.org)

Tegniese Bestuurder / Technical Manager:  
Hardus du Toit | 083 465 6522 | [hardus@sappa.za.org](mailto:hardus@sappa.za.org)

Tegniese Beampte / Technical Officer: Ivan Schubach  
078 643 3221 | [ivan@sappa.za.org](mailto:ivan@sappa.za.org)

Landbou Ekoonom / Agricultural Economist: RP Campher  
072 017 1373 | [info@sappa.za.org](mailto:info@sappa.za.org)

Administratiewe Beampte: Leilani le Roux  
021 250 1692 | [admin@sappa.za.org](mailto:admin@sappa.za.org)

## Kantoor | Office

Kantoor ure | Office hours  
Maandag tot Vrydag | 08:00 - 16:30

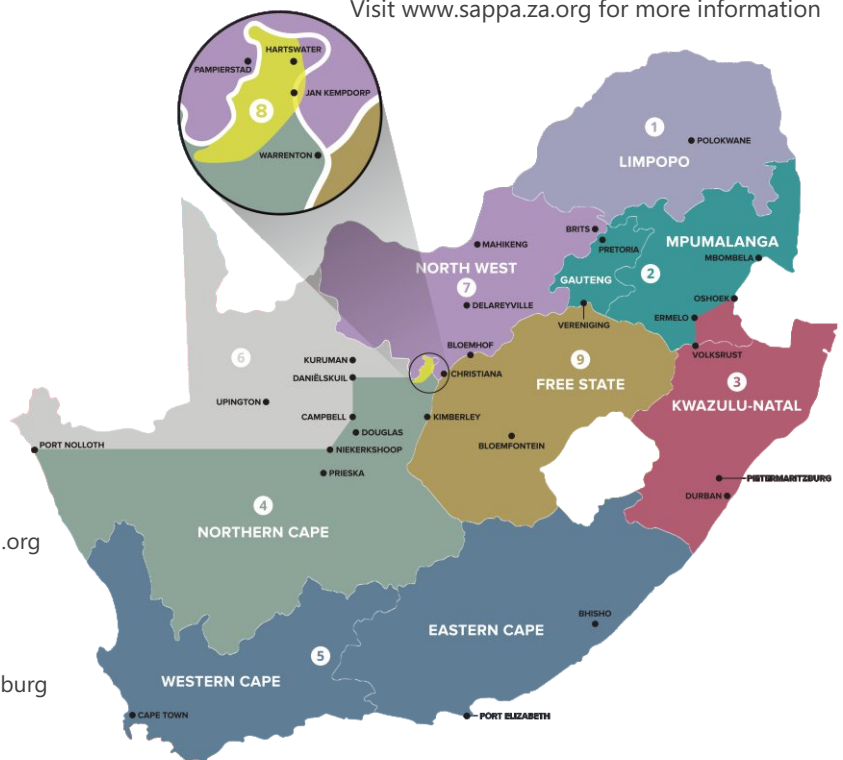
Adres | Address  
Posbus 163, Paarl, 7620  
Hoofweg 258, Paarl, 7646

Tel 021 250 1692  
Epos | Email [admin@sappa.za.org](mailto:admin@sappa.za.org)

Visit [www.sappa.za.org](http://www.sappa.za.org) for more information

## SAPPA Regions

Visit [www.sappa.za.org](http://www.sappa.za.org) for more information



## Redaksie Span | Editorial Team

Artikels | Articles: Albert Bouwmeester  
[elandsdraai.pecans@gmail.com](mailto:elandsdraai.pecans@gmail.com)

Advertensies | Advertisements: Andre Coetzee  
[andrec@sappa.za.org](mailto:andrec@sappa.za.org)

Ontwerp & Uitleg | Design & Layout: Ronél de Jong  
[roelofronel@gmail.com](mailto:roelofronel@gmail.com)

# Marlow Landbouskool Matrieks

# SAPPA BORG SEUNS



**LEIGH-TOLAN  
SMITH**

NUGGET



**Tuisdorp**

Hankey

**Laerskool**

Laerskool Hankey

**Nugget lyk of hy goed aanpas - akademies, sosiaal en op sportgebied. Hy is deel van die o/14A rugbyoefengroep**



**LU - JEAN  
JANSEN**

POPS



**Tuisdorp**

Cradock

**Laerskool**

Laerskool Cradock

**Pops lyk of hy goed aanpas - akademies, sosiaal en op sportgebied. Hy is deel van die o/14A rugbyoefengroep**



SAPPA verander  
seuns se lewens  
deur hulle  
ten volle te borg  
vir hul  
hoërskool  
oopbaan.

Hulle is  
baie dankbaar  
vir die  
geleentheid.



# 'n Oorsig & Opsomming van NAVORSINGS Projekte

Deur Hardus du Toit, SAPPA Tegnieuse Bestuurder

*Oor die laaste 12 jaar is 'n wesentliche deel van die SAPPA begroting aan navorsing spandeer. Die navorsings komitee deel graag met ons lede 'n opsomming van die navorsing wat tans aandag geniet. Dit sluit in projekte wat handel oor: Produksie navorsing, Ontwikkeling en registrasie van oesbeskermings middels en Na-oes navorsing. Enige navrae kan gerig word aan Hardus du Toit en Ivan Schubach.*

## Produksie navorsing

**WRC - Water gebruik navorsing: Universiteit Pretoria,** Die water use fieldguide is beskikbaar. Werk op die Water use model gaan nog voort en die remote sensing data word ook nog verder ontwikkel. Fokus is op die water gebruik van hoë digtheids boorde. Die nuwe 4 jaar projek sal weer op 'n 50-50 basis deur SAPPA en die WRC befonds word

**Siekte navorsing program: UFS, Universiteit van die Vrystaat:** Werk fokus tans op algehele agteruitgang, pecan scab en die kweek van siekte vrye saailinge. Onlangse fungisied proewe is afgehandel en die inligting is in die nuwe siekte handleiding vervat. Handleiding kan bestel word via die SAPPA webtuiste.

**Scab beheer navorsing: SAPPA, UFS, Procrop en Syngenta:** Toets 2 spuitprogramme. Toets trekker en drone toediennings vir scab beheer. Projek ontwikkel ook 'n deposisie waarde vir scab beheer.

**Insek monitoring: Justin Hatting, Andermatt Madumbi.** Insek monitoring vind plaas in Modimolle, Muden, Vaalharts en Prieska. Ons monitor feremoon lokvalle vir Karobmot, FCM en Afrika Bolwurm in Vaalharts, Jacobsdal en Prieska.

## PSHB navorsing, Polyphagous shot hole borer

**PSHB FABI: Universiteit Pretoria,** die effek van sonlig-bestuur op kewer getalle word gemonitor nadat kombi-nasies van sonlig bestuur toegepas is. Die opbrengs en kwaliteits data word ook versamel. Ons kyk na die laaste paar jaar se klimaats data om te kyk of daar enige korrelasie is tussen die klimaat en die kewer infestaties.

**PSHB SU: Stellenbosch Universiteit,** die projek ondersoek die gebruik van Myte om biologiese beheer agente oor te dra na die boorders. 7 myt spesies is identifiseer wat nou in kolonies opgebou word. Daar is ook 1 EPN (entoma patogeniese nematode) en 1 EPF (entoma patogeniese fungi) gekry wat moontlik in die beheer van die PSHB gebruik kan word.

## Kultivar evaluasies

- **Proefaanplantings:** Basiese inligting oor opbrengs en kwaliteit, siekte verdraagsaamheid en gevoeligheid vir voedings tekorte word aangeteken. Bestuivings patrone sal ook oor tyd vasgestel word.

- **Saailinge met uitsonderlike eienskappe:** Dit behels die evaluering van saailinge met uitsonderlike opbrengs of siekte verdraagsaamheid. Ons monitor hierdie bome oor minstens 4 jaar om deeglike data te versamel.

- **Stuifmeel waarnemings:** Die pollination guide is voltooi. Daar is data op die SAPPA webtuiste beskikbaar en verdere waarnemings sal ook gemaak word oor tyd.

**Ontwikkeling van weefselkultuur protocol: TCF, Tissue Culture Facility.** Kyk na die ontwikkeling van die protokolle om lokale plantmateriaal te kloon asook om 'n protokol te ontwikkel vir wanneer ons weefselkultuur wil invoer vanaf die VSA om nuwe kultivars op so 'n manier in te voer.

**Paclabutrazol evaluasie: Center for excellence Levubu,** 'n Verslag oor die 4 jaar se evaluasies op 'n enkele toediening is in die laaste SA Pekan versprei. Ons monitor nog 1 plaas waar Cultar elke jaar toegedien word maar teen laer hoeveelhede.

#### **Fruit drop research program: UP, Universiteit Pretoria**

- **Bestuiwing en afspeen navorsing:** Die projek kyk tans na meganiese/kunsmatige bestuiwing, die stoor van stuifmeel en die effek van kruisbestuiwing. Die projek sal ook kyk na die impak van KNO<sub>3</sub> en KNO<sub>3</sub> + Jodium op blom vorming en vrug set.

- **Koölhidraat navorsing:** Fokus op die bench-marking van Koölhidraat norms reg deur die jaar. Die werk word uitgebrei en sal ook die impak van KNO<sub>3</sub> en KNO<sub>3</sub>+ Jodium op die koölhidraat status van die bome monitor, dus kan ons die status binne die boom verander met sekere voeding?

- **Bemestings proef:** Die fokus is om te kyk na die impak van KNO<sub>3</sub> en KNO<sub>3</sub> + Jodium op blom vorming en vrug set en sodoende pekan opbrengs. Hierdie projek sluit nou aan by beide die **Koölhidraat projek** en **die Bestuiwings en afspeen projek**. Bemesting word deur SQM voorsien.

- **Pollen parent identification:** Die projek sal werk om 'n vinnige en koste doeltreffende manier te ontwikkel om die ouers van neute te ID. Hierdie werk sluit nou aan by die kruisbestuiwings en afspeen navorsing wat plaasvind.

**UFS CRI mot navorsing: Universiteit van die Vrystaat,** Monitering het in Augustus 2024 begin en die werk fokus op FCM en Karob mot monitoring en effek op oes verlies. Dit kyk ook na die verwantskap van die twee peste tussen sitrus en pekans. **CRI befonds 2 derdes van die projek.**

**Selective limb pruning proewe: SAPPA personeel,** Ons het uit die PSHB proewe 'n klomp data versamel asook op 'n ander plaas.

Die ontleding van opbrengs en kwaliteits data sal oor 'n paar siesoene gedoen word.

**Myt ondersoek: Stellenbosch Universiteit,** Myte word ondersoek as 'n moontlike rede vir die afspeen van klein neute. Bud mites en cottony cushion scale is gevind in die 2023-24 seisoen. Die werk word in 2024-25 seisoen herhaal. Plant monsters sal 4 keer deur die seisoen op dieselfde plase en bome geneem word in Groblershoop, Prieska en Vaalharts vir verdere ondersoek.

#### **Ontwikkeling en registrasie van oesbeskermingsmiddels**

**KANNAR Bladspringer beheer:** Proewe word in Prieska en Groblershoop gedoen om die effek van bladspringer beheer op neut opbrengs en kwaliteit vas te stel.

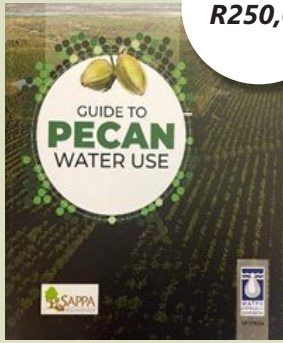
**Nuwe registrasies:** Daar word tans werk deur verskeie maatskappye gedoen om behoeftes van die bedryf aan te spreek. Dit sluit groei reguleerders, swam dodders, insek dodders en onkruid dodders in.

#### **Na oes navorsing**

**Oes skattings model:** Ons het 'n oes skattings model saamgestel en is besig om dit te toets. Sodra ons tevrede is met die ruseltate sal dit beskikbaar gemaak word vir gebruik.

**Na oes bederf van neute: Universiteit van die Vrystaat,** Die projek toets verskillende opbergings parameters van skoon en meganiese geoesde neute sodat ons riglyne kan kry vir die opberging van neute tussen oes in die boord en verwerking in die fabriek.

**Benchmarking van boorde:** RP, werksaam by SAPPA as Landbou ekonoom, is tans besig om 'n benchmarking model op die been te bring. Dit sal die produsent 'n tool gee waarmee hy homself kan meet teen ander boere in sy area. Jy sal kan kyk waar jy kan verbeter of waarna jy moet kyk binne jou eie koste struktuur om te bespaar op produksie koste. ■



R250,00

# SAPPA PUBLICATIONS

\*Email [admin@sappa.za.org](mailto:admin@sappa.za.org) to order

\*All prices includes VAT  
& excludes postage



R50,00

## Guide to PECAN WATER USE

This guide provides an overview of water usage on pecans in South Africa. Water is a scarce and valuable resource in South Africa and needs to be managed optimally in agriculture to optimise both yield and quality. Increasing competition for limited resources between a growing population, industry and agriculture is placing increased pressure on agriculture to use water more efficiently and to justify water used to produce a crop. As the vast majority of pecans are produced in semi-arid regions in South Africa, where irrigation is required to remain productive, using water productively is important to ensure the sustainability of the industry and to allow for any future expansion.

## INSECTS Associated with Pecan Cultivation in South Africa

The guide provides a brief overview of the insect Life Cycle, information on the identification, seasonal occurrence, damage and control of the most prevalent species. Information on the natural enemies associated with these insects is also provided, thereby aiding the farmer to recognise their presence in support of conservation of biological control; especially within a perennial crop environment. Correct identification of the insects associated with pecan remains the backbone of any successful control strategy, albeit humanly induced or naturally aided. This clip file-type guide enables future additions/ updates to be made to the text and photos, as new research findings materialise within the industry.

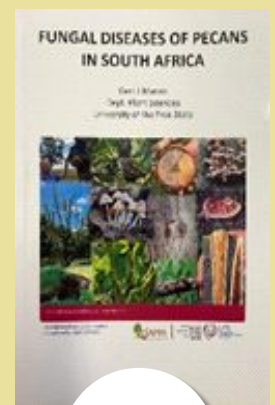
## Texas PECAN Handbook



R1000,00

The recently updated Texas Pecan Handbook covers all aspects of growing pecans, including selecting the site, choosing the right variety, planting, managing mature trees, and controlling diseases and insects. Also discussed are the financial aspects of growing pecans and the health benefits of pecans. This manual is an ideal tutorial for beginning growers and useful reference for the experienced producer. The handbook also serves as the textbook for the annual 5-day Texas Pecan Shortcourse at Texas A & M University. (199 pp.).  
By: Larry A. Stein, Extension Horticulture Program.

## FUNGAL DISEASES Associated with Pecans in South Africa



R150,00

The guide provides a brief overview of common pecan-related fungal diseases and possible treatments in South Africa.

## 10 jaar van spesialisasie

Verkryging, verwerking en bemarking is die drie hoof funksies van Bester Fruit & Nuts.

Hierdie drie funksies is geïnkorporeer in 'n handelsoplossing wat herhaaldelik hersien word om die verhouding tussen produsente en die internasionale verbruikersmark te versterk.

Geaffilieer met



## Kontak ons

Hoofkantoor  
Stellenbosch +27 (0)21 809 2500

Verwerkingsaanleg  
Vaalharts Pecan Plant +27 (0)53 474 1910



# U.S. and Mexican PECAN HARVEST Overview and Market Outlook

By RP Campher, SAPPA Agricultural Economist

*The United States and Mexico remain the dominant forces in global pecan production. However, recent reports indicate that the 2024-2025 harvests in both nations have fallen short of initial projections, leading to a tightening market and concerns about future supply stability.*

**Harvest Overview.** According to the official U.S. crop estimate, the 2024-2025 harvest stands at 122,879 metric tons (MT), while Mexico's COMENUEZ forecast projects a slightly larger crop at 127,100 MT. Additionally, the U.S. carried 68,971 metric tons into the crop year, resulting in a total available supply for North America of approximately 318,950 MT. However, updated figures from the American Pecan Council and reports from growers suggest that both U.S. and Mexican crops are 10-15% smaller than anticipated. The USDA's final U.S. crop figure, expected in May, will confirm the actual shortfall.

**Market Challenges and Trade Dynamics.** The supply shortfall is reshaping market dynamics. Processors on both sides of the border report pecan half yields are down 10% from last year. U.S. import data shows domestic shortages will not be offset by foreign supply—kernel imports are down 15.5% year-over-year, while in-shell imports have dropped 20%.

Additionally, uncommitted in-shell pecans are largely held by farmers waiting for better prices. As a result, availability—rather than price—may become the main constraint by August. China's role in the pecan trade has also shifted. Once a major buyer, China's 32% tariff on U.S. pecans has forced American farmers to seek alternative markets like India. Meanwhile, Mexico has lost market share in China to South Africa. While this benefits suppliers in the short term, developing new domestic and international kernel markets remains crucial for long-term stability.

**Future Industry Outlook.** Looking ahead, the pecan industry faces multiple uncertainties. The unresolved issue of inventory financing in North America continues to threaten smaller processors. Additionally, if U.S. tariffs on Mexican imports change, a fundamental shift in supply chain dynamics could occur. Currently, about 75% of the Mexican pecan crop is exported to the U.S. for processing or sale. If trade policies disrupt this flow, U.S. processors will need to compete more aggressively, and prices may rise in the short term. However, higher prices relative to other nuts could reduce consumer demand for pecans, leading to long-term instability.

Furthermore, the U.S. will soon have a significant surplus in processing capacity. Currently, two major processors operate plants designed to handle 45,000 MT or more annually, while three others are built for 23,000 to 36,000 MT. To run efficiently, these five shellers alone require at least 185,000 MT of in-shell pecans. However, in the past century, the U.S. has only produced crops exceeding 186,000 MT twice. Over the last decade, 70% of U.S. pecan crops have been below 136,000 MT (300 million pounds). This raises a critical question: what happens to the smaller processors handling less than 23,000 MT? The inevitable bankruptcies and consolidation of processing facilities will limit options for both farmers and buyers —disrupting the industry in ways that could be difficult to recover from.

## Conclusion

The 2024 pecan harvests in the U.S. and Mexico are shaping

up to be significantly smaller than initially expected, setting the stage for supply constraints and price volatility. With trade uncertainties, processing challenges, and shifting global demand, the industry must adapt to ensure long-term sustainability. As stakeholders await the final USDA crop report in May, all eyes remain on market developments that will shape the months ahead.

Despite these uncertainties, South Africa has significant opportunities. As global markets shift, strategic planning and trade partnerships could strengthen South Africa's position as a key pecan supplier.

**The next few years will be critical in shaping the country's role in the global pecan industry, presenting both challenges and market prospects.**

*Overview compiled using various sources from the U.S. and Mexico.*



- Direkte aankope van indop- en kernneute vanaf produsente
- Groot aanvraag na kleiner, laer SKR pekanneute
- Verseker 'n beter prysrealisasie op die plaas
- BRCGS9 Voedselveilig gesertifiseerd

**Red Sun**  
**PECANS**

[www.redsun.co.za](http://www.redsun.co.za)

**Pekanneute is 'n heilsame produk wat Redsun Pecans aan die hele wêreld wil bemark**

Stryss Strauss : 082 775 1952 : [stryss@redsun.co.za](mailto:stryss@redsun.co.za)  
Lorna Basson : 064 786 1783 : [lorna@redsun.co.za](mailto:lorna@redsun.co.za)  
Kantoor : 054 337 8660 : [info@redsun.co.za](mailto:info@redsun.co.za)



# Cost of Advertisements (excl. Vat)



FULL COLOUR	One (1) issue	Three (3) issues
A4 - Full Page: Portrait	R2850	R7800
A5 - Half Page: Landscape	R1900	R5200
A6 - Quarter Page: Portrait	R1250	R3400
A7 - Eighth Page: Landscape	R800	R2200

Special Pages - FULL COLOUR	One (1) issue	Three (3) issues
Front Inside Page - Full Page A4	R3500	R8900
Middle Page - Double Page A3	R6300	R15600
Back Inside - Full Page A4	R3100	R8600

## How to Place an Advertisement

1. Download "Request to place advertisement" form from <http://www.sappa.za.org/publications/> or send an email to [andrec@sappa.za.org](mailto:andrec@sappa.za.org) to request the form.
2. Fill in the form and send back to [andrec@sappa.za.org](mailto:andrec@sappa.za.org)
3. An invoice will be sent to you. Please pay before advertisement deadline date (banking details are on the invoice). Use invoice number as reference and email proof of payment to [filda@sappa.za.org](mailto:filda@sappa.za.org)
4. Send your advertisement (please take note of advertisement specifications on the form) to [andrec@sappa.za.org](mailto:andrec@sappa.za.org) before the deadline date.





Photo by Larry Stein

***A Pecan tree re-leafing  
after experiencing dieback***

**By Larry A. Stein**

*Professor and Extension Specialist  
for Department of Horticultural Sciences  
at Texas A&M University,  
larry.stein@ag.tamu.edu*

Pecan South, Volume 57, No.10, December 2024

# The TALE of WATER

***Water is the key to life, both animals and plants; without water, none could exist. As the drought continues in Texas, there are key takeaways that can be made depending on your water situation.***

As you will so often hear, soil is a key component of growing pecans. We have all heard the drill, “deep, well-drained, and fertile!” These are typically alluvial soils along rivers and/or creeks, more than 20 to 25 feet deep, followed by a gravel layer that can be of varying thickness but usually contains water. So, not all soils are the same, and if you have a weak soil—i.e., less deep and less water holding capacity—those trees will be showing stress—dropping yellow to brown leaves and limb dieback.

As you might guess, there are many trees scattered across Texas with such symptoms. There were scattered rains in early September, but it has now been more than 52 days without measurable agriculturally significant rain in many areas. Many of those stressed trees re-leafed after those September rains, and the leaves still look ok. I also witnessed some of these trees that put on new leaves producing some catkins, but I did not see subsequent nuts. Nevertheless, it remains to be seen how these trees will go through the winter and emerge next spring.

But the whole point is to make observations in the orchards you manage. There are going to be areas where the trees look better than other areas. We would naturally assume that this would be the result of being on better soil. Alluvial soils are interesting in that they are not uniform and there can be pockets with more sand and/or rock, which will dry out sooner, and the trees will be more challenged to grow in times of drought.

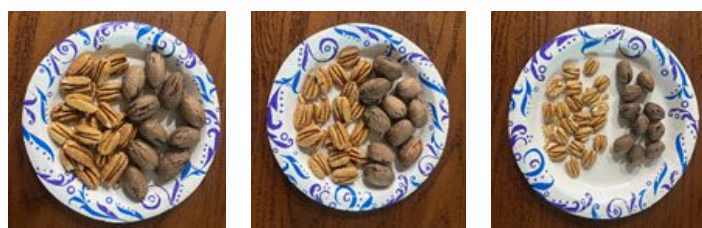
The other factor may be rootstock since almost all pecan trees are genetically different. So there actually could be certain rootstocks that can tolerate drought better than others. I also have observational data to suggest that certain varieties can handle the stress better than others. Therefore, we're not only looking at differences in tree health but also looking at variations in nut size and development.

**Banking Water.** Those of you who ran out of water have some key decisions to make moving forward. First and foremost, are you able to secure a reliable source of water? If

that is not possible, then one may have to downsize and only keep those trees in the very best soil.

Next, it may be possible to “bank” water, meaning you put extra water out when it is available so that the soil can store the water. This tactic may not be practical, but you might be surprised at the amount of good that it can do. Many row crop farmers do this via a practice known as furrow diking. Small dikes are formed down the non-traffic row, and in times of rain and/or irrigation, these dikes fill with water, and the water goes into the soil as opposed to running off. Perhaps you can direct excess water back into the orchard instead of just going down a stream or creek.

### Differences in Nut Size.



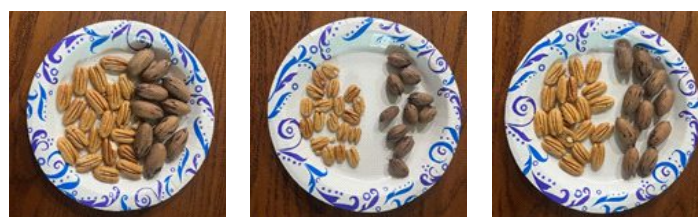
Growing pecans (I should say quality pecans, as typically anyone can grow pecans, but quality pecan kernels are another story.) requires a good management program, but more often than not, water is the key to that program. Note the difference in size of the following 'Desirable' pecan samples shown here.

The sample in the first photo received season-long irrigation and developed a very nice size, 37 nuts per pound and 52 percent kernel.

The second group received early irrigation along with some water “banking” and the nuts are not as large, 44 nuts per pound, but they are still decent with great kernels—52 percent. The next group was from an area with good soil but absolutely no supplemental irrigation—103 nuts per pound and 50 percent kernel. So, as you can well see, size is dictated by water.



Next are photos of 'Caddo,' with a similar situation—69 nuts per pound with 55 percent kernel, 81 nuts per pound with 50 percent, and 142 nuts per pound and 50 percent kernel. Another example can be seen with these 'Sioux' pecans—58 nuts per pound with 60 percent kernel, 74 nuts per pound with 59 percent kernel, and 142 nuts per pound with 56 percent kernel. It is hard to believe that there can be so much variation from just lack of water.



### Differences in Percent Kernel.

Make no mistake, growing quality kernels is a must. Quality sells, and without it, you are at the mercy of the buyers. If you have quality, then you have a bit more leverage. Again, water goes a long way to determining quality; however, nut size also affects this. More often than not, smaller pecans have better quality. So, even though size is nice and people buy with their eyes, sometimes smaller pecans are not necessarily such a bad thing.

As the population continues to grow, water will only become more critical. We must make sure that we use water wisely to produce this premiere health food. In doing so we also have to change the mindset that pecans are for Thanksgiving and Christmas!

Do your homework as to how your trees performed and make notes as to what you need to do better.

**Please, by all means, if there are areas where the trees just don't grow and/or do not produce quality pecan kernels, make it a point to take those trees out and use that water where it will do some good.**



# GIBBERELLIC ACID

## A Potential Key Regulator of Pecan Alternate Bearing

**By Lu Zhang and Ming Yang** Dr. Lu Zhang is an Assistant Professor of Pecan/Tree Physiology in the Department of Horticulture and Landscape Architecture. Dr. Ming Yang is a professor in the Department of Plant Biology, Ecology, and Evolution at Oklahoma State University). *Pecan South, Volume 57, No.10, December 2024*

*Gibberellic acid (GA) is a plant hormone in the gibberellins class known for regulating various aspects of plant growth and development.*

First discovered in rice infected with the fungus *Gibberella fujikuroi*, these hormones are now understood to influence processes such as stem elongation, seed germination, bud dormancy, flowering, and fruit development. Gibberellic acid (GA) has also been shown to interact with other hormones, such as abscisic acid (ABA), auxin, and cytokinin, whose relative amounts to each other greatly affect plant reproductive success.

One of the major factors limiting pecan production is alternate bearing, where trees have high yields one year and low or negligible yields the next. This phenomenon is believed to be linked to the tree's resource allocation and hormonal signaling, particularly with respect to flower initiation and fruit set. Gibberellins are known to promote male flower initiation and suppress female flower initiation. Wood et al. (2004) applied ProGibb (GA3, one form of GA) to pecan trees in summer to both 'on' and 'off' trees, resulting in almost no fruit being produced in the following year. It revealed that gibberellic acid (GA) changed trees' return bloom. Wood et al. (2003) postulated that proper hormone balance was essential to both initiation and maturation of female flowers in pecans. Studies in olive and citrus (Baktir et al., 2004; Koshita et al., 1999) reported that GA inhibited flower bud formation while the hormones auxin and abscisic acid (ABA) promote the formation of flower buds.

Moreover, the relative ratio between gibberellic acid and ABA functioned as a key factor for floral development and alternate bearing in olive trees; when the concentration of ABA is greater than the concentration of GA, it results in increased flower bud formation, while the opposite situation (ABA is less than GA) favored vegetative growth.

Our laboratories are working together to understand how GA influences alternate bearing in pecan trees. In the summer of 2024, we thinned nuts on trees to varying levels with the goal of inducing heavy, moderate, and minimal fruit sets in 2025. These trees will enable us to

study the correlation between phloem sugar concentration, GA concentration, and nut yield.

We plan to measure the phloem sugar concentrations, GA concentrations in these trees' first- and second-year buds, and the corresponding nut yields. We will also determine the expression levels of genes involved in sugar transport, GA signaling, and floral development in these buds by targeting several known key genes and a transcriptomic approach. By doing so, we hope to understand how GA influences the complex process of alternate bearing, which may help us develop strategies to mitigate the negative effect of alternate bearing on pecan production.

This research is supported by a grant from the USDA Agriculture and Food Research Initiative Program, awarded in 2024. We are excited about the potential findings and will continue to update you on the progress of our study as we move forward. ■

#### Citations:

- Baktir, I., S. Ulger, L. Kaynak and D.G. Himelrick. 2004. Relationship of seasonal changes in endogenous plant hormones and alternate bearing of olive trees. *HortScience* 39(5): 987–990.
- Koshita, Y., T. Takahara, T. Ogata and A. Goto. 1999. Involvement of endogenous plant hormones (IAA, ABA, GAs) in leaves and flower bud formation of satsuma mandarin (*Citrus unshiu* Marc.). *Scientia Horticulturae* 79: 185–194.
- Wood B.W., Conner P.J., Worley R.E. 2003. Relationship of alternate bearing intensity in pecan to fruit and canopy characteristics. *HortScience* 38(3): 361–366.



*Jou vennoot vir*

*vertroue en kwaliteit!*

**Kontak gerus een van ons vriendelike verkrygers:**

Leanie van Niekerk: 082 419 1556

Madrie du Plessis: 073 824 3285

Frikkie Meyer: 083 701 8229 (Hoopstad area)



Stasiestraat 4, Hartswater



053 473 0138



madrie@nutlink.co.za

admin@nutlink.co.za



www.nutlink.co.za





**Strong on Parts and Service**

**Orchard Machinery Corporation  
announces acquisition of  
Weiss-McNair**



Our combined team will continue to produce industry-leading nut harvesting equipment and offer the parts, service, and support our customers expect.



**2950  
SWEEPER**



**7510  
HARVESTER**



**5110  
CONDITIONER**



**B85  
BLOWER**



**MONOBOOM  
FRONT-MOUNT SHAKER**



**LIFTED SPRINT  
SIDE-MOUNT SHAKER**



**Headquarters**  
2700 Colusa Highway  
Yuba City, California 95993  
USA

**Direct Sales Contact**  
Joe Martinez  
Mobile: +1 530-565-8145  
Email: [jm@shakermaker.com](mailto:jm@shakermaker.com)

# ORCHARD MACHINERY CORPORATION



**Sprint**  
SIDE-MOUNT SHAKER



**Catchall X**  
2-PIECE SHAKER/RECEIVER

**TREESEEKER**  
PAT. # 6,658,834 7,757,471 9,485,912



**CC-350**  
CONVEYOR CART



**CC-525**  
CONVEYOR CART



**AR-7**  
BIN CARRIER



**AR-400**  
SIDE-DUMP SHUTTLE



**AR-450**  
FRONT-DUMP SHUTTLE



**AR-500**  
SHUTTLE & SPECIALTY TRACTOR



**SD-36**  
SIDE-DUMP ELEVATOR



**SE-180**  
FRONT-DUMP SWING ELEVATOR



**FE-36**  
FIELD ELEVATOR



**Skirter/Hedger/Topper**  
TRACTOR MOUNT



**Hedgehog**  
MODEL 3000 HEDGER



**OMC Brush Hog**  
HYDRAULIC RAKE



**E-LIMB-INATOR**  
SHREDDER

**STRONG ON PARTS AND SERVICE**

**SINCE 1961**

[www.ShakerMaker.com](http://www.ShakerMaker.com)

Follow us on Facebook and Instagram



@OMCshakermaker





**PecanPro**  
*Nursery*



**Place  
ORDERS  
NOW  
for  
July/  
August  
2025**



**Premium Quality**

**Volume Discount on large orders**

083 282 5301 - WhatsApp Heiko

083 271 6211 - WhatsApp Agatha

[pecanpro.orders@gmail.com](mailto:pecanpro.orders@gmail.com) | [www.pecanpro.co.za](http://www.pecanpro.co.za)



*Image example of an overcrowded orchard  
(Photo courtesy of Dr. Charles Rohla)*

# Addressing THE ROOT CAUSES of Our Problems

**By Charles Rohla.** *Manager of the Center of Pecan and Specialty Agriculture at the Noble Research Institute, Ardmore, Oklahoma. [ctrohla@noble.org](mailto:ctrohla@noble.org). Pecan South, Volume 57, No.11, January 2025*

*As producers, we know that to succeed, we must keep a close eye on all our enterprises, whether it's our pastures, livestock, or crops.*

*As managers, we look for a problem and start thinking about how we want to treat what we see.*

*But have you ever stopped to think about what's causing the symptoms to occur?*

*If we all just slowed down for a moment and observed what was happening around the area of the symptoms, we could identify some of the root causes of the problems we are experiencing.*

As producers, we have been conditioned to look for the symptoms and typically will have a plan of action on hand to address these symptoms. Usually, this plan treats the symptoms we are seeing and will involve a chemical, fertilizer, or some other type of input. Seldom does the cost of the chosen treatment cross our minds because we know that if we do nothing, the symptoms will get worse. But by only treating the symptoms, all that we do is put a band-aid over the real problem.

If we could step back for a moment and honestly evaluate what was going on, we could identify what was causing the problem or why the problem existed. If we determine what was causing the problem, we could have a different plan of action to correct the problem. How do we do this? First, we must be in a mindset that allows us to evaluate what is happening around us and be willing to see what is occurring, not just what we see. We will see things differently with this mindset and not just look for symptoms.

In pecan orchards, we can observe some common causes of problems reasonably quickly, but as producers, we typically overlook them. Let's think about the issues that may occur in overcrowded orchards. When orchards are overcrowded, we limit sunlight penetration through the trees and onto the soil surface.

There are several things that this problem can cause. First off, it can significantly restrict crop production. We must remember that to produce pecans, we must have plenty of sunlight, and if we are limiting the sunlight within the canopy of the tree, the only production that will occur will be limited to the areas of the canopy that are receiving the sunlight (typically the top of the tree). Suppose we are in a region that has problems with scab or other foliar diseases. In that case, an overcrowded orchard limits the airflow in the orchard, increasing humidity and causing the leaves and nuts to have moisture on them longer. This increases the likelihood of disease infections and increases the spread of diseases to other trees.

Lack of sunlight penetrating the soil surface will limit forage growth under the trees. When forages are limited, erosion can occur. On top of increased erosion, it will impact the soil structure, which can lead to issues with additional water runoff, water pooling on the soil surface, and soil compaction. Having forages (any plants) growing under the trees will benefit the soil structure, helping to protect the soil surface. The roots of these plants help loosen up the soil and increase water infiltration.

Suppose we have a diverse plant community growing. In that case, it can also help increase the soil health and soil microbes that are in the soil, helping with higher water holding capacity, more water absorption following a rainfall or an irrigation event, and increasing the nutrients in the soil.

These are just a few of the problems that overcrowded orchards can cause. As a grower, if we have these problems, instead of treating the symptoms (scab, erosion, water pooling on the soil surface, droughty soils, etc.), if we address the real problem – an overcrowded orchard, we can alleviate some of these problems. The problems associated

with overcrowded orchards are just one example of how you could evaluate what is causing your problems/symptoms in your orchard. Several other examples could be discussed. However, the key point I hope you get out of this article is to start looking at your operation differently.

Do more than just look for the symptoms and automatically reach for the treatments you typically use. Evaluate your situation and try to determine the root cause of your problem and address that to solve your problem.

Remember that your situation may differ from other producers because of your location, soil type, health of your soil, or other factors that may not be visible to you. In the long run, this will be less costly and help increase your success and profitability.

**So, I would challenge you as a producer to change your mindset when you see problems in your orchard and evaluate why that problem is occurring.**



Amanda: 0835020781  
pecans.kim@gmail.com

## Healthy Soil – Healthy Plants – Pecan Gold

- **Wichita**
- **Pawnee**
- **Navaho**
- **Western**
- **Choctaw**
- **Ukulinga**
- **Barton**



DAFF REG NO: 78490001  
SAPPA associated member

**ORDER NOW FOR 2026**





FAMILY  
**ORGANICS**

PECAN NURSERY

— MAGALIESBURG —

**BARE-ROOT PECAN TREES  
AVAILABLE FOR 2025**



**WICHITA**



**NAVAHO**

**CONTACT US**

**CELL: 083 700 3549**

**EMAIL: GAVIN@FAMILYORGANICS.CO.ZA**

**WWW.FAMILYORGANICS.CO.ZA**

PIETERSE PECAN NUT INDUSTRY

# PPI



*We lead the way  
for the rest to follow...*



3,2m Wydte, kompakste  
boordbesem beskikbaar.



PPI ROW  
ASPIRATOR

65kw

540PTO



We color-match  
all of our  
equipment.



PPI Mobiele Rolsiwwe voeg  
waarde tot u produk.

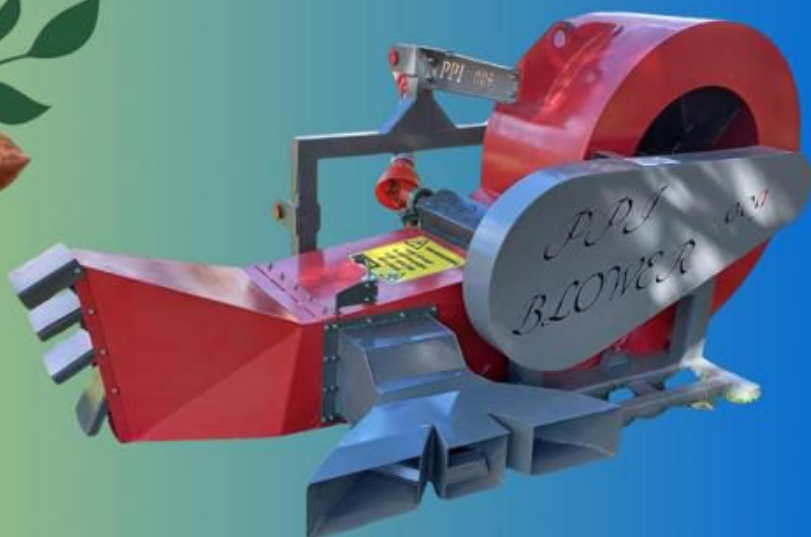


PIETERSE PECAN NUT INDUSTRY

# PPI



*We lead the way  
for the rest to follow...*



Ons unieke  
en  
effektiewe  
boordblaser.



Ons Boordblaser met  
veelsydige funksies.





# SOIL APPLIED ZINC

## A Valuable Resource for Pecan Farmers

By Dr Gesine Coetzer. Department Soil Sciences, UFS

**Role.** Zinc (Zn) is essential for pecan trees, acting as a cofactor for over 300 enzymes involved in enzyme activation, protein synthesis, gene expression, and reproductive development. It plays a critical role in metabolic pathways influencing carbohydrate, protein, and auxin metabolism and maintaining membrane integrity, which affects photosynthesis and respiration. Zinc is vital for fundamental cellular processes, including DNA synthesis and enzyme catalysis, and aids in nutrient uptake and transport, enhancing resilience to environmental stresses.

In reproductive processes, zinc-rich pollen is crucial for fertilization, and adequate zinc levels during flowering and seed development promote cell differentiation and fruit development. Maintaining optimal zinc levels is critical for maximizing fruit yield and quality, particularly in regions with calcareous soils.

**Uptake and Transport.** Zinc (Zn) is primarily absorbed by plants in its divalent form,  $Zn^{2+}$ , but in calcareous and high pH soils, it can also be taken up as  $ZnOH^+$ . The complex interactions of zinc in soil and plant systems complicate its application and timing. Zinc uptake depends on its availability in the soil, with soil zinc fertilization being an effective strategy to increase concentrations. Free  $Zn^{2+}$  in the soil is in equilibrium with total soil Zn, controlled by absorption, desorption, precipitation, dissolution, and biological processes. Zinc mobility in soil is limited by sorption and precipitation, and high concentrations of  $Ca^{2+}$  and other divalent cations can inhibit zinc uptake.

Excessive phosphorus can exacerbate zinc deficiency, with the P/Zn ratio being critical for availability. Soil temperature also affects zinc uptake early in the growing season. Zinc accumulates in root tissues and is transported to

shoots via the xylem, moving as  $Zn^{2+}$  ions or bound to organic acids, with significant levels also detected in the phloem.

**Deficiency.** Zinc (Zn) deficiency in pecan trees presents symptoms such as shortened internodes, reduced leaf area, thinner leaves, curly margins, interveinal chlorosis, and terminal shoot dieback and defoliation in severe cases. Deficiency leads to poor shoot growth, reduced fruit set, lower nut and kernel weights, and compromised nut quality. Zn deficiencies are common in sandy, acidic soils and calcareous soils with high pH, where Zn availability is significantly reduced. Maintaining optimal Zn levels is critical for achieving high nut yields and quality, with foliar spraying of zinc sulfate proving effective in increasing Zn content and improving fruit development.

**Toxicity.** Zinc (Zn) toxicity in pecan trees occurs when Zn levels exceed plant tolerance thresholds, negatively impacting growth and physiological processes. Excessive Zn in soil can degrade soil quality and lead to environmental pollution. Research by Liu et al. (2021) demonstrated that while moderate Zn application enhanced chlorophyll content, photosynthesis, and overall growth in 'Pawnee' pecan seedlings, higher Zn levels inhibited photosynthesis, damaged the photo-chemical system, and reduced photosynthetic efficiency. Thus, careful nutrient management is essential to balance Zn application to maximize yield and quality without inducing toxicity in pecan orchards.

**Norms.** Recent studies challenge the long-standing recommendation of maintaining a leaf zinc (Zn) concentration of  $50 \mu g g^{-1}$  as optimal for pecan trees. Nuñez-Moreno et al. (2009a) found that achieving excellent nut quality and a high kernel yield exceeding 61% was possible with a leaf Zn concentration below this threshold, suggesting

that the critical concentration may need revisiting. Walworth et al. (2011) observed severe deficiency symptoms at concentrations between 15-20 mg kg<sup>-1</sup> and recommended a minimum of 30 mg kg<sup>-1</sup> for adequate Zn levels in 'Wichita' pecans. Heerema et al. (2017) and Hu and Sparks (1991) similarly advocate for maintaining leaf Zn concentrations between 14-22 mg kg<sup>-1</sup> to support photosynthesis and fruit production, highlighting the complexities in determining

optimal Zn levels for pecan growth, yield, and quality.

**These findings challenge previous norms and underscore the need for tailored nutrient management strategies based on specific orchard conditions and cultivar responses.**

---

## SOIL APPLIED

**Broadcasting.** Soil-applied Zn treatments through broadcasting for pecan trees can be inconsistent due to Zn's poor mobility and varying soil conditions. Although these treatments can improve Zn status over time, they often show delayed results, particularly in alkaline soils.

### 1. Effectiveness and Consistency:

- Soil-applied Zn can take several years to show results in pecans, with effectiveness varying by soil type and application method.
- In alkaline soils, results are inconsistent and often require several years to become evident.
- Moist soil conditions can sustain Zn needs for at least four years as Zn moves deeper into the soil profile.

### 2. Application Methods:

- **Broadcasting:** Large amounts of ZnSO<sub>4</sub> (57 to 282 kg/ha) are needed for effectiveness, but this method can be problematic due to cost and inconsistent uptake.
- **Trenching and Banding:** More efficient but less commonly used; involves applying Zn in concentrated bands or trenches near irrigation emitters.
- **Organic Amendments:** Combining Zn with animal manure can improve Zn mobility and absorption in calcareous soils.

### 3. Zn Sources and Rates:

- **ZnSO<sub>4</sub>:** Preferred due to its solubility and ease of use, especially in acid soils, but can convert to less available forms in soil.
- **ZnO:** More economical but has low water solubility; effectiveness is similar to ZnSO<sub>4</sub> over time due to soil conversion.
- High application rates are often necessary to achieve adequate leaf Zn levels, particularly in high-pH soils.

### 4. Studies and Findings:

- Several studies have shown improved Zn status and tree growth with soil-applied Zn, but the response can vary significantly.
- Combining Zn with organic amendments, such as animal manure, has shown increased Zn uptake and leaf concentrations in pecan orchards.

### 5. Recommendations:

- Soil-applied Zn can provide a long-term solution for Zn deficiencies compared to foliar sprays.
- Further research is needed to optimize application techniques and rates for different soil types and conditions.

**Overall, soil-applied Zn through broadcasting is a viable but complex strategy for managing Zn deficiencies in pecan orchards, requiring careful consideration of application methods, rates, and soil conditions.**

# HOOILAND

SINCE 2005



## Agri

YOUR ONE STOP PECAN EQUIPMENT SHOP



Dewet Myburgh-082 613 8394



dewet@hooiland.co.za



5 Alan Street, Hartswater, 8750

## Hooiland Tree Shakers



Suitable for  
trees 100-  
450mm

Suitable for  
large trees  
140-650mm



L700 and XL950 Blowers



**New** Easy Sweep  
3m Orchard  
Broom

**AFRÖN**  
INNOVATION IN MOTION



## Hydraulic Powerpack



**Van Breda 1060  
Orchard Sprayers  
available in 2000lt-  
5000lt**

**Afron hedgers available. Contact us for more information**



**AFRÓN**  
INNOVATION IN MOTION

**You bring a vision, we make it a reality.**

**Trenching/ Banding.** Concentrated zinc banding in soil can be effective but may lead to phytotoxicity if not managed properly.

**Key Findings:**

**1. Trenching/ Banding:**

- Trenching, such as applying ZnSO<sub>4</sub> in trenches around trees, can correct deficiencies but may not be immediately effective.
- Banding, where Zn is applied in narrow bands around trees, is less effective than broadcasting for quick correction.

**2. Soil Acidification:**

- Combining Zn with sulfuric acid in trenches in alkaline soils can increase Zn uptake over several years despite initial delays in response. Although initially labor-intensive, this method provides cost savings by reducing the need for frequent foliar applications.

**3. Efficiency with Drip Irrigation:**

- Concentrated Zn banding near drip irrigation emitters is efficient, especially in acidic soils. With a single application, this method can sustain Zn levels for several years, making it a viable alternative to annual foliar sprays.

**4. Comparing Zn Sources:**

- ZnSO<sub>4</sub> and Zn-EDTA are effective Zn sources. Zn-EDTA can be particularly effective in alkaline soils, while ZnSO<sub>4</sub> is more economical and suitable for acidic soils.
- Combining Zn with organic amendments like animal manure can improve Zn mobility and uptake, especially in calcareous soils.

**5. Soil pH and Lime Application:**

- Managing soil pH is crucial, as high pH from lime applications can form insoluble Zn compounds, complicating Zn correction. Banding Zn can mitigate these issues by allowing concurrent management of soil pH and Zn levels.

**6. Long-Term Impact:**

- Studies show that a single application of Zn, particularly in acidic soils with drip irrigation, can sustain adequate Zn levels for several years. For example, Zn rates between 264 and 1056 g per tree effectively maintained leaf Zn concentrations above the critical threshold.

*Soil-applied zinc, especially through concentrated banding near irrigation systems, offers long-term benefits by maintaining adequate Zn levels for several years.*

*This approach contrasts with the immediate but short-lived corrections provided by foliar applications.*

---

**Micro-Sprinkler.** Applying Zn through micro-sprinkler systems is effective, especially in high pH and calcareous soils. Zn-EDTA (zinc ethylenediaminetetraacetic acid) is preferred due to its efficiency.

**Key Findings:**

**1. Uniform Distribution:**

- Injecting Zn fertilizers into irrigation water ensures uniform distribution and timely availability to roots.

**2. Studies in San Simon, Arizona:**

- Soil: Silty clay loam, calcareous, pH 8.1.
- Trees: 'Wichita' and 'Western Schley' on 'Bradley' rootstock.
- Treatments: 0, 2.2, or 4.4 kg Zn ha<sup>-1</sup>.

- **Walworth and Heerema (2015):**
  - Zn-EDTA applied at 2.2 or 4.4 kg ha<sup>-1</sup> through micro-sprinklers increased foliar Zn concentration significantly over four years.
  - Soil Zn levels were higher in the sprinkler area, leading to enhanced photosynthesis and elimination of Zn deficiency symptoms.
  - Yield doubled in treated trees.
- **Heerema et al. (2017):**
  - Zn-EDTA increased leaf Zn concentration and photosynthesis rates over three years.
  - No significant difference in photosynthesis between 2.2 and 4.4 kg Zn ha<sup>-1</sup>.
- **Walworth et al. (2017):**
  - Soil Zn levels increased significantly with Zn-EDTA application.
  - Leaf Zn concentration reached 22-35 µg g<sup>-1</sup> with 4.4 kg Zn ha<sup>-1</sup>, lower than the recommended 40-50 µg g<sup>-1</sup> but without deficiency symptoms.
  - Zn-EDTA application improved root growth and function.
  - Increased stem diameter and nut yields with Zn-EDTA, indicating root-absorbed Zn is more efficient than foliar-applied Zn.
- **Smith et al. (2021):**
  - Additional foliar Zn applications did not significantly increase photosynthesis, suggesting root-absorbed Zn from fertigation suffices.

**Micro-sprinkler application of Zn, particularly Zn-EDTA, is effective for pecan trees in challenging soil conditions. It enhances foliar Zn concentration, photosynthesis, tree health, and yield. This method is a viable alternative to traditional foliar applications, addressing Zn deficiency sustainably and promoting pecan production.**

**Drip Irrigation** . Drip irrigation efficiently applies zinc (Zn) fertilizers to pecan orchards, enhancing nutrient uptake, growth, and yield, especially in calcareous soils where foliar applications are less effective.

#### Key Findings:

##### 1. Study by Olivas-Tarango et al. (2021) in Mexico:

- Focus: 12-year-old pecan trees in calcareous soil (pH 7.5).
- Comparison: Conventional foliar Zn vs. soil-applied Zn chelate (CarboxyZnR) via drip irrigation (12, 14, and 16 kg ha<sup>-1</sup>).
- Results:
  - Soil-applied Zn increased shoot length by 4.5% and specific leaf area by 6% (not statistically significant).
  - Healthier foliage, especially in 'Wichita' trees.
  - Zn content in leaves was 86% higher with foliar applications, but leaf concentrations from soil-applied Zn were within acceptable ranges.
  - Yield was 3% higher with drip-irrigated Zn, with nut production exceeding the Mexican norm.

##### 2. Study by Wood (2007) in Byron, GA:

- Focus: 4-year-old 'Desirable' pecan trees.
- Method: Soil-banded Zn applications (0 to 4224 g Zn tree<sup>-1</sup>) over drip irrigation.
- Results:
  - Critical Zn threshold met in the first year with 2112 g Zn tree<sup>-1</sup>.

- Zn requirements were sufficient for several years with a single application.

### 3. Study by Tarango and Olivas (2018):

- Findings:
  - Drip irrigation increased nut size by 5.8% over three years.
  - Combined with microbial consortium, enhanced microbial populations in rhizospheric soil.
  - Provided an economical, ecological, and sustainable alternative to traditional foliar sprays.

**Drip irrigation is an effective alternative for Zn application in pecan orchards, especially in calcareous soils. Benefits include improved shoot length, specific leaf area, healthier foliage, and increased nut yield.**

Combining Zn applications with microbial consortia enhances soil health and nutrient uptake, offering a sustainable approach to pecan cultivation.

**Stem implants.** Stem implants and trunk injections have become vital for controlling pests in pecan orchards. These methods, particularly for zinc (Zn) application, have evolved to include innovations like zinc bentonite paste, which proved more effective and required less Zn than traditional foliar methods. Studies have shown that pressure trunk injections can significantly raise Zn levels in leaves.

These techniques offer direct and efficient nutrient delivery, reduce the need for multiple foliar sprays, and minimize environmental contamination. Despite challenges such as managing nutrient concentrations to avoid tissue damage and the risk of phytotoxicity, these methods improve tree health and yield in pecan orchards.

## MICROORGANISMS

Microorganisms significantly enhance nutrient availability and uptake in pecan trees, which is crucial in agronomic biofortification, particularly for zinc (Zn). Biofortification can be achieved through genetic modification or agronomic practices like fertilization, with plant growth-promoting bacteria (PGPB) in the rhizosphere enhancing soil fertility and nutrient bioavailability. These microorganisms improve root elongation and physiology, facilitating the absorption of nutrients like Zn, which boosts plant growth, yield, and quality.

Agronomic biofortification, combining fertilizer application with microbial inoculation, is an environmentally friendly and cost-effective method that addresses nutrient deficiencies through acidification, solubilization, and chelation, modifying root architecture and physiology to enhance nutrient uptake.

Studies have shown that soil microbial activities significantly improve Zn's nutritional status by solubilizing and relocating Zn in plants. For instance, inoculating plants with PGPBs like *Arthrobacter* sp. and *Bacillus* sp. enhances root characteristics, improving Zn uptake. Co-inoculants of symbiotic rhizobia support plant growth, yield, and nutrient use efficiency by enhancing root traits and phytohormone production.

The level of ectomycorrhizal colonization is vital for crop nutrition, as these microorganisms solubilize minerals like  $Zn(CO_3)_2$ , making them available for plant uptake. Integrating microbial inoculants with traditional fertilization methods offers a sustainable solution for Zn biofortification in pecan trees, addressing nutritional deficiencies, enhancing crop resilience, and ensuring food security.

## SOURCE AND SOLUBILITY

Zinc (Zn) is vital for plant growth and development, with its effectiveness in pecan trees influenced by the source and solubility of Zn fertilizers. Primary sources include zinc sulfate ( $ZnSO_4$ ), zinc oxide (ZnO), zinc nitrate ( $ZnNO_3$ ), chelated zinc ethylenediaminetetraacetic acid (Zn-EDTA), and zinc trisodium diethylenetriaminepentaacetate acid (Zn-DTPA). Zinc sulfate is particularly advantageous for young pecan trees due to its cost-effectiveness and practicality.

The water solubility of Zn fertilizers is crucial for their efficacy, with soluble Zn fertilizers enabling short-distance movement in the soil for root absorption. Zn-EDTA stands out as the most effective due to its high solubility, applicable in various forms, and less prone to soil fixation, enhancing Zn availability to plants.



**Buyer & Seller of Inshell Pecans**

**Seller of Shelled Pecan Nuts**

**Albert Bouwmeester**

**Cell 083 302 2413 • Fax 086 502 9526**

**Email: [elandsdraai.pecans@gmail.com](mailto:elandsdraai.pecans@gmail.com)**

Find us just outside Cullinan, Gauteng

 [Google Maps: Elandsdraai Pecan Growers](#)



Chelated Zn fertilizers, like EDTA, significantly improve soil mobility and bioavailability compared to other Zn fertilizers. The pH of the Zn carrier also plays a role, with an optimal range of 4.6 to 6.1, and liquid fertilizers often outperform solid carriers. The interaction of Zn fertilizers with other soil amendments, such as nitrogen (N) and phosphorus (P), affects Zn availability. Soil acidification using strong acids or acid-forming compounds and adding organic matter and humic acids can enhance Zn uptake.

Understanding these factors helps optimize Zn fertilization strategies, promoting healthy and productive pecan orchards by addressing Zn deficiencies effectively.

In conclusion, zinc (Zn) is indispensable for pecan trees, pivotal in over 300 enzymatic reactions crucial for enzyme activation, protein synthesis, gene expression, and reproductive development. It plays key roles in metabolic pathways influencing carbohydrate, protein, and auxin metabolism, maintaining membrane integrity vital for photosynthesis and respiration.

Zinc is essential for fundamental cellular processes such as DNA synthesis and enzyme catalysis while aiding in nutrient uptake and transport, bolstering resilience against environmental stresses.

Adequate zinc levels during flowering and seed development are crucial for cell differentiation and fruit development, optimizing yield and quality, especially in calcareous soils.

**However, managing zinc application is complex, influenced by soil pH, nutrient interactions, and plant uptake dynamics.**

Recent research challenges conventional leaf zinc concentration norms, suggesting lower thresholds for optimal growth and yield, underscoring the need for sustainably tailored nutrient management strategies to maximize pecan orchard productivity. ■

*For the complete literature review please visit the SAPPA website.*





# EVALUATION

## of Reproductive and Vegetative Shoots Across Pecan Cultivars to Better Understand Yield Patterns and Nut Drop

SAPPA Technical Team

### INTRODUCTION

Central to the successful cultivation of pecan nuts is an understanding of the on-year-off-year bearing cycle which is influenced by the ratios reproductive and vegetative shoots (i.e. new branches), and fruit retention mechanisms observed across pecan cultivars. Pecan trees exhibit a distinctive on-year-off-year bearing cycle, where they alternate between heavy and light fruit production from one season to the next. This phenomenon poses challenges and opportunities for pecan growers, however, a thorough understanding of the factors influencing these cycles are crucial for optimizing yields and managing orchards effectively. Factors such as weather conditions, tree nutrition, and tree age play vital roles in determining the intensity of the bearing cycle.

Understanding the distinction and heritability of reproductive (determinate) branches is fundamental to comprehending pecan tree physiology and its bearing cycle. Reproductive branches are responsible for bearing pecan nuts, whereas vegetative branches primarily support the growth and development of foliage. The balance between reproductive and vegetative growth is essential for sustaining long-term orchard productivity and ensuring consistent nut production.

Fruit retention, particularly the retention of pecan nuts on the tree until harvest, is a critical aspect of pecan orchard management. Factors influencing fruit retention include pollination efficiency, environmental conditions during key developmental stages, and the health of the tree. Maximizing fruit retention not only enhances yield potential

but also contributes to overall orchard profitability and sustainability.

The work conducted to date provides a baseline toward the comprehensive understanding of the on-year-off-year bearing cycle, reproductive and vegetative branches, and fruit drop. This information is essential for pecan growers in South Africa to plan to optimize orchard management practices, enhance productivity, and ensure long-term success in pecan nut cultivation. Through ongoing research and the practical application of knowledge, the pecan industry of South Africa can continue to thrive and meet the growing demand for this valuable nut crop.

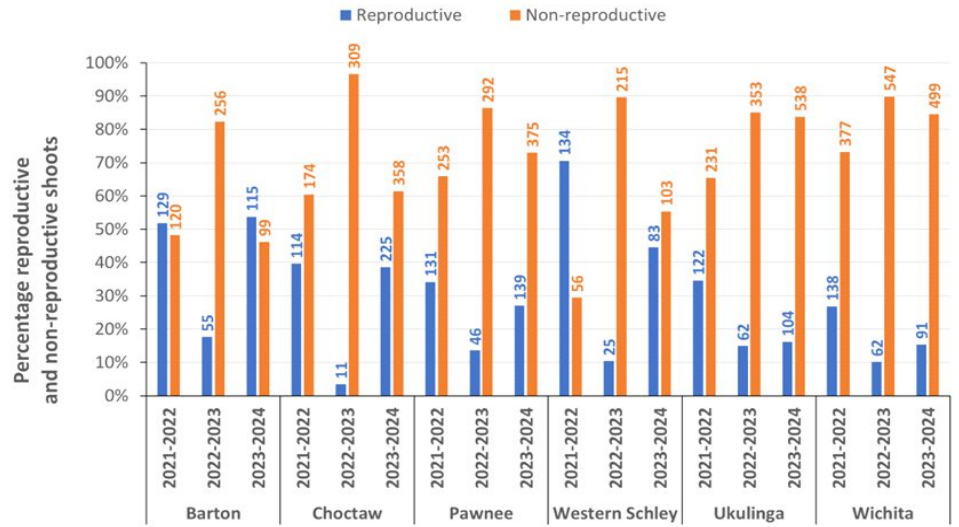
### METHODS

Branch measurements were taken repeatedly from individually marked syphers on selected shoots and multiple branches per replicated trees over three seasons (2021-2022, 2022-2023 and 2023-2024). The state (reproductive vs. non-reproductive) of the shoots, and number of nuts on the clusters were evaluated and counted respectively over time from 'Barton', Choctaw', 'Pawnee', 'Ukulinga', 'Western Schley' and 'Wichita' in the Hartswater pecan nut production region, Northern Cape, South Africa.

Shoots were clearly labeled and observed. The reproductive status of each shoot was indicated with "Yes" for reproductive (determinate, with nuts) and "No" for vegetative (no nuts, non-reproductive, leaves only). The number of nuts were counted during each observation, and 39 172 observations were done from repeated observations over three seasons across six cultivars.

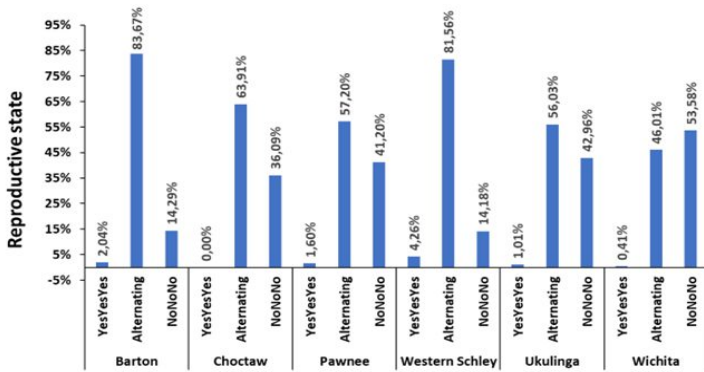
## RESULTS

The results indicate that very few shoots remained reproductive throughout the three observed seasons. Shoots predominantly alternated between reproductive and vegetative states or remained vegetative. The 2021–2022 (first observation) and 2023–2024 (last observation) seasons generally had higher yields compared to the 2022–2023 season, which was reflected by a higher reproductive percentage observed (Figure 1). The ratio of vegetative to reproductive shoots was generally more balanced (i.e., the percentages were closer) during these on-years compared to the off-year (Figure 1).

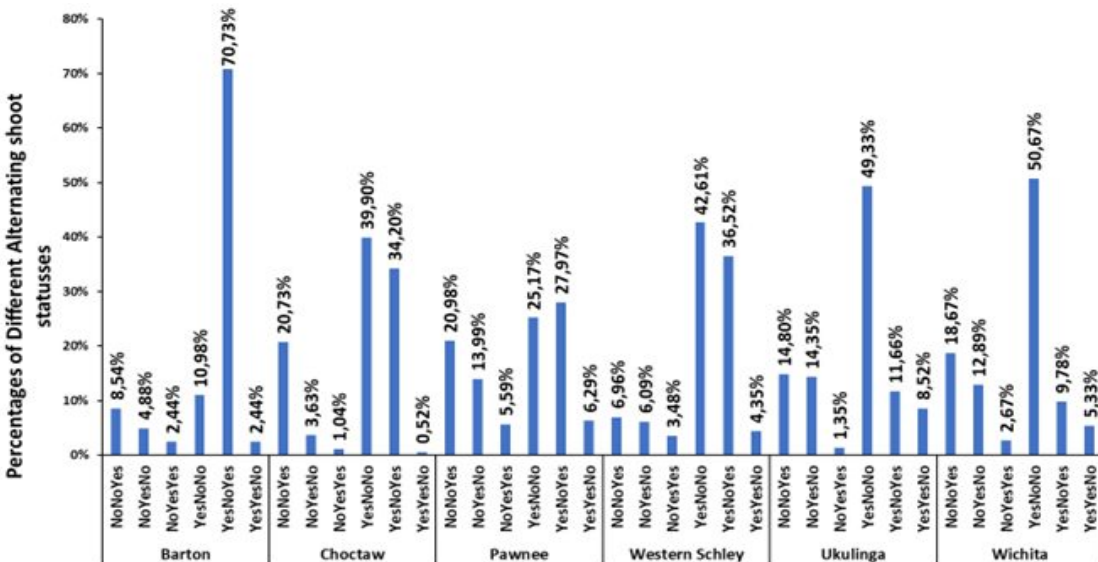


**Figure 1. Contribution of reproductive (determinate) and vegetative (indeterminate) shoots across the on-years (2021–2022 and 2023–2024) and the off-year (2022–2023). Note the higher number of reproductive shoots during the on-years compared to the off-year.**

The data suggest that shoots typically alternate between producing nuts (determinate) and remaining vegetative (indeterminate). For most cultivars, alternating shoots constituted the highest percentage across the seasons, followed by shoots that remained vegetative. Wichita, however, exhibited a higher proportion of consistently vegetative shoots, labelled as “NoNoNo” in Figure 2. A Breakdown of the “Alternating shoots” in Figure 2 can be seen in Figure 3.



**Figure 2. Changes in shoot status observed over three seasons. Shoots that remained reproductive across all seasons are labeled as “YesYesYes,” while those that stayed vegetative are labeled as “NoNoNo.” Shoots that alternated between reproductive and vegetative states are labeled as “Alternating.” Note the low percentage of shoots categorized as “YesYesYes,” indicating consistent nut production across all seasons.**

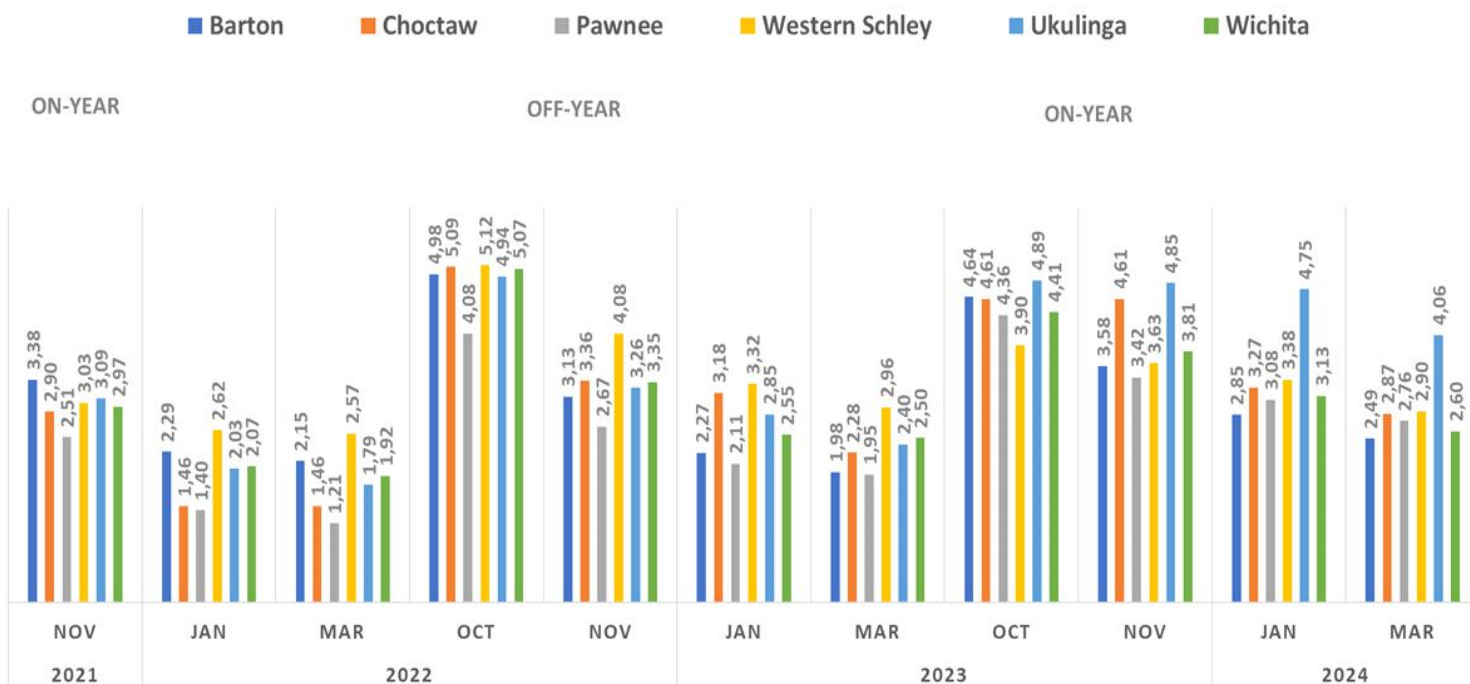


**Figure 3. Breakdown of the combinations that constitute the “Alternating” status in Figure 2. The percentages for the “YesNoYes” status highlight shoots that were reproductive exclusively during the on-years (2021–2022 and 2023–2024).**

Nut drop is a significant factor contributing to yield losses (Figure 4). Tracking nut counts over time highlighted the importance of starting recordings in October, after fruit set; therefore, data collection from October began in 2022. When examining October data, the final yields for the 2022-2023 off-year and the 2023-2024 on-year were 47.88% and 70.48%, respectively, of the initial nut counts. It is noteworthy how significantly nut counts dropped from October to November in the 2022-2023 off-year, as shown in Table 1. Analysis of the November data across three seasons revealed that final yield measurements represented an average of 60.71%, 71.05%, and 77.74% of the initial nut counts during the 2021-2022 on-year, 2022-2023 off-year, and 2023-2024 on-year, respectively.

Season, cultivar	Season, cultivar		
	2022-2023 (off-year)	Final / October	Final / November
Barton		39,78%	63,37%
Choctaw		55,36%	83,78%
Pawnee		29,74%	44,83%
Western Schley		55,64%	72,55%
Ukulinga		55,81%	84,66%
Wichita		50,99%	77,11%
<b>Average</b>		<b>47,88%</b>	<b>71,05%</b>
2023-2024 (on-year)	Final / October	Final / November	
Barton	56,24%	73,48%	
Choctaw	79,34%	81,95%	
Pawnee	77,94%	78,28%	
Western Schley	68,49%	81,08%	
Ukulinga	80,54%	82,61%	
Wichita	60,31%	69,03%	
<b>Average</b>	<b>70,48%</b>	<b>77,74%</b>	

**Table 1. Summary of percentage nuts remaining on the clusters considering the October and November nut counts in an off-year (2022-2023) and an on-year (2023-2024).**



**Figure 4. Summary of the number of nuts counted on average per cluster across three seasons.**

Using actual harvest data and two simple regression models—based on total nut and shoot counts—yield losses for the Hartswater pecan nut production region was evaluated (Table 2). During the 2021-2022 on-year, losses in yield due to nut drop between November and harvest were estimated at 1 349 to 1 485 kg per hectare, which represents a 31% to 35% reduction in yield. In the following off-year season (2022-2023), the model calculated losses, ranging from 282 to 310 kg per hectare, accounting for a 13% to 16% reduction in yield. Most recently, in the 2023-2024 on-year, the estimated losses were 793 to 873 kg per hectare, corresponding to a yield reduction of 19% to 22%.

**Table 2. Recorded harvests and calculated losses due to nut drop between November and harvesting.**

Season	Actual harvest (kg/ha)	Loss in yield (kg/ha)	% Loss
2021-2022 (on-year)	3 718	1 349 - 1 485	31 - 35
2022-2023 (off-year)	1 677	282 - 310	13 - 16
2023-2024 (on-year)	3 652	793 - 873	19 - 22

October data were collected for the 2022-2023 and 2023-2024 seasons, providing additional insights into nut drop occurring earlier in the production cycle (Table 3). During the 2022-2023 off-year, yield losses from October to harvest ranged from 832 to 917 kg per hectare, representing 30% to 36% in yield. In the 2023-2024 on-year, calculated losses for the same period ranged from 1 015 to 1 117 kg per hectare, equating to a yield reduction of 22% to 25% between October and harvest. This indicates a substantial volume of nuts dropped between October and November which was 550 to 600 kg per hectare in the 2022-2023 off-year. For the 2023-2024 on-year the nut drop between October and November was lower at 220 to 240 kg per hectare.

**Table 3. Recorded harvests and calculated losses due to nut drop between October and harvesting.**

Season	Actual harvest (kg/ha)	Loss in yield (kg/ha)	% Loss
2022-2023 (off-year)	1 677	832 - 917	30 - 36
2023-2024 (on-year)	3 652	1 015 – 1 117	22 - 25

## CONCLUSION

The study revealed that most pecan cultivars alternated between vegetative and reproductive shoot growth over the three observed seasons, except for Wichita, which exhibited a higher proportion of shoots remaining vegetative. Yields were significantly higher in the 2021-2022 and 2023-2024 seasons (on-years) compared to the 2022-2023 season (off-year), with on-years showing a more balanced ratio of vegetative to reproductive shoots.

Nut drop emerged as a major contributor to yield loss, highlighting the importance of monitoring nut counts over time, and managing tree stress to reduce the October and November nut drops. November nut drop data indicated that final yield measurements were approximately 60.71%, 71.05%, and 77.74% of initial nut counts on average for the three seasons. October data showed final yields at 47.88% and 70.48% of initial nut counts for the 2022-2023 off-year and the 2023-2024 on-year, respectively.

The regression models based on total nut and shoot counts provided valuable insights into industry losses attributable to nut drop. Analysis of November nut drop data over three seasons indicated that estimated yield losses ranged from 1 349 to 1 485 kg per hectare and 793 to 873 kg per hectare during the on-years, with losses of 282 to 310 kg

per hectare during the off-year. These losses corresponded to percentages of 31–35%, 13–16%, and 19–22%, respectively. For the 2022-2023 and 2023-2024 seasons, October observations revealed estimated yield losses ranging from 832 to 917 kg per hectare and 1 015 to 1 117 kg per hectare, translating to loss percentages of 30–35% and 22–25%, respectively.

These findings emphasize the importance of a balanced shoot ratio and influence of nut drop as key determinants for improved pecan production. Sunlight management and general tree growth will vary between farms and growing regions and may influence these results.

**This study remains ongoing,  
and further results will continue  
to provide guidance and insights  
into optimizing yield and industry performance.**

*Field data collection done by Kelebogile Botshelo.  
Data processing was done by RP Campher.  
Report writing was done by RP Campher, Hardus du Toit  
and Dr Elsje Joubert provided valuable insights  
into the data analysis and report.*

Packed with Antioxidants

Nutrient-Rich

Filled with Fiber

High in Magnesium



## Health Benefits

Pecans are rich in essential nutrients and offer a wide range of health benefits.



## RECIPE

### *Pecan Smoothie*

- 1/2 cup Pecans from South Africa (soaked overnight for extra creaminess)
- 1 banana (frozen for a creamy texture)
- 1/2 cup Greek yogurt or plant-based yogurt
- 1 cup milk (dairy or non-dairy)
- 1 tbsp honey or maple syrup (optional)
- 1/2 tsp cinnamon
- 1/2 tsp vanilla extract
- Ice cubes (optional for a frosty finish)

Add all ingredients to a blender.  
Blend until smooth and creamy.  
Pour into a glass, top with a sprinkle of crushed pecans, and enjoy!



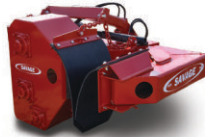
# All the machines you need for your orchard



Row-Vac 8960



V-Sweeper 7520



Shaker 2653



Harvester 8261



Sweeper 7510



Cleaner 4224



Limb Rake 7218



Pre-Cleaner 4324



Sprayer 5740



34-Series Sweeper



Shaker M700



Harvester 860



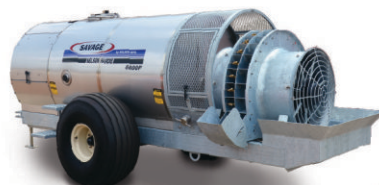
Harvester 8772 with Conveyor Cart 1500



Shaker VR700



Sprayer Super 80



Sprayer 6800P (PTO)



Tree Squirrel



Sprayer Super 92

**Order your orchard machines by  
Savage, Flory, Nelson and others.**

**Contact Werner Hamman:  
Office: 053 474 1222  
Mobile: 082 948 2119  
Email: info@savagesa.africa**

# Faster return on your investment

with the largest variety of Pecanutt trees



**Place  
ORDERS NOW**  
for July/August 2025

**Premium Quality**  
at a fair price

**Volume discount**  
on large orders



Delivery to PECAN PRO depots in Cradock, Vaalharts & Upington  
Eastern Cultivars- Ukulinga, Marina, Barton, Sutex, Cape Fear  
Western Cultivars- Wichita, Choctaw, Western, Navaho, Pawnee, New test varieties

083 282 5301 - WhatsApp Heiko  
083 271 6211 - WhatsApp Agatha  
pecanpro.orders@gmail.com  
www.pecanpro.co.za



**PecanPro**  
Nursery