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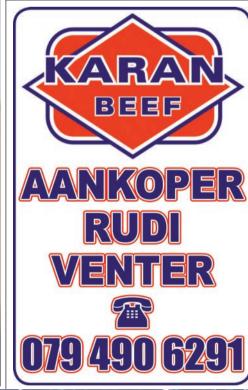




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Third Quarter Moon 3 Oct.



Full Moon 9 Oct.



**First** Quarter Moon 17 Oct.



New Moon 25 Oct.



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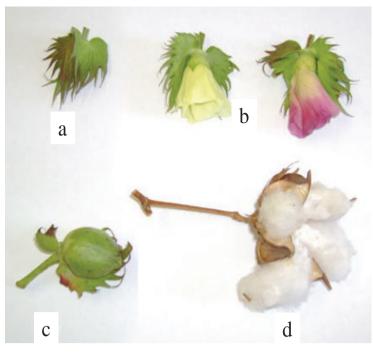


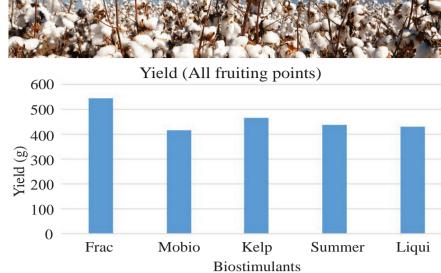
Figure 1. a = Square, b = Flowers, c= Bolls, d = Bursted boll

### Great yields with research on bio stimulants at LNR

AGRI-PULSE – NORTH WEST

– Did you know the latest research
by VIMP (Vegetables, Industrial
Crops and Medicinal Plants at the
Rustenburg campus of the ARC
includes the evaluation of different
types of bio stimulants? Bio stimulants
contain amino acids and hormones
which promotes root growth which
in turn offers your plants and young
seedlings a better chance of survival.
It is a known fact that better root
development leads to better nutrition
absorption and thus increased yields

development leads to better notice development leads to better nutrition absorption and thus increased yields. At least five agents have been tested, notably Fractal Grow (America), Mobiostim (Moringa juice) Summer Bucket and the company Liquigrow's own nitrogen, phosphate and microelements mix as well as Kelp X5 which is essentially a seaweed extract. In fig 1 the different fruiting sections of cotton can be seen, while fig 2 shows that the agent Fractal Grow has offered the best results. Only limited plants were sampled, hence the growth in gram and not kilogram/hectares.



Figuur 2. Fruiting point yields (g) of the Biostimulant trial at Rustenburg 2021/2022.

# Growing your own superfood

AGRI PULSE – Spring and Autumn is the best seasons to plant blueberries in your garden.

Blueberries are considered a superfood due to its high nutrition value. They are also easy to grow if the correct soil conditions are met, are resilient against pests and diseases, and will provide you and your family with an abundance of fruit for many decades to come.

Blueberries are native to North America, and for centuries Native Americans gathered them from forests and fields to eat fresh or to dry for later use. They called them "star berries" because of the perfect five-pointed star which forms at the blossom end of each berry.

These hardy perennials are usually prostrate shrubs that can vary in size from 10 centimetres to 4 meters in height. Small but charming bell-shaped flowers appear in late winter or spring, and can be white, pale pink or red, and sometimes tinged with green. The berries are produced in summer, appearing pale green at first and turning to reddishpurple, and finally dark purple when fully ripe. They have a sweet taste when mature, with variable acidity; and are covered in a protective coating of powdery epicuticular wax, known as the "bloom." In autumn their leaves turn a fiery shade of red, before dropping.

In South Africa the blueberry industry is small relative to other domestic fruit industries such as citrus, apples, pears and table grapes, and 68% of our berries are grown in the Western Cape, with about 70% of the production being exported. However, the industry is growing rapidly due to domestic and international investments in the sector.

Blueberry plants require superior soil growing media with good drainage and internal aeration as well as good water holding capacity. It can easily be planted in containers. If planted directly into the ground, a hole of 40cm x 40cm x 40cm can be made where the planting medium can be placed into. When transplanting the plant, make sure to plant it at the same depth to ensure that the crown is not covered or the roots exposed. Even adding a little bit of peat moss (about 5dm to 10dm) to the planting area close to the small plant, would greatly benefit its growth. Avoid placing too rich fertilizers such as manure or chemical fertilizers in the planting hole as they may burn the roots.

Blueberry bushes prefer full sun but they can tolerate partial shade. Blueberry roots are very shallow and require aeration. The roots are fine, fibrous and do not have root hairs and therefore do not compete well against weeds which must be eliminated before planting. Weed control should begin the year before planting with means of herbicides and/or cultivation. Avoid sites that are waterlogged, have poor drainage or have a permeable layer close to the surface. Raised beds, 15cm-30cm high can be used if the soil is marginally drained or if the water table is lower than 60cm. Compared to other fruit crops blueberries do not need much water but care must be taken to keep the moisture consistent, but not overwatered. Younger, newly established plants require the most care to make sure that their roots do not dry out or get waterlogged. During the summer months, when the plant is growing and fruiting, 20mm to 30mm of water is needed per week. We found that in most climates, a water budget of at least 3L/plant per day is required. Irrigation is usually applied with drip irrigation, but micro-sprinklers and overhead irrigation can also be successfully used. No hard pruning is needed during the first 4 years of the plant, but the fine twiggy, low growing vegetative shoots that grow sideways and do not bear fruit, should be pruned out. Remove any dead wood leaving any bright coloured lateral branches.

Source: Berries for Africa.



## oplossings gedryf deur advies

saad | wetenskap | diens



#### Manzu

- Oesgereed binne 80 tot 100 dae
- Geskik vir die verpakkings- en bossiemark
- Goeie toleransie teen Rhizomania



#### Subeto

- Medium-vroeë kultivar
- Regop groeiwyse
- Uistekende somerkultivar
- Geskik vir die varsmark
- Hoë toleransie teen blaarvlek



#### Natuna

- Baie eenvormige, silindriese wortel
- Goeie verdraagsaamheid teen Alternaria
- Hoë opbrengspotensiaal
- Geskik vir die 1, 3 en 5 kg verpakkingsmark



#### **Baltimore**

- Silindriese, gladde wortel met 'n afgeronde punt
- Sterk blaaraanhegting maak dit geskik vir meganiese oes
- Oesgereed na 100 tot 110 dae
- Geskik vir die vars- en prosesseringsmark

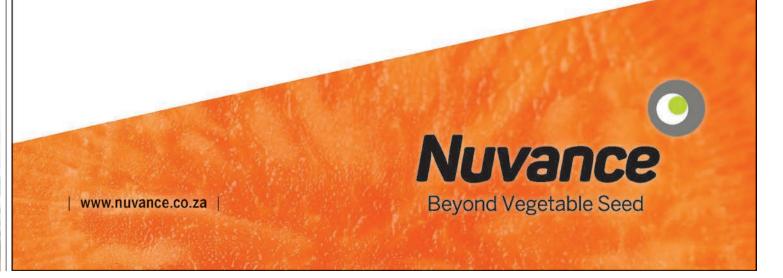




Figure 1. Moderate to severe black rot symptoms on carrot roots.

#### BLACK ROT

Black rot, caused by the fungus *Alternaria* radicina, occurs worldwide in most carrot-producing regions. While the disease mainly affects the crown and upper taproot, the pathogen can also cause seedling damping-off and blighting of the leaves and umbels.<sup>1,2</sup>

Black rot causes necrosis of the roots and crown, and infection usually starts where the leaf petioles attach to the crown. Small, chlorotic spots first appear on the petioles. The spots enlarge, and the affected tissues darken and decay. The infected petioles can break off when the carrots are mechanically harvested, leaving the taproot in the ground, thus reducing yield. Some fields are abandoned before harvest if disease severity is high. 1.2.3 The dark rot spreads to the crown and the upper part of the taproot. The rot can continue to spread downward on the root, with black, sunken lesions developing below the soil surface. The black lesions reduce the marketability of the harvested roots.

The black rot fungus can be seedborne, mainly on the seed surface. The fungus can also survive for several years in infested crop debris and in the soil. 1.2.3 Carrot plants can be infected at any stage, but young seedlings are

## Root Diseases of Carrot

- Black rot, cavity spot, and root knot are three important diseases of carrot roots and crowns.
- Diseases of carrot roots and crowns directly impact the harvested product.
- Management focuses on sanitation and cultural practices to lower inoculum levels and minimize disease development.

particularly susceptible. Infection is favoured by wet conditions (rain or overhead irrigation) when temperatures are over 20°C. Older, senescing tissues are also very susceptible to infection.

A primary method for managing black rot is to plant disease-free seeds. This is especially important when planting in fields with no history of the disease to prevent the introduction of the pathogen into the field. Treating seeds with fungicides, such as iprodione, can also help eliminate seedborne inoculum. 1,2,3 Once the pathogen is present in a field, three to fouryear rotations to non-host crops can help lower inoculum levels and prevent a build-up of the pathogen. Prompt destruction of crop debris after harvest can help speed the decomposition of the infested tissue and help lower inoculum levels. Burying inoculum through deep tillage can help lower rates of infection. Fungicides can be applied to plants in the field; however, the applications are often only marginally effective because of the difficulty in reaching the target areas of the plant with the fungicide sprays. Carrot varieties with some resistance to black rot are available.

#### **CAVITY SPOT**

Cavity spot is caused by the water mold organisms *Pythium violae*, *Pythium sulcatum*, and other Pythium species. *P. violae* is the most common and has a broader host range than *P. sulcatum*. Cavity spot can occur in fields with no prior history of carrot cultivation. The disease may not have a major impact on total yield, but it can reduce marketable yield resulting in substantial economic losses. Incidence rates of 10 to 20% can cause whole loads to be rejected during grading, and severely affected fields are sometimes abandoned.<sup>1,2</sup>

Cavity spot symptoms start as yellow, pinpoint spots on the taproot about twelve weeks after planting. These spots develop into elliptical or irregular, depressed lesions that are 1 cm or larger in diameter and oriented across the taproot. The lesions can develop on any part of the taproot, but they most commonly occur on the upper third of the root. Initially, the lesions appear grey but become darker as they enlarge and develop into cavities. Secondary pathogens can colonize the affected tissues and increase the size of the cavities. 1,2,3 There are no foliar symptoms, and the disease may not be detected until the roots are near marketable size, as the roots must be pulled and examined to see the symptoms.<sup>1,4</sup> Sometimes lesions are not visible when the carrots are harvested but may cause losses later in storage. Disc-shaped lesions can also enlarge during storage.

The cavity spot pathogens can survive in the soil for many years, and they can infect other plants, including tomato, cotton, watermelon, maize, and potatoes. Wet soil conditions favour infection. Heavy rains, flooding, and poor soil drainage are associated with increased disease levels. The disease is favoured by temperatures below 20°C. <sup>1,2,3</sup>

To help manage cavity spot, avoid fields with a history of the disease, and avoid planting in fields with poor drainage. Manage irrigation to prevent flooding. Deep cultivation between rows may help reduce the severity of cavity spot. Disease severity can be higher in fields with acidic soils, so adjusting soil pH levels to between 7 and 7.5 can help manage the disease. Plant when soil conditions are not overly wet and harvest as soon as carrots are mature, as the incidence of cavity spot tends to increase later in the season as older roots are more susceptible. Long-term crop rotations (three to five years) may help lower inoculum levels of the pathogens. Fungicides effective against water molds, such as Pythium and Phytophthora, may help manage the disease. Recommended fungicides include phenylamide fungicides (metalaxyl and mefenoxam), fenamidone, cyazofamid, and fluopicolide. Applications of metalaxyl or mefenoxam are usually most effective when first applied at planting or shortly after emergence. Two applications may be needed in some situations. Pre-plant applications of the fumigant metam sodium, may also help reduce inoculum levels and lower disease incidence. There is some variation in susceptibility to cavity spot among carrot varieties, but commercial varieties with high levels of resistance are not currently available.1,2,3,4



Figure 2. Elliptical lesions of cavity spot.

#### ROOT KNOT

Root knot is caused by several species of root knot nematodes (RKN), including *Meloidogyne arenaria*, *M. chitwoodi*, *M. fallax*, *M. hapla*, *M. incognita*, and *M. javanica*. There are several races within some of these species. RKN species occur worldwide and have wide host ranges. Species of Meloidogyne are sedentary, endoparasites, which means that they set up permanent feeding sites within the root.<sup>1</sup>

Root knot can cause substantial damage to carrot roots. Galls (round to spindle-shaped swellings) develop on the feeder roots. The size and shape of the galls vary depending on the nematode species. Infected roots tend to be short with fewer feeder roots. A forked taproot can form if the tip of the taproot is damaged. These roots can be stunted and distorted, making them unmarketable. Above-ground symptoms include yellowing, stunting, and a predisposition to wilting. Reduced stands and lower yields are often associated with fields infested with root knot nematodes. <sup>1,3,4</sup>

RKN survive as eggs in crop debris and in the soil. Juveniles (larvae) emerge from the eggs, enter roots near the root tip, and set up feeding sites within the root where they develop into male and female adults. Root damage is correlated with nematode population levels, and damage tends to be more severe in fields with sandy or muck soils. 1.3

Collecting soil samples and sending them to a diagnostic lab for analysis can provide information on the RKN species present and population levels. Because any detectible level of RKN in the soil can result in some yield loss, some situations may warrant a zero-tolerance threshold for these nematodes in the soil.<sup>1,3</sup> If RKN are detected, some strategies can be used to help reduce population levels or at least slow the build-up. Keeping fallowed fields weed-free can help lower RKN populations because larvae will have nothing to feed on. Crop rotation to non-host crops can also be helpful; however, because many of the RKN species have wide host ranges, including many vegetable crops, effective crop rotations can be difficult to achieve. Sanitation practices, such as cleaning farm tools and equipment between fields, are important for preventing the spread of RKN into non-infested fields.3,4

Pre-plant soil treatments can be applied to help reduce RKN populations. The application of soil fumigants, such as metam sodium, 1,3-dichloropropene, and chloropicrin, can be used to help lower populations. Non-fumigant nematicides, which can be pre-plant broadcast and incorporated or applied in-furrow, are also available, as are a couple of bio-control agents.<sup>3,4</sup> Adjusting planting time to avoid times when juveniles are most active can help prevent infection of young roots. Recommended temperature ranges for planting depend on the RKN species present. Planting when temperatures are below 15° to 18°C can help delay infection of taproots by several of the RKN species. However, for fields with M. hapla, planting when temperatures are below 13° to 14°C is required. Effective resistance for root knot nematodes is not available in commercial carrot varieties. 1,3,4

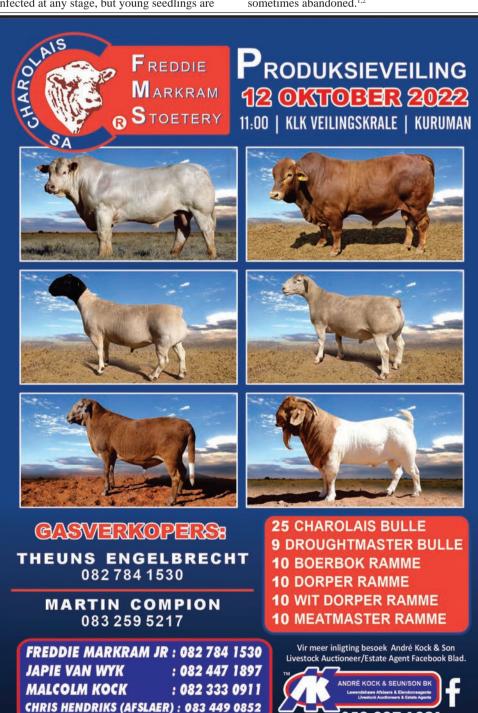


Figure 3. Roots distorted from root knot nematode infection.

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VERKOOP VOORWAARDES: Rekeninge moet vereffen word direk na afloop van veiling dmy kontant of elektror

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# Love of snakes overcomes phobia

AGRIPULSE - BRITS - Ophidiophobia - the word - looks scary at first glance and that's exactly what snakes were to Rolané van der Merwe, scary.

Rolané (15), a pupil of Die Hoërskool Wagpos, suffered from severe Ophidiophobia (fear of snakes). She says that she got heart palpitations just thinking about snakes.

About four years ago, her family was in the bushveld when by chance they saw a large python, injured on the road. Because Rolané is a big animal lover, her heart crumbled when she saw the injured snake and for the first time in her life made direct contact with a snake. With the assistance of several other people, they picked it up and took it to Onderstepoort for specialist treatment. The snake recovered and was released.

"My father, Marius van der Merwe said because I held the snake and overcame my fear, he would buy me my own snake," says Rolané. "Then I found Duchess, she had the most beautiful personality and was the best pet ever. I had her for two years, but in a freak accident she unfortunately broke her neck."

That was then, and today she boasts a very unique collection of 54 snakes. All her snakes are Ball Pythons (Python regius) or Royal Pythons.

AgriPulse visited Rolané and her snakes in Bethanie, outside Brits in North Wes and learned more about her snake farming.

As she talks about the snakes and their habits, the snakes curl lovingly in her hands and with names like Scarlet, Ivanka, Bailey and Prince, it is clear that she treats her snakes like royalty.

Each snake has its own unique name that matches its personality. Each one is kept in its own plastic container, because snakes like small spaces, and on the sunny porch where the snakes live, they are at their happiest.

Rolané overcame her fear of snakes. Here she steals a kiss

from the gentle Prince.

She explains how the breeding process works: "First we check what kind of baby snakes they will give us, then we put the males in with the females, never the other way round, because the females are extremely territorial" she says. "We put them together for four days and then take them out to rest for four days. After their resting time, they can visit another female again. I have a fridge that has been converted into an incubator where the snakes' eggs are kept and the heat in my incubator is regulated."

The types of Ball Pythons she breeds with are the Pinstripe, Pastel, Enchi Cinnamon, Banana Pied, GHI Mojave, Pastel Blade Clown, Axanthic Spinner, Super Pastel Yellow Belly Axanthic, Black Pastel, Pastel Phantom spot nose, Pastel Butter and then also normal Pied (orange, dream, fire, and black pastel).

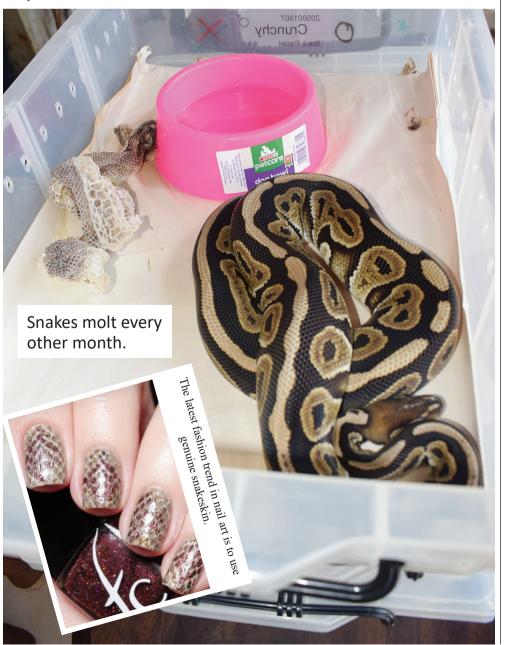
Rolané experiments with cross breeding to get unique colours. "I put pairs like, Ivanca who is a Spider Piebald and Blizzard, a Piebald or Hestia, a Fire and Blade, a pastel Blade Clown together," she says. "With Hestia and Blade, I expect a magnificent snake soon."

Feeding the snakes was at first a big challenge because she often had to buy large quantities of mice and rats (of different sizes), but with her mother, Mari van der Merwe's help, they now have a complete mouse and rat breeding facility. Mom, Mari, is in charge of the mice and rats and she ensures that the mice and rats only get the best nutrition. She gives fresh vegetables and feeding pellets because what they eat has a direct effect on the snake's condition.

Those interested, can call Rolané or Mari for more information on 074 663 7944.



Keeping book of every process is very important.





# Vaalharts Pecan Festival

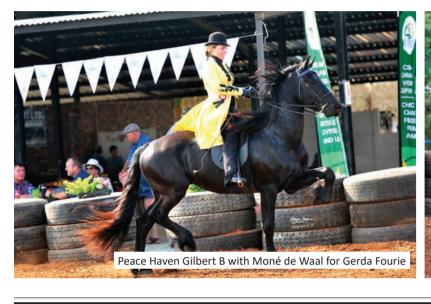




















Horses and riders at the Vaalharts Pecan festival that was held this past weekend.

### **THEUNS COERTZE & GASVERKOPERS** STAAK SAAIBOERDERY VEILING 21 OKTOBER 2022 11:00 | PLAAS: TOGGEKRY, STELLA 23.5 KM VANAF PUMA GARAGE. OP N18 NOORD VAN STELLA

2X 8 TON VETSAK ONTLAAIW 1X 3 TAND V-LEM 1X SOILMASTER TILLER
1X JOHN DEERE 6 RY DUISENDPOO 1X 4 SKAAR WILTON SANDPLOF **1X 2 RY AARTAPPEL PLANTER** 1X PIKKEWYN (GRAAN LAAIE **1X 2 TAND RIPPER** 1X ROLLER (KOMPAKTEERDE X MOBIELE GRAANDAM (SILO)

X GRONDBOONTJIE VURK X 5000L WATERTENK OP WIELE X HOBBS GRONDBOONTJIE PLUKKER X AARTAPPEL KOMPLEET SORTEEMASJIE 2X PTO WELDERS

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IX TUSSENRY SKOFFEL MET KUNSMIS BAKK 1X JOHN SHEARER ALGEHELE SKOFFE 1X AGRITECH TUSSENRY SKOFFEL IX SWAARDIENS AGRICO TUSSENRY SKOFFEL MET KUNSMISBAKKE 2X SLATTERY 4-SKAAR PLOE 4X MASSEY FERGUSON 3-SKAAR PLOF 1X MASSEY FERGUSON 5-SKAAR PLOE 1X 4-SKAAR AGRITECH PLOEG IX LM TUSSENRY SKOFFEL 3X LM 10-SKOTTEL ONEWAY 2X 14-SKOTTEL OP LAND ONEWAY IX DORMAS VI 500 AARTAPPEL UITHALER 1X 8030 NEW HOLLAND 2X 4 SKOTTEL SKOTTELPLOFF (NIE KOMPLE

1X UITMERKER 2X 10 000L WATERTENK OP SLEEPWA 1X JOHN DEERE QUECK HITCH IX JOHN DEERE T200 5-RY PLANTER 3X 1-RY KUILVOER KERWERS 1X 4 TOL HARK **8X LM 1000 POOT KARRIETJIES** 1X 1000L SPUIT (SLEEP) 2X IMPLEMENT RAMME 1X GRONDBONE UITHALER
1X 3 TAND SUPER 19 RIPPER

1X KUILVOER WA

GPS: S 26°22'17.37 E 25°0'39.76"

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# Working together makes the difference - Agri-NW congress



Francois Strydom, Senwes Group CEO.

AGRI-PULSE – Farmers must face attacks

from all sides, but they must never give up. Farmers from all over North West gathered at Senwes in Klerksdorp for the annual Agri NW congress. The atmosphere on September 27 was sombre yet optimistic.

Jaco Minnaar, president: Agri SA, painted a dark picture for farmers, but stressed that

partnerships are now more important than ever. "The war in Europe is intensifying and the impact is getting worse. The threatening energy crisis is very serious," he said.

Locally, farmers have to deal with foot and mouth disease still raging in some parts of the country, increasing crime and the attack on the

"Eskom is destroying agri and there are no signs that the situation will change within the next ten years."

He hopes the theme of the election in 2024 will not be agri, where the theme of the previous election was land expropriation.

He told delegates about the negotiations with government when war erupted in Europe where they wanted to close the borders to secure food security.

"We stressed that farmers have to export or local prices will fall." About the future.... The government is

privatising. "They are doing it without people noticing.

harbours.'

"The future lies in yourself. Partnerships now more than ever. Agric has to stick together. Now more than ever."

It happened with SAA and now also with the

Francois Strydom, Senwes Group CEO, said farmers have to answer many questions and challenges which leads to personal decisions.

"These decisions also impact our families, farm workers and clients. We must rely on proven facts." According to him, now more than ever,

South Africans must be true to themselves and make decisions based on integrity, accountability and impact. "The world is changing, with a new world

order, caused by the Covid pandemic. It had a direct impact on business and how business is conducted. It hit agri hard too.

"Don't wait for the future, your actions and decisions must have an impact on the future. Don't go on hearsay, rely on proper analysis. "People see what we do, we have a

responsibility to show that we rely on proper research," said Strydom. "Don't rely on what's communicated on social media and discussed at

He added that positive and realistic agri news should be communicated. That includes the fact that SA exports more than what is used domestically, that agri has a positive impact on the economy and that agri creates jobs. Most importantly that agri supplies safe and affordable food for the country and its people."

Agri NW appointed its new management with Willem De Chavonnes Vrugt (Setlagole) as president, Cobus van Zyl (Hartbeesfontein) and Gideon Zyl (Reivilo) as his deputies.

Representatives of farmers unions from all over the province also reiterated their support to



Jaco Minnaar, president: Agri SA.



X MERCEDEZ RENZ 2629 POWERLINE 1X MASSAKAR - STATIES OP 4 POTE MET WIELE - "KIEWIET" 1X TOYOTA 2.5 DOUBLE CAB SRX 2008 IX COLT V6 DOUBLE CAB PETROL 1X VOERKAR GROOT STROPE JOHN DEERE MIELIE TAFEL PARTE 1X 3 AS TOHF TRAILER. HOË MASSA KANTE EN BEES TRALLIES 1X JOHN DEERE 965 STROPER VIR PARTE EN BAIE SPARES 3X LM TUSSEN BY SKOTTELS **1X SLATTERY STROPER PARTE** 

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**1X 6M 9 TAND RIPPER** 1X 6 RY JOHN DEERE DUISENDPOOT **1X 6 RY JOHN DEERE TUSSENRY SKOFFEL** 

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1X 10 TON SLEEPWA MET MASSA KANTE 2X ROUGHNECK WELDERS BAIE ELEKTRIESE MOTORS MET **3FASE STARTERS.11 TOT 75KW** 

1X 5 TORING VALLEY SPILPUNT

BAIE LORRIE RIMS EN TYRES EN BAKKIE TYRES

1X KOMPLEET 8 TORING AGRICO SPILPUNT (SELF AFBREEK)

1X JOHN DEERE 1240 PLANTER BALK MET PARTE

**BAIE ROLO KUNSMIS BAKKE** 

2X LIFT SPUITE

**1X 6 KALFHOK** 

1X DROPPER MAKER

**1X OLIEBOOM SIF** 

**1X PIKKEWYN** 

24 EG LITTE AGRITECK TILLER BALKE

**1X VOER HYSER** 

BAIE PLANTER PARTE

5X 7000 JOHN DEERE KUNSMIS BAKKE

1X JOHN DEERE BWA 40 SKOTTEL DISK

1X 5 RY SLATTERY FYNSAAD PLANTER

1X JOHN DEERE 7000 PLANTER BALK MET WIELE EN 3 TANKS OP

MEER..

EN NOG

VELE

Vanaf Delareyville, neem Vryburg pad en draai na 2km regs. Op Stellapad vir ongeveer 16km, Volg wegwyse Vanaf Stella neem Delarcyville pad vir ongeveer 40km. Volg wegwysers, E25°17'30.93" Virmeerinfigting besoek André Rock & Son Livestock Auction

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ale bedrag in ons rekening reflekteer kan diere gelaai word. Kontanthanteringsfooie sal gehef word op alle ko FICA dokumentasie(ID / paspoort en bewys van verblyf) moet teenwoordig wees om transaksie af te handel.

# AgriPulse heartheat of the farmer OCTOBER 2022 Suiwelbedryf — Impak van

Die impak van klimaatsverandering op Suid-Afrikaanse melkkuddes: Die rol van aardverwarming in hittestres by melkkoeie Deur dr JH du Preez, spesialis-veeartsenykundige

Figuur 1: Opsomming van belangrikke uitwerking en gevolge van hittestres se impak op die prestasie van melkbeeste Hittestres het 'n beduidende negatiewe effek op die immuunfunksie en gesondheid van melkbeeste in alle stadiums van hulle lewensiklusse en het die grootste negatiewe impak as stresfaktor by melkbeeste omdat alle funksies van die melkbeeste daaronder ly. Dit is duidelik dat hittestres by melkbeeste hulle immuunstelsel onderdruk en deel is van die diere se voortdurende poging om 'n toestand van homeostase te handhaaf.

#### **Endokrienstelsel** Prolaktien ↓ Gonadotropiese hormoon ↓ Follikelstimulerende hormoon ↑ Kortikotropien ↑ Adrenokortikotropiese hormoon ↑ Glukokortikoïed ↑ Katekolamien ↑ Luteïniserende hormoon 1 Groeihormoon J Estradiol ↓ en Hipertermie (liggaamstemperatuur verho weens termoregulering versaking in die hipotalamus van die brein) Negatiewe energiebalans Asemhaling ↑ Kwyl ↑ Waterinname ↑

Corpus luteum wanfunksie



Reproduksie en uterus

- Bloedvoorsiening na uterus J
- Metritis (baarmoederontsteking) ↑
- Estrusperiode verkort ↓
- Estrussiklus verleng ↑
- Resorpsies verhoog 1
- Plasentawanfunksie
- Embriomortaliteit styg ↑ Fetalegroei vertraag ↓
- Kalfgeboortemassa laer ↓

Rektaletemperatuur verhoog ↑ (>39.3°C)

- Ensoötiese beesleukose
- Immuniteit ↓
- Somatiese seltelling ↑

#### Melkproduksie en die uier

- Mastitisgevalle ↑
- Nuwe uierinfeksies ↑
- Uierweefsel nekrobiose (selle sterf) ↑
- Uier verdedigingsmeganisme ↓
- Melkproduksie ↓ (5 tot 40%)
- Melksamestelling verander
- Bottervet ↓ (10 tot 40%)
- Vetvrye vastestowwe ↓ (10 tot 20%) Totale proteïne
- Somatiese seltelling 1

AGRI-PULSE - Hittestres het 'n beduidende negatiewe effek op die immuunfunksie en gesondheid van melkbeeste in alle stadiums van hul lewensiklusse. Dit affekteer alle funksies van die melkbees, onderdruk die immuunstelsel en ondermyn die dier se voortdurende poging om 'n toestand van homeostase te handhaaf.

In hierdie reeks van drie artikels kyk ons na hoe klimaatsverandering - hoofsaaklik die geleidelike toename in die gemiddelde omgewingstemperatuur – die voorkoms van hittestres by melkkoeie verhoog, met 'n gevolglike negatiewe impak op melkproduksie en konsepsiepersentasies. In die eerste aflewering word daar op die bydraende effek van aardverwarming tot die voorkoms van hittestres

#### Klimaatsverandering en hittestres

Aardverwarming word hoofsaaklik veroorsaak deur die opbou van kweekhuisgasse, met koolstofdioksied (CO2) as hoof bydraende faktor. Sedert die begin van die 20ste eeu het die gemiddelde atmosferiese temperatuur met sowat 0,74°C gestyg. In Suid-Afrika is die gemiddelde tempo van verwarming ongeveer 0,16°C per dekade. Suider-Afrika se temperature sal na verwagting binne die volgende eeu met tot 8°C styg. Klimaatsverandering is 'n verandering in die verspreiding van weerpatrone oor 'n lang tydperk. Dit kan verwys na 'n verandering in gemiddelde weerstoestande of na die tydwisseling van weerpatrone binne die konteks van langtermyn gemiddeldes. Sekere menslike aktiwiteite is as primêre oorsake van voortdurende klimaatsverandering geïdentifiseer, wat algemeen na verwys word as aardverwarming.

#### Klimaat en melkboerdery in Suid-Afrika

Die tendens van Suid-Afrika se oppervlaktemperature in die binneland vanaf 1931 tot 2015, het verhoogde en verminderde tendense

vir sekere kusgebiede getoon. Vervolg op bladsy 9.





Vir meer inligting besoek André Kock & Son Livestock Auctioneer/Estate Agent Facebook Blad.

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VERKOOP VOORWAARDES: Rekeninge moet vereffen word direk na afloop van veiling dmv kontant of elektroniese fondsoordrag. Sodra totale bedrag in ons rekening reflekteer kan diere gelaai word. Kontanthanteringsfooie sal gehef word op alle kontanttransaksies. FICA dokumentasie (ID / paspoort en bewys van verblyf) moet teenwoordig wees om transaksie af te handel.



## Wen met Toulouse ganse

AGRI-PULSE - RUSTENBURG - Toulouse ganse is 'n swaargewig gans (wyfie 9kg en mannetjie 13kg), oorspronklik van Frankryk en geteel vir die gebruik van sy vleis.

Die voorkoms van die Toulouse is plat/horisontaal en vertoon nie regop soos die Embdenras nie. Die Toulouse is ook lank en vol, die rug is breed, loop effens krom, groot en sterk vlerke, stert kort en breed. Die kop is besonders groot, korterige bek, nek is lank en dik met 'n hangende keelvel onder die bek. Bek, bene en pote is oranje van kleur.

Die Toulouse kom slegs voor in twee kleure - grys en 'buff'.

Rustenburg Pluimveeklub: Die klub bied jaarliks skoue aan in Rustenburg, sowel as Thabazimbi, Lichtenburg en Parys. Hier vertoon telers hul rasegte pluimvee soos hoenders, watervoëls en kalkoene. Vir meer inligting, kontak Hanri: 083 465 1486, Dawie: 071 196 7696 of Marlize: 072 668 1495; Epos: rustenburgpoultryclub@gmail.com.



# klimaatsverandering op melkbeeste

#### Vervolg van bladsy 8.

Klimaatsverandering beïnvloed beslis die lewens van mense en ook boerderymetodes in Suider-Afrika.

Die sensitiwiteit van vee vir weerstoestande is al goed bewys en hul prestasie word in 'n groot mate deur die direkte uitwerking van die weer beïnvloed. Gevolglik beperk die weer dikwels die doeltreffendheid van veeproduksiestelsels, veral vir melkbeeste met 'n hoë melkopbrengs waarvoor voldoende voeding voorsien moet word.

Die uitwerking van ongunstige weerstoestande het 'n nadelige effek op die hoeveelheid en gehalte van melk, ongeag hoe intensief die produksie is. 'n Oormatige warm klimaat belemmer voerinname, melkproduksie en die reproduksievermoë van melkbeeste, terwyl metaboliese hitteproduksie ook toeneem. Dit het ernstige ekonomiese gevolge vir melkboerderye.

#### Invloed van hitte op melkbeeste

Veral onder warm toestande, het fisiese omgewingsfaktore 'n bepalende invloed op die produktiwiteit van melkbeeste. Melkbeeste is homotermiese diere en hul homeostase word gehandhaaf deur 'n sensitiewe balans tussen hitteproduksie en hitteverlies. Skommelinge in omgewingstemperatuur lei tot veranderinge in die temperatuur van die perifere liggaamsdele, en daarom word die diep liggaamstemperatuur of kerntemperatuur as 'n beheerparameter vir veranderinge in liggaamstemperatuur gebruik.

Omgewingsfaktore soos sonlig, termiese bestraling en lugtemperatuur, diere-eienskappe (tempo van metabolisme, vogverlies en geometriese struktuur), en termoregulerende meganismes soos geleiding, bestraling, konveksie en verdamping beïnvloed die energie-uitruiling tussen die melkkoei en haar omgewing. Dit beïnvloed weer die liggaamstemperatuur van die dier, wat weer tot veranderinge in haar metabolisme en gedrag lei.

Figuur 1 bied 'n holistiese samestelling van die negatiewe uitwerking van hittestres, wat deur klimaatsverandering gedryf word, op melkbeeste.

#### Figuur 1: Belangrike gevolge van hittestres op die prestasie van melkbeeste.

#### Die temperatuurhumiditeitsindeks

Dit is dus noodsaaklik om te bepaal hoe klimaatsverandering die voorkoms van ongunstige toestande van hittestres nadelig beïnvloed, en 'n gevolglike negatiewe impak op melkproduksie en konsepsiepersentasies by melkbeeste het.

Dit word gedoen deur die historiese ontleding van langtermyn data oor klimaat, gemeet by weerstasies binne die vernaamste melkproduksiestreke in Suid-Afrika.

Berekening van die temperatuurhumiditeitsindeks (THI-waardes) dien as 'n nuttige indeks van hittestres.

Dit is steeds een van die beste en mees praktiese parameters vir die bepaling van omgewingstemperatuur en die uitwerking daarvan op melkbeeste, asook die mees doeltreffende aanwyser vir hittestrespotensiaal.

Die wiskundige berekening van werklike

THI-waardes as 'n indeks van hittestres by melkbeeste is soos volg: THI = Tdb + 0.36tdp + 41.2, waar Tdb = droëboltemperatuur in 'C' (maksimum temperatuur om 14:00), en tdp = doupunttemperatuur in 'C', ook om 14:00.

#### Seisoenale THI-waardes in Suid-Afrika

Die warmste maande van die jaar ooreenkomstig die hoogste gemiddelde THI-waardes, is die vyf maande vanaf Oktober tot Februarie. Die warmste maand is Januarie (Figuur 2). Gedurende hierdie maande moet 'n koei-vriendelike omgewing geskep word, doeltreffende bestuurspraktyke verseker word, die kragvoertot-ruvoer verhouding moet ongeveer 80:20 wees om energie-inname te verhoog, en koeie moet toegang hê tot water met 'n temperatuur van ongeveer 21°C.

#### Figuur 2: Gemiddelde THI-waardes in Januarie, vanaf 1984 tot 2014, vir lakterende melkbeeste in Suid-Afrika.

Dit sal verseker dat die afname van die koeie se melkproduksie in hittestres-tye so gering as moontlik is. Gedurende hierdie vyf maande moet gestreef word na 'n drempel-THI-waarde van 69 vir melkproduksie.

Teen 'n THI-waarde van ≥70, sal melkproduksie redelik afneem. Die hoogste gemiddelde maandelikse THI-waarde tot nog toe (Oktober 2019) in Suid-Afrika aangeteken, was 83,43 by Lichtenburg se weerstasie.

Julie is gewoonlik die koudste maand in Suid-Afrika. Die THI-waarde vir Julie is <70 (Figuur 3). Gedurende hierdie maand sal melkbeeste optimale melkproduksie lewer.

Figuur 3: Gemiddelde THI-waardes in Julie, vanaf 1984 tot 2014, vir lakterende melkbeeste in Suid-Afrika.

Die meeste Suid-Afrikaanse melkbeeste, wat van Noord-Europese oorsprong is, is diere wat tipies in koel weerstoestande gedy. Suid-Afrika se warm en soms vogtige toestande kan dus 'n aansienlike gevaar vir die suiwelbedryf inhou tussen Oktober en Maart.

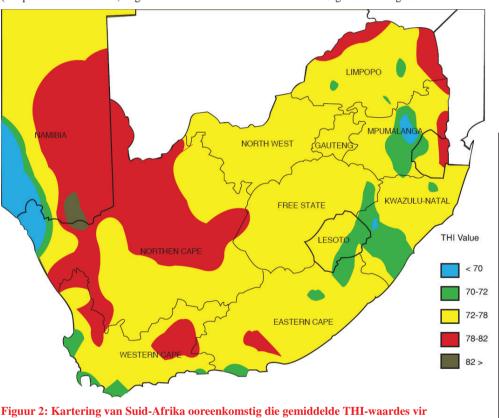
#### Bestuur van omgewingshitte

Hittestres het die grootste negatiewe impak as stresfaktor by melkbeeste, omdat alle funksies van die bees daaronder ly. Nie alle parameters is betroubaar en prakties om hittestres by melkbeeste te bepaal nie. Die THI-waarde is steeds die beste indeks vir die bepaling van omgewingstemperatuur wat hittestres by melkbeeste veroorsaak. Melkbeeste vereis goeie bestuur en behuising in warm en vogtige omgewings om teen optimale vlakke te kan presteer. Goed-beplande behuising en bestuurstrategieë, sowel as taktiese praktyke soos die vermindering van omgewingshitte, is noodsaaklik vir korttermyn beskerming wat op verhoogde langtermyn prestasie en welstand gemik is.

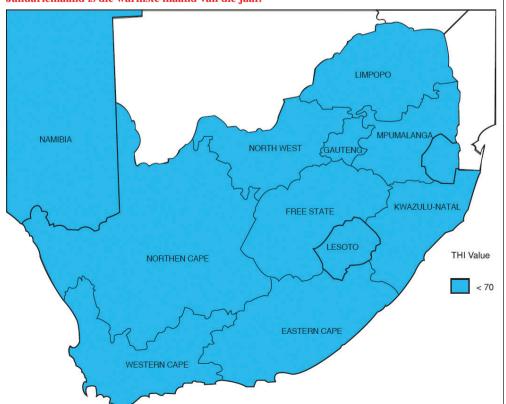
In die volgende aflewering van hierdie reeks kyk ons spesifiek na die effek wat hittestres, wat deur klimaatsverandering gedryf word, op melkproduksie het.

Vir meer inligting en bronverwysings, stuur 'n epos aan die outeur by <u>drjanh.dupreez@gmail.com</u> of skakel 083 656 3638.

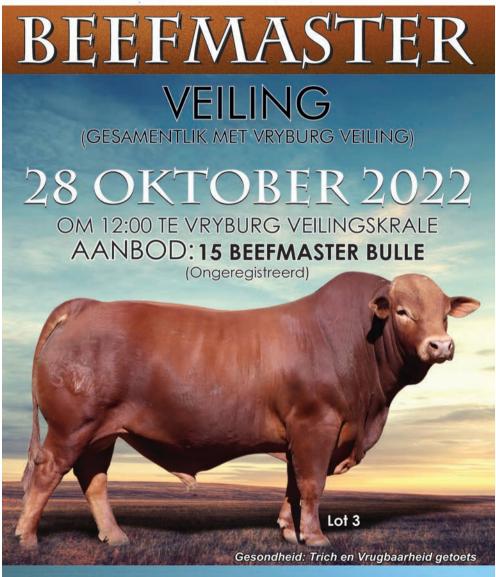
S. VAN NIEKERK



Figuur 2: Kartering van Suid-Afrika ooreenkomstig die gemiddelde THI-waardes vir Januariemaand (>35 jaar tydperk, 1984 tot 2014) vir lakterende melkbeeste in Suid-Afrika. Januariemaand is die warmste maand van die jaar.



Figuur 3: Kartering van Suid-Afrika ooreenkomstig die gemiddelde THI-waardes vir Juliemaand (>35 jaar tydperk, 1984 tot 2014) vir lakterende melkbeeste in Suid-Afrika. Juliemaand is die koudste maand van die jaar.



TERME: Slegs kontant of elektroniese betalings. Kaart fasiliteite sal beskikbaar wees. Bankkostes word op kontant en kaartbetaling gehef. Aankope mag eers gelaai en verwyder word sodra Karoo-Ochse bewys van betaling ontvang het.

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or try one of their eating challenges.

Ons boeregemeenskap kook saam met Janette Kuhn, chef and owner of the popular Vigilante Restaurant in Upington, invited AgriPulse to try her quick and easy quesidillas. Feel free to try their

North West & Northern Cape

## Quick and easy Quesadilla with an South African twist

Janette Kuhn, chef and owner of the popular Vigilante Restaurant in Upington, invited AgriPulse to try her quick and easy quesidillas.

What is a Quesadilla?

'Queso" is cheese in Spanish. A quesadilla is a heated tortilla with melted cheese inside. But in addition to cheese, you can put practically anything in a

A quesadilla is a Mexican dish that dates back to the 16th century. Traditional quesadillas were made with a corn tortilla that was warmed on a griddle, filled with cheese and various other fillings (meat, vegetables), and then folded over to be eaten by hand.

The addition of toppings like guacamole, salsa, and sour cream seems to have come along later. And, as Americans have adopted quesadillas, they've put their own spin on them, adding untraditional fillings such as scrambled eggs to make breakfast quesadillas and often swapping out flour tortillas for the corn tortillas.

Pre-grated cheese is handy and melts okay enough, though we recommend grating your own cheese for the best meltability.

You can use any meltable cheese in a quesadilla. Corn or Flour Tortillas for Quesadillas?

Traditionally in Mexico quesadillas are made with corn tortillas, not wheat flour tortillas, and a melty, white cheese.

Ingredients

Biltong powder or shredded biltong 1 Avocado for garnish Guacamole Salsa Grated cheese

Feta Cheese Chopped tomatoes Biltong for garnish Sour cream or creamed

Finely chopped cilantro (coriander)

#### Method:

Preheat your toaster or oven to 1800. Generously spread your biltong powder or shredded biltong on your tortilla. Ad some feta to the spread. Liberally add grated cheese and place another tortilla on top.

Spray some Sray and Cook on your toaster or oven

Wait for your quesadillas to turn lightly brown. Cut in to quaters and garnish with salsa, Guacamole, sourcream,

Serves well with some sangria, beer or even sparkling wine.

How to make your own guacamole

Ingredients

3 avocados - peeled, pitted, and mashed 1 lime, juiced

1 teaspoon salt 2 roma (plum) tomatoes, diced

½ cup diced onion 3 tablespoons chopped fresh cilantro

1 teaspoon minced garlic 1 pinch ground cayenne pepper (Optional)

#### Method:

Mash avocados, lime juice, and salt together in a medium bowl; mix in

tomatoes, onion, cilantro, and garlic. Stir in cayenne pepper.

Serve immediately, or cover and refrigerate for 1 hour for improved flavor.

How to make your own tortilla

#### Ingredients

2 cups all-purpose flour 1/2 teaspoon salt 3/4 cup water

3 tablespoons olive oil

#### Method:

In a large bowl, combine flour and salt. Stir in water and oil. Turn onto a floured surface; knead 10-12 times, adding a little flour or water if needed to achieve a smooth dough. Let rest for 10 minutes. Divide dough into 8

portions. On a lightly floured surface, roll each portion into a 7-in. circle. In a greased cast-iron or other heavy skillet, cook

tortillas over medium heat until lightly browned, about 1 minute on each side. Serve

#### How to make your own

#### Ingredients

3 cups chopped tomatoes 1 cup onion, diced

½ cup chopped green bell pepper

¼ cup minced fresh cilantro 2 tablespoons fresh lime

½ teaspoon ground cumin ½ teaspoon kosher salt ½ teaspoon ground black pepper

Method: Stir together tomatoes, onion, green bell pepper, cilantro, lime juice, cumin, salt, and pepper in a bowl.





Tap here - on your electronic device or go to https://bit.ly/maklikequesadilla for a video of our cooking session...



# Focus on broiler environmental cages



The open chicken coops with sails on either side that are controlled by a person to regulate the temperature and air flow in the coop.

#### (by Anita Kotzé)

AGRI - PULSE - Environmentally controlled cages for broiler farming are being erected more and more and we decided to compare these modern cages whose environment inside the cage is controlled by a computer system, with the standard open broiler cages that are commonly used by chicken farmers.

Environmentally controlled cages are built and the temperature is controlled by a computer, which eliminates temperature fluctuations and therefore leads to healthier chickens, which results in lower mortalities. The environment of the chickens in these cages is controlled as chickens grow from day old to slaughter at 32-35 days. The common open chicken coops use sails on both sides of the coop which must be controlled by a person to regulate the

temperature and air flow in the coop. Coal furnaces are used to ensure warmer temperatures in open and ambient cages.

Environmentally controlled cages are less labor intensive – cages are raked up to and including 24 days and wetness is removed until the end of the cycle. Open cages are much more labor intensive. More chicks are placed per square meter (23.3) in environmental cages, while fewer chicks (18.75) are placed in open cages. The humidity and CO2 levels in environmental cages are controlled with better air quality and good ventilation, while open cages are more influenced by weather conditions, which leads to higher deaths.

The management of feed turnover is better in new cages which therefore contributes to

the production efficiency factor. Environmental cages produce 45kg of chicken meat per square meter compared to the 34kg of meat per square meter in open cages. The profit from open cages is therefore much lower per square meter than in environmental cages. Profit in environmental cages varies between R4 - R5 per chicken while profit in open cages varies between R3 - R4 per chicken. Profit in environmental cages amounts to 104.85% per square meter compared to about 65.625% per square meter in open cages. The capital cost for chickens per square meter amounts to R1667 in open cages and R2694 per square meter in environmentally controlled cages. Farmers place different numbers of chicks in environmental cages, but up to 52,000 chicks on 2,227 square meters compared to the 22,500 chicks on 1,200 square meters in open cages.

The disadvantages of ambient cages versus open cages are that they are very expensive to set up. One environmental cage costs approximately R6 million compared to the approximately R3 million for erecting an open cage. The payback period of an environmental cage is approximately six years. The entire environmentally controlled chicken house is dependent on the control system which therefore requires extra safety measures in place such as a generator that switches on during power outages. If this measure is not in place it will result in huge losses. A generator of 250 kva is required to allow a site consisting of ten cages (environmental and open cages) to function normally during power outages. The cost of such a generator is R300 000 and about R1 500 worth of diesel is consumed per day.

Interesting facts about broiler farming is that the availability of light is adjusted every two weeks. In the first two weeks chicks sleep two hours a night, at four weeks they sleep four hours a night and the last two weeks six hours a night. Except for the more serious diseases such as for chickens per square meter amounts to R1667 in open cages and R2694 per square meter in Newcastle, Gumborro and Avian Influenza are the most common diseases that occur in broilers Ecoli, respiratory infections, heart attacks and dropsy (Ascites). Burnt feet (black feet) in broilers form in the last week if there is dampness in the cage. Broilers' bedding consists of sunflower husks or wood shavings.

For further inquiries or information in connection with the construction of environmental cages for broilers, 0825767288 can be contacted.



Day old chicks inside a modern environmentally controlled cage.



The impressive environmentally controlled chicken house as seen from the outside on the farm Rietvlei in the Coligny district.





Chickens of about 21 days in the new environmental cages are healthy and thrive in the right temperature under favorable conditions to achieve a good weight at 32 -34 days.



### No close relationship between stinkwood and white-stinkwood



The author of this article tree guru Naas Grové.

AGRI-PULSE – NORTH WEST - Stinkwood (*Ocotea bullata*) has for many years been the hallmark of Cape furniture. The earliest inventories referring to stinkwood is that of Engela van Breda and Michiel Leij between 1714 – 1719 referring to '1 stinkhout tafel met chitze sprei \(^1\) (one stinkwood table with tablecloth) and '1 stinkhout ledekant met blou behangsels en beddegoed \(^1\) (one stinkwood four-poster bed with blue curtains and bedding).

The early Settlers in the Cape Colony was experiencing a shortage of good timber, as most of the indigenous trees have been harvested for ship and house building by the Dutch colonists. George Rex, an entrepreneur, and timber merchant founded the town of Knysna and later played a significant role in developing the area. He immediately recognised the opportunity to supply and transport timber by sea instead of using the existing ox wagon trails to the Cape Colony.

Soon he started to cut, transport and

export indigenous wood from a port near Knysna to the Cape Colony on his own vessel made of stinkwood from 1830-1842. Indigenous wood was in such great demand that the Knysna forests became seriously depleted of accessible indigenous wood species by 1912. This was one of the reasons why all indigenous wood cutting in state forests between 1939-1967 was stopped. Today, controlled harvesting is practised, with replanting from self-sown seeds and cultivated seedlings in the forest.

Nowadays, these types of indigenous wood are generally unaffordable and in the case of stinkwood mostly commercially unobtainable. Stinkwood is one of the most expensive and highly prized timbers in the world. The common name stinkwood refers to the peculiar, unpleasant, but not lasting, smell of freshly cut wood. Young trees have a smooth grey bark and fresh cut bark has a pleasant smell (not the wood). It should not be confused with the white stinkwood (Celtis africana), so-called because of the pale-white colour of the wood and the slightly unpleasant smell of freshly cut wood. However, the white stinkwood has no commercial value and cannot be compared with the valuable stinkwood timber suitable for all sorts of heavy and extensive woodwork.

This stinkwood is a medium sized fast-growing evergreen tree and can be found in the mist belt Afromontane forests of the eastern Drakensberg escarpment, the mountain forests of the Soutpansberg and in evergreen moist forests along the south coast of KwaZulu-Natal and the Knysna forests in the southern Cape. The tree belongs

to the LAURACEAE-family. Plants commercially grown such as cinnamon, bay leaves, camphor tree used for insect repellent and medicinal purposes as well as avocado are all members of this family. The genus *Ocotea* refers to the native name for the genus in Guiana and the Latin bullata refers to the two or more raised hollow pockets (domatia) or blisters in the axil of the veins under the leaf. The young green fruits look like miniature acorns and turn purple when ripe. The seeds are eaten by insects, birds, and primates so it can be hard to find. The seeds are recalcitrant (unorthodox seeds that do not survive drying and freezing because they can lose their viability) and cannot be stored before planting. Freshly planted seeds will germinate within six weeks. The plant can also be grown from stem cuttings to be prepared in August and dipped into rooting hormone powder which will take after approximately ten weeks.

Stinkwood is under the top ten traditional medicinal plants used in KwaZulu-Natal and the destructive harvesting methods, like bark stripping / ring-barking, and high demand has caused the species to be close to extinction in this area. The bark is harvested and used to cure headaches, urinary disorders, to treat stomach problems and as an emetic for emotional and nervous disorders. Because of the anti-inflammatory properties in this plant, grounded bark is snuffed, or smoke is inhaled to relieve headaches, emotional and nervous disorders.

The larvae of *Trioza bullatae* sp. *nov*. induce conspicuous globular galls on the leaves of stinkwood and causes the leaves to curl.



The leaves of the extremely valuable and almost extinct stinkhout tree.



The leaves of the common witstinkhout tree



The harvesting indigenous timber in the Knysna forest is strictly controlled.





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