

R60



Poultry Bulletin

ISSUE 17 DECEMBER 2023 / JANUARY 2024



THE SOLUTIONS ISSUE

OFFICIAL MAGAZINE OF THE SOUTH AFRICAN POULTRY ASSOCIATION

FESTIVE WISHES FROM OUR HOUSE TO YOURS! HAPPY HOLIDAYS!

HPAI: WE SHALL OVERCOME!

*Winning the battle with science,
strategy and fighting spirit*

THE ABATTOIR SOLUTION

HOW A FAMILY BUSINESS
SCALED UP

SCROLLING FOR BUSINESS

The farmer who
teaches on
social media

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*Innovation from
an American
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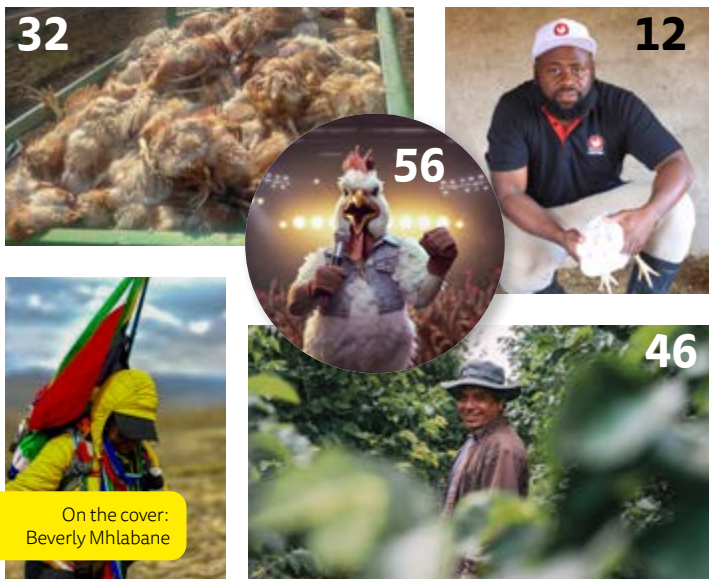
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Contents



On the cover:
Beverly Mhlabane



We are relieved that we can almost wave goodbye to one of the most challenging years in recent history. Farmers in particular are battered and bruised, as the job of producing food for the nation has never been harder or more thankless.

The story of this issue's cover star personifies the spirit of our poultry producers, which is the reason why we can wrap up 2023 on a note of hope. Despite loadshedding, feed prices, avian flu – you name it – SA's poultry industry does not lie down, it does not give up, and when faced with difficulty, it thinks out the box to find solutions. Beverly Mhlabane lost all her laying hens in the most recent Gauteng bird-flu outbreak (read the latest on page 32), and it would be very easy to lose heart and sink into despondency.

Instead the intrepid SAPA Egg Board member is using the enforced downtime to train to tackle one of Africa's biggest challenges – Mount Kilimanjaro – and will be climbing the 5.9km-high peak to draw attention to the important role of poultry farmers in 2024. And she'll be wearing egg-yolk yellow, in support of the egg industry!

Poultry Bulletin is proud to back Mhlabane's initiative and applauds the resilience of this industry, which is clawing its way back from the brink. As we go to print, new reported cases of bird flu are dwindling, vaccination approval is pending, and thousands of fertile eggs are on their way to help restock our national flock. We feel positive that 2024 will be better.

Enjoy our festive-season issue, and happy holidays!

We are thrilled to announce that *Poultry Bulletin* has won silver in the prestigious International Content Marketing Awards 2023, placing us in the esteemed company of Qantas (gold winner) and Porsche (bronze). A win for one is a win for us all!

Melinda
 @melshaw001
 @poultrybulletin

4 From the Boardroom

6 Letters

8 News in Brief

Plans for the egg shortage, SA ingenuity tackles solar solutions, and more

10 Economist's view

Tracy Davids about rebuilding after HPAI's blows

12 Scrolling for business

The poultry farmer who built an audience with instructional videos

16 Members' Noticeboard

Analysis of all the latest industry reports

32 HPAI – strategies for industry survival

Looking at the way ahead after the bird-flu crisis

40 The poultry value chain – abattoirs

Slaughter facilities for small operators

46 How a network of farmers is rethinking chicken

An American story of regenerative farming

56 Humour

The chicken rap

60 On the Wires

HPAI threatens exotic island birdlife, an app for mixing feed, and other global news

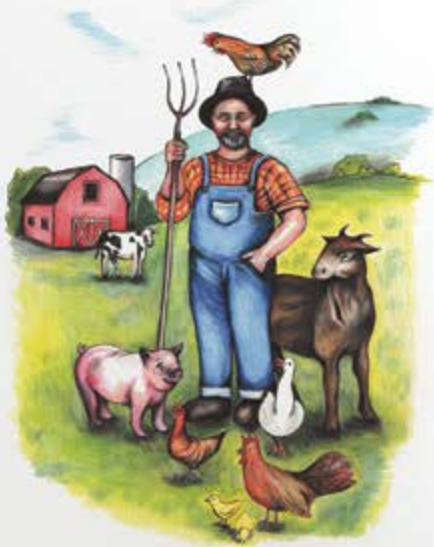
62 How to work out your selling price

Expert guidelines to help inform your calculations

64 Recipe

A festive feast of crispy glazed duck breast





Old McDonald had a farm,
and a feed mill,
and a hatchery,
and chicken houses,
and an abattoir,
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ee-i-ee-i-oh!



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Poultry Bulletin

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Board members reflect on 2023

A handful of SAPA's decision makers take stock at the end of a tough year

Colin Steenhuisen

As we wrap up this calamitous year, here are some urgent questions I wish I could whisper into the ears of the ministers who preside over the poultry industry's fate:

How about revising the government's stance on zero compensation for culled poultry? How else must farmers restock?

How about letting supply and demand of eggs find its own price balance in the market?

How about preventing importation of poor-quality table eggs from countries that require refrigeration en route to South Africa, where they are then placed on shelves at ambient temperatures only to rapidly deteriorate? Inspections of imported eggs at the point of entry and on shelf should be bolstered.

How about employing more state veterinarians to enforce biosecurity in all flocks, especially in the informal sector?



How about fast-tracking a vaccine programme suitable for all SA poultry farmers big and small?

How about highlighting the fact that free-range hens are the most susceptible to HPAI infection of all classes of chicken?

How about allowing the live sales of end-of-lay hens to continue if vaccinated, if they survived, or if they are otherwise proved to be scientifically safe and not shedding any more HPAI virus?

How about granting a diesel rebate for standing generators on farms?



Marthinus Stander

Annus horribilis! Can we shout it out – louder and even louder? This time of year, chicken farmers worry about rain. From 10 October onwards, that is what we do. Worry about rain. Projecting maize crop, maize price and we look at world stocks. This time round, we stare big-eyed at charts showing the spread of the wildfire that is H7. We do this while we at least still celebrate the World Cup (although these days in the dark once more because Eskom dropped the ball, again). And for Pete's sake what is Minister Patel thinking by contemplating a rebate on import tariffs, when all we do is make plans every day to keep supply going to our beloved customers and consumers?!

Merry Christmas! Braai often and celebrate chicken. Next year will be better.



Dr Abongile Balarane

If one had to summarise 2023, I'd say can we please start 2024 already? It was a year of doom for the egg industry, and Mother Nature showed no mercy when she unleashed that tsunami of highly pathogenic avian influenza on us this past winter. However, we are a resilient industry, and we'll remain strong, so I wish every farmer a well-deserved break to regroup, and all the best for a steady recovery in 2024.



Gary Arnold

I cannot recall in all my time in the industry any year that has been so hard hit by factors outside of our control. Loadshedding, water-supply disruptions, continued deterioration of road and rail infrastructure, escalating input costs in energy, diesel and feed – all coupled with a weak consumer environment – lead to financial distress and negative returns. The industry's support of the masterplan was exemplary, and many investments in production capacity that were pledged have been completed. Unfortunately with all the macro challenges facing our industry and country alike, none of these investments have yet borne fruit. We have also had to deal with the worst

bird-flu outbreak ever, decimating poultry in many areas, with costs running into billions of rands. With no compensation from Government for culling birds, the industry is working hard towards a vaccination strategy, without which the recurring threat of infection will place at risk food security and jobs, both critically important to South Africa's future.

I thank all my colleagues in SAPA for their continued efforts towards a sustainable and beneficial local poultry industry for all stakeholders. My sincere appreciation to Izaak Breitenbach for his support and the critically important work that he carries out on behalf of the broiler organisation.

Chris Mason

After an incredibly difficult year, I believe that 2024 will be better. SAPA's current efforts with respect to the HPAI vaccination campaign and assisting suppliers and producers with the importation of fertile eggs will help to restore normality again. During the year we distributed information on planning, viability and sustainability,

forming relationships with suppliers and understanding your production costs, and it might be a good opportunity for producers to relook their business going into the new year.

I'd like to wish you all well over the festive season and let's hope that 2024 is a better year for all of you, your families and the industry as a whole.



Jake Mokwena

As we come to the end of a tough year, I would like to extend my sympathies to those farmers who experienced losses as a result of the HPAI outbreak; and also to those whose businesses hang in the balance as a result of Eskom loadshedding. My message to you is, don't give up.

It is my wish that we will see real transformation and real assistance

for small farmers so that they can become commercial operators. May all stakeholders put their money where their mouth is regarding this and not just pay lip service.

And finally, I want to wish the SAPA board, all members and all farmers a merry Christmas and a prosperous 2024. Take it easy over the festive season and enjoy the time spent with your loved ones.



LETTERS

We want to hear from you. Send your letter to editor@poultrybulletin.co.za



Crates of eggs destined for Mpumalanga boarding schools



Eggsellent by Lebo selling at Phola Mall



More eggs being collected by a representative from Spar

'We're under construction!'

The shops have no eggs, and so many of our colleagues have lost their flocks in the year's big avian flu outbreak. Since we were featured in the August/September issue I am extremely grateful that Eggsellent by Lebo has been approved for government funding for a commercial layer farm, and so proud to share the plans. By 2024 we will launch this new facility in the rural area of Thembilise Hani, where we will produce 30 000 eggs daily!

Lebogang Mashigo



The plans for the farm under construction

More AVI Africa please!

I was glad to see advance notice about next year's AVI Africa in the magazine, but I believe that the decision was made afterwards that it will in fact only take place in 2025. This year's congress was excellent; it was so great to meet so many of our colleagues. Our industry is changing so rapidly and there is no better way to stay on top of the latest news and developments and technologies than by attending this event and getting the opportunity to share experiences with others in the same boat. Bird flu has been such a nightmare and with something so serious threatening our livelihood, it is very important to have the chance to come together and ask questions and get answers from the experts regularly. I look forward to the insights we will gain at AVI Africa 2025.

Tawfeeq Brinkhuis

Ed: Indeed, it was decided due to demands on time and budget to revert to a two-yearly congress rather than an annual one, so we will see you in 2025! Watch this space!

WINNER!

Congratulations to Samuel Nkosana Magalula of Diepkloof Extension, who wins a copy of *A Country of Two Agricultures* by Wandile Sihlobo, signed by the author. The correct answer was, of course, Wandile Sihlobo.



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NEWS IN BRIEF

Powdered eggs to relieve the shortage, solar that defies thieves, and more news

Compiled by **Charmain Lines**

No to old eggs for import

Not quite bacon and eggs, but powdered egg can be used in many ways to alleviate the shortage of table eggs caused by avian flu.



The announcement by Minister Thoko Didiza that South Africa will be importing powdered and liquid eggs in bulk to help ease the current shortage of fresh table eggs has been welcomed all round. With six million of the usual 27 million national layer flock already lost to AI and another three million possibly affected, the industry cannot currently meet consumer demand.

“As an industry, we fully support the decision to import powdered and liquid eggs mainly for industrial purposes,” said Dr Abongile Balarane, GM of SAPA’s Egg Organisation. “This will allow us to channel all the available fresh table eggs to consumers while we rebuild the national flock.”

Balarane added that the hard lessons learnt when poor-quality and even rotten eggs were dumped

in South Africa during the 2017 AI outbreak will be applied to this round of imports. At play is the so-called 40-day rule set out in Regulation 345 of DALRRD’s regulations regarding the grading, packing and marking of eggs intended for sale in South Africa. The regulation states unpasteurised eggs may not be sold in this country after 40 days from the date of lay.

“The rule will be applied to all imported eggs, despite a call from Hume International to lift it,” said Balarane. “It is not in the best interest of consumers or the industry to expose our market to substandard eggs that pose a food-safety risk.”

SADC countries like Zimbabwe, Namibia, Angola and Malawi, which remain AI free, will be the main source of egg imports. 📌

Chickens in art



Looking for a way to “cement” your love for your chickens in a creative way? On a recent visit to the studio of ceramic artist John Bauer, *Poultry Bulletin* spotted these charming little porcelain tiles featuring impressions of chicken feet.

Bauer’s studio at Montebello Design Centre in Newlands, Cape Town, brims with displays of thousands of one-of-a-kind matchbox-size porcelain tiles featuring various textures, patterns and iconography, from snakeskin and fern leaf impressions to fragments of human faces and, well, imprints of chicken feet. The tiles are sold individually or in panels. Collectors can buy a complete panel or, if they prefer, make up their own collection of tiles.

We are giving away these three tiny chicken-feet tiles courtesy of John Bauer Ceramics, to adorn the desk or wall of one chicken lover. 📌

WIN!

To stand a chance to win the three tiles, valued at R300, send the name of the artist to editor@poultrybulletin.co.za. The winner’s name will be drawn on 5 December.

Photographs: Shutterstock; supplied

Local problem, local solution

Not enough electricity and too much criminality – many chicken farmers and *Poultry Bulletin* readers are all too familiar with this double whammy. Research being done at the Belgium Campus in Pretoria, however, promises a solution.

Inspired by the struggles of chicken farmers in the Free State who invested in a solar system to cope with loadshedding only to have its batteries stolen within a week, Dr Neil Croft challenged himself and his students to get power directly from the panels to a chicken house fan via a motor. "Our task was to eliminate the need for batteries and inverters," says the Belgium Campus senior lecturer.

Croft's solution was to seek out solar panels that run off direct current and to replace the inverter with a voltage regulator. With the panels connected to the voltage regulator, the fans can run as long as the sun shines – which is exactly when the farmers need to keep their flocks cool.

The solution was installed as a pilot and worked like a dream. Feeding off this success, Croft is now testing other applications, including running computers directly off solar panels using a step-down converter. He is confident that the system can also be used for remote monitoring, and to power Internet of Things devices, cellphones and drone docking stations.



These solar panel emulators are used by the researchers to simulate a solar panel with varying inputs to see how the system will work

"These solutions exist in theory, but practical application and experimentation are needed to understand how to apply them to real-world problems," says Croft, "and this is what my students and I are busy with there at Belgium Campus. Getting solar to work directly without components that are easily stolen will make life easier for many people, particularly farmers." 📷

People on the move



SAPA welcomes Zingiswa Stefans

on board as the organisation's new financial manager. A chartered accountant with eight years of experience in financial accounting and auditing, Stefans joins the poultry industry having worked in telecommunications, transport, property development, energy and resources, construction and the public sector. 📷



Another warm SAPA welcome to Olga Leshabane,

who has stepped into the position of administrative assistant. 📷

Congratulations

to Dr Abongile Balarane, GM of the Egg Organisation, on his appointment to the board of the International Egg Commission (IEC) during the organisation's annual general meeting in Canada in October. Balarane will serve as executive board member responsible for South Africa and the African continental egg sector until October 2027. In this capacity, he will contribute to the policy direction and long-term strategic planning of the IEC.

Commenting on his appointment, Balarane says, "Through the IEC, I can engage my counterparts all over the world to exchange information on common issues that are of importance to our local industry. I believe this



exciting opportunity will benefit our industry in terms of the policy ambiguity issues that sometimes cause serious bottlenecks for our farmers."

We also applaud Dr Balarane for the recent completion of his MBA with Edinburgh Business School in Scotland. Well done! 📷

Congratulations also

to one of the industry's partners in poultry for winning a 2023 IMM Marketing Excellence Award. Chantal Sombonos-Van Tonder, the CEO of Chicken Licken, won the coveted Marketer of the Year Award. Chicken Licken has won numerous marketing accolades during her tenure. 📷



Prioritise rebuilding after HPAI's blows

By **Tracy Davids**

This year has been among the most challenging to date for South Africa's poultry industry. Feed costs remain persistently high, as the combination of ongoing war in Ukraine and challenging weather conditions in many leading feed-grain exporting countries drives global prices ever higher. There was some respite globally, particularly in maize prices, but exchange-rate depreciation in South Africa offset some of this benefit in local markets. With around 70% of production costs derived from feed, the multi-year buildup of spiralling feed costs is critical, but additional issues in 2023 included a severe ramp-up in the intensity of loadshedding, adding cost pressures across the value chain. BFAP estimates that running of diesel generators during loadshedding scales electricity costs to more than double the current Eskom tariff, adding almost R1 per kg to production costs at stage 6 levels.

At the other end of the spectrum, South African consumers are also under immense pressure, as slow economic growth and tightening monetary policy that strives to control inflation severely reduces spending power. Chicken is among the most affordable protein sources for lower-income consumers, but these same consumers are also highly sensitive to rising prices.

Consequently, chicken prices have not increased to the same extent as costs, with producers forced to absorb a substantial share, which has significant implications for profitability



‘The removal of VAT, even temporarily, could enhance affordability for consumers, without placing further undue strain on producers’

and, ultimately, sustainability.

Despite these challenges, poultry production has increased over the past three years, reflecting investments to expand production following the signing of the poultry industry masterplan in 2019. Similarly, imports have declined consistently, having reached a peak in 2018. This trend however could end abruptly, as the industry is confronted with the most recent challenge – the widespread outbreak of avian influenza, which has resulted in extensive culling and an estimated loss of 30% of the

commercial layer and broiler-breeder flocks. While many actions are being taken to control further spread of the disease and assist availability, time will be required to rebuild production and the impact of recent losses will likely be felt through at least the first half of 2024.

The impact of the AI outbreak is complex, with massive losses on farms where culling occurred, implications for industry revenue and, ultimately, agricultural GDP, as well as food-price shocks. Price impacts differ for chicken and egg producers, due to the role of imports in domestic markets.

South Africa already imports significant quantities of frozen chicken, which makes meat imports easier to ramp up than egg imports. Consequently, egg prices are expected to rise more than that of chicken and could remain higher for longer. From a consumer perspective, the ability to ramp up chicken imports will help

to ensure availability and to mitigate some of the expected price increase. At the same time, however, it exacerbates the impact of the disease on producer revenue, as larger price gains could offset some of the losses in production volumes.

Price impacts are critical to consider but also inherently challenging, due to the large share of consumption by lower-income consumers, who are most vulnerable to food-price increases. At the same time, the impact of any trade-related intervention to reduce the cost of additional imports must be considered against the backdrop of the challenging environment in which the industry has operated for multiple years and the sustainability of investments to expand production. Interventions such as tariff rebates must be considered relative to

alternatives such as the removal of VAT, even if temporarily, which could enhance affordability for consumers, without placing further undue strain on producers, who are critical for rebuilding supply.

The sustainability of production must be a priority, as poultry remains a critical industry – the largest contributor to agricultural-sector revenue in South Africa and a major offtake for feed products. 📌



Dr Tracy Davids is the executive director and manager of commodity markets and foresight at the Bureau for Food and Agricultural Policy (BFAP)

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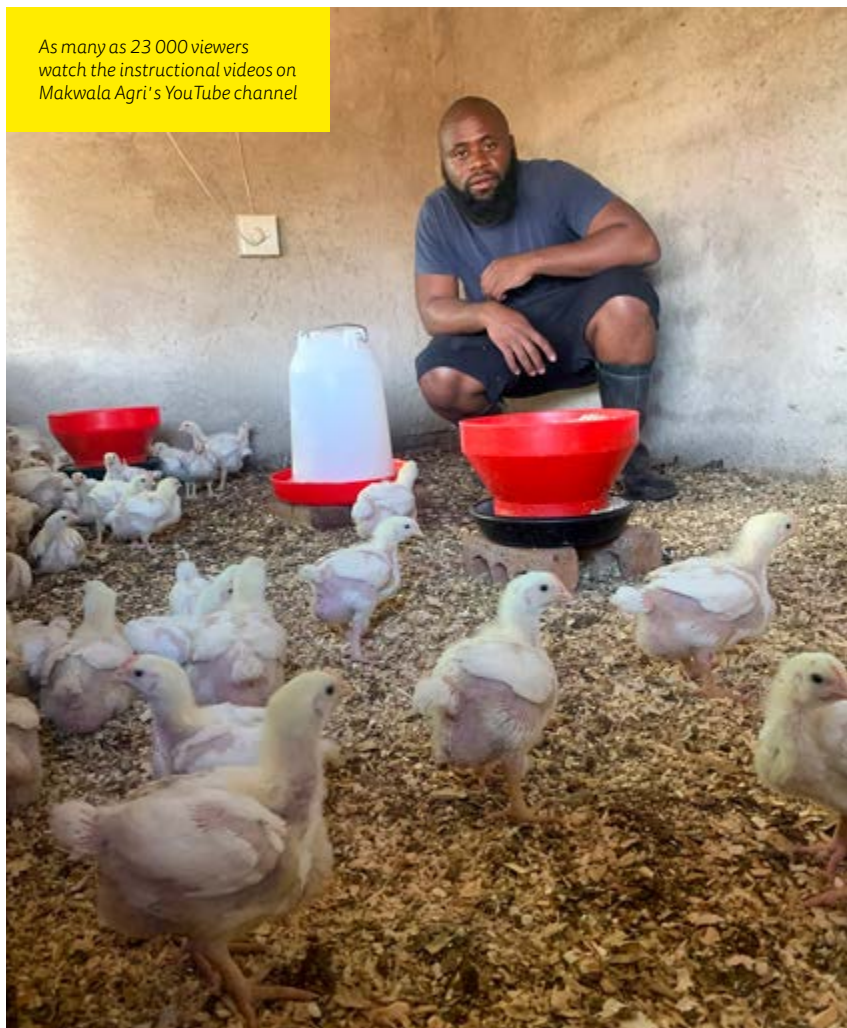
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**** All the above-mentioned products were tested for virucidal efficacy against Avian Influenza virus**

SCROLLING FOR BUSINESS

Limpopo broiler farmer and YouTuber Mphoke Makwala has built his business, Makwala Agri, by using various social-media platforms to get his brand out there. He speaks to **Diane McCarthy**

As many as 23 000 viewers watch the instructional videos on Makwala Agri's YouTube channel



Photographs: supplied

Out in the social poultryverse

Makwala Agri's "A Day in the Life of a Farmer" has built up quite the following, as this personable young farmer talks start-up farmers through the step-by-step of broiler farming in a series of instructional videos on YouTube. Makwala, a Damelin College graduate of financial accounting, is equally comfortable in front of the camera as he is in the hen house.

When he finished college he knew he wanted to start a business, he just wasn't sure what it was going to be. It was his beloved mom who got him thinking about poultry. "The doctor told her she needs to stop eating so much red meat, and switch to poultry and fish. So I thought that many South Africans are in the same boat, which means there is demand for chicken... and that is when my brain started moving in that direction."

Makwala counts himself lucky to have been brought up by his mom. A single parent, she raised him and his sister on a nurse's salary. "She taught me discipline – the discipline of money, the discipline of life. She taught me to think long term. If today I have R200, maybe I could blow it. But she taught me to make it last. Until



Makwala produces 300 broilers per cycle, but his lessons inspire thousands of starter farmers

you know when your next money is coming from, that R200 should last you.”

He knew he needed money to start anything, so he buckled down and got two delivery-service jobs, saving every spare cent for his future poultry business. After a year he had around R100 000 saved, and along the way, he had learnt a lot about consumer preferences. “People want convenience. So, when I started my business, I thought I’m not going to expect people to come to me to buy chickens; I’m going to sell convenience, and deliver to them.”

He turned to social media as a marketing platform and started growing his audience on Twitter and Facebook for a year before having any chicken to sell. “I started advertising before I even had the product; I was just checking out the market, seeing if my idea would even work. That’s how I built a solid foundation of customers. When someone ordered 200 chickens before I even had a farm, I went out and sourced chickens, bought them

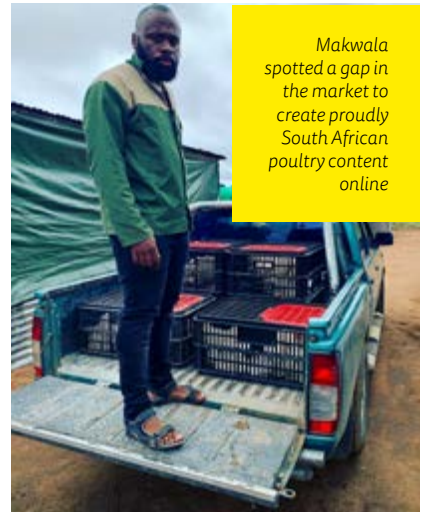
and sold them on. I became the middleman. I made my profit, and then made the call to start producing.”

His next step was to print flyers and take to the streets, where he handed out flyers in his local community, marketing his product to people in his area, and also posting on Facebook, Twitter and Tik Tok. “Your friends on Facebook are people you grew up with and who live in your area. Through my studies of retail marketing I got to understand how the algorithm works. That’s how I market my business.”

On his 1ha farm in Botlokwa in northern Limpopo, he produces 300 broilers per cycle and also grows vegetable crops. His customers are people in the area.

As his social media audience grew, they were asking many questions about his business. “The same questions kept coming up – how to start a business, how to raise chickens from scratch – so I got the idea to start a YouTube channel where I could respond and help.”

“When I was doing my own research



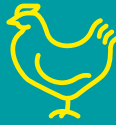
Makwala spotted a gap in the market to create proudly South African poultry content online

into how to raise chickens, I found that most of the content online was created by people outside of South Africa. My idea was to bring it home, so that locals could relate; to give my followers the information they wanted in a South African context.” “A Day in the Life of A South African Farmer” was born.

The content he creates has grown his audience organically, and he



POULTRY PEOPLE



Makwala's followers are vocal about their appreciation of his content

decides on topics in response to the comments and DMs from followers across his social-media platforms. Currently Makwala Agri has over 6 000 subscribers on YouTube and his videos can get as many as 23 000 views. His followers are very vocal and engaged, which motivates him to keep active. "I know I'm doing well when I get messages like 'I'm learning every day on your channel my brother... my mentor' and 'Thanks bro. I have learnt a lot from your YouTube channel. One day I will find my feet and start my own poultry farm'."

So far he has not significantly monetised his channel, but Makwala Agri has started attracting the

attention of sponsors, and the hope is to expand to present a regular, weekly farmers' conversation show with fellow farmers in his region.

At only 27, Makwala is a mentor to many, and he says that he feels a responsibility to encourage more young farmers. He has a dream of opening a farming school and already has the land in Limpopo, which he bought after graduation in 2019. He's currently exploring funding options that would enable him to build a facility where his followers can come to learn about farming, broiler production and crop rotation face to face.

His own farming journey has taught him many lessons and, he says, the most important one is realising his own lack of control over external circumstances. Right now, for instance, his usual supplier is unable to provide him with day-old chicks due to the HPAI-related shortage that many others are facing too, and this has stalled his broiler operation. But he is pragmatic about the lull in the business, because he's had to sustain himself through lean times before, when the last avian flu outbreak in 2021 dried up his chick supply. That is why he has a contingency fund to see him through.

"I'll be out of business for the next few months until my suppliers are able to deliver chicks again – I don't know exactly how long that will be. The situation is out of my control, but I will focus on my vegetables for now, and keep an eye on the situation so that I am ready to come back strong when things normalise." 📷

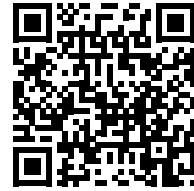
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YouTube: Makwala Agri
Twitter/X: @MakwalaAgri

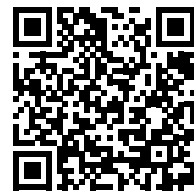
WATCH MAKWALA AGRICULTURE IN ACTION

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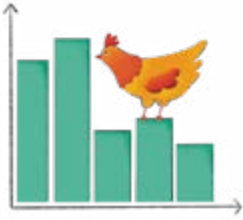


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MEMBERS' NOTICEBOARD

Key memos sent to SAPA members, summarised for a quick overview

Compiled by **Michael Acott**



What happens if bird flu hits Brazil?

A closer look at a tricky question by Broiler Organisation GM **Izaak Breitenbach**

Brazil supplies 90% of all poultry imports into South Africa. What happens to that trade if and when avian influenza (bird flu) hits Brazil's commercial poultry flocks and bird-flu bans come into place?

Do we ban all imports from Brazil? Do we ban imports only from those areas affected by bird flu? Or do we allow imports of products like mechanically deboned meat (MDM) and heat treat it in South Africa?

These are the three options under discussion at the moment but, unless a new policy is approved, all Brazilian poultry imports will be banned as soon as any commercial flock is affected by bird flu.

Brazil is one of the few big poultry-producing countries not as yet hit by bird flu. Many regard it as only a matter of time, which is why those options matter.

MDM makes up 60% of Brazil's

Izaak Breitenbach ponders the effect the disease might have on trade with one of the world's biggest suppliers



Photographs: Elaine Banister Photography; Forrest Walker / Shutterstock.com; Shutterstock

poultry exports to this country. It is a paste used in the production of processed meats such as polony and sausages, and it's imported in large quantities, mainly from Brazil, as it is not produced here. South Africa imported MDM worth R2 billion in 2022 and imports so far this year are even higher.

Importers are lobbying in advance for that trade to continue if Brazil is hit by bird flu. Brazil and Argentina, which is already under a bird-flu ban, have asked South Africa to allow MDM to be heat treated on arrival, which could lead to potentially infected meat landing in this country. DALRRD has said it will only allow meat into the country if it has been heat treated prior to export.

Compartmentalisation is another possibility. Brazil would have to apply for the country to be divided into different poultry regions, each to be treated separately in the event of a bird-flu outbreak. This would allow exports from disease-free compartments.

Unless and until that is approved, all Brazilian poultry imports will be banned in the event of a bird-flu outbreak. 📌



AI vaccines: there's still a way to go



Much needs to be done before South African poultry producers can start vaccinating their flocks against avian influenza.

This is the assessment of SAPA's AI report for September 2023. The process is underway, following a government decision in September to allow vaccination against bird flu.

Since then, much has been done but progress has been slower than hoped, so "a lot of work is needed before vaccination can actually begin," the report says. Vaccines are being sought against both the H5N1 strain and the newer H7N6 strain found only in South Africa.

"A number of good vaccines are available internationally against H5N1 as this is encountered across the world. Because of this, it is likely that vaccines against H5 will be the first vaccines available for use in

South Africa.

"The H7N6 strain of AI occurs only in South Africa and is not close to any other AI strains in the rest of the world – so the existing vaccines may only have limited efficacy against it.

"Before these vaccines can be registered, they need to be carefully assessed and may require local trial work to confirm their efficacy, which may delay registration. Locally produced vaccines are being developed but this will also take some time to complete."

The criteria for farm evaluations and approvals for vaccination haven't been finalised. The report says it is likely that vaccinated farms will have to demonstrate a high level of biosecurity and will have to perform increased surveillance for AI as well as agree not to sell live birds into the cull trade. 📌



Winners shine at Galliova Awards 2023



Galliova winners from left: Tony Jackman, Glynis Horning, Chad January, Anne Trapido, Sam Linsell, Georgia East, Esther Malan. (Not present: Arina du Plessis)

South African foodie writers look forward to the annual Galliova Awards, sponsored by SAPA, and this year's event once again lived up to all expectations. High on the hilltop with sweeping views overlooking Somerset West and False Bay, Chorus restaurant at Waterkloof Wine Estate was a glorious setting for the 34th Galliova Awards, and the food by its award-winning chef, Bertus Basson, was equally spectacular.

Cash prizes totalling R214 000 were awarded across eight categories, to writers and digital content creators who support the poultry industry with clever, creative and innovative foodie and health content. The proceedings were led by popular television per-

sonality, qualified chef, award-winning cookbook author and Galliova judge Zola Nene.

This year, a new category was added in acknowledgement of the tough economic climate in South Africa – the Galliova Egg Hero category called for content aimed at budget-conscious consumers with limited disposable income, and it attracted many newcomers. In announcing the winner in this hotly contested new category, SAPA's Colin Steenhuisen said that the Galliova Awards took great care to recognise the media's response to the changing needs of South African consumers.

The winner, Esther Malan, had demonstrated a true understanding

of the budget-related theme with her piece, "Sunny Side Up", written for *You and Huisgenoot*, in which she presented a variety of recipes such as egg nests with pan-fried Amasi bread, French toast sarmies with naartjie syrup, and savoury bread and butter pudding with charred onions, which require no more than R100 to put together. "I want the home cook to be able to rummage through their food cupboard and be able to cook a delicious meal without ingredients that are too expensive," she explained.

Steenhuisen also underlined the role of eggs as the most affordable animal protein available to South Africans, despite the industry's current challenges.

The prizes were awarded after a lengthy judging process, and the judges commented on the excellent calibre of work submitted across all categories, resulting in very close scores between the top five entrants. Due to the high standard of entries, for the first time in the history of the Galliova Awards, there was a tie for first place in two of the categories.

It was the only the second year that one category winner was singled out for the additional Galliova Champion award, which recognises and acknowledges a

body of exceptional work. This award is only granted if all judges agree that one winner surpassed all expectations, and this year Arina du Plessis, who writes for *Landbouweekblad*, *Landbou Boerekos* and *LandbouKind*, as well as *Country Cooking*, took the honours.

"I aim to be my readers' best friend in the kitchen – a familiar voice and trusted source of ideas and inspiration. Through my food articles I try to inspire, teach, remind and help them, and evoke a sense of nostalgia," she explained. 📷



Galliova judges from left: Jake Mokwene, Monique Pideret, Barbara Joubert, Zola Nene, Anna Montali, Marthinette Slabber Stretch and Marco Torsius



Chorus restaurant at Waterkloof Wine Estate was a great setting for this year's successful Galliova Awards luncheon

2023 GALLIOVA AWARDS – ALL THE WINNERS

Galliova Food Writer

- Joint winners: Tony Jackman (*Daily Maverick*) and Anna Trapido (freelance)

Galliova Food Stylist

- Winner: Chad January (*My Kitchen*)
- 2nd place: Johané Neilson (*Tuis |Home, Weg! | Go!, Weg! Ry & Sleep, Go! Drive & Camp*)

Galliova Health Writer

- Winner: Glynis Horning (freelance)
- 2nd place: Lydia van der Merwe (*Sarie, Sarie Kos, Sarie Gesond*)

Galliova Egg Champion

- Winner: Arina du Plessis (*Landbou Boerekos, Landbouweekblad, Country Cooking & LandbouKind*)
- 2nd place: Herman Lensing (*SarieKos*)

Galliova Chicken Champion

- Winner: Arina du Plessis
- 2nd place: Chad January

Galliova Digital Content Creator

- Joint winners: Sam Linsell (*Drizzle & Dip*) and Georgia East (*East After Noon*)
- 2nd place: Dawid Botha (*Lekker Weskus*)

Galliova Egg Hero

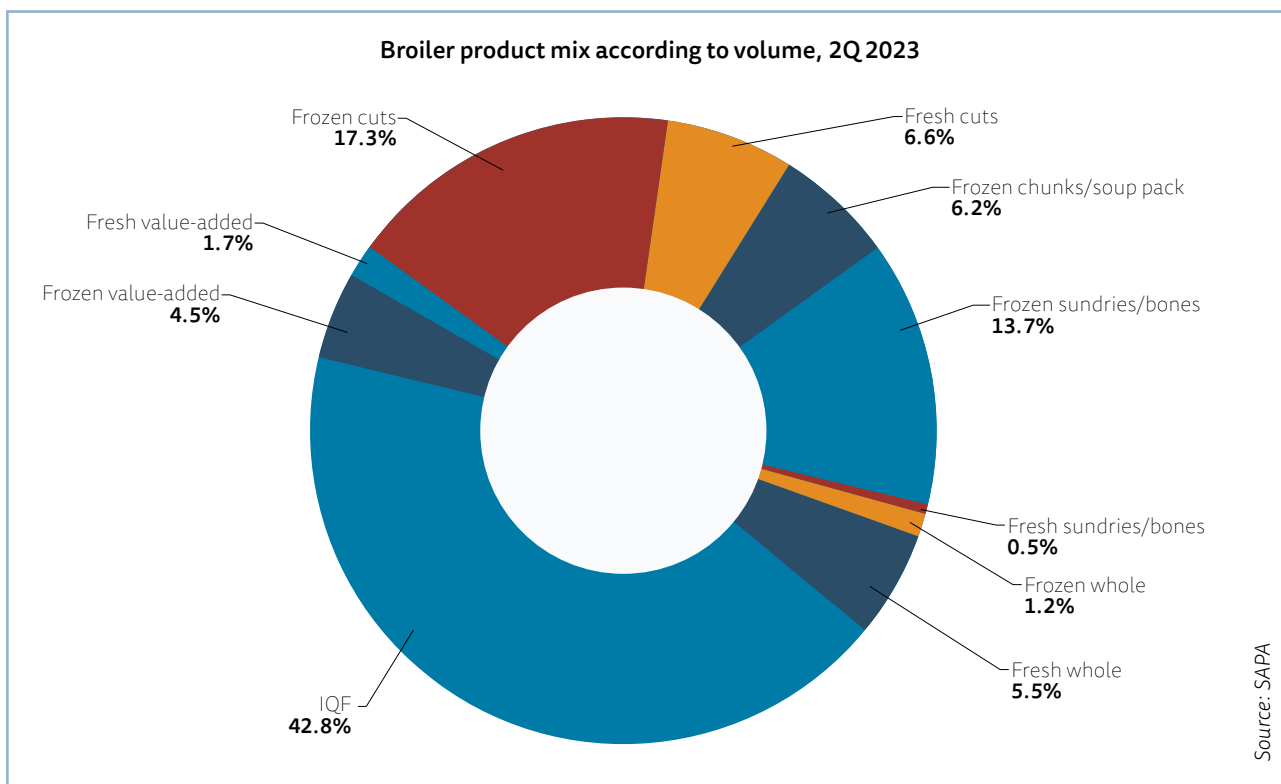
- Winner: Esther Malan (*You, Huisgenoot*)
- 2nd place: Sinoyolo Sifo (*Sifo the Cooking Husband*)

The Galliova Champion

- Winner: Arina du Plessis



Producer prices up but not as much as in 2022



Chicken producer prices in the first half of 2023 were well above 2022, but the increases were not nearly as high as those recorded in the previous two years.

The total chicken producer price, including both fresh and frozen, averaged R31.15/kg for the first six months, a 6.1% increase over the 2022 year. The fresh chicken price averaged R39.97/kg, up 9.6% from 2022, while frozen chicken averaged R29.68/kg, 5.2% higher than 2022.

These increases were nearly half of those recorded in 2022 when the average price increase was 12.1% and in 2021, when prices were 11.3% higher than the previous year.

For the month of July, the total chicken price averaged R31.44/kg, 6% above July 2022. Fresh chicken averaged R39.94/kg, 8.8% up on the previous year, and frozen chicken averaged R29.95/kg, 4.9% higher than in July 2022.

The market share in July was 85.1% frozen chicken and 14.9% fresh chicken.

Individually quick frozen (IQF) portions accounted for 42.8% of local chicken production volume in the second quarter (April to June) 2023. Frozen cuts made up 17.3% and fresh cuts 6.6%. Frozen sundries, mostly edible offal, and bones came to 13.3%.

The monthly breakdown of frozen chicken producer prices showed that IQF portions averaged R29.42/kg, with frozen whole chicken averaging R35.43/kg and frozen sundries R15.99/kg. Sundries include liver, necks, hearts, gizzards, heads, feet and intestines (mala).

Frozen sundries showed the biggest annual price increase, up 24.2% from July 2022. Frozen whole chickens were up 11.8% over the year, while IQF portions declined by 0.1%. 📌

Chicken production down in first six months

The drop-off in chicken production in the first half of the year due to avian-influenza outbreaks is evident in SAPA's broiler production report for July 2023.

The more serious impact came in the second half of the year, and will be detailed in future production reports.

For the six months to July, broiler production averaged 20.5 million

birds per week, a 3.9% drop from the 21.3 million birds per week averaged in 2022. There was, however, an increase in July to 21.6 million birds produced per week, a 15% rise over the 18.8 million averaged in June.

In the first half of the year, South Africa's chicken consumption totalled 1 260 139 tons, of which

1 027 926 tons were local production and 260 182 tons were imports. Consumption is calculated from total production (including culls), plus imports minus exports.

Imports equalled 25.3% of local chicken production and 20.6% of consumption for the period, which represents an increase from 19.6% and 16.8% in 2022. 📄

Chicken meat (tons)

Year	Production	% change	Consumption*	% change	Imports	% of production	% of consumption
2019	1 704 195		2 165 282		511 317	30.0	23.6
2020	1 768 744	3.8	2 179 353	0.6	460 708	26.0	21.1
2021	1 801 237	1.8	2 159 066	-0.9	406 826	22.6	18.8
2022	1 838 945	2.1	2 149 110	-0.5	360 252	19.6	16.8
to Jul 2023	1 027 926		1 260 139		260 182	25.3	20.6

Source: SAPA



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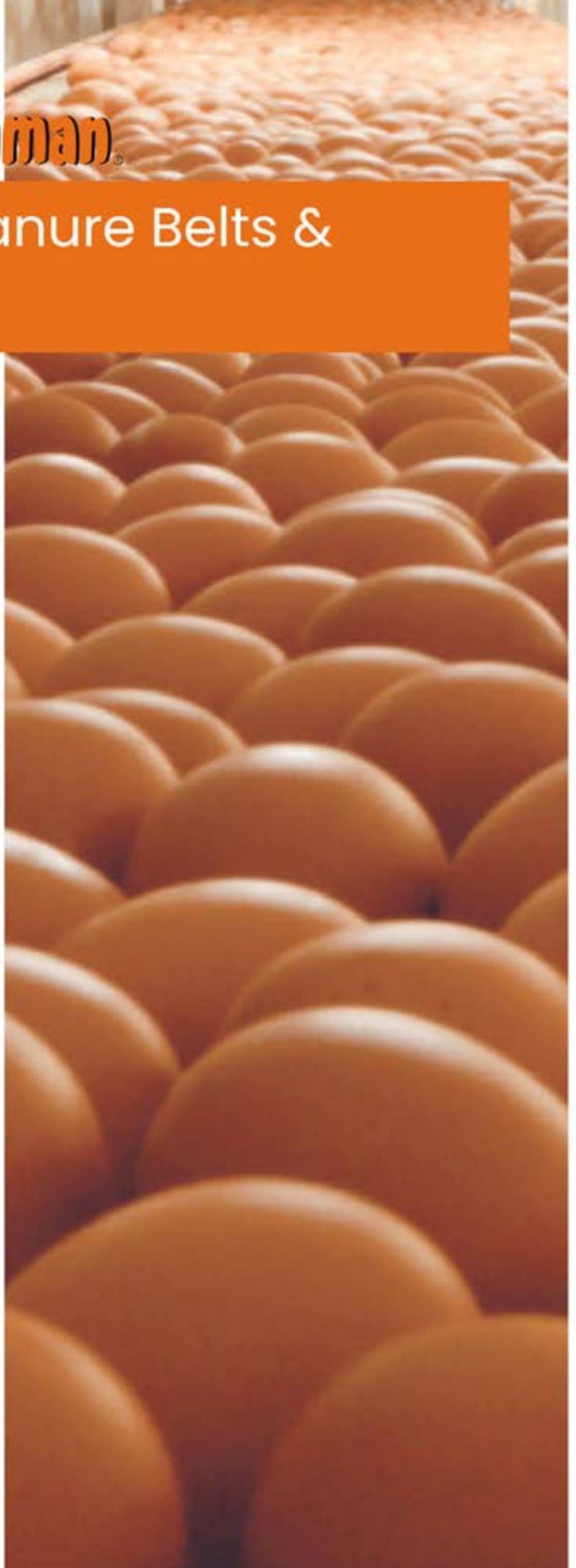
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Improvement ahead after a tough year, says Rabobank

After a tough first half of 2023, the outlook for South Africa's poultry industry is "moderately positive" because conditions are improving. This is the assessment of international food and agri bank Rabobank in its Global Poultry Quarterly report for the fourth quarter of 2023. Graphics with the report show that while the demand for poultry is declining, industry profitability is recovering.

Rabobank states that the South African industry has been on a "roller-coaster ride", but feed costs are lowering and poultry prices have stayed relatively high.

The "roller coaster" involves multiple challenges, including constantly rising feed prices, load-shedding, rising import volumes,

avian influenza (AI) and a weak economy, which leads consumers to trade down.

"As a consequence, industry margins have been under pressure, and the focus has shifted to cost reduction, alternative energy sources and lowering production," Rabobank says. Poultry production in the first half of the year was 3% below the same period in 2022, while imports were up 4%.

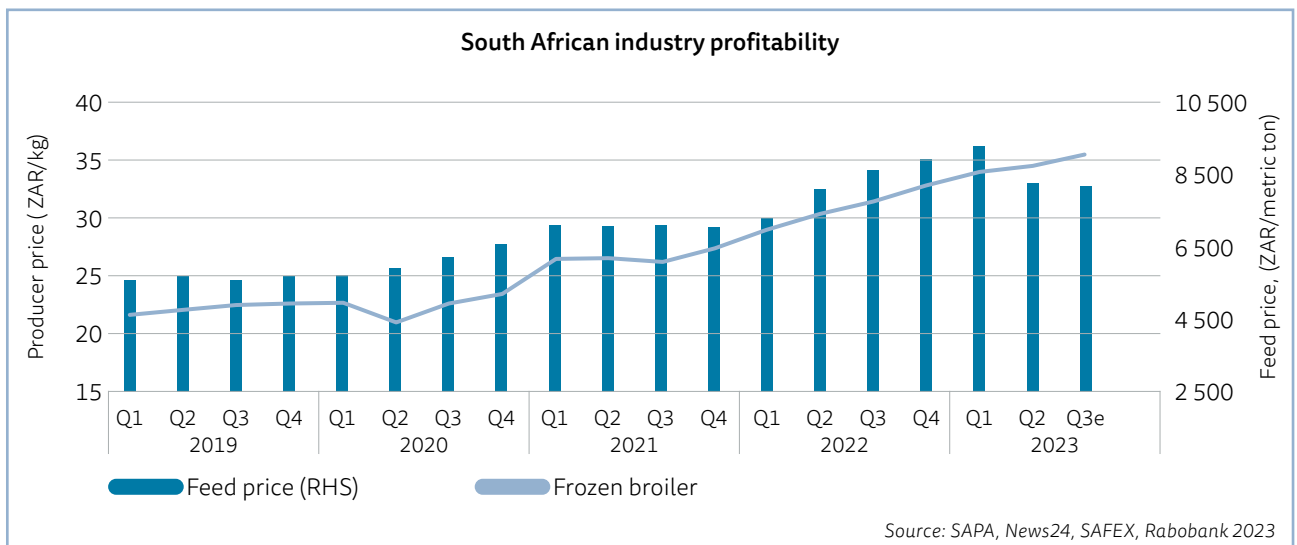
Explaining its "moderately positive" outlook, Rabobank says the South African market will remain price driven, as GDP growth is low and consumer-price inflation remains high. Operational conditions are improving and feed costs are expected to remain relatively low, although

maize and soya prices are rising because of concerns about the impact of the El Niño weather phenomenon which could herald droughts over SA's summer-rainfall areas.

The biggest operational challenges will be the impact of loadshedding and avian influenza.

Production might increase slightly, but "price upside for the South African industry is, however, relatively limited in the current context of a weak economy and more competitively priced pork and beef," the Rabobank report says.

Looking at the global poultry market, it says growth in 2023 is expected to be slow, but markets are well positioned to improve at the end of 2023 and into 2024. 📌





NOTICES

In loving memory of Cliff Saunders

4/10/1936 – 25/10/2023

It is a sad day indeed for the industry to lose someone as dedicated and influential as Cliff Saunders. His contribution to the poultry sector, particularly in the commercial layer and broiler sectors, was substantial. As a mentor and a leader, his impact on the lives and careers of many managers was immeasurable. His involvement in various capacities, especially in the importation of the Ross 308 great-grandparent stock, significantly influenced the development of the industry in South Africa.

Cliff's service on the boards of ICS and his role as an executive member of Tiger Brands showcased his leadership and expertise. His advocacy for scientific management, coupled with a deep understanding of strategic principles – inspired by the likes of Michael Porter – contributed to turning around numerous companies within the sector.



▲ Astral Foods honoured Cliff Saunders in 2019 by naming a boardroom after him. Here he is (right) with Astral CEO Chris Schutte

His unique approach has left a lasting mark on the poultry sector. Cliff's absence will be felt, and he

leaves a legacy as a pioneer in the industry. He will be remembered and greatly missed by many. 📌

New dates for AVI Africa

After the success of AVI Africa 2023, the SAPA Board has confirmed that the next congress will take place in two years' time, in May 2025. The decision to present the congress two-yearly was taken in 2019 before the Covid

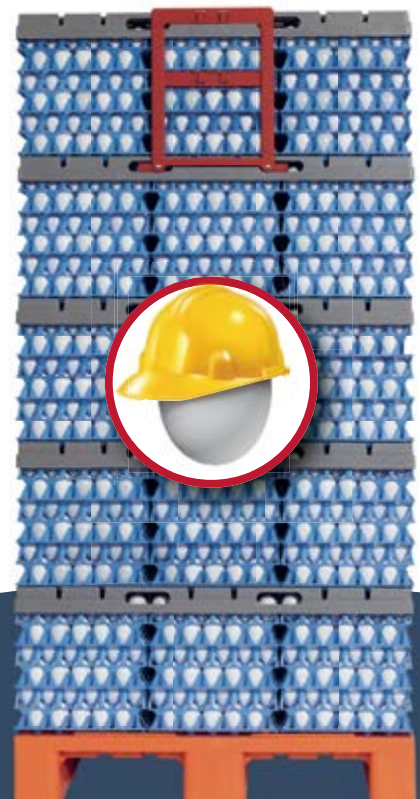
pandemic which caused a four-year break. Although the board considered the merits of hosting it annually, members' feedback influenced the final call to uphold the earlier decision. Bookmark May 2025 so long! 📌





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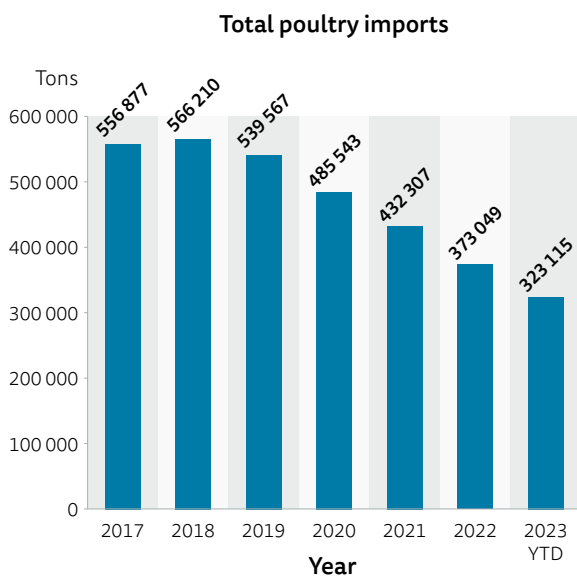


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Further declines in chicken imports



Source: SAPA

Chicken imports have been declining since 2018. Although 2023 looked like being a turnaround, it is heading for another low-volume year, unless there are sharp increases in the last few months.

High import volumes in the first three months have been followed by steady declines from April onwards. SAPA's latest imports reports, for September 2023, show that chicken imports dropped nearly 25% compared to August.

Despite the downward trend, the high import volumes until March mean the total for the first nine months is ahead of the previous two years.

The decline is most noticeable in bone-in chicken, where the total to September (57 758 tons) is less than half of the 130 482 tons imported over the same period in 2020. Imports of mechanically deboned meat (MDM) and offal have been steadily above previous years. Although volumes have dropped recently, both are at their highest levels for four years. 📊





Feed prices rising, but lower than last year



Forecast feed ingredient prices: March 2024

Feed ingredient	Randfontein		Pietermaritzburg	
	Price (R/ton)	y/y ** % change	Price (R/ton)	y/y ** % change
Yellow maize	3 977	-5.7	4 127	-5.5
Sunflower oilcake	7 150	-4.7	7 150	-4.7
Soya meal	9 442	-2.7	9 642	-2.6
Fishmeal	30 000	15.4	30 200	15.3

Source: SAPA
**March 2024 compared to March 2023

Forecast feed prices: March 2024

Feed (raw material cost only)	Inland		Coastal	
	Price (R/ton)	y/y ** % change	Price (R/ton)	y/y ** % change
Broiler starter	6 345	-3.6	6 485	-3.5
Broiler grower	6 127	-3.8	6 262	-3.7
Broiler finisher	6 192	-2.9	6 328	-2.9
Pullet grower	5 245	-4.2	5 360	-4.1
Layer	4 907	-4.5	5 041	-4.4

Source: SAPA
**March 2024 compared to March 2023

Feed prices will keep rising for the remainder of the year and into 2024, but will not reach the peaks recorded at the end of 2022.

This is the forecast from SAPA's feed ingredient report for September 2023, with an outlook to March 2024. It is based on the views of an independent feed consultant, and SAPA emphasises that the forecasts are for guideline purposes only.

The report says the international price of maize moved downwards in the two months to September. Brazil was trying to export its large crop to make storage space for the soya harvest, Argentina had produced only 60% of its normal crop and exports from the United States were well

below 2022 levels.

Brent crude oil prices had increased to above \$94/barrel, impacting US maize prices because maize is used to produce fuel ethanol.

There had been a switch back to using yellow maize in the feed industry, as white maize had become more expensive.

South African maize prices are linked to the Chicago Mercantile Exchange (CME) and therefore followed the trend. However, local SAFEX prices in rand had increased mainly due to the weakening of the rand.

The report said export indications for maize were lower than normal. It estimated deep-sea maize exports of

more than 3 million tons, and possibly 600 000 tons of soya beans following South Africa's record soya harvest. Harbour logistics could be a constraint for grain exports.

The report forecast that the March 2024 price of feed ingredients would be lower than the previous year, with the exception of fishmeal. Its estimate of Randfontein prices was R3 977/ton for yellow maize, R7 150/t for sunflower oilcake, R9 442/t for soya meal and R30 000/t for fishmeal.

Forecast inland feed prices for March 2024 were broiler starter R6 345/t, broiler grower R6 127/t, broiler finisher R6 192/t, pullet grower R5 245/t and layer R4 907/t. 📄

Cull trade down somewhat in 2023

Some 830 000 live chickens were sold into informal markets by South African poultry producers in the third quarter of 2023. This shows a decrease over the year, as 1.2 million birds were traded in the first quarter.

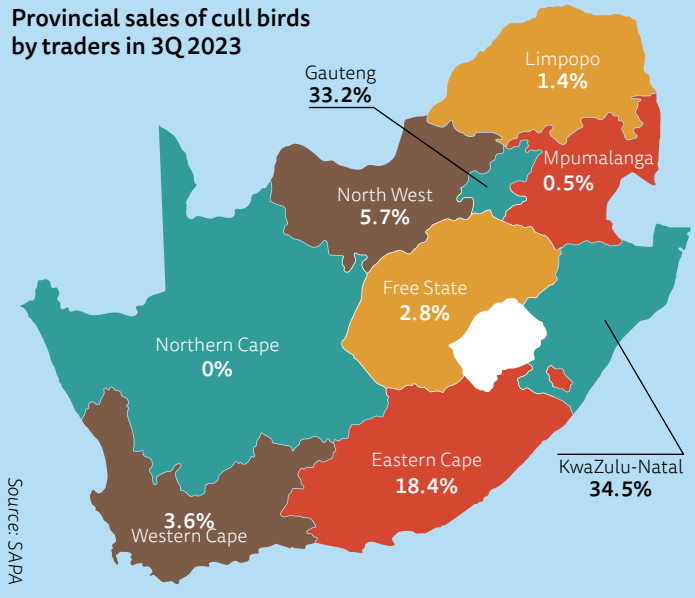
The trade in live birds, known as the cull trade, involves sales to cull traders at municipal depots and directly from a variety of poultry operations.

The trade is regulated, and traders and sales are registered, because of the risk that the movement of live birds could facilitate the spread of avian influenza. Farmers require a health permit before live birds can be moved off the farm.

Data on cull sales suggests that live birds were mainly sold within the province of purchase and were not typically transported across provincial borders.


Because of the bird-flu risk, SAPA asks producers and cull traders to comply with the protocols regarding the movement of live birds. 📄

Provincial sales of cull birds by traders in 3Q 2023




Feeding growth in Africa.





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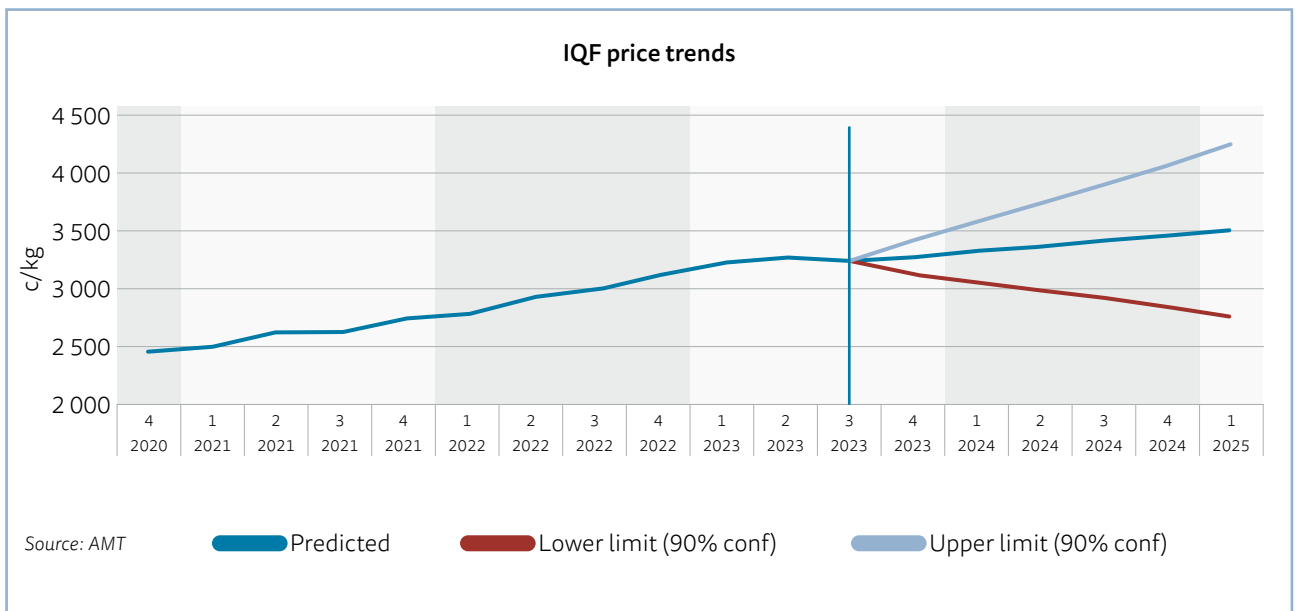
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Poultry to follow meat price trends



According to forecasts from agricultural trend-analysis company AMT meat prices, including that of poultry, are likely to show an upward trend during 2024.

AMT's quarterly livestock report for the third quarter ended September 2023 indicates that poultry producer prices show an upwards cost correction towards year-end, with prices for most products continuing this trend throughout 2024.

The report showed the third quarter producer price of frozen poultry at R34.92/kg, which represents a quarterly increase of 1.79% and 12.81% above the same quarter last year. Fresh poultry fetched R34.76/kg, a cost correction

of 1.31% above the second quarter and 9.1% higher than the previous year. Individually quick frozen (IQF) portions were R32.49/kg, slightly down from the previous quarter but an 8.61% rise since the third quarter of 2022.

AMT said that, based on historic trends, the prices for all three products would be further cost-corrected in the last quarter of 2023.

Forecasts for pork, beef and mutton prices showed a similar trend – sharp price spikes for the December

period of high demand, and then more gentle increases in 2024. 📈



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REDUCING BROILER CHICKEN PROCESSING CONDEMNATIONS AND DOWNGRADES

In the abattoir, chicken carcasses are checked for defects and abnormalities which may negatively affect the grade and price of portions. This article will discuss common carcass downgrades and farm management practices that can reduce their occurrence.

Carcass quality is negatively affected by the presence of damaged or scratched skin, inflammation and bruises, abnormal bone positions or fractures, and blackened, infected foot pads or hocks. Breast meat is downgraded if there is striping between muscle fibres, if deep breast muscle is dark red, black or green in colour, or if breast blisters or ammonia burns are present (Tondeur and Simons, 2019). Carcasses can also be downgraded due to contamination by gut contents or faecal matter, or through the result of disease prevalence and septicaemia (Russell, 2012).

Bruises and scratches are the most common downgrades, with deeper scratches often resulting in cellulitis (bacterial infection of the inner layers of the skin). To reduce bruising and scratching, maximum limits for kilograms of live mass per square meter at catching should be adhered to, and breed guidelines should be followed to ensure sufficient feeder and drinker space. Drinker systems need to deliver sufficient water, especially at the end of the cycle when the demand for water intake is the greatest. Single periods of darkness longer than 6 hours should be avoided and, if possible, dusk/dawn periods should be simulated to reduce the rush to feeder pans and nipple drinkers after periods of darkness. Duties in the house should always be performed in a calm and steady manner (Graaf, 2019).

Footpad dermatitis, hock burn, ammonia burns, and breast litter spots (black scabs on the breast skin) are the result of poor litter conditions in the poultry house, with wet litter being the predominant causative factor. Control of moisture exchange via ventilation and air distribution is crucial in keeping the house's relative humidity under control, and drinker line management is important in preventing water spillage.

Good catching practices limit bruising, scratching and bone breakages. If daytime catching is performed, light programmes can be modified to gradually reduce the number of dark hours in the days leading up to catching (Graaf, 2019). When catching, dim the light over an hour before starting, to keep the broilers calm during catching. Catching in bright light can increase the incidence of wing damage due to excessive wing flapping (Tondeur and Simons, 2019). Migration fences may help to reduce overcrowding and birds in sections that are not being caught may still have access to water. Due to the skill and effort required, it is recommended that an expert team be trained for the specific task of catching broilers. Catching broilers is heavy, repetitive work, performed under time pressure, often at night and in a dusty environment. A reward system based on percentage of catch damage could be considered for a specialised catch team in order to incentivise proper handling and loading of birds (Tondeur and Simons, 2019).

Carcass contamination by faecal matter and gut contents can be avoided by feed withdrawal prior to catching. A period of feed withdrawal of 8 to 12 hours allows the intestinal tract to be emptied while retaining strength and

integrity of intestines. Note that when birds no longer have access to feed and water, weight loss will occur, which can be up to 0.25% of live mass per hour. Ensure that birds have full access to water for a minimum of 2 hours after feed is withdrawn, and best practice is to provide free access to water until the arrival of the catching crew at the house (Graaf, 2019).

The incidence of farm-related carcass downgrades and condemnations can be significantly reduced by good farm management, stockmanship and catching practices. Minimising the incidence of broiler carcass condemnations is essential to public health, animal welfare and profitability.

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Epol - Innovation and Research Manager
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HPAI: AN INDUSTRY AT WAR

Culling. Vaccination. Biosecurity. It is not either-or but and-and that will make it possible for the global poultry industry to find a way through avian influenza

By **Charmain Lines**



IN SEARCH OF SOLUTIONS



The numbers are the stuff of nightmares – more than 9.5 million chickens culled and R5.7 billion lost – but the human impact is even worse. Farmers going out of business, poultry industry workers having to deal with mountains of dead birds and consumers faced with empty store shelves. The HPAI outbreak currently ravaging our industry is at a scale we've never experienced before.

But even around this darkest of clouds a silver lining is emerging as the global industry looks for – and finds – solutions or, at the very least, mitigating factors.

Vaccination

A weapon in an arsenal of measures is how AI vaccinations should be viewed, says Izaak Breitenbach, GM of SAPA's Broiler Organisation. As important as vaccination is, it will be too late for

the current outbreak. "Vaccination is now aimed at the future, making the industry less vulnerable to outbreaks going forward," he says.

In terms of Act 36 of 1974, vaccine manufacturers CEVA, Boehringer Ingelheim and one other have submitted H7-vaccine dossiers to DALRRD for

evaluation and, hopefully, approval. Once approved, vaccine doses can be imported. Deltamune, a South African vaccine manufacturer, is also busy developing a local inactivated HPAI H7 vaccine and will submit its own dossier as soon as it is completed.

Companies wanting to vaccinate will have to apply to DALRRD for permission, given the biosecurity measures and monitoring protocols that have to be in place.

Dr Wilhelm Maré, who chairs the Poultry Group of the SA Veterinary Association, says that while DALRRD has indicated that it will not entertain applications in terms of Section 21 of the Medicines and Related Substances Act (which allows for emergency permits to be issued), it has committed to expediting the registration process. "Several H5 vaccines have been registered recently and once they are available here, we'll have more tools to deal with future outbreaks," Maré says. "The vaccines aren't perfect as they don't prevent infection but they will help us manage this disease, especially ▶



Dr Wilhelm Maré of the South African Veterinary Association's Poultry Group



Photographs: Jamie McBean / Shutterstock.com; Sidney van den Boogaard / Shutterstock.com; Brian Vinkoff / Shutterstock.com; TLF / Shutterstock.com; Algi Febri Sugita / Shutterstock.com

in terms of protecting breeding flocks.”

One of the big deterrents to vaccination has always been the impact on exports. Current regulations will make it impossible for most producers to continue exporting to our neighbouring countries and the United Arab Emirates should they choose to vaccinate, notes Breitenbach. However, SAPA is busy renegotiating the relevant clauses in the legislation with DALRRD. “The department has already informed our export customers of our intention to vaccinate, but it’s up to them to accept or reject our vaccination strategy.”

Prof Celia Abolnik, SARChI Chair in Poultry Health and Production at the University of Pretoria’s Faculty of Veterinary Science, says that vaccination won’t start until the registration processes have been finalised and a vaccination and monitoring plan has been agreed. The latter would include tracing and the controlled use of the vaccine, a surveillance protocol for vaccinated flocks, monitoring the fate of all vaccinated birds and an eventual exit strategy.

“Vaccine efficacy against the H7N6 virus will also need to be determined experimentally,” she adds. “A good vaccine shouldn’t only protect birds from sicknesses and death, but also reduce the amount of virus being shed so that the spread of the virus to other flocks can be prevented.”

Compartmentalisation

During the International Avian Influenza Summit that was hosted by the Centre of Excellence for Poultry Science at the University of Arkansas in October, the application of the “no antibiotics ever” (NAE) model was mentioned as a solution to the conundrum of allowing vaccinated poultry to be exported. In such a model, a poultry producer has multiple flocks over different premises. Birds that are not treated with antibiotics are kept in one facility and those that are treated in another.

The same principle could apply for companies in countries with an approved vaccination programme.

South Africa leads the application of the export-compartment concept that would enable a two-pronged approach to vaccination – pending DALRRD approval. Even if not all



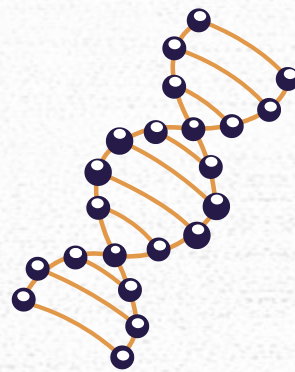
Bird flu has become endemic in large parts of the world, with no one simple solution.



Warning the public in England, to prevent the spread of the disease



Firemen dealing with a breakout on a turkey farm in the Czech Republic



Bird-flu warning in the Netherlands



In Indonesia birds are being vaccinated to help against bird flu



IN SEARCH OF SOLUTIONS

of the hundreds of individual farms that make up export compartments receive permission to vaccinate, compartmentalisation could help to find a compromise between vaccination and international trade.

As the global momentum shifts in favour of vaccination, markets like the EU are becoming more amenable to exploring more nuanced solutions, such as NAE or compartmentalisation, instead of bluntly refusing imports from countries that vaccinate. This could promote South Africa's efforts to receive export approval from the EU.

Biosecurity remains critical

According to Professor Robert Bragg who specialises in veterinary biotechnology in the Department of Microbiology and Biochemistry at the University of the Free State, biosecurity remains the only short-term option to control AI.

"Reducing virus levels is important for the success of a vaccination programme," says Bragg. "Once a bird is vaccinated, its immune system starts to make antibodies. Only when there are enough antibodies, will the bird be protected – a process that can take up to two weeks. However, if there is too much virus in the field, the bird's immune response can still be overwhelmed."

Bragg explains that this is what happened with the Newcastle disease (NCD) outbreak in the late 1990s. "The national flock had very high antibody levels against NCD and should have been protected. However, there was so much circulating virus that the immune systems of the birds were overwhelmed and the outbreak was very difficult to control."

SAPA's Christopher Mason notes that biosecurity measures should extend to feed as well. "A farmer recently contacted me to find out



Professor Robert Bragg

if he could sell the feed he had left over after his flock was culled. As this was the first time I had received this specific query I asked our experts and the answer is a definitive no – the feed needed to be destroyed."

Can birds survive?

The short answer is yes; the longer answer is more complicated. SAPA estimates that around four million layer hens that have not been culled have survived on farms hit by HPAI. It is critical to remember that culling remains DALRRD's policy for dealing with AI as a means to contain outbreaks, although farmers can


H7N6 - WHAT WE DO AND DON'T KNOW

The H7N6 strain was first identified on a small farm in Mpumalanga at the end of May this year. From there it spread to Gauteng, Limpopo and North West. H5N1 remains dominant in the Western Cape and KwaZulu-Natal.

According to Prof Celia Abolnik, similar low-pathogenicity H7 viruses have been circulating in South Africa's wild-bird population since at least 2020. The field evidence indicates H7N6 is highly infectious, which one would expect from a chicken-adapted H7 virus that's had a few months to circulate in poultry flocks. Diagnostic data shows that faecal-oral spread may play a greater role in the virus' transmission than aerosol spread between birds. The only way to know for sure how infectious and lethal to chickens this strain is, is by performing in vivo infection studies



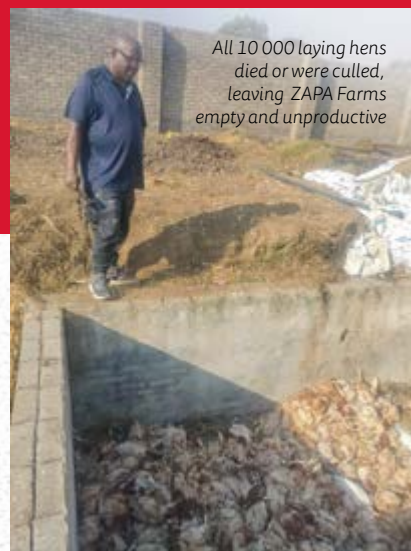
Prof Celia Abolnik

in specific pathogen-free chickens under controlled biosafety level 3 conditions. Such studies haven't been done yet but are planned. "There is an approvals process that must take place that entails Section 20 approval from DALRRD and the University's Research and Animal Ethics committees. This can take anywhere between three and six months, but we are working on it." 

THE HUMAN COST OF HPAI



In happier times Mhlabane and ZAPA Farms were held up in parliament as a success story to celebrate



All 10 000 laying hens died or were culled, leaving ZAPA Farms empty and unproductive



Mhlabane is training to conquer Africa's highest peak to raise awareness of the plight of farmers

"I've cried so much that I have run out of tears. This has been a devastating blow. It has drained me." Speaking to *Poultry Bulletin* is Beverly Mhlabane, Gauteng egg farmer and member of SAPA's Egg Board. H7N6 has reduced her flourishing and steadily progressing egg business to a ghost farm. "I used to wake up every morning and go to the farm. Now I wake up and I don't know what to do. I'm laughing because what else can I do? I'm drowning."

Mhlabane's nightmare started in the week of 14 August when mortalities on her farm suddenly increased. After two days of a hundred dead layers per day, she called in the state veterinarian on 17 August. By the next Monday the verdict was in. ZAPA Farms was officially quarantined and the order to cull issued. By then the daily mortalities were around 500. "There were dead chickens all over the place,"

Mhlabane says.

A concrete-lined pit that had been dug to house a second septic tank on the farm became the repository for 10 000 culled layers, doused in lime that the vet supplied. Some 16 tons of feed also went into the pit. Since then Mhlabane's farm, equipped to house 17 000 birds, has been a no-go area – and it will remain inactive until she can find support to restock.

Burdened with a R1.2-million Land Bank loan, she cannot apply for more debt and no other form of funding is available. "Unless I can find someone to sponsor me, it will be a long time before I'm back. Without a kickstart I can't start building again." The funding conundrum is exacerbated by the fact that the virus is still circulating, making restocking a risk few are willing to back.

Mhlabane does not know how her

flock became infected, but her theory is that feed might have been the carrier. Whatever the cause, the effect has been as lethal to a farmer's dreams and goals as to her birds. "When I started, I had to fight to get a market for my product. Now that I have a market I have no product..."

True to her trademark can-do spirit, Mhlabane has set out to conquer mountain peaks while deciding what the future holds for her egg business. With Sentinel Peak in the Drakensberg and Thabana Ntlenyana in Lesotho – the highest mountain in southern Africa – already under her belt, she is preparing to tackle Africa's highest peak, Mount Kilimanjaro, early in 2024. 📍



Empty egg shelves in supermarkets has been a reality in Gauteng



breeder facilities are often situated fairly close to one another, cross contamination takes place.

“Taking a chance on not culling can be good for egg producers, but very bad for broiler producers,” says Stander. “As it is, our birds infect each other, and the situation is exacerbated when the ambient viral load remains high. In the best interest of the industry as a whole, we all have to play by the rules as they stand until either vaccination or compensation – or both – become available.”

Shortages - and dealing with them

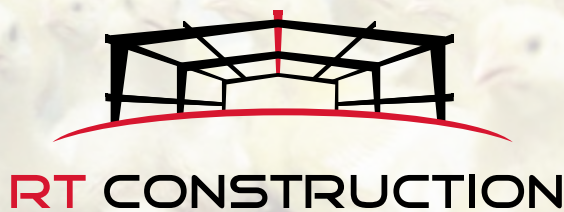
Over the past weeks, South Africans have been confronted by empty egg shelves in supermarkets and much talk about looming chicken meat shortages and skyrocketing prices. Importers

apply for exemption. Unfortunately, the lack of consistency by South Africa’s policymakers in applying the law of compensating affected producers for their losses results in many smaller farmers becoming self-regulating to rescue their livelihoods. This inconsistency in applying the law can have disastrous unintended consequences for neighbouring operations.

Ironically, while commercial table-egg producers are the hardest hit, layer hens do have a better chance

at surviving because being in cages means that they are not in contact with manure, which is a major source of infection. As a result, the mortality rate among commercial egg layers is much lower – around 30% – than among broiler breeders.

Marthinus Stander, MD of Rainbow, explains that the issue for commercial broiler producers is that uncultured infected chickens keep shedding the virus and thus help maintain a high viral load in the environment. As commercial egg producers and broiler-



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IN SEARCH OF SOLUTIONS



have used the situation to advocate for the suspension of import duties, citing the need to “keep chicken affordable”.

In response to what could be a nationwide problem, the dtic’s Minister Ebrahim Patel asked ITAC to investigate the viability of offering rebates on imports to prevent shortages and price hikes. SAPA’s submission to ITAC highlighted the flaws in such a step.

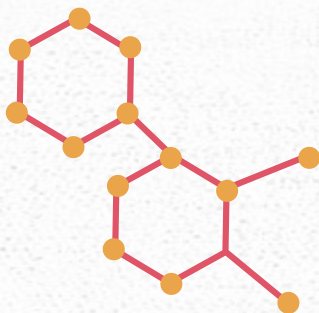
Firstly, SAPA does not expect any shortage to be significant enough to warrant a special dispensation on chicken meat imports, says Breitenbach. “Indications are that bird-flu infections had peaked in late August, early September. Since then we averaged zero to three new outbreaks per week. This means that the largest shortages will be experienced in December, which is also peak chicken-consumption season in South Africa. Imports come to us by sea, which means that any special dispensation granted now will result in the imported meat only arriving in the country during January – just in time for the drop in demand after the festive season. The timing will therefore be off.”

In addition, producers all have some meat stocks left over from the winter that they can now release into the market and as infection rates come down, broiler farms can be restocked and have birds ready for slaughter at around Christmas. Imports also usually increase between September

and December in normal years, and the same is likely to happen with or without rebates.

Secondly, it remains a fallacy that cheap (or dumped) imports benefit consumers. The recently published Genesis Analytics study found that antidumping duties do not increase retail prices significantly. Chicken prices depend, instead, on market conditions and are kept in check by organic factors such as competition between retailers.

“Antidumping and other import duties are not punitive,” says Breitenbach. “They are meant to level the playing field. Lifting duties now will do tremendous harm to our resilient and competitive industry. Nothing stops importers bringing in more meat legally if they judge that there is a market for it. All the studies that have been done have concluded that the existing tariffs are fair. Allowing a crime, which is what predatory trade practices are, to address a problem will never be acceptable.”



Thirdly, South Africa is in the process of importing 90 million fertilised eggs from Brazil, the USA, Spain, Ireland and Argentina. Of these, 260 000 are destined to replace commercial layer breeding birds, while the rest are hatching eggs to restock broiler farms. In addition, the large chicken producers are taking measures of their own to prevent shortages. These include keeping parent flocks in production for longer and moving hatching eggs to unaffected parts of the country.

“We don’t downplay the seriousness of current and potential future meat shortages,” says Breitenbach, “but we do think that import rebates would be a blunt instrument with which to address a very nuanced situation.”

Bird flu has entered a new era, both in terms of how it infects and spreads and how it needs to be managed. The days of culling as the only management measure are fast coming to an end in favour of a variety of possible solutions, depending on the specifics of an outbreak. 📌

BY 15 NOVEMBER 2023:

- South Africa’s poultry industry had lost around:
 - 3.5 million broiler breeders (25% of the industry)
 - 6 million layer hens (25-30% of the national flock)
 - 200 000 layer breeders (66% of the industry)
 - R5.7 billion in revenue
- Around 12% of the industry’s farms were under quarantine.



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THE POULTRY VALUE CHAIN



*Kwanda and Philani Ntondini
outside their moveable abattoir*



*A thousand birds are slaughtered
per shift, and when demand is
high, they do two shifts a day*

A FAMILY

BUSINESS

WITH VISION

From the Eastern Cape to Gauteng, the Ntondini family has added a moveable abattoir while building a chicken business using the power of vertical integration. By **Charmain Lines**

Back in 2015, Kwanda Ntondini and his family were running a profitable small business in Mthatha in the Eastern Cape, buying live chickens from small-scale farmers, slaughtering them manually and selling the dressed birds. But they had a bigger dream. "We wanted to produce our own chickens, and so we started discussing finding opportunities in Gauteng," says Ntondini.

They had to fund the dream, however, and that became a reality when the family secured European funding to build chicken houses on the 2 hectares of land they had bought in Benoni on the Gauteng East Rand. Ntondini, who had worked for a state-owned enterprise in the Joburg CBD since moving from the Eastern Cape, resigned and cashed in his pension for working capital.

"We soon realised that the urban market in Gauteng was for slaughtered chicken, rather than live birds," says Ntondini. This led him to invest in a moveable abattoir supplied by JF Equipment. "To date, Kwanda's abattoir is the only one we sold to someone in business; all the others we've supplied were part of corporate social-investment programmes," notes Pat Young who heads up sales at JF Equipment.

The moveable abattoir was exactly what the Ntondinis needed to add another piece to their vertical integration picture



Young regards moveable abattoirs as equipment for a niche market – too big and expensive for really small broiler farmers and far too small for bigger enterprises. For the Ntondinis, however, the moveable abattoir was exactly what they needed to add another piece to their vertical integration picture.

Vaphi & Mnomana, as the business that Ntondini owns with his daughter Naledi and son Philani is called, has the capacity to produce 52 000 broilers per cycle and slaughters 1 000 birds per shift. When demand is high, Ntondini runs two shifts per day to service his customers.

"Our main customer is a meat hypermarket that buys 2 000 birds a week from us for their outlets in Thokoza and Katlehong townships," he says. "We also sell to other butcheries and we supply chicken dust to small one-person businesses in the townships. Slaughtering is challenging, because the meat quality

Pat Young of JF Equipment is on hand to deliver any support the Ntondinis need



must always be up to standard."

Gizzards, offal and especially feet are a strong additional income stream for Vaphi & Mnomana. "Chicken feet are a big mover in the townships," Ntondini notes. Customers place their orders based on the abattoir's slaughtering schedule and collect the bags of offal from the facility.

When Ntondini's own supply chain can't keep up, he brokers deals between his customers and broiler farmers in the area to service the contracts he has in place. "We negotiate the selling price with the customers, and slaughter and pack the birds according to their specifications. The farmers pay us R6.50 per bird we slaughter. We all make some money in the deal." He also offers a slaughter-only service to neighbouring farmers when needed.

Ntondini employs 14 people in the abattoir and another six on the farm; 16 of his employees are women. As company director, his daughter Naledi ▶

THE POULTRY VALUE CHAIN



The Ntondinis employ 20 people, 16 of whom are women

looks after the day-to-day running of Vaphi & Mnomana, while son Philani is the farm manager.

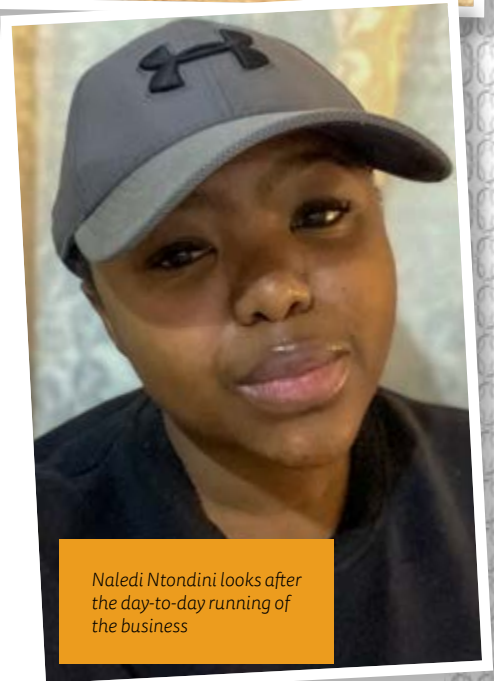
Commenting on the current AI outbreak, Ntondini notes the shortage of fertilised eggs as the biggest impact on his business. "We run our own hatchery and now we struggle to secure enough eggs."

With the hatchery, broiler farm and abattoir in place, the Ntondinis' next step towards full integration will be a breeder farm and, finally, producing at least a portion of their own feed. "That will bring our production costs down and widen our profit margin. We want to make enough cash to control our own growth," says Ntondini.

In the meantime, their Eastern Cape business, Mojo Chickens, is poised for expansion as one of the

investors in the Wild Coast special industrial zone that is being developed close to Mthatha Airport. The meat-processing plant the Ntondinis are planning will employ 345 people and slaughter 48 000 birds per day. "We are negotiating with KFC Africa to become a major supplier," Ntondini says. 

'We run our own hatchery and now, with avian influenza, we struggle to secure enough fertilised eggs'



Naledi Ntondini looks after the day-to-day running of the business

MORE ABOUT MOVEABLE ABATTOIRS



According to Pat Young from JF Equipment, simplicity is one of the great advantages of moveable abattoirs. "Minimal site preparation is needed, as long as you have a level floor or an even piece of ground on which to place the two containers. You also don't need an environmental impact assessment (EIA) and can be up and running within three months of ordering a unit."

A proper moveable abattoir must have a self-draining design so that water moves from clean to dirty, a dirty and a clean lobby, as well as ablution facilities for the employees.

"Our units are air conditioned, have chillers to cool the meat down to 4°C and storage space for between 700 and 800 birds," Young explains. "Everything is white and shiny like an operating theatre!"

A well-designed and -built moveable abattoir capable of processing 1 000 birds per shift costs around R4 million.



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Natural solution to support eggshell quality

During her lifetime, a modern laying hen deposits about 50 times her body's calcium store in eggshells. To be able to produce top-quality table eggs throughout her production period, the interplay between vitamin D and mineral metabolism needs to operate smoothly

Understanding the mineral

metabolism is essential to develop effective nutritional strategies, especially as '500 eggs per hen housed' has become common practice. It is well-known that the efficiency of calcium absorption decreases with hen age. Therefore, the hen must mobilise more calcium from bone to be able to deposit enough calcium in the eggshell, which inevitably challenges bone quality in old hens. We must realise that simply increasing the dietary calcium content as the hen ages to compensate for this lower efficiency of intestinal calcium absorption may be counterproductive.

Excess calcium is known as an antinutrient, and the presence of more

unabsorbed calcium in the intestinal lumen could complex with phytate and other essential nutrients, such as amino acids and fatty acids. This complexation limits phytase efficacy and nutrient utilisation. Also using alternative calcium sources like oyster shell might not be an effective alternative. Preventing the declining efficiency of intestinal calcium absorption with hen age would be a more sustainable way of supporting daily eggshell formation, while minimising loss of bone strength. Recent scientific research has shed more light on changes in calcium utilisation in the ageing hen.

Vitamin D metabolism

Vitamin D is key to maintaining calcium and phosphorus homeostasis in the laying hen. Gloux and others (2020) clearly demonstrated that during the eggshell formation process $25(\text{OH})\text{D}_3$ is hydroxylated in the kidney to produce $1,25(\text{OH})_2\text{D}_3$, the active form of vitamin D to stabilise serum calcium content. This metabolite binds to the vitamin D receptor in the cell nucleus and stimulates calcium absorption from the gut, reduces calcium excretion in the kidney and facilitates calcium mobilisation from bone. However, about 40 years ago, Abe and others (1982) indicated that the activity of 1 α -hydroxylase

in the kidneys in white laying hens was significantly reduced from 38 to 72 weeks of age. This implies that the production of the active vitamin D metabolite (ie $1,25(\text{OH})_2\text{D}_3$) becomes limiting for efficient calcium absorption, explaining why calcium utilisation reduces with age.

Recently, it was shown that this phenomenon still occurs in modern breeds. Pampouille and others (2022) selected hens with high and low eggshell strength from a group of brown laying hens at 84 weeks of age and analysed the concentration of vitamin D metabolites in the blood. They observed no difference in $25(\text{OH})\text{D}_3$ in the blood, while the content of $1,25(\text{OH})_2\text{D}_3$ was 20% lower in the hens with poor eggshell strength (Table 1). This observation corroborates with Abe and others (1982) who indicated that older hens apparently cannot efficiently activate $25(\text{OH})\text{D}_3$, even when the circulating levels of $25(\text{OH})\text{D}_3$ in the blood are adequate. Alternatively, plant-based $1,25(\text{OH})_2\text{D}_3$ in glycosidic form (G- $1,25(\text{OH})_2\text{D}_3$) can be used to compensate for this lack of 1-hydroxylase in the kidneys. Where the glycosides are hydrolysed in the gut, G- $1,25(\text{OH})_2\text{D}_3$ becomes a slow-release source of $1,25(\text{OH})_2\text{D}_3$ which can directly stimulate calcium homeostasis, irrespective of the reduced activity of 1-hydroxylase.

Dietary supplementation with $1\ \mu\text{g}$ G- $1,25(\text{OH})_2\text{D}_3$ /kg from *Solanum glaucophyllum* meal after peak production improved laying rate and feed conversion ratio.



Photographs: Oliver Oettli; Bert Jansen



ADVERTORIAL



▲ Vitamin D is key to maintaining calcium and phosphorus homeostasis in the laying hen and to support eggshell quality

There are a few plants that naturally produce G-1,25(OH)₂D₃, of which *Solanum glaucophyllum* is known to have the highest level of glycosilation. Standardised *Solanum glaucophyllum* meal is an effective and safe way to supplement animal feed and support the mineral metabolism in animals.

***Solanum glaucophyllum* meal**

An experiment was conducted in 2022 at UNESP (Brazil) with white LSL-Lite laying hens from 110 to 120 weeks of age. The hens were fed a maize-soya diet with 3.8% Ca, 0.39% available P (including phytase matrix) and 2'700 IU vit D₃/kg. At the start of the trial, a number of productive hens were selected and randomly allocated to one of three treatments (Control (C), C+ 1 µg G-1,25(OH)₂D₃/kg and C+ 2 µg G-1,25(OH)₂D₃/kg). Panbonis 10 (Herbonis Animal Health GmbH, Switzerland) was used as the source of the standardised *Solanum glaucophyllum* meal. Production performance and eggshell traits were measured during the 10-week trial period. (Results given in Table 2.)

Dietary supplementation with 1 µg G-1,25(OH)₂D₃/kg from *Solanum glaucophyllum* meal from 110 to 120

weeks of age improved laying rate and feed-conversion ratio. Doubling the dose only showed a marginal additional effect. Egg weights were slightly lower in the supplemented groups but were not significantly affected. Eggshell traits were all

improved, again with the lowest G-1,25(OH)₂D₃ inclusion level showing the best increase. The trial clearly demonstrates that the supply of 1,25(OH)₂D₃ glycosides from *Solanum glaucophyllum* meal supports calcium metabolism and eggshell quality in laying hens. 📄

Table 1 – Analyses of vitamin D metabolites in blood plasma at 96 weeks of age in hens selected for poor and good eggshell quality at 84 weeks of age (adapted from Pampouille and others, 2022).

	Hens with poor shell quality	Hens with good shell quality	P-value
Eggshell strength (84-wk), N	3051 ± 464	3891 ± 493	
Blood plasma contents			
25(OH)D ₃ , nmol/L	172 ± 26.6	176 ± 23.7	NS
1,25(OH) ₂ D ₃ , pmol/L	1050 ± 257	1248 ± 274	0.087

Table 2 – The effect of dietary supplementation with graded levels of G-1,25(OH)₂D₃/kg on production performance and eggshell traits in white laying hens from 110 to 120 weeks of age.

	Control (C)	C+ 1 µg G-1,25(OH) ₂ D ₃ /kg	C+ 2 µg G-1,25(OH) ₂ D ₃ /kg
Egg production, %	86.7 ^a	90.4 ^b	91.6 ^b
Egg weight, g	66.5	66.0	66.1
Feed-conversion ratio	1.85 ^b	1.77 ^a	1.76 ^a
Eggshell traits			
Eggshell weight, g	5.5 ^a	6.1 ^b	5.9 ^b
Eggshell thickness, mm	0.34 ^a	0.36 ^b	0.37 ^b
Eggshell density, mg/cm ²	71.4 ^a	79.3 ^b	77.1 ^b
Eggshell strength, N	24.8 ^a	36.7 ^b	29.8 ^b



CREATING A MODEL FOR THE FARM OF THE FUTURE

The team at Minnesota's Tree-Range Farms is pioneering an approach to raising chickens and trees in tandem, storing more carbon and water in the soil while providing an entry point for minority farmers who are often left out of the conventional system. By **Twilight Greenaway**

When you approach the poultry paddocks at Salvatierra Farms outside Northfield, Minnesota, in the US, you might not notice how many chickens are hiding among the tall grasses and young hazelnut trees at first. And that's by design.

On a warm afternoon in June, 1 500 seven-week-old hens had come out to mill around – lured by feed and water stations – but many were hard to find.

"There's an eagle that comes around here," says Reginaldo Haslett-Marroquin, the farmer and visionary behind the operation. "It has flown over a few times, and it just keeps going." Soon, he adds, the trees and other perennials will be tall enough



Reginaldo Haslett-Marroquin, the founder of the Regenerative Agriculture Alliance and cofounder of Tree-Range Farms. Together the nonprofit and for-profit business have created an 'ecosystem' that includes more than 40 farms and a processing plant in the US Midwest



One of several flocks raised at Organic Compound Farm in Fairbault, Minnesota, which helped pioneer and has been using the Tree-Range system for six years.



The birds are fed outdoors, and the placement of the feeders help draw them out of their barns to eat insects and some plants

to provide cover for the birds, but the grass will suffice in the meantime.

Salvatierra Farm, which was a conventional maize and soya operation until Haslett-Marroquin bought it three years ago, is in the midst of a wholesale transformation. He has planted more than 8 000 hazelnut trees, created a water-catchment pond, begun managing the forest that frames it on two sides, and levelled the land where he plans to build a home for his family.

The past summer, he also raised the first flocks of chickens there. As it comes into maturity, Salvatierra stands to become a central hub around which a growing network of farmers,

scientists, nonprofit organisations, and funders will rotate – all in the name of regenerative poultry farming.

Regenerative is a complex term with many interpretations. Haslett-Marroquin's approach combines what he learned growing up in Guatemala – where chickens thrive in multi-story jungles – with a deep understanding of the American Midwest's native ecosystems. Unlike the pasture-based model of poultry production which typically uses mobile barns and is sometimes also referred to as "regenerative," it involves raising the birds in one spot, alongside trees and other perennial crops as a way to build soil that is rich with organic matter and ▶



CHICKEN AROUND THE WORLD



The Regenerative
Agriculture Alliance
processing team

carbon, captured and stored water, and make the land on which it takes place more resilient in the face of the climate crisis.

At the core of the effort in Minnesota is Tree-Range Farms, the company Haslett-Marroquin cofounded, and a growing network that includes more than 40 farms in the region. The Regenerative Agriculture Alliance, (RAA), the nonprofit organisation he founded, also plays a key, on-going role in developing the infrastructure behind the network and has plans to scale it up to extend across the upper portion of the US's maize belt.

But the grand vision doesn't end there. There are also farms using Haslett-Marroquin's approach in Guatemala and Mexico. And if its advocates have their way, the core practices and the philosophy behind it could be replicated in many parts of the

world in the future.

And at a time when Americans eat over 16 million servings of chicken every day and industrial poultry farming at that scale comes with environmental challenges, it could be a welcome change.

Like the chickens hiding in the grass, the sophistication of Haslett-Marroquin's regenerative poultry system may be hard to spot for the

'Everything that is part of the standard was tried and tested, from breeds to how long you feed them, to all aspects to consider in the coop construction'

untrained eye. For years, he collaborated on research and development which has led to the establishment of a production standard

that has very specific parameters.

Each poultry flock or "unit" includes 1 500 chickens, a barn, and 0.6ha of land divided into two fenced-in areas, or paddocks. The birds spend every day outside – where they eat a combination of dry grain, sprouted grain, bugs, and plants – in one paddock, and when the plants there have been sufficiently grazed down, they're moved to a second one. Farms typically start with one unit, but they can also opt to start with half a unit if land is scarce.

"Everything that is part of the standard was tried and tested, from breeds to how long you feed them, to the right kind of welfare aspect to consider in the coop construction," says Diane Christofore, the executive director of the RAA, which funded the research and development.

In addition to trees, farmers are



Each flock in the Tree-Range system is made up of 1 500 birds on 0.6ha of land. Most farmers raise more than one flock



Farmer and Tree-Range Farms cofounder Wil Crombie stands among the mature chestnut trees at the Organic Compound in June 2023

encouraged to plant other perennials such as grasses, elderberry bushes and comfrey. And if they grow maize and soya beans, they are invited to diversify their rotations by adding oats for soil health. In eight to 12 weeks, farmers can take the birds to the small-scale processing plant that the RAA runs in Northern Iowa. If they opt to sell them under the Tree-Range label, storage, distribution and marketing are all taken care of.

The hope is to provide a relatively easy point of entry for beginning farmers looking for a way to start earning capital quickly. With their short lifecycle and relevance across many cultures, chickens allow farmers to get on board and join the network while renting land and/or working other jobs. Once the barn has been set up the required labour is concentrated in the mornings and evenings, making it a relatively easy lift for new farmers.

“We’re creating this for people who lack the resources for large-scale agriculture, but also working with people in conventional agriculture who might be interested in transitioning,” says Christofore.

Many farms raising birds for Tree-Range are run by immigrants, and Feed the People Farm Cooperative is

After years of prototyping the system on his first farm, everything fell into place at Salvatierra

one example. There, Cliff Martin has been raising two flocks a year on land that his dad owns as part of a collective with three other young farmers.

They see the farm as part of a larger collective movement and the money they earn from the flocks goes toward maintaining the land, training and offering events for other young community organisers in the region. They’re also working on adding a composting processing site.

Haslett-Marroquin says there are more interested farmers than the RAA can support at this point, so he’s confident that the network will keep growing.

For one, he says, the modular approach to adding flocks to farms makes it relatively simple to replicate. After years of prototyping the system on his first farm, he says everything fell into place very quickly at Salvatierra Farms.

“There was no guesswork,” he says. “We could take 500 or 5 000 or a million hectares, and we’d know exactly what to do. That’s the difference between farm-level thinking and system-level thinking. And at the end, it’s the scale that makes it truly regenerative, not the farm itself.”

Feed-conversion ratio – the relationship between the feed and the final product – is a common metric for measuring financial success and environmental impact in meat production. But the RAA’s definition of regenerative turns that equation on its head.

The chickens in this system eat



The young farmers at Feed the People Farm, a collective operation that works with Tree-Range



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more grain than chickens raised in a barn because they move around much more. But the farms have an overall smaller footprint, because the added chicken manure boosts the productivity of the hazelnuts and other crops, without synthetic fertiliser. On 0.6ha, mature hazelnut trees will produce 350 – 550kg of nuts.

“Once you add up the output of meat, the output of hazelnuts, the large-scale sequestration of carbon,” Haslett-Marroquin says, “you can’t even compare it to a confinement model. It’s not apples to apples.”

At the core, his approach to food production is one that places productivity within a larger context of a balanced living system. It’s about “stewarding the transformation of energy from non-edible forms to edible ones”.

Haslett-Marroquin is confident that the system he has developed works, but he knows that Western scientific research is key to scaling it up.

Beth Fisher, a soil scientist and assistant professor at Minnesota State University is part of a team of scientists that started measuring the health of the soil, water, and the emissions released from farms in 2021.

Fisher says she was approached by Haslett-Marroquin, who asked her to gather evidence to add validation to what he had long observed and understood about the way regenerative practices work on the ground. She was interested in the approach, but it was the visit to his farm, where birds and trees had been raised side by side for a dozen years, that sealed the deal.

“The soil structure is beautiful – it has a wonderful collection of organic matter,” she says. “Water infiltrates beautifully.” Since then, she and the students she works with have been



Scientists have praised the soil quality at Salvatierra Farms

gathering samples of soil on farms in the network, as well as neighbouring conventional maize and soya farms.

“We’ll be disseminating the results in academic peer-reviewed literature, but also elsewhere so it can find its way into the context where farmers can hear about it.”

Lack of accessible meat processing is a common barrier to entry for small-scale poultry producers. So, in prototyping a network of producers, the RAA has invested in its own processing facility.

The modest facility in Northern Iowa was acquired in late 2021. That first year, it processed 1 000 chickens.

‘The soil structure is beautiful – it has a wonderful collection of organic matter. Water infiltrates beautifully’

In 2022, it processed 50 000, and manager Arnulfo Perrera was hoping to reach 80 000 to 90 000 birds by the end of 2023.

Trained in Honduras, Perrera joined RAA in 2022 to manage its



On a farm of 0.6ha, mature hazelnut trees will produce 350 to 550kg of nuts

processing plant. He staffed it with 14 people, despite its isolated location and the challenge of competing with larger companies that could offer higher pay.

Perrera hopes to help create a new model in the US, in an industry where ever-faster line speeds, crowded facilities, underage workers, and resistance to protecting workers’ health have become the norm. “I believe strongly that if the food is going to be sustainable, it needs to be that way throughout the food chain – on the farm side, as well as the processing,” he says.

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For Jose Morales, who has been at the plant since the RAA took ownership, the difference is palpable. The facility where he worked previously slaughtered 13 000 chickens every day of the year; 2 000 workers worked 24 hours a day in three shifts. He felt like a cog in a machine.

At the RAA facility, Morales says, he's had a say in shaping the work day and he's helped train other employees. "We created a plan – each person will do each job for two, maybe two and a half hours. So you're not doing the same thing all day." It's less repetitive motion, easier on everyone's bodies, and all the workers are trained to work all the roles.

"It's harder in the beginning, but then it's better. When someone's sick, or they don't have a babysitter, we have somebody to call."


Nonprofit meat-processing plants are rare, but Christifore, Haslett-Marroquin, and the rest of the team see the fact that they don't have shareholders to appease as key to their approach. The goal is to enable the growth of the network of farms, and provide better jobs than many meat-processing facilities.

Haslett-Marroquin is soon stepping down from leading RAA and hopes that the network moves toward a collective model of leadership. The idea is to create a strong system wherein everybody leads and follows at the same time. "And if you do that, you unleash the energy of the people, and it is unbelievable."

He has his sights set on reaching 250 farms on 20 000ha in Minnesota, Iowa and Wisconsin. From there, he sees the network expanding around

the United States, until it reaches 500 million chickens. That growth sounds enormous, but it would still only be five percent of the total chickens raised in the US. And at that point, he says, a truly regenerative system would have some real leverage.

"At that point, we'll look at the industry and say, 'OK, folks, why should we only do five percent of the total poultry system this way when we can do 100 percent?'" says the visionary farmer.

"I may not get there myself, but somebody else could get us there. It doesn't matter how long it takes. This is about the seven generations in front of us." 

This story was produced in partnership with Edible Communities, and originally published on civileats.com



Haslett-Marroquin has his sights set on growing the network of farmers to reach 250 farms on 20 000ha in the Midwest

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'TWAS THE RAP BEFORE CHRISTMAS

Words: **Lycett Winter**

Illustrations: **Jason Bronkhorst**

Imagine a chicken rapper was challenged to an MC battle at the end of 2023...

Bird flu, bird flu, whatchoo gonna do? Whatchoo gonna do when it comes for you?

'Twas the dawn before Christmas and Mother Claus was trippin' – She had nothing in the larder but some stale old bread and drippin'.

"The old fool betta have lotsa goodies on his sleigh, Or that table's lookin' mighty naked, come Christmas Day!" When the reindeer returned with her husband to the grotto, He was all red-faced and jolly, i. e., seriously blotto.

"Greetings to my darling," he burped, all fat and merry, Beard full of mince pie crumbs and reeking of brown sherry.

"Don't you 'my darling' me and stand there looking pissed! Did you, or did you not, go shopping with my list?"

"Your list? Ah, yes!" his cheeks grew little beads of sweat...

"You know, I had a feeling there'd be one thing I'd forget."

Then he stood there looking hangdog while his missus went ballistic; Calling him a lotta names we can't call altruistic.

Till suddenly by memory he happily was stricken...

"It's not that bad, dear Mother Claus – at least I got a chicken!"

Bird flu, bird flu, whatchoo gonna do? Whatchoo gonna do when it comes for you?

"A chicken? Just a chicken? Will it feed a hundred elves?

Will there even be a wishbone left for us to feed ourselves?"

But Santa took affront at this, and trynna sound more sober, "The chicken?" he enunciated. "No fowl could be nobler!

Ten thousand years, the magic chook has helped us feed our asses –

The humble pullet's a magic bullet; the protein of the masses!

And still, despite the bird flu and successive rural dramas,

We know we can rely upon our hard-working farmers."

"It's a mystery, a miracle that they can play the game,

Plague or drought or floods be darned; their prices stay the same!

It'll always be the cheapest meat; how is their pricing crafted?"

Said Mrs C, "It seems to me, the

farmer's getting shafted...

The price of feed is through the roof, while sneezy flocks are dyin' And import firms with chicken gluts in stealthy wait are lyin'

To survive, the poultry farmers need to raise how much they're chargin' But the paltry wholesale price stays fixed to guard the retail margin!"

Bird flu, bird flu, whatchoo gonna do? Whatchoo gonna do when it comes for you?

"It's iniquitous," she ranted on, her shopping list forgotten, "That those who farm our staple meat



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are treated quite so rotten.
It's time they had a protest march with
banners and much cluckin'
To tell the stores they're sick and tired
of rampant farmer-pluckin'!"

And though Santa was quite
grateful to be facing no
more ire,
He tried to Devil's
Advocate, but threw
petrol on the fire...
"But the supermarkets
also have a tricky line
to walk –



If the price of chicken rises, their
customers will squawk."

"Then squawk they must," his missus
cried, "And find a way to cope,
'Cos the local poultry industry is
running out of rope.
When they're counting pennies just to
call an avian veterinarian,
We need to pay them more per bird, or
all go vegetarian!"
Then she bustled over to the stove to
set a pot a-boiling,
"So, chicken soup for Christmas lunch
– in her grave my mom is roiling!"
Then Santa, trying to cheer her up,
unwisely pinched her bottom...

'Twas the last mistake he ever made,
'cos that was when she shot him.

***Bird flu, bird flu, whatchoo
gonna do?***

***Whatchoo gonna do when it comes
for you?***

***Bird flu, bird flu, whatchoo gonna do?
Whatchoo gonna do when it comes
for you? 🦅***

The South African Poultry Association would like to thank all our
members, partners and suppliers for their support during 2023.

We wish you all a blessed festive season.

Happy Holidays!





ON THE WIRES

More bird flu havoc, an egg museum, a feed app and more global news

Compiled by **Charmain Lines**

HPAI hits the Galápagos Islands



Located off the coast of Ecuador in South America, the Galápagos Islands are home to species of wild birds that live nowhere else on the planet. It is, therefore, of great concern that three birds found dead on the islands have tested positive for the H5N1 avian influenza virus.

The discovery was announced in late September.

In response, biosecurity protocols have been strengthened to reduce

the risk of the virus spreading. These include the closure of several tourist visitor sites on the islands of Genovesa, San Cristobal and Española.

Tour operators have also been instructed to implement stricter procedures for disinfecting footwear and clothing before landing at other visitor sites, and to continuously disinfect outdoor public areas and dinghies used for ferry visitors

to the islands.

Authorities are monitoring the habitat and nesting areas of endemic bird species such as Galápagos penguins and flightless cormorants, and teams have been deployed across the archipelago to assess the situation.

Park guides and tour operators have also been asked to assist with monitoring the behaviour of wildlife, and to report any concerns. [📰](#)

Egg museum opens in China



This year ends on a high note for China's egg industry with the opening of the Egg World Science Museum (EWSM) in Shanghai. Far from a dusty collection of eggs gathered over centuries, the museum offers exhibitions, interactive zones, cooking and tasting areas, games and even live broadcasts.

Based at the Shanghai University of Sport, the EWSM aims to promote the understanding of eggs as a health food and their role in sports nutrition. It will act as a centre for the exchange of ideas on production and processing, highlighting the most advanced technologies, and will

inform the public about eggs both generally and scientifically.

The museum also conducts research and offers consulting services.

The 1 700m² museum is a joint initiative between Lyja Media who publishes *Poultry International* China edition, the National Layer Technology System and various Chinese egg enterprises. Entrance is free for industry partners, young people and students. Its developers say that the EWSM showcases the "culture and development of China as the world's largest egg producer and consumer, displaying advanced technology and rich egg products". [📰](#)

Feed mixing made easier

If you want to mix your own chicken feed, there is now a free mobile app for chicken farmers to help you make sure that your birds get the right nutrition in the most cost-effective way.

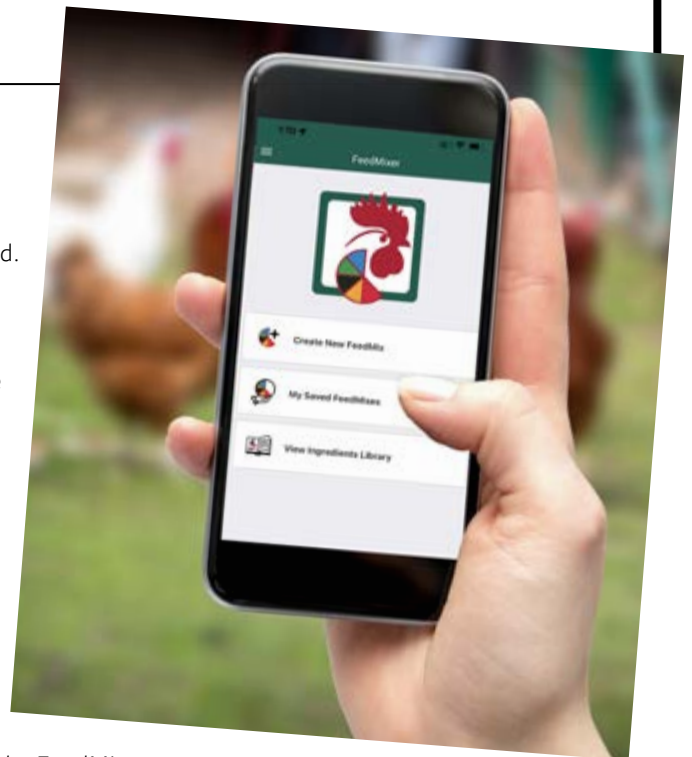
The FeedMixer app, which was designed by poultry nutrition experts at the Department of Poultry Science at the University of Georgia in the US and funded by the World Poultry Foundation, guides farmers on feed mixes for layers, broilers and dual-purpose birds at various ages.


It also includes a large library of feed ingredients to make it relevant for farmers in different parts of the world.

To use the app, you simply click on the type of chicken you are feeding and then select the ingredients you have available and the proportions

you intend to blend. The app will tell you whether your chosen mix will give your birds the energy, protein, fibre, vitamins and minerals they need without wastage.

Prof Sean Chen from the Department of Poultry Science at the University of Georgia says that the FeedMixer app was specifically designed to be easy to use for people with a basic poultry background, including backyard and emerging chicken farmers.



*The FeedMixer app is available in English, French, Spanish and Portuguese in the Google Play Store and on Apple iStore. 

Can herbs keep chickens healthy?


This question is the subject of a project launched in Ethiopia by researchers from Nottingham Trent University in the UK. In simple terms, the study explores the ability of plants that grow locally to replace antibiotics in poultry diets in Ethiopia.

The project is led by Dr Ashraf Alkthib from Nottingham Trent, Dr Metekia Tamiru from the Department of Animal Science at Jimma University in Ethiopia and Dr Jane Wamatu, ruminant scientist at the International Centre for Agricultural Research in the Dry Areas (ICARDA), an international organisation that investigates innovative science-based agricultural solutions to improve livelihoods.

The new project builds on work



previously done in Ethiopia. Studies carried out at the poultry farm of the College of Veterinary Medicine and Agriculture of Addis Ababa University looked at the antimicrobial and immune-stimulatory effect of mixing 1% thyme, mint, basil, rosemary and lemongrass in the basal broiler ration.

The aim of the Nottingham Trent study is to explore the ability of inexpensive, local plants to replace antibiotics in poultry diets in Ethiopia. Should they succeed, the researchers anticipate that their solution will help lower the production costs of eggs and meat for Ethiopian consumers. 



Working out your selling price



It all starts with a thorough knowledge of your production costs, says **Chris Mason**



“How do I price my eggs correctly for the market?” – Xolani, via email

When it comes to establishing your selling price, the secret is to understand your production costs.

This critical aspect of your business determines whether you make or lose money, and it starts by completing an analysis after every cycle. By plotting your direct and indirect production

costs and the income generated you determine your profitability on your sales, and that is really the only way for you to calculate your selling price.

When asked about selling price, we often hear farmers say that they align with that of their competitors. Unfortunately, that is indicative of a farmer who’s unaware what it costs them to produce an egg or a chicken, which also means that they

aren’t able to calculate a margin that ensures profitability, and long-term sustainability.

So kudos to the reader who interrogates this subject. Here then, is a breakdown of the costs you have to consider when working out your real unit price:

Firstly, there are the direct production costs:

Start with the cost of rearing

the houses for production, including removal and disposal of old litter. Then add the cost of day-old chicks or point-of-lay birds, new bedding or litter, medications and feed. Next, cost the fuel used to heat the houses, electricity, and the diesel costs for generators (factoring in any rebates if relevant). Then come labour costs, and the direct maintenance on the farm, including costs of breakdowns and repairs.

Biosecurity maintenance, which includes equipment, chemicals and protective clothing, has to be costed, as does the disposal of mortalities. Then there are slaughter costs for broilers and grading costs for eggs, as well as the cost to transport birds to market, and packaging and marketing.

In addition the following general

overhead expenses need to be considered, because if you don't factor those in, you might undercharge for your product and come up short:

Loan repayments to the bank; lease or rental costs for the land; SARS and property taxes (municipal rates) as well as insurance. Your communication

'Indirect costs to factor in include loan repayments to the bank, taxes and insurance'

costs – phone and internet bills – and general office administration, including all maintenance costs of equipment such as printers, modems, computers and software. The costs of

statutory levies for eggs, food safety audits and compliance measures, financial bookkeeping and audit fees, banking charges and commissions or broker fees, and any costs associated with compliance with statutory requirements.

You should also provide for unexpected events and downturns in the market, and have a fund for variable, unexpected costs.

Each of these items needs to have a cost value attached. You need this to calculate what it costs you to produce your eggs so that you can determine what price you should charge when going to market. 📄

Christopher Mason is the operations and sustainability manager at SAPA. Contact him on christopher@sapoultry.co.za

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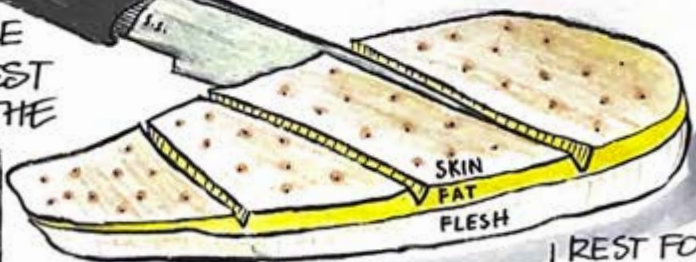


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RUB WELL WITH SALT, PEPPER & 5 SPICE POWDER. COVER & REST WHILST YOU MIX THE

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PRESS DUCK BREAST SKIN SIDE DOWN INTO PAN & HEAT.

COOK MEAT UNTIL ALL FAT HAS BEEN RENDERED ± 15 MINS. DRAIN OFF FAT. TURN BREASTS & COOK FOR A FEW MORE MINUTES

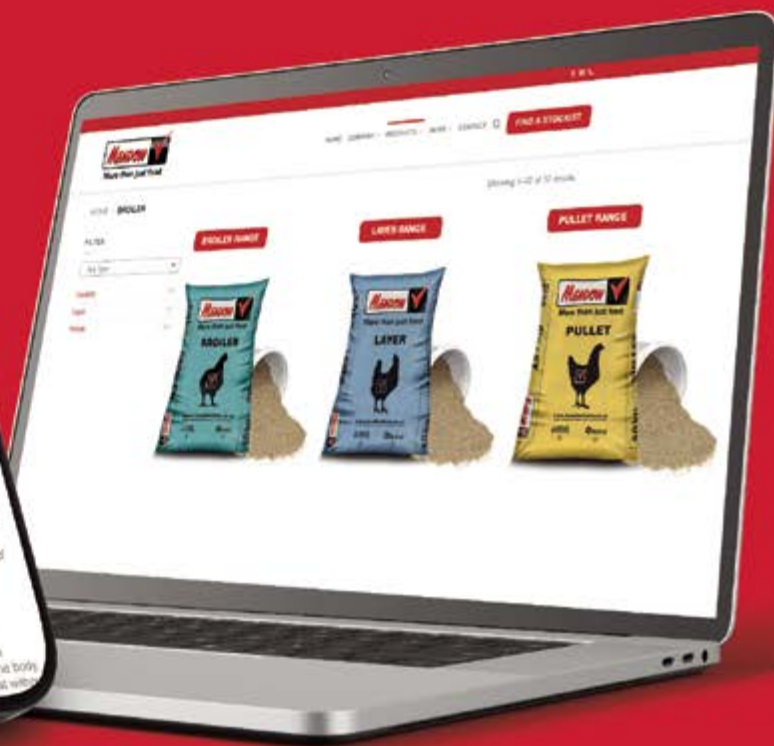
FLESH SHOULD BE PINK & SPRINGY & SKIN CRISP. ADD GLAZE & BASTE, TURNING OFTEN, UNTIL SAUCE IS STICKY ± 1 MINUTE REMOVE FROM HEAT

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