

AFMA MEMBER UPDATE

For additional information regarding the projects and actions mentioned in the AFMA Member Update, please reach out to the AFMA office at +27 (0)12 663 9097 or email admin@afma.co.za.

INTRODUCTION

Quarter three of 2024 in review

Dear AFMA Members,

As we conclude the third quarter of 2024, we take a moment to reflect on the key developments that are shaping the animal feed industry. This newsletter showcases AFMA's commitment to supporting its members and fostering a sustainable animal feed sector in South Africa.

In this edition, we feature highlights of the 77th AFMA Annual General Meeting that was held at the beautiful Cathedral Peak on 6 September 2024. Anina Hunter presented the chairperson's report, a new Board of Directors was elected, and the annual awards were presented, including a first-ever Lifetime Achievement Award.

Important milestones were reached on the Feeds and pet food bill and feedback is given on the significant changes that occurred within the Registrar's office at Act 36. Good news are shared with regard to feed registrations and renewals, and it seems as if the Farm feed Division has now reached an optimum capacity to handle the volume of registration applications within the agreed service delivery time frames.

An update on trade matters will highlight the latest developments on the import duties for soya oilcake and copper sulphate. AFMA continuously engage with the DTIC, ITAC and SARS, on trade matters and through good collaboration and communication, these matters are closely monitored and managed on behalf of the industry. Imported Gluten 60 also came under the spotlight during due to discrepancies in quality that were reported to AFMA.

Training and skills development remains a top priority, and we are pleased to announce that the Livestock Feed Milling Operator E-Learning Program is progressing well with a new online registration process and administration being handled by the AFMA office since the 1st of July. Two occupational qualifications in feed milling have been registered by SAQA and published by the QCTO earlier this year,

and marks an important milestone for AFMA regarding the facilitation of occupational learning opportunities for the industry going forward. Continuing in the spirit of training, AFMA also presented a guest lecture to final year animal science students at the University of Pretoria in August to keep them abreast of happenings and opportunities in the feed industry. Special focus was given on sharing knowledge about the regulation of animal feed according to Act 36 of 1947.

This issue also provides a glimpse into the upcoming AFMA Symposium entitled "Innovate for success in disruptive times" and we are proud to announce the first-ever *Student Research Expo* that will be held in conjunction with the Symposium.

The initiative aims to close the gap between innovation needs of industry and academic research outputs and to provide a platform where universities across South Africa can showcase their top agricultural research projects and star students through engaging poster presentations. Going forward, it is anticipated that AFMA will play a leading role to ensure continued engagements between industry and academia that will stimulate dialogue of mutual interest in the field of animal science and nutrition.

As we enter the final quarter of the year, I am optimistic about AFMA successfully driving its strategic actions. The collective efforts of our members are paving the way for growth and collaboration. We extend our heartfelt gratitude for the dedication shown towards AFMA's mission whether through participation in our training initiatives, golf day, symposium, or contributions to important industry discussions. Together, we are building a brighter future!

Liesl

Liesl Breytenbach
Executive Director: AFMA

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AFMA AGM

The 77th AFMA Annual General Meeting (AGM) was held on 6 September 2024 at the scenic Cathedral Peak, providing an ideal environment for reflection and future planning. Mrs. Anina Hunter chaired the member's session and presented the Chairperson's Report, offering a comprehensive overview of AFMA's achievements over the past year. Members are encouraged to take the time to [read this report](#) to fully appreciate the collective journey and progress made by the organisation.

During the open session, keynote speakers Mr. Wandile Sihlobo and Mr. Chris Schutte delivered engaging presentations. Mr. Sihlobo discussed global developments in BRICS agricultural policy under the Government of National Unity (GNU), while Mr. Schutte shared valuable lessons from his leadership journey in the industry.

AFMA's newly elected Board of Directors was announced and they are committed to drive progress and innovation in the feed industry through leadership, expertise, and dedication. The AGM welcomed Mr. Francois du Toit (Quantum Foods) and Mr. Ruan Stander (Meadow Feeds) for the first time to the Board, and thanked the outgoing Board members, Mr. David Nel and Dr. Neil Dominy, for their exceptional service and dedication towards the advancement of AFMA. Mrs Anina Hunter and Mr. Michael Schmitz were re-elected as Chairperson and Vice-Chairperson respectively.

- ▶ Mrs Anina Hunter – Epol
- ▶ Mr Brett Roosendaal – Epol
- ▶ Mr Dieter Fleischmann – Afgri Animal Feeds
- ▶ Mr Francois du Toit – Quantum Foods
- ▶ Dr Franscois Crots – Country Bird Holdings
- ▶ Dr Josef van Wyngaard – Voermol Feeds
- ▶ Mr Michael Schmitz – Meadow Feeds
- ▶ Mr Paul Saunders – Sovereign Foods
- ▶ Mr Ruan Stander – Meadow Feeds
- ▶ Mrs Sharlene Moodley – De Heus
- ▶ Mr Thinus van Lill – Quantum Foods
- ▶ Mrs Liesl Breytenbach, AFMA Executive Director

The AGM was not only a time for reflection but also a momentous occasion for celebration and networking. As customary, a warm feeling of 'reuniting with relatives' was shared by most of the guests attending the meet & greet function. During the evening we also celebrated excellence by presenting three prestigious AFMA awards, recognizing outstanding contributions and achievements within the agricultural community.



Technical Person of the Year

Dr. Vlok Ferreira of Molatek



For his outstanding contributions to feed technology and innovation in the industry.

Information about the award is available at:

www.afma.co.za/afma-technical-person-year-award-barney-van-niekerk

Person of the Year

Wandile Sihlobo of Agbiz



For his exceptional leadership and impactful contributions to the agricultural sector.

Information about the award is available at:

www.afma.co.za/afma-person-of-the-year-award

AFMA Lifetime Achievers Award

Mr. Chris Schutte, CEO of the Astral Group



For his visionary leadership, unwavering dedication and remarkable contributions to the feed and poultry sector.

It is the first time that this award is given by AFMA and you are invited to read more about it in the upcoming October AFMA Matrix edition.

AFMA Membership and Code of Conduct

Currently, AFMA has a total of 157 members, comprising 63 Full members; 75 Associate members; and 19 Affiliate members. AFMA continues to receive regular requests for membership via its [online application process](#), illustrating its relevance and importance as a representative body within the agricultural sector and a spokesperson for the animal feed industry.

Commitment to the AFMA Code of Conduct is mandatory for full and associate membership and compliance is verified bi-annually through an independent auditor appointed by AFMA. Since June 2023 the following membership activities are noted:

- 86 facility audits conducted
- 83 CoC certificates issued
- 38 new membership applications received
- 85 renewal applications received

Non-compliance issues: During this period non-compliances were recorded at 8.1% of audited facilities. The main issues were related to labelling, health & safety, and legal entity risks.

An [updated membership list](#) is available on the website and includes a status of compliance for each facility.

TOTAL AFMA MEMBERSHIP = 157 MEMBERS



63 Full members



75 Associate members



19 Affiliate members

NEW MEMBER COMPANIES JOINING AFMA



Assurecloud



AFMA TRADE COMMITTEE

Potential rebate facility for copper sulphate

The International Trade Administration Commission (ITAC) has approved an application for an increase in the general rate of customs duty on copper sulphate classifiable under tariff subheading 2833.25 from free of duty to 10% ad valorem. This decision follows ITAC observations of significant price disadvantages faced by domestic producers in comparison to similar imported products. In South Africa, copper sulphate is predominantly used in the mining sector with animal feed comprising less than 5% of total usage, but with a unique quality requirement for the product to be used in animal feed.

The increase in the import duty on copper sulphate affected both the "general" and "MERCOSUR" rate of duty. It is important to note that copper sulphate is not included in the list of products eligible for a preferential rate under MERCOSUR, which necessitates a corresponding increase in the MERCOSUR rate to

align with the general rate of customs duty.

In response to this increased duty, AFMA has initiated discussions with ITAC to explore the establishment of a rebate facility for copper sulphate used in animal feed. As part of the development of this process, ITAC has developed a questionnaire to gather information from users of copper sulphate (feed manufacturers, premix producers, and ingredient suppliers) to ensure that the rebate facility meets their actual requirements. This questionnaire aims to collect comprehensive information regarding the usage of copper sulphate, market conditions, and the overall impact of the copper sulphate import duty. The timely participation of copper sulphate users is crucial in informing ITAC's investigation and shaping the potential rebate structure. It is expected that ITAC will release the questionnaire in the next month and we strongly encourage all relevant members to actively engage in the process.

Consultation process on soymeal import duty review

In our efforts to gather comprehensive insights, AFMA has concluded its consultations and discussed its findings with all role players within the soya value chain during a meeting in July. These discussions aim to understand the diverse perspectives and implications of reviewing the import duty, particularly as the next review period under MERCOSUR is scheduled for 2026. Furthermore, AFMA is in the process of appointing a consultant to conduct a thorough economic study. This study will assess the potential impact of a reduction in import duties on all role players in the soya value chain. The findings from this research will not only inform our discussions but will also serve as a vital support document during the ITAC application process.



Heightened vigilance urged for Gluten 60 imports amid quality concerns

During AFMA's third Technical Committee meeting in August 2024, an urgent advisory on the quality of imported Gluten 60 was discussed, emphasizing the need for increased vigilance and enhanced testing protocols.

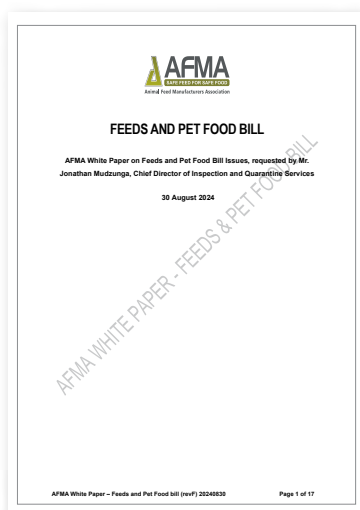
The advisory followed the discovery of adulteration in a shipment of Gluten 60 that had initially passed microscopic analysis. Upon arrival in South Africa, further testing revealed maize, maize bran, Gluten 20, and unidentified materials, although no harmful substances were detected. This incident highlighted the limitations of standard wet chemistry analysis and the importance

of adopting more comprehensive methods like microscopic and Near-Infrared (NIR) analysis. NIR can flag outliers based on known Gluten 60 profiles, providing an effective screening tool.

While this incident did not trigger the AFMA Early Warning System, this serves as a reminder of the critical role vigilance plays in maintaining feed quality and safety. Members are urged to review their quality assurance protocols and reach out to AFMA for assistance in accessing microscopic analysis services. A [list of accredited feed analysis laboratories](#) is also available on AFMA's website.

AFMA REGULATORY COMMITTEE

The Feeds and Pet Food bill: What you need to know!



The agricultural sector is on the verge of significant regulatory changes with the revision of the Feeds and Pet Food Bill, a key topic of discussion at AFMA's third quarterly Regulatory Committee meeting. The proposed legislation aims to modernize the regulatory framework governing the animal feed and pet food industry in South Africa, which has been in place for the past 77 years. The bill is designed to enhance safety, quality, and traceability throughout the production and consumption process.

At the end of August, AFMA submitted a [White Paper on the Feeds Bill](#) to the registrars' office. This document addresses some concerns and provides recommendations based on unresolved issues highlighted during the public consultation workshops held in 2019. Currently,

the Department is reviewing the inputs from AFMA and PFI and subsequent consultations are expected with other stakeholders towards the end of the year. Once the draft bill has been concluded by the state law advisors, it is ready for submission to Parliament.

The bill aims to create a more robust and modern regulatory framework that will be supported by a set of regulations incorporating advances in science, technology, and global standards. This will enhance South Africa's alignment with key trading partners and foster growth in the export market. A comprehensive article on the Feed and pet food bill will be featured in the upcoming October AFMA Matrix edition and members are encouraged to familiarize themselves with the proposed changes.

Streamlining Farm Feed applications: A step towards efficiency

The Farm Feeds Division, which has long faced challenges due to registration backlogs, is seeing a positive shift in product registration efficiency. Highlights from the latest status report by the Department includes a number of record-breaking stats:

- ✓ **Completed applications** – the highest completion rate since July 2019 (1,173 applications completed during May to July)
- ✓ **Outstanding applications** – no backlog and the lowest number of outstanding applications since October 2016 (799)
- ✓ **Outbound** – a record-breaking reduction in the outbound backlog, which dropped from 684 applications to just 18 over the last three months.

- ✓ **Assessment period** – new registrations from June 2024 and amendments from May 2024 are currently being assessed, confirming a service delivery period within the agreed timeframes, and for a second consecutive period.
- ✓ **Product renewals** – only 13 renewal applications from the 2024/2027 renewal cycle are still pending internal investigation.

Looking ahead, it is important to maintain this momentum in product registrations, whilst at the same time allocating sufficient resources to conclude the amendment of the farm feed regulations and the Feeds and Pet Food Bill.

New Registrar of Act 36

As of 12 August, Mr. Gift Moncho has been awarded the responsibility to manage all registration and administrative duties within the Agricultural Inputs Control division. This follows the promotion of Mr. Mudzunga to Chief Director of Inspection and Quarantine services. Mr. Maganyela Masenya will manage the AIC Inspection Services, replacing Mr. Moncho in that capacity. AFMA congratulates both Mr. Moncho and Mr. Masenya on their new appointments and look forward to continued collaboration between the feed industry and government.

Automated response message implemented

AFMA was instrumental in the implementation of an automated response message for all Act 36 farm feed personnel. The system was finally implemented in September and provides immediate response to all email enquiries by the public. The response gives answers to frequently asked questions, provides contact details and links to relevant documents, and is aimed at improving the efficiency and output of the officials dealing with product registrations. This milestone is recognized by the partnership between the Strategic Agricultural Inputs Forum (SAIF) and DALRRD and forms part of the implementation plan for the Gap analysis.

Addressing CMR substances in animal feeds: Key Takeaways from the Regulatory Committee

During the recent regulatory committee meeting, a significant portion of the discussion was dedicated to the topic of CMR (Carcinogenic, Mutagenic, and Reproductive Toxicant) substances in farm feeds. This issue has garnered attention due to its potential impact on the animal feed industry.

In April 2024, the registrar's office released a guideline outlining the process and application for derogation concerning farm feed products classified as "substances of concern." However, the lack of a clear classification of animal feed products under CMR categories has created a complex regulatory landscape, raising numerous challenges for stakeholders.

AFMA expressed concerns over how the phasing-out process of CMR substances has been handled, particularly due to the lack of proper public notice of the intention to prohibit products containing these substances. Subsequently, the validity of the proposed derogation process and accompanying guideline may be jeopardized. It was also noted that the guideline is not aligned with the farm feed regulations, hence it is not clear which feed products or product categories may be affected.

Moving forward, AFMA and PFI awaits feedback from the registrar on how they intend to address the concerns raised. AFMA will continue its engagement with the Registrar's Office and will assist with any effort towards awareness and creating a better understanding of the use of CMR substances in animal feed.

Renewals for 2025–2028 now open

The renewal of Farm Feed registrations for the 2025–2028 cycle will open earlier than usual this year. With over 5,000 applications expected for this cycle, members are encouraged to take advantage of the early bird opportunity and avoid disruptions to their operations. This is especially important for members that import and/or export products and would like to prevent unnecessary costs and demurrage fees at the port of entry due to unregistered products. All renewal applications for this period must be received by the registrar by 31 March 2025 at the latest.

Tips for a successful renewal application:

- ➔ view the latest farm feed tariffs on the AFMA website ([Tariffs for the 2024/25 summary](#))
- ➔ refer to the [Act 36 Guideline](#) for an outline on the renewal requirements
- ➔ submit your renewal application and Service Request form directly to the Registrar's Office with all required supporting documentation.



AFMA Livestock Feed Milling Operator E-Learning Program

The AFMA Livestock Feed Milling Learning Program aims to enhance business performance by equipping livestock feed milling operators with practical skills and knowledge. Initiated in 2020, this blended learning course combines e-learning with workplace-based training. It covers both theoretical and practical aspects, benefiting both learners and the feeding industry as a whole.

Since July, a new online registration process was implemented for the registration of learners and all the course information is available on the website. Members are encouraged to visit the [AFMA website](https://www.afma.co.za) for more information, or to contact the AFMA office at admin@afma.co.za or +27 (0)12 663 9097.

The course includes modules on various aspects of feed

milling, such as material handling, storage, feed production, feed processing, and team leadership. Learners gain hands-on experience through Work-based Integrated Learning (WIL), ensuring knowledge retention and application in the workplace. The program is adaptable, offering full or short courses over six months, with industry-recognized certification upon completion.

Participants need basic literacy, computer skills, and access to a dedicated learning environment. The course covers important topics like safety, quality control, and operational leadership, making it ideal for operators in the feed milling industry.

AFMA encourages all Feed Millers to reach out to us to support this initiative and enhance their workforce's capabilities.

AFMA recognizes animal nutrition research at the SASAS Congress

The 54th annual SASAS Congress was held from 3 - 5 July in East London, with the theme *"Animal Science and the Environmentally Stressed Production Animal."* The three-day event featured a variety of presentations, discussions, and research, bringing together students, academics, and professionals to share insights on the latest advancements in animal science. The congress included three parallel sessions focused on Breeding, Nutrition, and Industry/Production/Physiology.

International and local experts shared their knowledge, offering valuable perspectives on animal welfare and production efficiency. Prof. Cathy Dwyer from the University of Edinburgh, Scotland, gave a compelling presentation on animal welfare, focusing on animal behaviour through the lens of emotions. Dairy farmer Nigel Lok from Tsitsikamma provided practical insights into the challenges faced on farms, highlighting areas for improvement in bridging research and real-world application.

A highlight of the congress was the student debate on Animal Welfare, followed by a panel discussion led by Prof. Gareth Bath, focusing on the role of animal science in understanding, advocating, and upholding animal welfare. This engaging session highlighted the crucial importance of welfare practices within the industry and drew active participation from the audience.

As part of AFMA's continued commitment and dedication to advancing animal nutrition research and building bridges between industry and academia, AFMA sponsored a poster award that recognizes top research in animal nutrition. It is the 10th year that AFMA supports SASAS in this endeavour. This year were received 16 poster entries and an experienced panel of judges evaluated



From left to right: Mr Trevor Dugmore (SASAS President), Second Runner-Up: Ms Ramokone Millicent Mokonyama (North-West University), First Runner-Up: Mr Tony Ferreira (University of Pretoria), Winner: Mr Makiwa Simeon Mthana (North-West University) and Ms Bonita Cilliers (AFMA Technical and Regulatory Advisor).

Photo courtesy of Plasmedia.

their relevance to industry, scientific principles and visual appeal.

AFMA congratulates the winners and extends sincere thanks to the judges for dedicating their time and expertise to evaluating the posters. A special acknowledgment goes to SASAS for successfully organising the congress and for the continued collaboration with AFMA in the advancement of animal science.

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1

Effect of dietary oyster mushroom spent substrate in broilers fed diets supplemented with combined marula seed cake and mucuna seed meal



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1. BACKGROUND

The massive production of broilers chickens is threatened by high price of soyabean meal (SBM) (Shi *et al.*, 2012). This suggests the need for exploration of cost-effective alternative protein sources such as Marula Seed Cake (MSC) and Mucuna seed meal (MSM) for replacement of SBM in broiler diets. Both MSC and MSM have a potential to replace SBM in broiler diets. However, they are fraught with potentially toxic chemical substances that serve as antinutritional factors (ANFs) in broiler nutrition. It was therefore hypothesized that dietary oyster mushroom (*Pleurotus ostreatus*) spent substrate (OMSS) will reverse the detrimental effects caused by combined MSC and MSM in broiler chickens. Thus, the aim of this study was to investigate the ameliorative effects of dietary OMSS in broilers fed diets supplemented with combined MSC and MSM replacing SBM.

2. METHODOLOGIES

2.1. Diets formulation

Diet 1 contained 100% SBM. Diet 2 with 60% MSC plus 40% MSM. Diet 3 with 60% MSC plus 40% MSM + 1.25% OMSS. Diet 4 with 60% MSC plus 40% MSM + 2.5% OMSS, and Diet 5 with 60% MSC plus 40% MSM + 5% OMSS.

2.2. Study design and data collection

400-day old chicks were randomly assigned to 5 dietary treatments. Each treatment was replicated 8 times with 10 birds per pen. Feed intake, body weight gain, and feed conversion efficiency, serum biochemistry, and carcass traits were measured.

2.3. Statistical analysis

Data was analyzed for analysis of variance using the general linear model (GLM) procedure of SAS (SAS, 2012). The LSmeans were separated using the probability of difference (PDIF). Significant differences among them were deemed significant at $P \leq 0.05$.

3. RESULTS AND DISCUSSION

Dietary 1.25% OMSS improved feed intake, body weight gain, and feed conversion efficiency at grower and finisher phases only ($P < 0.001$) whilst it decreased the gizzard weight ($P < 0.001$). The OMSS generally decreased ($P < 0.05$) serum SDMA and alanine transaminase whilst it augmented and augmented increases in serum alkaline phosphatase ($P < 0.05$) and cholesterol ($P < 0.01$).

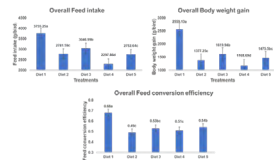


Figure 1. Overall growth performance of broiler chickens fed diets containing combined MSC & MSM plus varying levels of OMSS.

Table 1. Effects of OMSS inclusion in MSC & MSM containing diets on internal organ weights of broiler chickens

Parameters	Dietary treatments					SEM	P-value
	Control	MSC	MSM	MSC+MSM	MSC+MSM+OMSS		
Liver	2.32 ^a	2.17 ^a	2.52 ^b	2.79 ^b	2.74 ^b	0.186	P<0.001
Heart	0.31 ^a	0.29 ^a	0.31 ^a	0.31 ^a	0.31 ^a	0.008	P<0.001
Intestine	2.92 ^a	2.92 ^a	2.72 ^a	2.79 ^a	2.94 ^a	0.044	P<0.001
Gizzard	1.17 ^a	1.26 ^b	1.26 ^b	1.26 ^b	1.26 ^b	0.010	P<0.001
Caecum	0.24 ^a	0.23 ^a	0.23 ^a	0.23 ^a	0.23 ^a	0.013	P<0.001
Colon	0.16 ^a	0.16 ^a	0.17 ^a	0.17 ^a	0.17 ^a	0.007	P<0.001

Table 2. Effects of OMSS inclusion in MSC & MSM containing diets on serum biochemistry parameters of broiler chickens

Parameters	Dietary treatments					SEM	P-value
	Control	MSC	MSM	MSC+MSM	MSC+MSM+OMSS		
Albumin	32.52 ^a	32.52 ^a	32.52 ^a	32.52 ^a	32.52 ^a	0.003	P<0.001
SDMA	10.88 ^a	11.22 ^b	11.22 ^b	11.22 ^b	11.22 ^b	0.003	P<0.001
ALT	10.88 ^a	11.22 ^b	11.22 ^b	11.22 ^b	11.22 ^b	0.003	P<0.001
ALP	10.88 ^a	11.22 ^b	11.22 ^b	11.22 ^b	11.22 ^b	0.003	P<0.001
Cholesterol	10.88 ^a	11.22 ^b	11.22 ^b	11.22 ^b	11.22 ^b	0.003	P<0.001

4. CONCLUSION & RECOMMENDATION

Combined MSC plus MSM induced deleterious effects in broiler chickens that were limitedly abrogated by 1.25% inclusion of OMSS.

2

The evaluation of modern-day phytase enzymes on broiler production efficiency and cost

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Introduction

Calcium (Ca) and phosphorus (P) are vital minerals required for bone development and skeletal mineralisation in broilers. The P in most plant-based ingredients is in the indigestible form of phytic acid. Therefore, P must be supplemented to meet the birds' requirements. This supplementation is expensive due to P being the third most expensive nutrient in a broiler diet, adding significantly to production costs. One solution to the low digestibility of phytic acid is the use of phytase enzymes, which hydrolyse phytic acid, thereby liberating Ca and P, as well as amino acids and energy. This will have an impact on the profitability and sustainability of the broiler production system.

Methodology

This trial tested the positive control diet (PC) against three different phytase enzymes at 1 000 and 2 000 FTU/kg each:

- a hybrid phytase expressed in *Aspergillus niger* (PhyA);
 - an *Escherichia coli* phytase expressed in *Komagataella phaffii* (PhyB); and
 - a novel consensus bacterial 6-phytase variant expressed in *Fructodermatophilus* (PhyC).
- A total of 4 200, mixed-sex Ross 308 broilers were randomly assigned to one of seven treatments (50 birds/pen) with 12 replicates per treatment. The treatment diets were formulated using the manufacturer's Ca and digestible P (DGP) matrix recommendations and 75% of the metabolisable energy and amino acid recommendations. All broiler diets were analysed for

phytase activity prior to initiation of the study to ensure phytase enzymes were dosed at the correct levels. All diets were formulated using least cost and the weighted feed cost per tonne of feed based off feed intake was determined. Broiler bodyweight (BW) and feed intake (FI) were recorded on 0, 7, 16, 24, and 32 days of age, respectively. Average daily feed intake (ADFI), average daily gain (ADG), and mortality-corrected feed conversion ratio (mFCR) were calculated for each phase. On days 10 and 32, right tibia bones were sampled from two birds per pen with weights close to the pen mean. These were dried and defatted and used to calculate tibia ash percentage. Economic parameters were calculated on day 32, expressed as feed cost in R/kg broiler.

Results

Statistical analysis was conducted using JMP 17.0 (SAS institute) with a one-way ANOVA being used to compare the seven treatment diets. Means were separated using a protected Tukey honestly significant difference (HSD) test. Values without common superscripts differ significantly ($P < 0.05$).

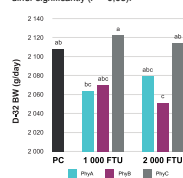


Figure 1 Day-32 bodyweight

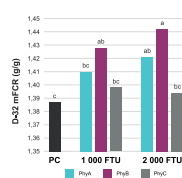


Figure 2 Day-32 mortality-adjusted feed conversion ratio

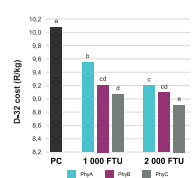


Figure 3 Day-32 feed cost per kilogram broiler

Conclusion

Supplementation with PhyC maintained broiler performance (BW, FCR), whereas PhyB did not, relative to the PC. When considering the cost of the treatment diets, utilisation of PhyC at 2 000 FTU was considered to be the most cost-effective diet, whereas the PC, followed by PhyA at 1 000 FTU was the most expensive. The use of PhyC at 2 000 FTU can lead to cost savings of R1.17 per kilogram broiler and R100.61 per tonne of feed relative to the PC. These results illustrate that, based on current high feed ingredient prices, higher doses of phytase can result in improved production costs.



3

Effects of enzymes inclusion in diets on internal organs, bone development and welfare in broiler chickens fed Kalahari melon oil cake (*Citrullus lanatus*)

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BACKGROUND

➢ Broiler meat is the most rapid growing source of protein for human consumption (Mottet & Tempio, 2017).

➢ Poultry feed is expensive with protein constituting the major feed component.

➢ A potential alternative protein source such as Kalahari melon meal (*C. lanatus*) that allows for least cost diet formulations must be explored.

➢ However, it contains higher fibre content than SBM.

➢ Therefore, to offset the high fibre, enzymes can Sused (Singh & Kim, 2021).

➢ The objective of the study was to determine the effect of enzyme inclusion on internal organs and bone development in broilers fed Kalahari melon meal.

➢ The study was conducted at NWU Molewane Farm, South Africa, for 42 days, *ad libitum* feeding

➢ 400, day old cobb 500 chicks were purchased from Chicken Ranch (Phy Ltd). KMM Highland essential oils, other feed components Nutretec (Pty Ltd) and Chemuquic (Pty Ltd), South Africa.

➢ Five experimental diets were formulated (n = 8 replicate pens per treatment)

➢ A standard broiler diet (Control), 10% KMM, 10% KMM was treated with 3% Protease, 3% XB and 3% XAP.

➢ Measurements post-slaughter, internal organs, and bone development parameters, latency to lie.

➢ Data was analyzed using the general linear model procedure of SAS (2010) in a CRD with diet as the major factor.

RESULTS AND DISCUSSION

Figure 1. Intestinal morphometric measurements

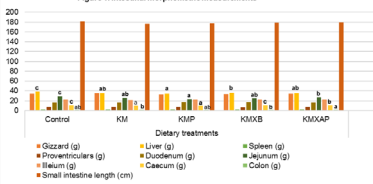


Table 1. Effects of enzyme inclusions on tibia biomechanics of broiler chickens fed Kalahari melon meal based diets

Parameters	Dietary treatments					
	Contr	KM	KMP	KMB	KMXAP	Scm
Latency-to-lic test (min)	9.69 ^a	9.21 ^a	8.79 ^b	7.32 ^c	8.84 ^b	0.72
Tibia weight (g)	16.89 ^a	17.85 ^b	18.20 ^b	22.09 ^c	20.07 ^b	1.08
Tibia diam prox end (cm)	1.73 ^a	1.83 ^b	1.60 ^a	1.96 ^b	1.93 ^b	0.07
Tibia diam mid (cm)	0.56 ^a	0.73 ^b	0.73 ^b	0.63 ^a	0.63 ^a	0.04
Tibia length (cm)	10.00	9.63	9.83	10.33	9.76	0.28
Tibia diam distal end (cm)	1.56	1.60	1.50	1.66	1.56	0.06
Bone breaking strength (N)	132.13	196.58	143.72	171.98	147.44	26.5

a, b, c Means with different superscript are significantly different ($P < 0.05$). Dietary treatments: control (commercial broiler diet), KM (10% KMM), KMP (10% KMM+protease), KMB (10% KMM+xylose and β-glucanase), KMXAP (10% KMM+xylose, amylase and protease), SEM: Standard Error Mean

➢ Diets significantly affected ($P < 0.05$) the Latency-to-lic test which measures welfare of birds. Broiler chickens fed control and KM had the highest ($P < 0.05$) standing persistence.

➢ KMM or enzymes in diets improved ($P < 0.05$) the tibia linear measurements and improved ($P < 0.05$) bone mineralization (MgZn).

➢ No dietary effects ($P > 0.05$) were recorded on the internal organs apart from the weight of the liver, jejunum, caecum and colon which improved ($P < 0.05$).

➢ No dietary influence was observed on growth plate analysis ($P > 0.05$)

conclusion and recommendation

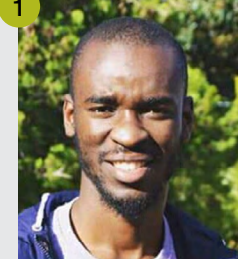
➢ Inclusion of enzymes in Kalahari melon meal-based diet can effectively improve the utilization and digestibility of minerals for enhanced bone development and welfare in broiler chickens. Thus, KMM with enzyme inclusion has a potential to be used as an alternative protein source

References

Mottet, A. & Tempio, G., 2017. Global poultry production: current state and future outlook and challenges. *World's Poultry Sci.* 73, 245-256.

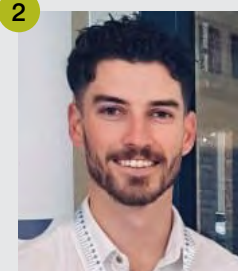
Singh, A.K. & Kim, W.K., 2021. Effects of dietary fiber on nutrients utilization and gut health of poultry: a review of challenges and opportunities. *Animals*, 11, 181.

1



WINNER:
Makiwa Simeon Mthana (North-West University) for his poster on "Effect of dietary oyster mushroom spent substrate in broilers fed diets supplemented with combined marula seed cake and mucuna seed meal."

2



FIRST RUNNER-UP:
Tony Ferreira (University of Pretoria) for his research on "Evaluating the efficacy of three commercial phytase enzymes based on broiler performance and production economics."

3



SECOND RUNNER-UP:
Ramokone Millicent Mokonyama (North-West University) for her research on "Effects of enzyme inclusion in diets on internal organs, bone development, and welfare in broiler chickens fed Kalahari melon oil cake (*Citrullus lanatus*)."

AFMA GOLF DAY

The annual Golf Day, held on 7 August at Centurion Country Club, was a tremendous success, featuring robust participation from members and sponsors. The day was filled with networking, camaraderie, and friendly competition, creating the perfect atmosphere for relationship-building.

Hole sponsors enjoyed excellent brand exposure while fostering connections within the industry. The Spirit Trophy was awarded to Trouw Nutrition, the team who best demonstrated teamwork, enthusiasm, and sportsmanship.



Trouw Nutrition receiving the Floating Spirit Award Trophy.

Feedback from attendees was overwhelmingly positive, confirming the event's importance on the AFMA calendar for fostering industry bonds in a relaxed, enjoyable setting.

Golf Team Winners

- 1st place: Free State Oil
- 2nd place: Bester Feeds and Grain
- 3rd place: Free State Oil

AFMA Symposium 2024 *Innovate for Success in Disruptive Times*

As industries worldwide face unprecedented disruptions, the animal feed sector must evolve to stay ahead. The AFMA Symposium 2024, themed *"Innovate for Success in Disruptive Times,"* aims to equip industry leaders with innovative solutions and strategies to thrive in a rapidly changing environment.

The Programme Committee carefully selected nine distinguished local and international speakers, chosen for their ability to inspire, innovate and offer practical strategies for business growth. With **less than a month to go**, members are encouraged to register and participate in the animal nutrition event of the year. Sponsorship opportunities are still available and you can [visit the website](#) for more information on the programme, featured speakers and sponsorship opportunities.

This year, the AFMA Symposium will include an **added focus** on students and animal science research by hosting the **first-ever AFMA Research Expo**. Eight universities across South Africa have been invited to submit their top 3 research projects on animal nutrition, food science (animal products) and/or agricultural economics. Participating students from various institutions will showcase their posters throughout the Symposium, allowing attendees an opportunity to browse, engage with students, and learn about their latest research.



AFMA Symposium 2024 31 October 2024

INNOVATE
For Success in Disruptive Times

Diamond Auditorium, CSIR International Convention Centre

AFMA attends the **AKEFEMA Conference** in Kenya

The Association of Kenya Feed Manufacturers (AKEFEMA) held its first-ever Feeds Exhibition & Conference in Nairobi on 17-18 July with the theme *"Resilience and innovation in an ever-changing feed industry landscape for enhanced food security in the region"*. The event was very well attended by almost 500 delegates from across the Eastern Africa Community, and included almost 47 exhibitors. The conference programme featured 20 speakers both local and international, including a number of South Africans and AFMA members.

AFMA supported AKEFEMA by attending the event, and participated in a special meeting between feed associations from Kenya, Tanzania, Morocco and South Africa to discuss areas of collaboration and cooperation in future. AFMA will continue to support its African counterparts and congratulated AKEFEMA for successfully hosting their first international conference. With the AKEFEMA team visiting South Africa in 2023, and attending the AFMA Forum, it served as a valuable opportunity to learn and guide the initiation of Kenya's own international conference and exhibition, and AFMA is proud to have played a small part in the creation of this successful event.



AFMA welcomes Petru Fourie as Operations Manager

AFMA is delighted to welcome **Petru Fourie** as our new Operations Manager! With more than 16 years of experience in the grain and oilseed industry, Petru brings a deep understanding of agricultural economics, research coordination, and stakeholder engagement to our team. She holds an MSc in Agricultural Economics from the University of the Free State and kicked off her career at Grain SA in 2008.

Throughout her journey, Petru has been a passionate advocate for aligning research with industry needs. She recognized the critical skills gap in agricultural research and took the initiative to create consortiums that bring together experts from universities, private companies, and public research

institutions to tackle pressing issues in the sector. Her collaborative spirit has led her to participate in numerous grain and oilseed forums and work closely with government departments, including the Department of Science and Innovation (DSI) and the Department of Agriculture, Land Reform and Rural Development (DALRRD).

At AFMA, Petru will manage our Training & Skills Development portfolio, focusing on creating effective training opportunities and fostering partnerships with tertiary institutions. She will also oversee the Management Information portfolio, where she'll be gathering valuable industry data to support the animal feed sector and ensuring the



Petru Fourie

success of key Trade and Training projects.

We're excited to have Petru on board and are confident that her expertise and collaborative approach will greatly enhance our efforts to advance the feed manufacturing industry. Welcome, Petru!

The AFMA Matrix

We are excited to announce that the next edition of the *AFMA Matrix* magazine will be launched at the AFMA Symposium! This jam-packed edition will feature the full symposium programme, profiles of our esteemed speakers, and recognition of our valued sponsors. It's a must-read for all attendees, offering key insights and highlights for the event. Make sure to get your copy there on 31 October 2024!

About AFMA

- The Animal Feed Manufacturers Association (AFMA) is the official representative body of the South African feed industry in the livestock sector and plays a pivotal role in the larger agricultural environment.
- AFMA members consist of animal feed and -ingredient manufacturers as well as suppliers of feed ingredients and related services such as consultants, laboratories, and feed-system installations.
- AFMA members feed approx. 100% of the broilers in South Africa and represent 60% of the total animal feed produced in South Africa.
- AFMA provides a unified voice and promotes the animal feed industry as an integral part of the food chain to deliver safe, nutritious, and affordable food for all.

Celebrating excellence



At the 2024 PSA Annual Meeting, held from 15-18 July 2024 in Louisville, Kentucky, Dr. Peter Plumstead, innovation director at Chemuniqué, was honoured during this year's Poultry Science Informal Nutrition Symposium.

[Link to article](#)

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