

# International Conference on Animal Science and Veterinary Medicine

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## E-Poster



# ANIMAL SCIENCE AND VETERINARY MEDICINE

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## The importance of oral care being addressed by a veterinary professional

### Keyana Beamon

Licensed veterinary technician, USA

Animals, both large and small that do not receive routine dental care are at risk for developing dental disease, if presenting problems are not corrected by a veterinary dentist. Dental disease can lead to secondary problems to the heart and other systems of the body. Veterinary professionals have developed research that indicated a scaling system based on how advanced the periodontal disease is. The higher the periodontal disease the likelihood that numerous teeth may need to be extracted. The purpose of this study is to understand the importance of oral health being maintained for a wide variety of animals. Veterinary dentists use dental charting and radiographing to determine what may need to be addressed in the oral cavity. Although each breed of species has unique oral anatomy, these tools utilize aid in the determination of what stage of periodontal disease is occurring. Understanding the anatomy and needs of each species' oral health is how periodontal disease can be either maintained or prevented altogether.

### Recent Publications:

1. Hamp SE, Olsson SE, Farsomadsen K, Viklands P, Fornell J. A macroscopic and radiologic investigation of dental diseases of the dog. *Vet Radiol.* (1984) 25:86–92. 10.1111/j.1740-8261.1984.tb01916.x [CrossRef] [Google Scholar]
2. Hajshengallis G. Periodontitis: from microbial immune subversion to systemic inflammation. *Nat Rev Immunol.* (2014) 15:30–44. 10.1038/nri3785 [PMC free article] [PubMed] [CrossRef] [Google Scholar].

### Biography

Keyana's expertise in veterinary medicine has sparked her interest in continuing to provide education on how to better provide quality care amongst many animal species. She has been in veterinary medicine for 10 years and has been practicing as a licensed veterinary technician for 2.5 years now.

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## Prevalence and Risk Factors of Toxoplasmosis in traditional pig farms in South-Eastern of Côte d'Ivoire

**G Fabrice GNALI**

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Toxoplasmosis is a cosmopolitan anthrozoosis caused by *Toxoplasma gondii*, which has long been the subject of numerous studies. In order to gain a better understanding of the epidemiology of human infection in Côte d'Ivoire, it is essential to estimate the prevalence of the parasite in meat intended for human consumption.

As pork is the second most commonly consumed meat in Côte d'Ivoire, a cross-sectional study was undertaken in 2019 among pigs reared in the south of the country to determine seroprevalence and associated risk factors. In the course of these surveys, 331 serum samples were collected from a population of 2,485 pigs in the departments of Agboville, Aboisso and Dabou and proportionally distributed. Specific antibodies were titrated using the modified agglutination test (MAT), the reference test for domestic animals and the OIE-validated test for pigs, and risk factors were assessed in relation to factors such as age, sex, breed and geographical origin (1,2). An overall seroprevalence of 44.1% (95% CI= [38.73%; 49.48%]) at dilution titre  $\geq 1/20$ , which is the highest in West Africa in pigs (3,4,5,6). Females (47.56%) and adults over one year old (56.25%) were found to be more infected. This could be explained by the fact that sows are used for breeding for a long time (4,6). In addition, there is no possibility of eliminating the parasite once the sow is infected (7,8). However, there was a wide variation in seroprevalence between the departments of Agboville (49.69%), Aboisso (46.99%) and Dabou (31.03%). A causal link was established in the univariate analysis ( $p < 5\%$ ) between *Toxoplasma gondii* seropositivity and factors such as sex, age and sampling area (department).

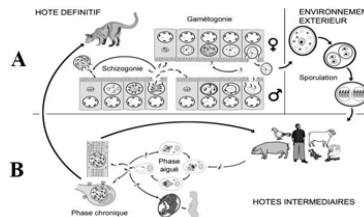


Figure 1: Cycle évolutif de *Toxoplasma gondii*

### Recent Publications:

1. Divers of ectoparasite diversity and abundance in paleotropical bats in Kenya
2. Prevalence and characteristics of salmonella isolated to smals mammals in Côte d'Ivoire
3. Profile de résistance et stéréotypage des *Pseudomonas aeruginosa* isolé des escargot géant d'Afrique
4. Impact of Consumption of Two Street Foods (Tuna Garba and Rice with Eggplant Sauce) on Vital Organs in the Wistar Rat (*Rattus norvegicus*).

### Biography

Gbohounou Fabrice GNALI, is a young veterinary surgeon who is slowly embarking on a research career in the animal resource management unit at the Institut Pasteur de Côte d'Ivoire, where he assists the head of the unit. Courageous and eager to learn with an open mind to science, he is also a member of GLOBAL SOUTH BAT, an organisation that campaigns for the preservation of wildlife biodiversity, in this case bats. He is a volunteer at Abidjan National Zoo, where he helps to diagnose and care for the institution's animals.

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## Accepted Abstracts



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**Prevalence, Public Health and associated risk factors of Coccidiosis in small ruminants at Deyniile sub-district in Mogadishu, Somalia**

**Abdirahman Barre, Abdifatah Muhudin Hirabe, Abdinasir Abdullahi Mohamed, Amel Adan Ibrahim, Hassan Elmi Mohamed, Mohamed Abdi Adan and Najmo Abdullahi Mohamed**  
Benadir University, Mogadishu Somalia

A prevalence study of coccidiosis was conducted in Raadeerka, Gubta and Bangalo in deyniile Sub-district, using a cross sectional approach. A total of 120 faecal samples were examined, the overall positive for the parasite was 100% of which, 37.5%, in sheep and 62.5% in goats. Sex and species did not significantly influence ( $p > 0.05$ ) the trend of infection. Prevalence of Small ruminants within different body conditions were Good 16(33.3%), Medium

20(41.7%) and Poor 12(25%) This indicates small ruminants with medium body condition are most likely to be effected with coccidiosis. There was significant ( $p < 0.05$ ) difference observed in Prevalence of Coccidia species based on the study site of small ruminants, and All ages of small ruminants (Sheep and Goat) were risk factors of infection when compared to the other small herds. In Raadeerka 14(29.5%), Gubta 18(37.5%) and Bangalo 16(33.3%) The prevalence of coccidiosis in Gubta was higher as compared to other two Sub-districts. The overall prevalence of pathogenic Eimeria species was 100 %, while the prevalence of that in sheep and goats were 78.68% and 48.13% respectively. Species, sex and age of animals in this case significantly influenced ( $p < 0.05$ ) the prevalence of pathogenic Eimeria species. The females (58.3%) significantly ( $p < 0.05$ ) had higher infection rates than males (41.7%). Animals of age greater than one years old (62.5%) had significantly ( $p < 0.05$ ) higher prevalence rates than one years (20.8%) and less than one years old (16.7%). Conclusively, prevention, public health awareness and effective control programs should be targeted towards the most predisposed females and younger animals.

The results of the study revealed that the sheep and goat Coccidiosis is widespread in the study areas. Therefore, there is a need for executing control measures and increasing public awareness in the prevention methods of the disease transmission.

**Recent Publications:**

1. Sh, Abdihamid & Barre, Abdirahman & Mohamed, Abdulahi & Samad, Mohamed. (2023). Impact of hot pepper, black pepper, Ginger and Moringa powder extracts against cowpea weevil *Callosobruchus maculatus* and two storage methods on cowpea, Mogadishu, Somalia. *Journal of Entomology and Zoology Studies*. 11(4): 33-37. 10.22271/j.ento.2023.v11.i4a.9213.
2. Barre, Abdirahman. (2023). Prevalence of hemorrhagic septicemia in dromedary camel (*Camelus dromedarius*) of some selected farms at Benadir region, Somalia. *Journal of Istanbul Veterinary Sciences*. 7. 8-14. 10.30704/http-www-jivs-net.1199746.
3. Barre, Abdirahman. (2023). Prevalence of hemorrhagic septicemia in dromedary camel (*Camelus dromedarius*) of some selected farms at Benadir region, Somalia. *Journal of Istanbul Veterinary Sciences*. 7. 8-14. 10.30704/http-www-jivs-net.1199746.

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## **Diseases occurrence of biofloc system in Sylhet district of Bangladesh: A report of mass mortality of striped snakehead, *Channa striata* (Bloch 793) due to co-infection with *Aeromonas veronii* and parasitic leeches**

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Sylhet Agricultural University, Bangladesh

Present study was conducted to assess the fish diseases in Biofloc fish farms of Sylhet District, the north-eastern part of Bangladesh. Nine biofloc farms were visited to collect data through a questionnaire interview method. A total of seven diseases and ten major problems were observed. The prevalence of fish diseases varied among Upazilas and Farms. Data showed the most prevalent disease in the north-eastern region of Bangladesh was tail rot (55.56%) followed by hypoxia (44.44%), dropsy (44.44%), fungal attack (44.44%), streptococcus (11.11%), gill clogging (11.11%) and exophthalmia (33.33%) and almost all respondents reported that they had the seed problems and the electricity problems (100%). high ammonia (66.67%) was ranked as second and followed by high mortality rate (55.56%), oxygen deficiency (44.44%), poor floc production (33.33%), low-quality Probiotic (33.33%), and production rate (33.33%). Among 8 biofloc fish farms, farmers of 6 farms found biofloc as a non-sustainable culture system due to low-quality probiotics, electricity problems, non-trained culturists, sudden death of fish, prevalence of disease, high mortality rate, seed problem, etc. Additionally, we investigated the incidence of mass mortality of striped snakehead fish, *Channa striata* collected from a biofloc fish farms. Clinical and laboratory diagnosis has been performed on diseased *Channa striata* and found leech infestation on the skin of the moribund fishes showing skin abrasion and red spots. Bacteriological investigation revealed yellowish coloured colonies on the Rimler-Shotts (RS) selective media for *Aeromonas* spp. later carried out polymerase chain reaction technique (16s RNA, 1450 bp) to ascertain the bacterial species, *A. veronii*. Further, the sequences date were blast and submitted in the National Center for Biotechnology Information (NCBI, Accession- ON854128). Severe pathological changes were noticed in the gill, liver, kidney, spleen and muscles of the infected tissues following histopathological investigation of diseased fish. Antibigrams study showed among fifteen antibiotics disc, gentamycin produced large area of zone of inhibition against *Aeromonas veronii*. The information of the study will be helpful for the proper management of fish diseases and treatment and to know the status of biofloc fish farms and their sustainability in the north-eastern region of Bangladesh.

**Keywords:** Biofloc System, Disease occurrence, Disease Diagnosis, Histopathology, Problems/ Threats, Sustainability.

### **Recent Publications:**

1. M.A.A. Mamun, S. Nasren, P.B. Abhiman, S.S. Rathore, K. Rakesh., N.S. Sowndarya, K.S. Ramesh, KM Shankar. 2022. Evaluation of feed utilization, immune response and disease resistance in striped catfish, *Pangasianodon hypophthalmus* (Sauvage 1878) fed with a novel *Aeromonas hydrophila* biofilm vaccine." *Fish and Shellfish Immunology Reports*, vol. 3, p. 100070
2. M.A.A., Mamun, S. Nasren, P.B. Abhiman, S.S. Rathore, N.S. Sowndarya, K.S. Ramesh and K.M. Shankar, 2019. Investigation of production, formation and characterization of biofilm cells of *Aeromonas hydrophila* for oral vaccination of fish. *J. Exp. Zool. India*, 22(2):
3. M.A.A., Mamun, S. Nasren, P.B. Abhiman, S.S. Rathore, N.S. Sowndarya, K.S. Ramesh and KM Shankar, 2019. Effect of biofilm of *Aeromonas hydrophila* oral vaccine on growth performance and histopathological changes in various tissues of striped catfish, *Pangasianodon hypophthalmus* (Sauvage 1878). *Indian J Animal Research*. doi: DOI: 10.18805/ijar.B-3814.

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## **Novel procyanidin antioxidant: A potential anti-fatigue agent in donkeys subjected to packing during the cold-dry season in northern Nigeria**

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<sup>1</sup>University of Ilorin, Nigeria

<sup>2</sup>Ahmadu Bello University, Nigeria

Overloading and overworking of donkeys may cause fatigue which is a major welfare issue. The experiment aimed at determining the effect of a novel procyanidin on some biomarkers of fatigue in donkeys subjected to packing during the cold-dry season in northern Nigeria. Methodology: Matured jacks (n=10) were used for the study. Five of them were given pycnogenol (PYC) in feed for seven days prior to packing (test donkeys), while another five were given feed only (control donkeys). Blood sample was collected for plasma analyses from each donkey before, during, 5 minutes after packing and at day three and seven after packing. The plasma samples were analysed for creatine kinase (CK), tumor necrosis factor-alpha (TNF- $\alpha$ ), superoxide dismutase (SOD) and total antioxidant capacity (TAC). Result: The TNF- $\alpha$  concentration was significantly ( $P < 0.05$ ) higher in the control group ( $35.6 \pm 3.3$  ng/ml), when compared with the test group ( $29.6 \pm 2.4$  ng/ml). The CK activity was significantly ( $P < 0.05$ ) higher in the control group during ( $95.9 \pm 12.4$  U/L), after ( $186.5 \pm 12.9$  U/L), 3 ( $60.3 \pm 8.8$  U/L) and 7 days after ( $205.8 \pm 8.0$  U/L) packing when compared with test group, with values of  $71.7 \pm 5.3$  U/L,  $140.2 \pm 19.8$  U/L,  $49.2 \pm 20.3$  U/L and  $71.9 \pm 15.7$  U/L, respectively. The SOD activity increased in the test group especially after packing ( $755.7 \pm 74.1$  U/L) and was significantly ( $P < 0.05$ ) higher than the value obtained in control group ( $443.2 \pm 59.9$  U/L). The TAC values obtained during the packing period were significantly ( $P < 0.05$ ) higher in test group when compared to the control group. Conclusion and significance: Packing caused muscle inflammation and damage indicating fatigue, which was mitigated by PYC.

### **Recent Publications:**

1. Olaifa, F.H., Ayo, J.O., Aluwong, T. & Rekwot, P. I. (2022). Pycnogenol improves kinematic parameters of donkeys (*Equus asinus*) subjected to packing during the dry season. *Sokoto Journal of Veterinary Science*, 20 (5), 63-70.
2. Olaifa, F.H., Ayo, J.O., Aluwong, T. and Rekwot, P.I. (2021). The effect of epicatechin-(4 $\beta$ -8)-catechin on oxidative stress and some biomarkers of fatigue of donkeys subjected to packing during the dry season in northern Nigeria. *Journal of Applied Animal Welfare Science*, 25(4); 396-409.
3. Olaifa, F. H., Ayo, J. O., Aluwong, T., Rekwot, P. I. and Zakari, F. O. (2019). Pycnogenol® supplementation improved the erythrocyte stability of packed donkeys during the late hot-dry season in Zaria, Nigeria. *Comparative Clinical Pathology*, 28:281-286.
4. Olaifa, F. H., Ayo, J. O., Aluwong, T., Rekwot, P. I. and Zakari, F. O. (2019). Ergonomic study of donkeys administered with pycnogenol and subjected to packing during the hot-dry season in northern Nigeria. *Tropical Animal Health and Production*, 51: 389-394.

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## The place of probiotics in ecology

**Ege catalkaya**

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**Statement of the Problem:** Probiotic microorganisms: are the most popular pharmaceutical preparations of the 21st century with additional applications in the protection, treatment and treatment of human and animal health. Although not yet reaching the gold standard, available information indicates that the mechanisms of probiotics are multifaceted with a cumulative trend; studies at the level of family, race and species continue and when examined, extensive information about their activities is brought to the literature. Contrary to popular belief, probiotics form different microbiomes with biodiversity in their localization outside the intestinal tract. Sometimes even with a geriatric human microbiota; common deterioration in the microbiota of a newborn calf can lead to different diseases.

**Methodology & Theoretical Orientation:** With human and veterinary research; clinical and preclinical studies and meta-analyses were reviewed.

**Findings:** Microbiota: "ecological communities formed by non-pathogenic, symbiotic and pathogenic microorganisms" and are found on the inner and outer surfaces of all multicellular organisms studied, from plants to animals. One of the most common non-motor symptoms of PD is constipation and occurs in approximately 80% of patients. In studies conducted, lower *Prevotella* spp species and lower *Bifidobacterium* spp were detected in stool samples. In neonatal calf diarrhea, generally negative environmental factors, weak immunity and infectious factors cause a decrease in the productivity of the farms and low *Bifidobacterium* spp in the calf large intestine; It shows a positive correlation with the severity of the disease. The absence of a single group of bacteria in two different organisms and in two different disease states (one progressive neurodegenerative and the other acute infectious disease) can cause different responses.

**Conclusion & Significance:** The use of probiotics in ecological balance, even if the problems are different, it will contribute to the solution, the use of probiotics in human and animal health, especially common infections, low side-effect profile in maintaining health, it has an important place in the ecosystem without the risk of chemical pollution.

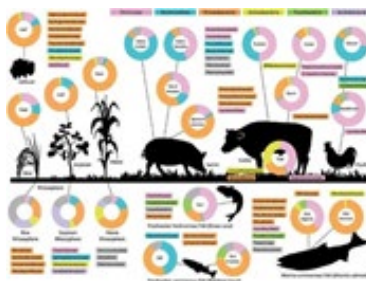


Figure 1. Microbiota in agriculture. The figure provides an overview of the bacterial composition of the microbiota of different parts of livestock animals, gill and intestines of fish, and phyllosphere and rhizosphere of plants at the phylum-level (pie-charts) and lower taxonomic levels



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**Recent Publications:**

1. Ikeda-Ohtsubo, W., Brugman, S., Warden, C. H., Rebel, J. M., Folkerts, G., & Pieterse, C. M. (2018). How can we define "optimal microbiota?": A comparative review of structure and functions of microbiota of animals, fish, and plants in agriculture. *Frontiers in nutrition*, 5, 90.
2. Morgan, X. C., Segata, N., & Huttenhower, C. (2013). Biodiversity and functional genomics in the human microbiome. *Trends in genetics*, 29(1), 51-58.
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4. Liu, X. (2016). Focus: Microbiome: Microbiome. *The Yale Journal of Biology and Medicine*, 89(3), 275.
5. Li, Z., Liang, H., Hu, Y., Lu, L., Zheng, C., Fan, Y., ... & Xu, P. (2023). Gut bacterial profiles in Parkinson's disease: A systematic review. *CNS Neuroscience & Therapeutics*, 29(1), 140-157.
6. Du, W., Wang, X., Hu, M., Hou, J., Du, Y., Si, W., ... & Xu, Q. (2023). Modulating gastrointestinal microbiota to alleviate diarrhea in calves. *Frontiers in Microbiology*, 14, 1181545.

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## **A novel method for the reduction and immobilization of diaphyseal fractures of the femur in birds**

**Jaime Samour**

Houbara Medicine and Breeding Consultancy, United Arab Emirates

Diaphyseal fractures of the femur are traditionally repaired using an open method. This consists in making an incision at the level of the fracture, on the lateral aspect of the limb, following debridement of the muscles in order to visualise the termino-terminal ends of the bone fragments. An intramedullary pin (IM) is introduced in the proximal fragment and driven in retrograde fashion as to exit immediately behind the major trochanter of the femur. The pin is withdrawn slowly until the distal end of the pin is at the same level of the proximal bone fragment. The bone fragments are then gently manipulated to reduce the fracture and then aligned in a near correct anatomical direction. The pin is then driven gently in normograde fashion until the distal end of the pin is firmly placed in the distal end of the femur. It is highly recommended that the IM used is threaded at this end to provide a solid hold on the distal femur. The muscles and skin are opposed and sutured in place using standard techniques. Two positive profile threaded external skeletal fixator (ESF) pins are placed, one proximal and one distally. The IM pin is bent at 90° angle and a tie-in is formed by joining the IM pin and the ESF pins using an acrylic bar or a bar and clamps. The muscle mass of the femoral region is voluminous, but with sufficient educated practical skills the veterinary surgeon should be able to feel the fragments of the fracture bone and reduced the fracture accordingly and repair the fracture using a close method. This can be carried out in birds weighing <100 g and >2500 g. The alternative technique for the reduction and immobilization of diaphyseal fractures of the femur is therefore as follows.

A small incision of the skin is made medially to the greater trochanter on the proximal femur. An IM threaded pin is driven in normograde fashion until it exits the terminal end of the proximal fragment. The surgeon then aligns the fragments using careful and gentle manipulation and the pin is driven gently to the distal femur. Two positive profile threaded external skeletal fixator (ESF) pins are placed, one proximal and one distally. The IM pin is bent at 90° angle and a tie-in is formed by joining the IM pin and the ESF pins using an acrylic bar or a bar and clamps. This method for diaphyseal fractures of the femur, if correctly executed, is faster and non-invasive than the traditional method commonly used. It is imperative that the technique is practiced in post-mortem cadavers and practice the alignment of the bone fragments avoiding unnecessarily rubbing of the termino-terminal ends of the fragments as this can lead to cracks or additional fractures due to the nature of avian bones.

### **Recent Publications:**

1. Baciadonna, Luigi & Zucca, Paolo & Samour, Jaime. (2021). Laterality preferences at rest and predatory behaviour of the Gyr Falcon (*Falco rusticolus*): An alpha predator of the sky. *Laterality*. 27. 1-15. 10.1080/1357650X.2021.1958831.
2. Wilcox, Justin & Arca-Ruibal, Barbara & Samour, Jaime & Mateuta, Victor & Idaghmour, Youssef & Boissinot, Stéphane. (2022). Linked-Read Sequencing of Eight Falcons Reveals a Unique Genomic Architecture in Flux. 10.1101/2022.01.05.468466.
3. Zwart, Peernel & Samour, Jaime. (2021). The Avian Respiratory System and its Non-Infectious Ailments: A Review. *Journal of Exotic Pet Medicine*. 37. 10.1053/j.jepm.2021.02.004.
4. Baciadonna, Luigi & Zucca, Paolo & Samour, Jaime. (2021). Laterality preferences at rest and predatory behaviour of the Gyr Falcon (*Falco rusticolus*): An alpha predator of the sky. *Laterality*. 27. 1-15. 10.1080/1357650X.2021.1958831.
5. Wilcox, Justin & Arca-Ruibal, Barbara & Samour, Jaime & Mateuta, Victor & Idaghmour, Youssef & Boissinot, Stéphane. (2022). Linked-Read Sequencing of Eight Falcons Reveals a Unique Genomic Architecture in Flux. 10.1101/2022.01.05.468466.
6. Zwart, Peernel & Samour, Jaime. (2021). The Avian Respiratory System and its Non-Infectious Ailments: A Review. *Journal of Exotic Pet Medicine*. 37. 10.1053/j.jepm.2021.02.004.

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## What to do in Equine Cervical Compressive Myelopathy (ECCM)?

**Luiz Alberto vasconcellos**

Integrated Equine Medicine Center, Brazil

**Introduction:** By definition, it is a neurological problem in the cervical region in horses that may be due to a stenosis of the cervical medullary canal of traumatic origin, congenital cervical malformation, bone growth problems (osteochondritis dissecans), or poorly consolidated fractures.

Common clinical signs are ataxia (forelimbs and hindlimbs or both), atrophy, asymmetry, loss of muscle strength, decubitus, neonatal mortality, miscarriage, laminitis, hypoesthesia-anesthesia, claudication. Materials and methods. We can use for the evaluation of horses with ECCM, the neurological examination, based on clinical signs, the ethogram (pain evaluation), thermography, radiography and computed tomography, to rule out non-congenital compression malformations (trauma, bone growth disorders and fractures), where we then begin planning the treatment, which may be clinical or corrective surgery (vertebral fusion and laminectomy); the surgical procedures aim at stabilizing the vertebrae or decompressing the medulla by totally or partially removing the bone cap. Vertebral fusion consists of placing, between the dislocated or unstable vertebrae, a metal implant in such a way as to cause arthrodiesis in that vertebral segment, reducing the damage to the spinal cord caused by the erroneous movement of the vertebra, while laminectomy consists of completely removing totally (laminectomy) or partially (hemilaminectomy) the bone cap of the vertebra and thus decompress the spinal cord, both permanent procedures, improving the clinical condition of the horse as well as its return to athletic or reproductive activity Results and Conclusions. Best results are achieved with the techniques described above in horses under the age of 3 years, grade 1-2 ataxia, with the shortest time between diagnosis and treatment and above all, owners with good understanding and understanding of the whole procedure and recovery time, which can reach 12 months.

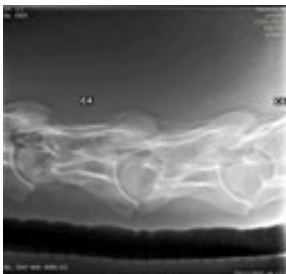


Fig. 1. Radiographic image of a malformation and therefore without surgical indication



Fig. 2. Image of a dislocation, therefore not congenital and with indication for laminectomy



Fig. 3. Joint preparation for implant placement in spinal fusion (cervical arthrodesis)



Fig. 4. Removal of the dorsal vertebral lamina for spinal cord decompression in the cervical segment

**Recent Publications:**

1. KONDO T, MASHIMO Y, SATO F, TSUZUKI N, YAMADA K (2022) Investigation of a contributing factor for cervical vertebral stenotic myelopathy using computed tomography for measuring the cervical vertebral volume. *J Vet Med Sci.* 1; 84(8):1084-1087.
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3. MAY-DAVIS, S.(2017) Congenital Malformations of the First Sternal Ribs. *Journal of Equine Veterinary Science.* 49. 92-100.
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## Growth performance and economy of production of broiler chickens fed black soldier fly larvae meal-based diets

Muyiwa Adegbenro<sup>1</sup>, A O Ayeni<sup>1</sup>, A A Akintomide<sup>1</sup>, A J Atansuyi<sup>1</sup>, O O O Kennedy<sup>2</sup> and J O Agbede<sup>1</sup>

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This study investigated black soldier fly larvae meal (BSFLM) as replacement for fish meal on growth performance and economy of production of broiler chickens. For processing, the live larvae were poured into heated water at about 70 - 80°C and stirred for about 3 – 5 minutes in order to make the larvae inactive. Filtered larvae were sun dried. Dried larvae were then milled and stored in an airtight container prior to use. Two hundred and fifty Cobb 500 breed day-old chicks were randomly allotted at 50 chicks per treatment of 5 replicates using growth performance and economy of production as response criteria in a Completely Randomized Design. The BSFLM was used to replace fish meal at graded levels of 0, 25, 50, 75 and 100% and designated diets I, II, III, IV and V, respectively. The same procedure was followed for the finisher phase. The respective diets and water were fed to the chickens ad libitum from 1 – 21 days. Among all the parameters measured only the feed intake were significantly ( $P < 0.05$ ) influenced by the dietary treatments. The highest final weight (2000g) and best feed conversion ratio (1.23) were recorded in birds fed diets I and III, respectively. Highest dressed and eviscerated weights (1818g and 1524g) were recorded in birds fed diet I. The highest Net profit/bird (N3219.21) was recorded in bird fed diet V. Considering the cost implication from this study, the percentage net profit/bird increased as the level of BSLM inclusion increased. It could be concluded within the limit of this study that replacement of FM with BSLM could reduce the high cost of finished feed and thereby leading to increase in farmer general profit and also making animal protein available to the populace.



Figure 1: Graphical description of the study

### Recent Publications:

1. Adegbenro, M., Agbede, J. O., Onibi, G. E. and Aletor, V. A. (2020). Quality of eggs produced by laying hens fed composite leaf meal as alternative to premix. *Livestock Research for Rural Development* 32(4)
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## Effect of kalahari melon essential oil and butyric acid on growth performance and protein utilisation efficiency in growing pigs

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The study was conducted to determine the effect of Kalahari melon essential oil, butyric acid and their blend on growth performance and protein utilisation in growing pigs. Forty growing mixed sex pigs, aged 8 weeks were weighed, and randomly allocated to five dietary treatments, NC-negative control (no growth promotant), PC-positive control (growth promotant), EO-Kalahari melon essential oil (0.4%), OA- butyric acid (0.6%) and EOOA Kalahari melon essential oil (0.4%) + Butyric acid (0.6%). Eight pigs were randomly allocated to each dietary treatment and each pig was considered an experimental unit. Dietary treatments significantly influenced growth performance. EOOA had the highest (1.10 ±0.01) ADFI compared to OA (1.07±0.01). NC had the lowest (0.55±0.01) ADFI and was significantly different (P <0.05) from other dietary treatments. ADG was low in NC (0.34±0.01) and high in EOOA (0.62 ±0.01). TWG was low for NC (23.77± 0.67) compared to other dietary treatments. PC, EO and OA had the highest FCR (P <0.05). CWG for NC was low and significantly different (P <0.05) from all dietary treatments. Dietary treatment significantly (P <0.05) affected protein utilisation and growth efficiency. Protein consumed was low in NC (10.10±0.24) and highest in EOOA (20.75±0.24). SGR significantly differed (P <0.0005) for all dietary treatments. NC (28.28±1.04) had a low SGR. Dietary treatment OA (4.39±1.04) and EOOA (4.89±1.04) had the highest SGR. GE was high in EOOA (4.89±0.12) and lowest in NC (3.72±0.12). The findings indicate that essential oils, organic acids and their blend can influence protein, nutrient utilisation and growth performance in growing pigs.

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## **Gender differences in moral distress and ethical conflict: A survey of Indian veterinary practitioners**

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Gender differences are steadily increasing in the moral distress and ethical conflict of practicing veterinarians internationally and little research has been done to identify the root causes of these problems. This study explores the existence of such significant gender differences in Indian veterinary practitioners. It aimed to investigate the ethical conflicts experienced by veterinarians in India and the coping mechanisms they use to deal with such conflicts. Gender differences in ethical conflict and resultant moral distress may lead to decreased job satisfaction in one specific gender. In contemporary veterinary practice, existence of such gender differences have an impact on the daily practice life. A mixed-methods sequential explanatory methodology was used to conduct an online electronic survey of randomly selected Indian veterinary practitioners to explore their moral distress and ethical conflict levels and to determine whether gender differences exist in their mean scores. The survey was conducted between April 2022 and November 2022, and data were collected through online mode from participants of the survey belonging to India. The study found that only 426 veterinarians participated in the survey, with responses analyzed for demographic characteristics and relevant training of respondents, causes of ethical conflict, and moral distress levels and coping methods. The majority of respondents were male and worked in State Veterinary Services. Female respondents reported less conflict resolution training and less training on self-care. The causes of ethical conflict varied, with some respondents reporting frequent disagreements with animal owners regarding their preferred course of treatment. Coping mechanisms included discussion with colleagues and seniors, seeking professional help, and discussing with a partner or friend. This study sheds light on the ethical conflicts faced by veterinarians in India and highlights the need for improved training on conflict resolution and self-care.

### **Recent Publications:**

1. Vijay Pal Singh and Sujoy Khanna (2021) Protecting animals in India: a government perspective through history to the present day. In "Changing Human Behaviour to enhance Animal Welfare" edited by Rebecca Sommerville. Published by: CAB International ISBN-13: 9781789247237.
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## Challenges in fish nutrition in pay-to-fish farms: Objectives and solutions

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The creation of fish in pay-to-fish facilities is a growing activity worldwide, and nutrition is one of the main challenges faced by producers. Proper nutrition is essential to ensure the growth, health, and quality of cultivated fish, which in turn affects the profitability of production. The aim of this study is to discuss the main challenges in fish nutrition in pay-to-fish facilities and present possible solutions to overcome these challenges. From a review of the scientific literature, the main factors that cause fish nutrition in pay-to-fish facilities were identified, such as water quality, food supply, fish size, and feed composition. Water quality is fundamental to fish nutrition and health and should be constantly monitored by producers. In addition, food supply should be adjusted according to the size and nutritional needs of the fish, avoiding both food shortage and excess. The use of commercial feed is the main form of feeding in pay-to-fish facilities, but natural feeding, such as offering worms and grains, can also be an option. The choice of commercial feed should consider nutritional composition and digestibility by fish. In conclusion, fish nutrition in pay-to-fish facilities is a complex challenge that involves various factors. The adoption of management and nutrition practices is essential to ensure the success and profitability of production.

Fish Species	Water Temperature	Water Quality	Feeding Frequency	Feeding Quantity	Feeding Type	Growth Rate
Tilapia	26-30°C	pH 6.5-8.5	2-3 times/day	2-3% body weight	Commercial feed	1.5-2.5 cm/month
Carp	16-22°C	pH 7.0-8.5	Once a day	1-2% body weight	Worms and grains	1-1.5 cm/month
Pacu	26-30°C	pH 6.5-8.0	2-3 times/day	2-3% body weight	Commercial feed	2-3 cm/month
Tambacu	24-28°C	pH 7.0-8.0	2 times/day	3-4% body weight	Commercial feed	2-3 cm/month
Catfish	22-28°C	pH 6.5-8.0	2-3 times/day	2-3% body weight	Worms and pellets	1-2 cm/month

Note: Water temperature and quality, feeding frequency and quantity, and feeding type may vary depending on the region and specific conditions. The feeding type used by the servers may also vary.

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