Prevalence of Avian Influenza H5N6 in Birds: A Systematic Review and Meta-analysis of Other Viral Zoonosis


ABSTRACT

Avian influenza viruses (AIV) are zoonotic pathogens that can potentially affect humans and potentially be epidemic in a region. Birds (such as poultry and wild birds) serve as potential reservoirs for these viruses, highlighting the importance of determining AIV prevalence in the avian population. No systematic reviews have been published on this issue in the world so far. The present systematic literature review following the PRISMA standard, with meta-analysis, used three databases to globally assess the Influenza H5N6 infection in birds (including poultry and wild birds). A model of random-effects meta-analysis was performed to calculate the pooled prevalence and 95% Confidence Interval (95% CI) for the prevalence of Influenza H5N6 infection in birds. A total number of 14,605 articles published from 2015 to 2020 were retrieved. After screening the abstract/title, 37 articles were selected for full-text assessment, and 15 were included for qualitative and quantitative analyses. Of the total number of birds (n = 13,416 birds), the pool prevalence by RT-PCR was 3.5% (95% CI: 2.8-4.3%). From the total, 39.67% of the birds assessed were ducks (family Anatidae), in which pool prevalence was 7.7% (95% CI: 4.4-11.0). In chickens (Gallus gallus domesticus), the pool prevalence was 3.3% (95% CI 1.9-4.8). Vietnam was the country with the highest pool prevalence; 7.9% (95% CI 4.0-11.7%). Bangladesh was the country with the lowest pool prevalence of 0.4% (95% CI 0.2-0.7%). A considerable proportion of infected birds tested positive highlighted the relevance of individual animals as reservoirs of H5N6. Ducks and chickens were found to be positive by RT-PCR in over 3% of the cases. These data suggest their relevance in maintaining zoonotic transmission and their potential implications for epidemics and even pandemics in the near future.

Keywords: H5N6, Influenza, Meta-Analysis, Molecular diagnosis, RT-PCR, Systematic Review
Keywords: from Sukraraj Tropical Hospital, Kathmandu, Nepal. The findings revealed that the number of post-exposure prophylaxis (PEP) consumption and the number of human deaths were negatively correlated. A total of vaccination and population management program for stray dogs in order to reduce the country's rabies burden.

A 10-year (2008-2017) retrospective canine-mediated human rabies epidemiology was studied through 10 years. On average, 36,995 PEP dosages were used per year for stray dog bites. There were 252,297 dog bite cases in humans recorded between 2008 and 2017. Every month, 482 human rabies deaths were recorded in Nepal during the study period. On average, 49 people died of canine-mediated rabies each year. Although there was an increase in the use of PEP, the number of human deaths and street dog bites recorded were still high. The high mortality due to rabies could then be attributed to the flawed surveillance system and stray dog management program.
ABSTRACT

Heat stress reduced the viability of granulosa cells by inducing the expression of an apoptosis-related gene (P53) and compromised expression of genes regulating the steroid biosynthesis, which resulted in up-regulation of cell defense gene (HSF1) and transcriptional activity. Granulosa cells were harvested after aspiration of cumulus-oocytes complexes that were collected from abattoir ovaries. The granulosa cells were cultured in vitro, and the expression of cell defense gene (HSF1), transcriptional, mitochondrial activity, and viability of granulosa cells was measured using trypan blue and quality was estimated by measuring the metabolic activity.


Production of Newcastle Disease Polyvalent Primary Antibody as the Alternative of Immunohistochemistry Primary Antibody against Newcastle Disease in Poultry


Moringa oleifera Leaf Meal in Layer Chickens' Feed: A Review

Leaf meal is very useful because its leaves are rich in fats, proteins, vitamins, and minerals with antimicrobial effects. Leaf tea is used to treat ulcers in these areas is required to make full use of the potential advantages of the Moringa oleifera plant.

Layer chickens received leaf meal supplementation increases feed intake and feed conversion ratio, as well as decreasing egg mass yield, percentage of egg production, and egg weight. More research in the effects of temperature and feed conversion ratio is required to make full use of the potential advantages of the Moringa oleifera plant.
Molecular Characterization of Chicken Anaemia Virus Circulating in Commercial Poultry

Specific mutations clustering them into new subgroups (2A, 2B). By mutation analysis, the current study was related to subgroup 2A, I83V in three strains (A/Egypt/AN1/2020, A/Egypt/AN2/2020, A/Egypt/AN3/2020). Egg production with an observed mortality rate ranging 5-15%. A total of 26 samples were collected from 14 Egyptian governorates, revealing that all Egyptian strains were clustered into two groups (A, B) that were distinct from the viruses from Japan, Argentina, and Malaysia in group A, and the other three viruses were closely related to the vaccinal strains by phylogenetic analysis and A.A. identity. In conclusion, the CAV was isolated from 30% of the samples, confirming its presence and spread in the poultry population in Egypt. Further studies are needed to investigate the potential horizontal transmission and to understand the dynamics of the virus in the poultry population.

Role of Elastin Expression in Thickening the Postpartum Vaginal Wall in Virgin and Parous Rats

Key points:
- Elastin is an extracellular matrix protein that confers elastic properties to organs and tissues, particularly those requiring elasticity.
- Elastin levels were significantly correlated with epithelial thickness.
- Elastin expression plays a vital role in the functioning of numerous tissues, such as the lungs, blood vessels, heart, and vaginal wall.
- Elastin expression increases in the vaginal wall during pregnancy, contributing to its thickening.
- Elastin expression decreases postpartum, allowing for vaginal relaxation.

Elastin levels were significantly correlated with epithelial thickness. Increased levator dimension and trauma to the levator ani muscle through avulsion result in increased vaginal distensibility. The occurrence of vaginal laxity or distensibility is associated with the vaginal wall's ability to stretch during childbirth and is influenced by the expression levels of elastin.

Assessing the Chronic Poisoning of White Mice Affected by Mospilan RP and Actara 25 WG

Keywords:
- Neonicotinoids
- Insecticides toxicity
- Mospilan RP
- Actara 25 WG
- Chronic toxicity

Neonicotinoids are a relatively small group of organic compounds that are widely used in crop protection as insecticides. In the present study, the chronic toxicity of insecticides from the group of neonicotinoids Mospilan RP (active substance acetamiprid) and Actara 25 WG (active substance thiamethoxam) on white mice was assessed. Mice were divided into two groups, each consisting of 10 virgin nulliparous mice. One group (C0) was used as the control, while the other group (C1) was used for chronic toxicity testing. The chronic toxicity of insecticides was induced by daily internal introduction of Mospilan RP and Actara 25 WG to mice for 30 days at the doses of 1/10 of Median Lethal Dose reported as 65 and 363 mg/kg of body weight, respectively. Blood plasma hyperproteinemia in mice treated with Mospilan RP and Actara 25 WG increased by 30% and 50%, respectively. Compared to the control groups, the chronic toxicity of insecticides significantly increased the levels of alanine aminotransferase by 60.0%, and γ-glutamyltranspeptidase by 80% and almost 400%, respectively. Compared to the control group, the chronic toxicity of insecticides was induced by daily internal introduction of Mospilan RP and Actara 25 WG to mice for 30 days at the doses of 1/10 of Median Lethal Dose reported as 65 and 363 mg/kg of body weight, respectively. The chronic toxicity of insecticides was induced by daily internal introduction of Mospilan RP and Actara 25 WG to mice for 30 days at the doses of 1/10 of Median Lethal Dose reported as 65 and 363 mg/kg of body weight, respectively. The chronic toxicity of insecticides was induced by daily internal introduction of Mospilan RP and Actara 25 WG to mice for 30 days at the doses of 1/10 of Median Lethal Dose reported as 65 and 363 mg/kg of body weight, respectively. The chronic toxicity of insecticides was induced by daily internal introduction of Mospilan RP and Actara 25 WG to mice for 30 days at the doses of 1/10 of Median Lethal Dose reported as 65 and 363 mg/kg of body weight, respectively.
The Effect of Essential Amino Acid (Lysine) in Commercial Feed of Patin Catfish

Patin catfish need essential amino acids to meet their needs. The addition of amino acid (lysine) in the commercial feed not only affects the metabolism of the fish but also the content of Omega-3 and Omega-6 would be found in the fish.

Based on the results of the current study, Patin catfish can be a good source of Omega-3 and Omega-6 if the feed that is used in the cultivation process, contains lysine as an amino acid.

ABSTRACT

The Effect of Dietary Inclusion of Whole Yeast, Extract, and Cell Wall on Production

The study confirmed that early weaning is not preferable for the rabbit under Egyptian conditions and it is better to wean young rabbits at the minimum age of 30 days to achieve the best BW and growth rate.

Keywords: Weaning, Body weight, growth rate, rabbit.
Moreover, B. abortus retention and decrease conversion ratio in carp. World Vet. J.

Short Communication

of addition of lysine in feed on energy retention and feed conversion ratio of carp. The research rearing.

ABSTRACT

(Thaïn A, Agustono and Anam Al Arif M.) showed that the addition of lysine as much as 2% in commercial feed can increase the energy Thaiin A, Agustono and Anam Al Arif M. The long period of raising carp Influence of Lysine Supplementation in Commercial Feed on Energy Retention and Feed Conversion Ratio of Carp (Osphronemus gouramy).

It can be concluded that the use of lysine has different effects related to the increase in energy retention. Therefore, the aim of this study was to determine the influences of addition of Lysine 0%, 1%, 1.5%, 2%, and 2.5% to the feed. The present experiment was conducted for a year. The results show that the addition of lysine as much as 2% in commercial feed can increase the energy retention and decrease conversion ratio in carp.

Keywords:

- Lysine
- Feed conversion ratio
- Energy retention
- Commercial feed
- Carp (Osphronemus gouramy)


Lipopolysaccharide (LPS) vaccine in Montanide ISA 70 adjuvant could influence the formation of antibodies and IFN-γ secretion on sheep. The administration of a dose of 100 μg/ml of 100 μg/ml. The result of the study on IFN-γ level indicated the control group had a greater IFN-γ level rather than the treatment group. In Conclusion, The administration of LPS can be used is...
The effect of energy and protein supplementation used corn and soybean meal was evaluated on biochemical blood profile in Crossbreed Holstein Dairy Cows Raised in Small Stake Holder Farms. The study aimed to evaluate the effect of protein and energy supplementation on the biochemical blood parameters of Holstein cows. Three groups of Holstein cows were treated in different ways: T0 (basal diet), T1 (3.5% energy and protein sources), and T2 (7% energy and protein sources). The total concentration of serum protein and urea in treated cows was significantly lower than that of cows fed by the basal diet from the local farmer. The results showed that the treated cows (T1 and T2) had significantly higher serum concentrations of glucose (T1 = 2.12 ± 0.40 mmol/L, T2 = 2.22 ± 0.39 mmol/L) rather than T0 (0.98 ± 0.39 mmol/L). The total concentration of serum protein and urea in treated cows was significantly lower than that of cows fed by the basal diet from the local farmer. The results showed that the treated cows (T1 and T2) had significantly higher serum concentrations of glucose (T1 = 2.12 ± 0.40 mmol/L, T2 = 2.22 ± 0.39 mmol/L) rather than T0 (0.98 ± 0.39 mmol/L).