Research Paper

Microclimate, Body Weight Uniformity, Body Temperature, and Footpad Dermatitis in Broiler Chickens Reared in Commercial Poultry Houses in Hot and Humid Tropical Climates.

Sohsuebngarm D, Kongpechr S and Sukon P.

ABSTRACT: The present study was conducted to investigate the variations of microclimate variables along the length of commercial broiler houses and to determine the associations between microclimate variables and animal variables in broiler chickens. A routine rearing program involving 480,000 broiler chickens was conducted in 24 commercial broiler houses (with dimensions of 14×120×2.5 m, yielding 1,680 m² of rearing area per house). Of these, 6,000 chickens were randomly selected for outcome measurements. Microclimate variables (Ambient Temperature (AT), Relative Humidity (RH), Air Velocity (AV), heat index, effective temperature, and ammonia) and animal variables (body weight uniformity, body temperature, and Footpad Dermatitis (FPD)) were measured at 10 sections (12 m apart) from the proximal end to distal end along the length of each broiler house. Regression analysis was used to determine the pattern of each microclimate variable along the length of the broiler houses and to determine the associations between the microclimate variables and the animal variables. The results showed that AT, heat index, and ammonia linearly increased from the front end to the rear end of the houses. In contrast, RH linearly decreased from the front end to the rear end of the houses. The regression analysis revealed no significant association between any of the microclimate variables and the body weight uniformity. Increasing AT and AV were associated with increasing mean body temperature. Increasing AT was associated with decreasing FPD. However, increasing RH and AV were associated with increasing FPD. In conclusion, the microclimate variables had various trends along the length of broiler houses.

Key words: Body weight uniformity, Broiler house, Footpad dermatitis, Microclimate
The present study designed an experimental model of coccidiosis induced by *E. tenella* infected with analogs. Broilers were weighed at the beginning and at the end of the experiment. The groups recorded in poultry farms with the free-range system. The share of such poultry farms is significant.

Counts were daily collected from the days 6 to 12 after infection. Counting was performed to determine the number of oocysts. All feces from the broilers of each experimental group were collected from the days 6 to 12 after infection. The number of oocysts per gram of feces in broilers of the groups 1 to 6 was 4,080; 6,880; 1,780; 1,530; 662; and 94, respectively. The average daily weight gain in groups 1 to 4 was significantly lower than in the control group.

### ABSTRACT:

Key words: Broilers, Performance, Nutrients digestibility, Carcass traits.


The obtained results revealed that final body weight and body weight gain significantly increased in T3 and T4 compared to T1. Rabbits on T3 consumed a higher amount of feed compared to the other groups. There were no significant differences in feed conversion ratio and carcass traits among the experimental groups. The experimental diets and substitution level of PVH significantly affected growth performance. The experimental diets and substitution level of PVH significantly affected growth performance. The FCR was not significantly different. While adding Galzym to rabbit diets had no effect on growth performance. The experimental diets and substitution level of PVH significantly affected growth performance except when adding Galzym to rabbit diets had no effect on growth performance.


The obtained results indicated that PVH, with or without Galzym, leads to better growth performance and higher economic efficiency without any adverse effect on rabbit health.
**ABSTRACT**


DOI: [Full text](https://dx.doi.org/10.36380/scil.2019.wvj36)

Highly Pathogenic Avian Influenza (HPAI) H5N1 virus is widely circulated between poultry flocks in Egypt. The present study described the spatiotemporal dynamics of HPAI H5N1 virus circulates and causes infection throughout the year, indicating changes in virus epidemiology and temporal patterns.

Key words: Nile Delta, Egypt.

The study sites included five Nile Delta governorates, Egypt (Dakhlia, Qalyobia, Sharkia, Gharbia, and Menofia) where poultry isolates of HPAI H5N1 virus clade 2.2.1 was predominant and remained stable. It was demonstrated that new unreported clades had been evolved from classic clades after the vaccination pressure until 2010 resulted in raising the PR sharply. The stability of PR from 2012 to 2014 could be attributed to the adaptation of 2.2.1.2 endemic clade. The generalized estimating equation model revealed that a one-unit increase in maximum and minimum temperature decreased the risk of a poultry infection with modeling of climate variability in outbreaks occurrence using the statistical generalized estimating equation model. The highest prevalence rate was recorded in Dakhlia and Qalyobia in five Nile Delta governorates, Egypt.

**Key words:** Nile Delta, Egypt.

**RESULTS**

The circulation of HPAI H5N1 virus infection was detected in the Nile Delta governorates from 2006 to 2016. The most cases were reported for the years 2006 to 2016. Moreover, this study explored the impact of climate variability in outbreaks occurrence using the statistical generalized estimating equation model. The highest prevalence rate was recorded in Dakhlia and Qalyobia in five Nile Delta governorates, Egypt.

**DISCUSSION**

In the present study, the variations of climatic factors were significant in HPAI H5N1 virus infection. The temperature and precipitation were the most significant factors influencing the occurrence of avian influenza. The maximum and minimum temperature showed negative relationship with the occurrence of HPAI H5N1 virus infection. The precipitation showed positive relationship with the occurrence of HPAI H5N1 virus infection.

**CONCLUSION**

The results of this study will be useful for the health and welfare of poultry, the poultry industry, and the public to manage the disease and to control the spread of HPAI H5N1 virus. The results of this study will be useful for the health and welfare of poultry, the poultry industry, and the public to manage the disease and to control the spread of HPAI H5N1 virus.

**ACKNOWLEDGEMENTS**

The authors are grateful to the Ministry of Agriculture and Land Reclamation, Egypt, for the financial support. The authors would like to thank the technical staff for their effort in the collection of the data.

**REFERENCES**


**ANTIBACTERIAL SUSCEPTIBILITY**

The antibacterial susceptibility of the bacterial isolates was determined using Kirby-Bauer disk diffusion method. The sensitivity classes were determined by the Clinical and Laboratory Standards Institute (CLSI) guidelines. The isolates showed high resistance to streptomycin and oxytetracycline followed by neomycin and erythromycin, norfloxacin and ampicillin, and chloramphenicol and kanamycin. The sensitivity classes were determined as highly resistant, resistant, intermediate, and susceptible.

**MULTIDRUG RESISTANCE**

The study was applied on 290 broiler chickens, aged 30-35 days, suffering from cellulitis. The data was analyzed using multiple antibiotic resistance index and sensitivity classes. The results revealed that all head and 91.5% of body samples were positive on bacteriological examination. E. coli was the most prevalent pathogen involved in cellulitis, particularly O78 serotype. In addition, this study demonstrated high prevalence of multidrug-resistant bacteria among isolates, particularly against commonly used antibiotics. Therefore, it is recommended to use antibiotic therapy with caution and proper monitoring to control the spread of multidrug-resistant bacteria.

**ANTIMICROBIAL RESISTANCE**

The prevalence of antimicrobial resistance of zoonotic Salmonella spp. was approximately similar rates of 4.7% and 4.4%, respectively. Chicken isolates were identified as Salmonella enterica Typhimurium NTS on the surface of the eggshells (7.3%) was higher than that in the other samples. Among Salmonella enterica subtypes, 12 antimicrobials tested, 86.4% resistance was found to streptomycin and oxytetracycline followed by neomycin and erythromycin, norfloxacin and ampicillin, and chloramphenicol and kanamycin. The sensitivity classes were determined as highly resistant, resistant, intermediate, and susceptible.

**ANTIBIOTIC SUSCEPTIBILITY**

A total of 290 broiler chickens, aged 30-35 days, suffering from cellulitis were collected from five layer chicken farms. Isolation of NTS was performed from the samples collected. The sensitivity classes were determined as highly resistant, resistant, intermediate, and susceptible. The study sites were also determined as susceptible to most of the antibiotics. The results revealed that all head and 91.5% of body samples were positive on bacteriological examination. E. coli was the most prevalent pathogen involved in cellulitis, particularly O78 serotype. In addition, this study demonstrated high prevalence of multidrug-resistant bacteria among isolates, particularly against commonly used antibiotics. Therefore, it is recommended to use antibiotic therapy with caution and proper monitoring to control the spread of multidrug-resistant bacteria.

**CONCLUSION**

The present study indicated that layer chickens and its products are important sources for human infection with multiple-drug resistant Typhimurium NTS on the surface of the eggshells (7.3%) was higher than that in the other samples. Among Salmonella enterica subtypes, 12 antimicrobials tested, 86.4% resistance was found to streptomycin and oxytetracycline followed by neomycin and erythromycin, norfloxacin and ampicillin, and chloramphenicol and kanamycin. The sensitivity classes were determined as highly resistant, resistant, intermediate, and susceptible. The study sites were also determined as susceptible to most of the antibiotics.

**ACKNOWLEDGEMENTS**

The authors are grateful to the Ministry of Agriculture and Land Reclamation, Egypt, for the financial support. The authors would like to thank the technical staff for their effort in the collection of the data.

**REFERENCES**


**DATA ANALYSIS**

The data was analyzed using multiple antibiotic resistance index and sensitivity classes. The results were interpreted using the Clinical and Laboratory Standards Institute (CLSI) guidelines. The sensitivity classes were determined as highly resistant, resistant, intermediate, and susceptible.
Decreasing losses at the abattoir. The aim of this study was to evaluate the causes of organ and carcass condemnation during the study period. Seven whole carcasses, 77 whole offal, 208 livers, 692 lungs, 46 hearts, 273 kidneys, and 96 spleens were condemned during this period. Effective meat inspection, proper disposal of organ condemnations, and standard animal husbandry health care to exclude zoonotic diseases and their economic losses are important.

The emphasis should be placed on effective meat inspection, proper disposal of organ condemnations, and standard animal husbandry health care to exclude zoonotic diseases and their economic losses are important.
An research on protein hydrolysate has been performed by using various types of enzymes, including a-laspe enzyme. The hydrolysate was prepared from Nile tilapia viscera using Alcalase enzyme at a concentration of 1.5% (w/v), pH 7.9, and temperature of 55.80 °C for 1.5 h. Fresh Nile tilapia viscera had a high protein content (62.81% ± 0.18) (dry basis). Furthermore, hydrolysis process significantly increased the protein content (62.81% ± 0.18) (dry basis). Glutamine had the highest amino acid level in hydrolysates (3.85 g/100 g), whereas cysteine had the lowest level (0.32 g/100 g). In conclusion, Nile tilapia protein hydrolysates indicated a high nutritional value which could be utilized for human nutritional needs.

Key words: Protein hydrolysate, Nile tilapia, Alcalase enzyme, Amino acids, Nutritional value.

ABSTRACT: The present study aimed to determine amino acid profile and composition (water, protein, fat and ash content) of protein hydrolysates prepared from viscera of Nile tilapia (Oreochromis niloticus) (O). Chemical characteristics and amino acid profile of Nile tilapia protein hydrolysates indicated a high nutritional value which could be utilized for human nutritional needs.

DOI: https://dx.doi.org/10.36380/scil.2019.wvj41

ABSTRACT: The Effects of Green Tea and Propolis Extracts on pro-inflammatory cytokines TNF-α, IL-6, and Immunoglobulin Production in Experimentally Infected Rabbits with BHV-1. The fifteen rabbits were divided accidentally into five groups. Group 1 was inoculated with BHV-1 virus 10^7 TCID50/250 ul in nostrils and received propolis ethanol, water green tea extracts and ACV antiviral for 7 dpi respectively. Group 4 was inoculated with BHV-1 virus 10^7 TCID50/250 ul in nostrils without extracts or commercial drug. Group 5 was considered as control negative. The study showed that all lungs collected from stray cats showed pathological changes, reflecting the presence of the pathogen agents and pollution in the environment of this city. From February to March 2013, 19 ailing cats were caught through animal rescue campaigns in Mosul city, Iraq. The study concluded that all lungs collected from stray cats showed pathological lesions in all the lung samples. Pathomorphogical changes, reflecting the presence of the pathogen agents and pollution in the environment of this city. Research Paper

Figure 1: Detection of the artificial effect green tea and propolis extracts against BHV-1.

Figure 2: Histopathological sections of rabbits Nose and Paranasal sinuses (B); Skin, subcutaneous tissue (C); Lung (D); Trachea (E); Bronchus (F); Stomach (G); Liver (H); Heart (I); Kidney (J); Ovary (K); Testis (L); Pancreas (M); Thymus (N); Spleen (O). Figure 3: Detection of the artificial effect green tea and propolis extracts against BHV-1.