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Review

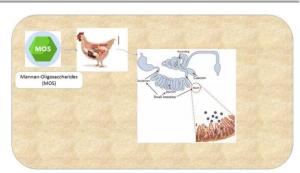
Use of Mannan- Oligosaccharides (MOS) As a Feed Additive in Poultry Nutrition.

Saeed M, Ahmad F, Asif Arain M, Abd El-Hack M-E, Emam M and Ahmed Bhutto Z.

J. World Poult. Res. 7(3): 94-103; pii: S2322455X1700012-7

ABSTRACT:

The European Union banned using all prophylactic antibiotics as growth promoters in poultry nutrition. As a result, the poultry nutritionist is now forced to look for growth promoting antibiotic



alternatives, or at least considerably demote the amount of antibiotics used to sustain efficient broiler meat production and to be able to produce safe poultry egg and meat products. The Mannan-oligosaccharides (MOS), is a type of probiotics originated from the yeast cell wall (Saccharomyces cerevisiae) has gained more prominent attention, mainly due to its ability to bind the threadlike fimbriae on pathogenic bacteria preventing them from attaching to the gut wall, thereby averting their stabilization and the resulting colonization and multiplication, up to the disease level, so it had been showed to be a most capable solution for antibiotic-free diets, as well as furnishing effective support for digestion and immunity in poultry. Several investigations confirmed that using MOS as a feed supplement in poultry diets allowed birds to achieve a similar trend as when they were fed a diet enriched with antibiotic growth promoters. In addition, MOS has also shown to have a positive affection on bodyweight gain, feed conversion ratio, egg weight, egg production, fertility, and hatchability thus ameliorating well-being, energy levels and performance of avian species. Furthermore, it is also thought that it plays a role as an antioxidant, helping with mineral retention, improving bone mineralization and subsequently the overall improvement the performance of poultry birds. This review article has aimed to illuminate its sources, mode of action and beneficial applications of MOS in poultry diet for improving, production, immunity, safeguarding health among consumers and it ought to be used as a natural growth promoter on a commercial level in order to replace synthetic antibiotics in the poultry industry.

Key words: Antioxidant, Feed additive, Gastrointestinal health, Mannan-oligosaccharides (MOS), Performance, Poultry [Full text-PDF] [XML]

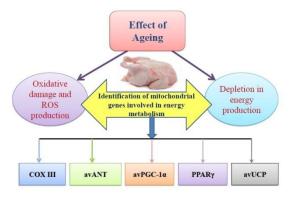
Research Paper

Effect of Aging on Mitochondrial Gene Expression in Chicken Breast Muscle.

Tarai S, Thyagarajan D and Srinivasan G. *J. World Poult. Res.* 7(3): 104-113; pii: S2322455X1700013-7

ABSTRACT:

Efficient conversion of food into body mass has been associated with altered gene expression of some proteins of the electron transport chain. We evaluated the effect of age on the mRNA expression of Cytochrome oxidase III(COX III), avian adenine nucleotide translocator (avANT), avian PPAR- γ coactivator-1a (avPGC-1a), Peroxisome proliferator-activated receptor- γ (PPAR γ) and avian uncoupling protein (avUCP) in chicken. A total of 90



male birds each from Nandanam B2, Rhode Island Red, Aseel and White Leghorn, were divided into three replicates containing 30 birds each and used for the study. Production parameters consist of body weight, body weight gain, cumulative feed consumption and cumulative feed efficiency at fourth and eighth weeks of age were recorded. Total RNA was extracted from the breast muscle tissue of male birds and reverse transcribed into cDNA. Real-time PCR analysis was performed using specific primers for the genes. The greatest reduction was observed when comparing fourth and eighth week old birds in COX III, avANT mRNA expression levels were then followed by avPGC-1a and increased mRNA expression levels were observed in PPARy followed by avUCP at eighth week of age. The study revealed phenotypic differences in production traits as well as the difference in expression of mitochondrial gene like COX III, avANT, avPGC-1a, PPARy and avUCP expression level change with age in chickens.

Key words: Ageing, Mitochondia, PPARγ, COX III, avANT, avPGC-1α, avUCP [Full text-PDF] [XML]

Research Paper

Growth Performance and Haemato-biochemical Parameters of Different Breeds of Rural Chickens.

Parveen A, Khan SH, Khawaja T, Iftikhar N and Khan S.

J. World Poult. Res. 7(3): 114-122; pii: S2322455X1700014-7





Rhode Island Red

ABSTRACT:

A total of 2000 un-sexed day-old-chicks of each Desi, Fayoumi and Rhode Island Red (RIR) breeds were reared and maintained on deep litter system for a period of 20 weeks. In floor pens, each breed was reared separately in a single pen until 7 weeks of age when the 2000 birds had been randomly distributed between pens, with 21 to 24 birds of the same breed per pen (2.00 to 2.50 ft2/bird). The results had revealed that the average day old weight was the highest in RIR, intermediate in Desi and lowest in Fayoumi. The RIR breed had consumed more feed and therefore, gained the highest weight gain than as compared to those of Desi and Fayoumi breeds at all ages of growing phase. The feed conversion was best in RIR and lowest in Desi breed. Desi and Fayoumi chicks had a lower mortality than the RIR breed chicks. The meat composition was found to be insignificant amongst the three breeds. There was no significant difference in blood glucose, triglyceride, cholesterol, calcium, protein, uric acid and alkaline phosphatase values amongst the three breeds. There was no significant difference in hematological values among all breeds. The total erythrocyte count, hemoglobin and packed cell volume increased with the advancement of age. However, erythrocyte sedimentation rate, mean corpuscular volume and mean corpuscular hemoglobin values decreased gradually with the advancement of age. It may be concluded that overall, RIR chickens had performed better than Fayoumi and Desi chickens. However, a lower mortality rate had been observed in Desi chickens.

Key words: Rural chicken, Body weight, Feed intake, Meat composition, Biochemical parameter [Full text-PDF] [XML]

Research Paper

Performance, Serum Biochemical Parameters and Immunity in Broiler Chicks Fed Dietary *Echinacea purpurea* and *Thymus vulgaris* Extracts.

Habibi H and Firouzi S.

J. World Poult. Res. 7(3): 123-128; pii: S2322455X1700015-7

ABSTRACT:

The objective of this study was to evaluate the effect of administrating herbal extracts of *Echinacea purpurea* and *Thymus vulgaris* into broilers drinking water on performance, immune response and serum biochemical and Phyto hemagglutinin. 270 day-old Ross chicks were assigned to nine dietary treatments in a randomized manner. Each treatment was given to two replicates of 15 birds. The variables of *T. vulgaris* extract were 1% and 2% and variables of *E. purpurea* extract



were 0%, 1% and 2% in drinking water. Body Weight (BW), Feed Intake (FI) and Feed Conversion Ratio (FCR) were recorded at the end of the experiment. Antibody responses against Newcastle disease viruses were measured after blood sampling at 42 days of age. The plant extracts did not affect BW, FI and FCR (P > 0.05). Antibody titers against NDV were significantly affected by the administration of *E. purpurea* (P < 0.05). The highest elevation was for the birds that were administrated with 2% *E. purpurea* from 1 to 42 days (P < 0.05). Administration of thyme extracts had improved serum biochemical parameters as compared with *Echinacea* and control group. It was concluded that under these research conditions, high levels of *E. purpurea* extracts had increased the broiler chickens' immunity. **Key words:** Broiler, *Echinacea purpurea* extract, Immunity, Performance, *Thymus vulgaris* extract. [Full text-PDF] [XML]

Research Paper

Effect of Plumage Color and Body Weight on the Semen Quality of Naked Neck Chicken.

Abbass W, Jabbar A, Riaz A, Akram M and Allah Ditta Y.

J. World Poult. Res. 7(3): 129-133; pii: S2322455X1700016-7

ABSTRACT:

The low fertility of local chicken breeds is a major issue in backyard poultry system. The fertility rate varies among different males due to their difference in semen quality. The objective of the present study was to evaluate the effect of plumage color and body weight on the semen quality of Naked Neck chicken. The Naked Neck males (n=18) vary in three

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Naked Neck chicken three verities black, white and brown were divided into three groups on the basis of body weight to evaluate semen volume, sperm concentration, livability and morphological defects. The semen volume and sperm concentration were influenced by body weight while other parameters were not affected. Body weight and plumage color have effect on semen quality and physiological semen traits of naked neck chicken. Naked Neck chicken with heavy weight and black color plumage can be used for breeding purpose to get better fertility rates.







plumage colors (black=6, brown=6, white=6) and each color contains two body weight sub groups (heavy= >1600gm n=3 and light= 1600 gm) contained significantly more semen volume (0.21±0.02 ml) and sperm concentration