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Review

A Review on Production, Reproduction, Morphometric, and Morphological Characteristics of Ethiopian Native Chickens

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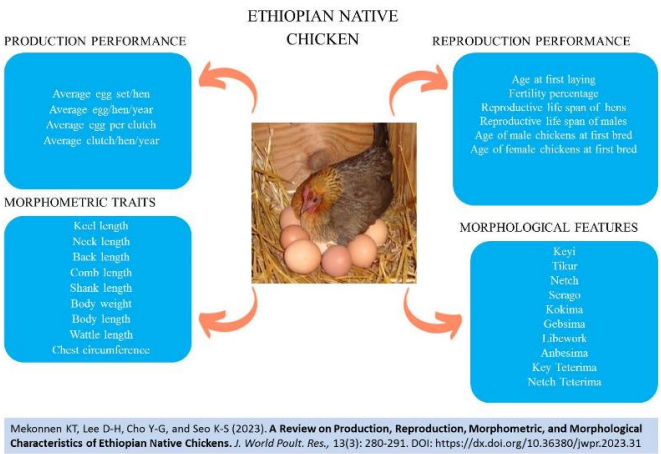
J. World Poult. Res. 13(3): 280-291, 2023; pii: S2322455X2300031-13



DOI: https://dx.doi.org/10.36380/jwpr.2023.31

ABSTRACT: Native chickens in Ethiopia are characterized in a fragmented manner for their performance characteristics and genotypes. This review aimed to explore the production and reproduction performance characteristics as well as the morphometric and morphological diversity of Ethiopian native chickens. The investigation was performed on four production performance characteristics, including average egg per clutch, average clutch/hen/year, average egg set/hen, and average egg/hen/year, as well as six reproductive performance characteristics, including age at first laying, age of male chickens at first bred, age at which female chickens are first bred, the reproductive life span of males and females, and fertility percentage in various parts of Ethiopia. Some economically practical morphometric characteristics of native chickens, such as shank length, chest circumference, comb length, body weight, body length, keel length, wattle length, neck length, back length, and morphological diversity, were also summarized. Regarding performance characteristics, there were some variations in eggs' average production performance per clutch (13.56-15.4 eggs) and clutch/hen/year (3.0-4.29) in Ethiopia. The average reproduction performance characteristics of Ethiopian native chickens for age at first laying (6.90-7.13 months), age of male chickens at first bred (5.87-6.15 months), female at first bred (5.20-5.93 months), the reproductive life span of males (3.79 years) and hens (3.56 years), and chicks hatched from set eggs revealed variation across Ethiopia. In various locations of Ethiopia, the average trait values reported for Ethiopian native chickens under the farmer's management differed in terms of morphometric and morphological features. The variation observed in performance characteristics, as well as morphometrics and morphological characteristics for Ethiopian native chicken ecotype population, can help the native breed classification, unique trait conservation, and breed improvement intervention programs.
Keywords: Ethiopia, Morphological trait, Morphometric trait, Native chicken, Performance

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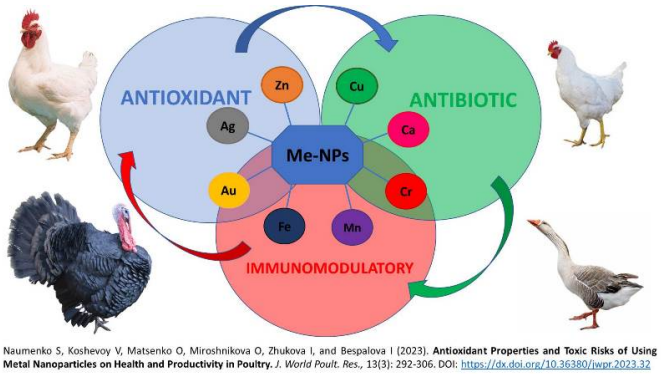
Review

Antioxidant Properties and Toxic Risks of Using Metal Nanoparticles on Health and

Productivity in Poultry

Naumenko S, Koshevoy V, Matsenko O, Miroshnikova O, Zhukova I, and Bespalova I.

J. World Poult. Res. 13(3): 292-306, 2023; pii: S2322455X2300032-13



Naumenko S, Koshevoy V, Matsenko O, Miroshnikova O, Zhukova I, and Bespalova I (2023). **Antioxidant Properties and Toxic Risks of Using Metal Nanoparticles on Health and Productivity in Poultry.** *J. World Poult. Res.*, 13(3): 292-306. DOI: https://dx.doi.org/10.36380/jwpr.2023.32

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ABSTRACT: Metal nanoparticles (NPs) are introduced into various fields of science, particularly poultry farming. Supplementation of metal salts in nanoform can increase the profitability of poultry farming by enhancing meat and egg production. Although their toxic parameters pose limitations on their use, many studies have evaluated the effects of using metal NPs in modern poultry farming on health, productivity, metabolism, and especially antioxidant properties. In addition, the peculiarities of their toxicokinetic and recommended doses that meet safety criteria in practical activities are highlighted. Zinc oxide NPs are one of the most studied compounds in the poultry industry. Their pronounced antioxidant properties, positive effect on productivity and homeostasis of poultry, egg quality, and immune status have been experimentally confirmed. Copper oxide NPs have similar properties but are limited in usage due to their toxicokinetics. Silver and gold NPs emerge as potential alternatives to antibiotics and could solve the resistance problem of microorganisms to antibiotics. Other important NPs used in poultry are Iron and Calcium. In their nanoform, these NPs exhibit high bioavailability, which allows for efficient absorption and utilization by poultry. The methods used to synthesize these nanoparticles make it economically viable to incorporate them into poultry diets, reducing overall expenses compared to similar macroergic compounds. Manganese and chromium NPs positively affect sperm survival in turkeys during refrigerated storage and contribute to increasing the resistance of the broiler chickens' body to heat stress and normalizing the

metabolism of sex hormones. In conclusion, the application of metal nanoparticles to poultry is a promising research direction, aiming at the development of feed additives, antibiotics, and growth stimulants due to their antioxidant, bactericidal, and immunomodulatory effects.
Keywords: Antioxidants, Health, Metal Nanoparticles, Poultry, Productivity, Toxicology

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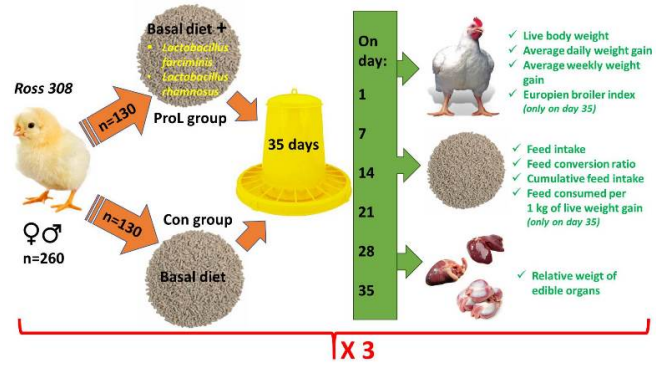
Research Paper

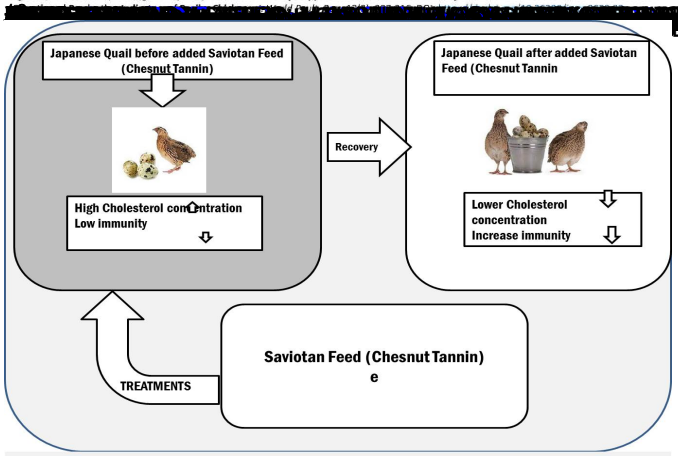
Effects of Dietary Supplementation of *Lactobacillus farciminis* and *Lactobacillus rhamnosus* on Growth and Production Indicators of Broiler Chickens

Eglite S, Mancevica L, and Ilgaza A.

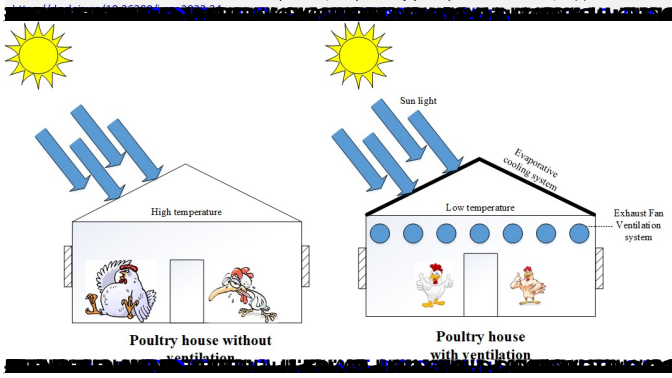
J. World Poult. Res. 13(3): 307-316, 2023; pii: S2322455X2300033-13



Eglite S, Mancevica L, and Ilgaza A (2023). **Effects of Dietary Supplementation of *Lactobacillus farciminis* and *Lactobacillus rhamnosus* on**



Erwan E, Afriadi, Rodiallah M, Irfan I, and Ibrah W (2023). **Effects of Supplementation of Saviotan Feed (Chestnut Tannin) on Blood Parameters and Yolk Cholesterol Concentration in Japanese Quails (*Coturnix japonica*).** *J. World Poult. Res.*, 13(3): 317-322. DOI:



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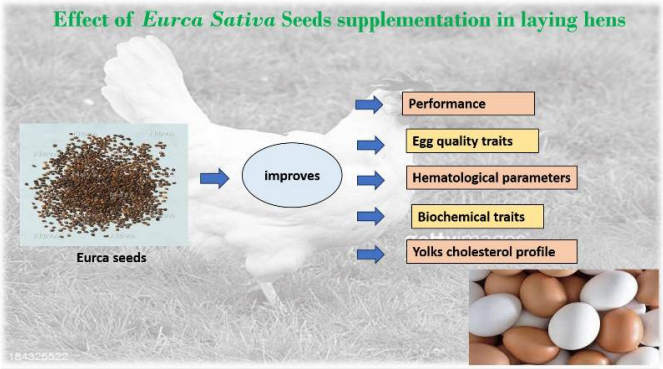

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