

Enhancing Chicken Productivity Using Insect-Based Protein Sources

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The purpose of this research was to evaluate whether adding an Insecta-based protein source to a *Gallus gallus domesticus* diet would improve overall productivity and egg production rates. Insecta tend to be a natural rich component of a *Gallus gallus domesticus*' diet in the wild and are naturalized in protein, nutrients, and amino acids. The two Insecta-based rations tested were, *Tenebrio molitor* with mixed layer feed ration, and *Hermetia illucens* with a mixed layer feed ration. Following the experimental phase, the results indicated that adding Insecta into a protein mix and adding it to a *Gallus gallus domesticus*' diet contributed to measurable improvements with overall productivity, and egg production. These findings will help to evaluate, measure, and serve as a more effective and sustainable alternative to future conventional poultry feed rationing. Future research will involve a secondary phase in which the Insecta-based protein diet will be monitored across both the winter and spring seasons to evaluate the impact on environmental and seasonal variable productivity. Additionally, another comparative analysis between the vegetarian-based feed and the Insecta-based protein diet will be conducted to help determine a more relative effectiveness on *Gallus gallus domesticus*' egg production, and productivity levels. This continued research has the potential to inform more sustainable and efficient poultry feeding practices, further contributing to more improved practices of different production outcomes and supporting new advancements in global agricultural sustainability practices.

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