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Optimization of Poultry Feed Formulation Using Experimental Strategy Approach

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A sizable portion of the population in Burkina Faso is engaged in cattle production. It contributes between 10 and 20% of the nation's GDP and ranks second in terms of agricultural value-added, behind cotton. More than 98% of the country's poultry population is raised in Burkina Faso using the traditional or comprehensive methods of raising indigenous breeds. For the activity's profitability and the minimization of production costs, poultry feed formulation is of special relevance. To overcome issues with chicken feed composition, some poultry farmers develop solutions while others use ineffective manual methods.

This study used an experimental design to enhance native poultry feed formulas in Burkina Faso, sometimes known as "Poulet du Faso."

In this investigation, biological materials, laboratory tools, breeding stock, and 11-day-old Poulet du Faso chicks were used. Raising "Poulet du Faso" is distinguished by a protracted rearing period and expensive feed prices in the local marketplace. In contrast to previous designs, mixture designs use factors that are proportions of constituents (whose sum is equal to unity) and values that are dimensionless, completely equivalent numbers. The strategy involved adding the constituent proportions until their sum equalled 100. The model equation's coefficients were used to calculate the values of the ADG. Finding affordable, high-quality feed was the goal.

The variation in growth illustrates how well our formulas' nutritional value, particularly in terms of their protein level, works. This decrease can be attributable to the appropriate formulation method's sensible utilization of raw ingredients in the feed formulation. Soybean meal and fishmeal have a favourable effect on ADG, which develops in proportion to the amount of these basic materials. For each test, the model's residual value is equal to zero. This indicates that the observed value of the ADG response has been accurately restored by the model. Soybean meal and fishmeal have a favourable effect on ADG, which develops in proportion to the amount of these basic materials. The high protein concentration of these two source materials can be used to explain this.

At a low cost, the newly discovered formulation technique improved the nutritional quality of chicken feed. The study found that under-regulated rearing conditions, a combination of the ideal proportion of local raw materials would enable an increase in ADG with the desired index. This ideal ratio will cut rearing time in half and feed expenses by more than 25%. By rationalizing the cost of chicken

production, the proposed formulation model could boost the profit margin.

JOURNAL REFERENCE

Inoussa KY, Charles PARKOUDA, Marius K. SOMDA, Bréhima DIAWARA and Mamoudou H. DICKO, 2021. Optimization of poultry feed formulation using experimental design methodology. Int. J. Poult. Sci., 20: 59-66.

KEYWORDS

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