



Impact Of Azolla (Azolla Pinnata) Nutrition On The Development Of Broiler Chickens.

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ABSTRACT

Azolla, a rapidly reproducing aquatic fern rich in protein, has emerged as an economical and effective feed supplement in poultry farming. Thanks to its abundant supply of essential amino acids, vitamins, and minerals, Azolla can partially replace traditional feed ingredients like soybean meal and fishmeal, resulting in lower feed costs and enhanced growth performance in poultry. Its easy cultivation, low resource requirements, and environmental benefits, including nitrogen fixation, make it even more appealing. Studies show that incorporating Azolla into poultry diets leads to better growth ratios and overall bird health.

Keyword – Azolla, feed, production, chicken, protein, nutrition, composition, vitamin.

1. INTRODUCTION

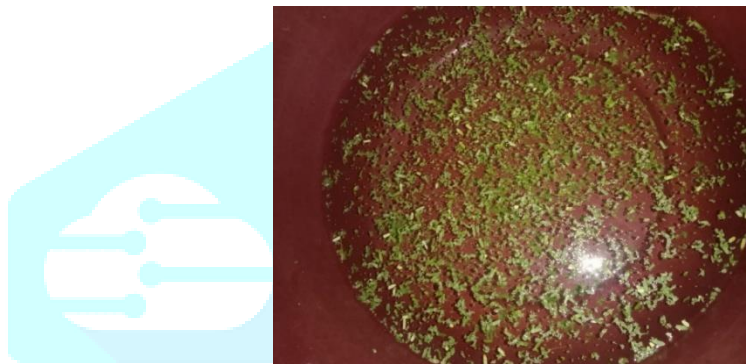
Azolla, a swiftly growing aquatic fern, has gained popularity as an eco-friendly and economical feed supplement in poultry farming. With a high protein concentration (ranging from 25–30% on a dry weight basis), along with an abundant array of amino acids, vitamins, and minerals, Azolla is an excellent natural alternative to conventional poultry feed. Although it has been primarily used in rice farming for its ability to fix nitrogen, poultry producers are now cultivating Azolla to reduce feed costs, improve bird health, and increase overall farm efficiency. Green plants have long been recognized as the most cost-efficient and abundant potential protein source due to their ability to generate amino acids from a wide variety of virtually endless and Easily accessible primary

ingredients are essential. To assess the potential of leaf meals for non-ruminant nutrition, a comparative evaluation of their nutrient content is necessary. While the role of leaf meals in improving pigmentation in broiler chickens is still largely unexplored, their benefits for enhancing the color of egg yolks are well-documented. Poultry, especially ducks and chickens, can incorporate fresh Azolla into their diets, which affects the digestibility of crude protein and crude fat. Despite significant progress in India's poultry industry over the last three decades, increasing costs and limited availability of feed ingredients pose major challenges to reaching desired production levels. Feed accounts for approximately 70% of total expenses, making it the largest part of production costs (Parthasarathy et al., 2001). Given that enhancements in feed efficiency can significantly impact profitability, poultry nutritionists are investigating practical, economical, and unconventional feed alternatives. Aquatic plant species typically exhibit growth patterns that prevent them from storing nutrients, positioning them as a more viable source of protein for monogastric animals compared to tree leaves (Bacerra et al., 1995). Recently, there has been increasing interest in incorporating aquatic plants into poultry diets, as they possess protein and nutrient profiles similar to those of some leguminous plants. Among these, one crop stands out as particularly promising due to its nutrient density and the fact that it can be harvested freely (Lumpkin and Plucknett, 1982).

2. METHODOLOGY

GROWING AZOLLA

- 1..First of all take a tube for farming azolla.
- 2.Fill the tube with water. Put azolla in this tube and let it stay there for 2-3 days so that it settles.
- 3.Add super phosphate and cow dung to azolla for its proper growth



1 Figure : AZOLLA

Chicken

Azolla can be fed to livestock either fresh or dried, and is best introduced gradually into their diet. For poultry, it can be mixed with commercial feed in a 1:1 ratio initially, then gradually increased as the birds become accustomed to it. Azolla can be included in the diet of broilers. Azolla can be added to the diet from 5% to 10%. Azolla can be fed directly or by mixing it with fodder.





Figure:2 Feeding azolla to broiler chicken

Results

Table: 1

		A	B
Before azolla blooms	1.5kg		
1 st week	1.20kg	5%	With other feed
2 nd week	1,4kg	10%	Only Azolla feed

- Before azolla bloom, a broiler chicken weighed 1.5kg
- In the first week 5%,azolla fodder was fed mixed with other fodder , due to which the weight of the chicken increased to 1.20%kg
- In the second week only 10% azolla bloom increasredthe weight of broiler chicken by 1.4kg

CONCLUSION

Based on the findings, it can be concluded that replacing 5% of the protein source with Azolla positively impacts both body weight gain and net profits per bird. Therefore, incorporating 5% Azolla into the diets of broiler chickens could improve the profitability of broiler production. The chemical analysis of sun-dried Azolla shows that it contains high levels of crude protein, trace minerals, and vitamins, which makes it a viable alternative feed option for livestock. The optimal outcomes observed in our study suggest that adding 5-10% Azolla to the feed can provide significant advantages. Hence, it can be inferred that substituting 5-10% of the protein source with Azolla has a favorable effect on body weight gain and net income per bird. As a result, including 5-10% Azolla in broiler chicken diets can enhance the profitability of broiler production. From the analysis mentioned, Azolla proves to be an excellent protein source that can be integrated into broiler diets at levels of up to 10% for better performance. Azolla meal emerges as a cost-effective unconventional feed ingredient that can be used in poultry feed to reduce feeding costs.

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