

## The Effect of Treatment Soybean Meal with Azolla (*Azolla pinnata* var.) Fortified with Mixture and Fermentation on the Productive Characteristics of Local Duck

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### Abstract:

This study was carried out in the animal field of the College of Agriculture, University of Basra, for the period from 14/1/2024 to 25/3/2024; 240 non-naturalized local duck chicks were raised at one day old with an initial weight of 45g. The chicks were distributed randomly over eight transactions and by three repeaters and each repeater 10 chicks according to the complete random design (CRD). The model as follows T1. Control treatment (standard diet). A diet supplemented with 5 g/kg of the synergy mixture per kg of T2 standard diet. T3 Azolla plant (unfermented) + soybeans meal- 25%. Synergy mixture of fermented Azolla plant fortification Treatment T4 is 5 g/kg soybean meal greater than 25%. T5 Treatment of Azolla (With no Fermentation) plant at the rate of 50% with soybean meal. T6 Treatment of fermented Azolla plant enriched with symbiotic mixture 5 g / kg soybean meal 50%. Unfermented Azolla soybean meal T7 75% treatment. Treat the treatment t8 of fermented Azolla plant and fortified with the synergy mixture by 5 g / kg to replace soybean meal by 75% The results of the experiment showed a that have a high nutritional value of the fermented Azolla plant and fortified with the taxi mixture through a high percentage of protein and improving the flavor of the feed. A marked superiority in body weight and weight increase with reduced feed consumed from fermented Azolla and fortified synergy mixture. Furthermore, an increase in feed conversion ratio and production index.

**Keywords,** *Azolla plant, synergy mixture, fermentation, duck*

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### INTRODUCTION:

The global poultry production is of paramount importance for food security because chicken meat and eggs are key sources of inexpensive protein. Nonetheless, the high prices of traditional feedstuffs is a top concern for poultry producers worldwide. Feed contributes around 60-70% to broiler overall production cost, Fish protein along with soybean meal are the most widely used protein sources in commercial poultry diets (Musigwa *et al.*, 2021). These feeding components are costly and the prices these are very volatile due to the changes in supply-demand and climatic conditions. Consequently, there is an increasing demand to investigate alternative cost effective and sustainable feed resources for enhancing Profitability and sustainability of poultry production. Over the past few years while looking for alternative feed ingredients, several unconventional but less explored feed sources have emerged, one of which is the floating aquatic fern plant *Azolla pinata*. *Azolla pinnata* is a fast growing and very productive species which is able to double its biomass within 3-5 days under good conditions. It can grow entirely in nutrient-poor environments thanks to a symbiotic relationship with nitrogen-fixing cyanobacteria (a species of blue-green algae *Anabina Azoulay*) and has emerged as a potential supplier of food, animal feed, particularly when ordinary feed ingredients are scarce. (Kouchakinejad *et al.*, 2024) Present in the Protocol. Because of its high nutritional quality, azolla is a good alternative for poultry feed, reducing feed costs. Recent research indicates that it improves growth performance, feed conversion rates, and health status across species. Hence, azolla could serve as the new animal feed because of its high organic matter and nutrient content and its crude protein content ranging from 25-35%, 10-15% minerals, 7-10% amino acids, and bioactive substances, with an average of 15% of total ash At the same time, in dry matter, azolla contains 7% dry matter, 15.4% crude