

Growth Performance of Broiler Chicken Fed with Mung Bean Sprouts as Feed Ration

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Abstract:

In the Philippines, organic farming is greatly promoted by the government. Producing an organic product is safer and more secure compared to the use of synthetic materials. In this study, mung bean sprout was used as a complement on a feed ration for the growth of broilers and its effect on feed conversion ratio. The growth of the broiler chicken is a significant factor in consumers' satisfaction. The study was laid out in a Complete Randomized Design (CRD). The birds were randomly distributed, into four (4) treatments and replicated three (3) times, with four (4) birds in for every replication. The different treatments were used in this study, as follows: Treatment 1 - 100% Commercial feeds + 0% fresh mung beans sprouts; Treatment 2 - 100% Commercial feeds + 5% fresh mung beans sprouts; Treatment 3 - 100% Commercial feeds + 10% fresh mung beans sprouts; and Treatment 4 - 100% Commercial feeds + 15% fresh mung beans sprouts. Overall results revealed that, Treatment 4 (100% Commercial feeds plus 15% fresh mung bean sprouts) has the highest body weight gain of 548.67 grams and the lowest feed conversion ratio of 1.74, revealing significant effects after 28 days of feeding broiler chickens with mung sprouts complimented feed ration.

Key words: feed ration; mung bean sprouts; broiler chicken; weight gain; natural raising

Introduction

1.1. Background

With the population increasing rapidly, the demand for food has never been more urgent. Innovations, practices, and discoveries have been recent for scientists to feed the people. The need for chicken meat has been increasing for the last decade. A different approach to raising broilers has been used in other countries: some used synthetic (chemical) approaches and some used organic farming. Synthetic feed supplement means artificial nutrients found in dietary supplements and fortified foods, (Jillian Kubala, M.S, RD, 2021).

In the Philippines, Organic farming is promoted. Since it is safer and more secure compared to the use of synthetic means. (Limbo, R.C., 2019) Broiler meat has several advantages, namely the quality of nutrition is good enough, delicious taste, relatively affordable price, easy to get, and accepted by all levels of society with diverse backgrounds. (Wahyono, N.D and Utami, M.M.D., 2018). According to the Department of Agriculture, in the Philippine Poultry and Livestock Virtual Summit (2021).

Poultry creation represents 13% of farming gross worth added (GVA), and dressed chicken creation in the Philippines flooded 40% between

2009 and 2018, expanding from 1,000,000 metric tons to 1.4 million. Broiler management requires a decent amount of money, time, and energy to function correctly. Without proper management, it will likely be a failure. Feeds should be of the highest quality for a quality product. Some farmers are resorting to synthetic or the fast production practices such as antibiotic growth supplements, while others are using the organic or the old-fashioned approach for broiler management. To survive, grow, and reproduce, broiler chickens need essential nutrients such as carbohydrates, protein, fats and oils, minerals, vitamins, and water. Still, raisers can do supplemental feeding in cases where feed resources on the range are insufficient.

Mung bean sprouts are one of the best supplemental feeds for broiler chicken because it is an excellent source of antioxidants, that strengthen the immune system. It is also a great source of vitamins and high protein. A study about the nutritional value of mung beans to livestock shows that it is evident that mung bean seeds are a good source of protein, rich in essential amino acids, and rich in unsaturated fatty acids. Accordingly, mung beans have excellent nutritional value for humans and animals. They can be used as a feed supplement to enrich animals' rations, fulfill

their maintenance requirements, and improve productivity. (Samir, A. N., 2019).

1.2. Objectives

1.2.1 The general objective of the study is to determine the effect of mung bean sprouts as a feed ration complement on the growth performance of broilers.

1.2.2 Specific objectives

1.2.1.a. Determine the level of feed ration complement of sprouted mung beans that can affect the body gain weight of chicken broilers.

1.2.1.b. Determine the level of feed ration complement of sprouted mung beans that can affect the feed conversion ratio of chicken broilers.

1.3. Statement of the Problem

In the Philippines, organic farming is one of the areas which is given great concern by the government not only for crops but for animals as feed. The contention of this study is to increase the production of broiler chickens using freshly sprouted mung beans complemented at different levels as feed rations or in combinations, thereof. It also aims to satisfy the consumers, as the growth of broiler chickens is a significant factor as to speak.

2. Materials and Methods

2.1. Experimental Treatments and Design

The study used a Completely Randomized Design (CRD) with four treatments, replicated three times, with four birds in every replication.

The treatments were as follows:

Treatment 1 – (Control) 100% commercial feeds + 0% mung beans sprout

Treatment 2 – 100% commercial feeds + 5% mung beans sprout

Treatment 3 – 100% commercial feeds + 10% mung beans sprout

Treatment 4 – 100% commercial feeds + 15% mung beans sprout

2.2. Research Environment

The study was conducted at Brgy. Quezon, San Carlos City, Negros Occidental, Philippines.

2.3. Preparation of Sprouted Mung Beans

The beans were placed in a clean plastic pail and were washed thoroughly with running water. Washed mung beans were then placed on a clean cloth. Thereafter, they were stored in a cool dry area. Daily washing with warm water and checking the beans were done daily until they sprouted.

2.4. Data Gathering Procedure

The researcher use the following procedure in the gathering of body weight gain and feed conversion ration.

The birds weight 7, 14, 21, and 28 days after feeding them with the complemented feeds. The body gain weight was computed by subtracting the initial weight from the final body weight.

2.5. Statistical Tool

Significant differences were evaluated using the Analysis of Variance (ANOVA) using Complete Randomized Design (CRD). Differences among treatment means were determined using the Least Significant Differences (LSD) at a 5% level of significance.

3. Results and Discussion

Body Gain Weight

Figure 1 shows the summary of the means of body weight gain (BWG) of broiler chickens fed completed with mung bean sprouts as feed ration. Results after 28 days of feeding show a significant effect at a 5% level on the body weight gain [F(3, 8)=7.70, p=0.0096] of broiler chickens fed complemented with mung beans sprouts as feed ration The Treatment 4 - 100% Commercial feeds + 15% fresh mung bean sprouts has the highest BWG of 548.67 grams. Treatment 2 (100% Commercial feeds + 5% fresh mung bean sprouts) has the second highest BWG of 349.45 grams, followed by Treatment 3 (100% Commercial feeds + 10% fresh mung bean sprouts), with 294.92 grams, and Treatment 1 (100% Commercial feeds + 0% fresh mung bean sprouts) having 265.67 grams of BWG, respectively

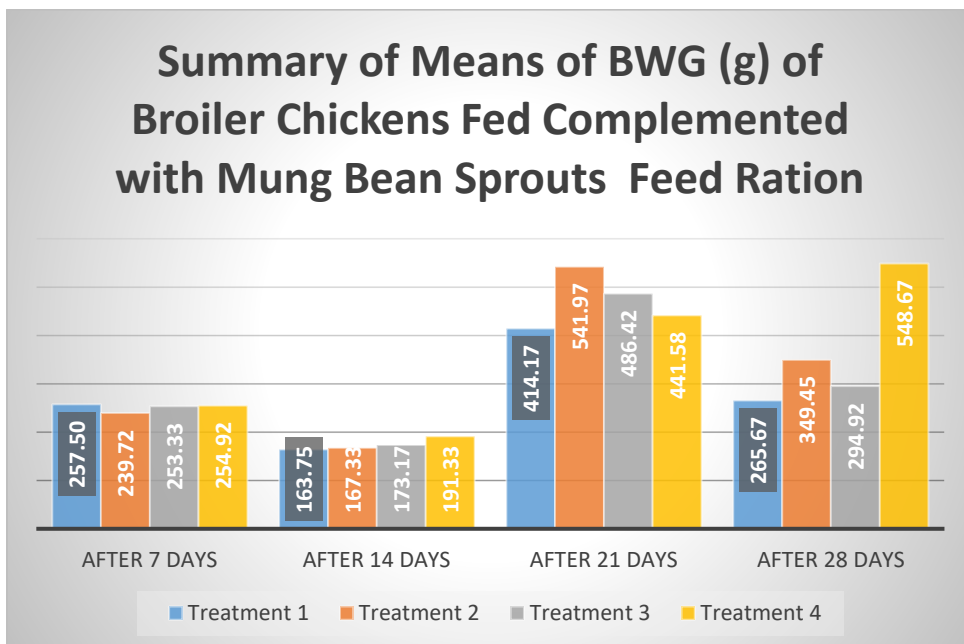
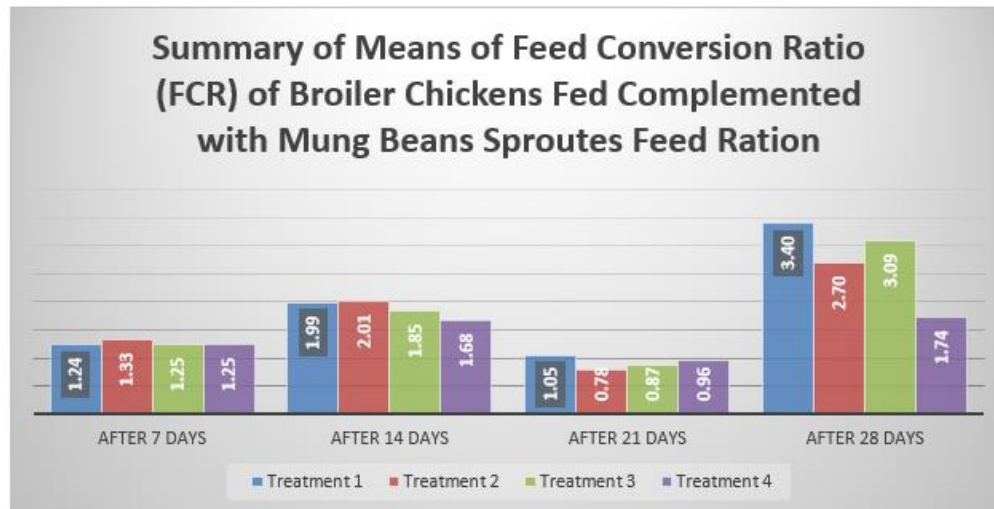


Figure 1. Summary of means on the body weight gain (g) of broiler chickens fed complemented with mung beans sprouts feed ration

Feed Conversion Ratio

Using ANOVA, feed conversion ratio (FCR) data [F(3, 8)= 6.06, p=0.0187] of broiler chickens fed complemented with fresh mung bean sprouts feed ration after 28 days revealed, a significant effect at a 5% level of significant as seen in Figure 2. Treatment 4 has the lowest FCR of 1.74,

followed by Treatment 2 with an FCR of 2.70, then by Treatment 3 and Treatment 1 with FCR of 3.09 and 3.40, respectively. Lower feed conversion ratio values mean that feeds given to animals are converted into weight gain efficiently (S. Charles Bai, et al., 2022).

**Figure 2:** Summary of means on the feed conversion ratio of broiler chickens fed with mung sprouts supplemented feed ration

Conclusions

1. Heavier chickens could be raised by complementing their feed with fresh mung beans on their daily feed ration.
2. There is a significant relationship between the conversion of feed of broiler chickens when their feed ration is complemented with fresh mung bean sprouts.
3. Organic raising of chicken could be done by complementing their daily feed ration with freshly sprouted mung beans.

Recommendations

1. The government shall encourage the farmers to complement the feed ration of chicken with fresh mung beans, especially for free-range chicken.
2. Further study should be along this finding for broiler chickens and other birds.
3. Planting mung beans should be encouraged not as a feed complement alone but also for its role in enhancing the growth of nitrogen-fixing bacteria in the soil.

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The authors received no direct funding for this research.

Conflict of Interest

The authors declare no conflict of interest. This is an original study conducted by the authors.

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