



PISSN: 2655-4356

Jambura Journal of Animal Science

(Animal Science Department, Faculty of Agriculture, State University of Gorontalo)

<https://ejournal.ung.ac.id/index.php/jjas/index>



e-ISSN: 2855-2280

Research Article

The Use of Probiotics in Feed on The Performance of Kampung Unggul Balitbangtan (Kub) Chickens in The Starter Phase (A Case Study)

Sam Saputra*, Youdhie H. S. Kowel, Florencia Nery Sompie, Betty Bagau
Faculty of Husbandry, Sam Ratulangi University, Manado, Indonesia

*Correspondence Author: samsaputra044@student.unsrat.ac.id

Jambura Journal of Animal Science, Volume:8, Issue:2,
May 2026

Keywords:

KUB chickens;
Probiotics;
feed intake;
body weight gain;
feed conversion ratio.

Abstract: This study aimed to evaluate the effect of probiotic supplementation in feed on the performance of Kampung Unggul Balitbangtan (KUB) chickens during the starter phase. The research was conducted at Tokatindung Reference Integrated Ecofarming Development (TRIED) Farm of PT MSM-TTN, Pinenek Village, East Likupang District, North Minahasa Regency, over a four-week rearing period. A total of 100 day-old KUB chickens were used in this study. Variables including feed intake, body weight gain, and feed conversion ratio. Liquid probiotics are administered through feed at a level of 2% v/w. Data were using Microsoft Excel. The results showed that the average feed intake of KUB chickens was 23 ± 13.52 g/bird/day, body weight gain was 12.12 ± 0.57 g/bird/day, and the feed conversion ratio was 1.89. These values are still within the standard performance range of KUB chickens in the starter phase, so it can be concluded that the use of probiotics in feed in this study has not had an effect on improving the performance of KUB chickens in the starter phase.

Citation APA Style

Saputra S, Kowel Y H S, Sompie F N, Bagau B. 2026. The Use of Probiotics in Feed on The Performance of Kampung Unggul Balitbangtan (Kub) Chickens in The Starter Phase (A Case Study). *Jambura Journal of Animal Science*, 8 (2) 74-80
©-2026. Saputra S, Kowel Y H S, Sompie F N, Bagau B. Under license CC BY NC SA 4.0

INTRODUCTION

Ayam Kampung are one of Indonesia's indigenous livestock with significant potential as a food source, particularly for animal protein. One superior ayam kampung variety currently being widely developed is the ayam kampung unggul Balitbangta(KUB), which boasts excellent production and reproductive potential, supporting the development of local animal protein sources (Amelia et al., 2025; Muslim et al., 2021). Ayam kampung have several advantages, such as strong disease resistance, improved feed efficiency, and a lower mortality rate (Pratama et al., 2024).

Optimal performance of ayam kampung can be achieved by meeting feed requirements, both in quantity and quality. Probiotics can be administered to improve poultry performance (Naeem and Bourassa, 2025). Administering probiotics to KUB chickens offers several important benefits, particularly in improving livestock health and productivity. It plays a role in maintaining the balance of beneficial microorganisms in the intestine, which supports digestion, nutrient absorption, and prevents pathogen-induced disorders such as odor in chicken manure (Sami and Fitriani, 2019).

Probiotics play a role in strengthening the chicken's immune system and supporting its ability to fight infections, including those affecting the digestive system (Hosseinzadeh et al., 2025). Optimal digestion allows for more efficient nutrient absorption, supporting good growth, increased body weight, and egg production (Sugiharto, 2016). This study was conducted to determine the effect of probiotics in feed on the performance of KUB chickens in the starter phase. The results can be use as guidelines for implementing more effective probiotic technology.

MATERIAL AND METHOD

Research Location and Time

This research was conducted at the Tried Farm of PT. MSM-TTN, in Pinenek Village, East Likupang, North Minahasa, for three months.

Research Materials

The cages used in this study were postal litter cages. A total of 100 chickens were kept in two cage sizes, adjusted for their age. The first cage was used for chickens aged 1 to 17 days, measuring 2 x 1 x 1 m³. Afterward, the chickens were moved to the second cage, measuring 2 x 1.5 x 1.5 m³, for chickens aged 18 to 34 days. The cage equipment used included feeders and waterers, buckets, scoops, hoses, shovels, wire, rope, drums, feed scales, sprayers, brooms, and stationery.

Research Feed

The feed used in the study was as follows:
BR-21E feed was given to chickens at 0-1 week of age, and 3-4 weeks of age.
PIP SUPER-1 feed was given at 2 weeks of age.

Probiotic Manufacturing Process

The probiotic manufacturing process can be seen in Figure 1.

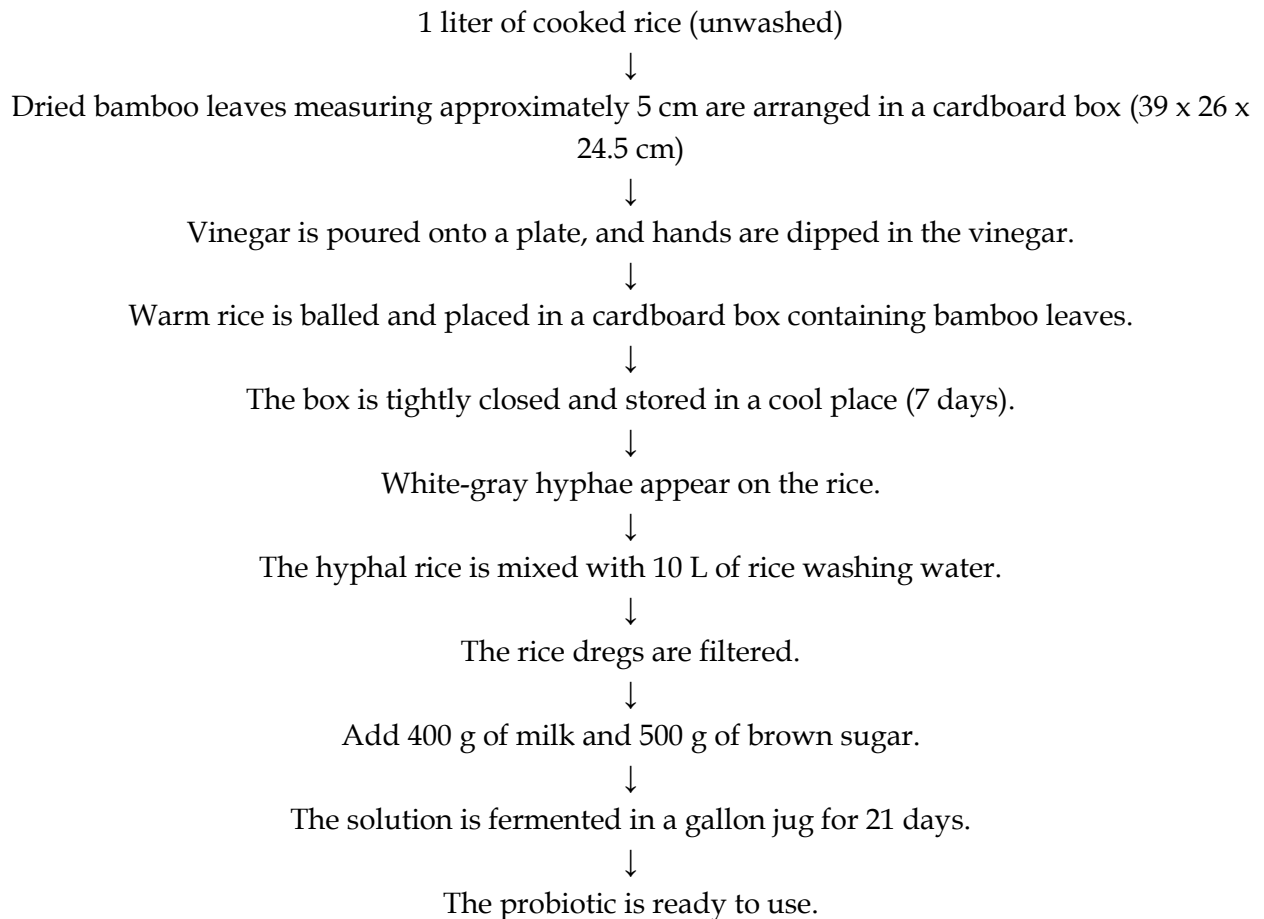


Figure 1. Flowchart for probiotic production.

Source: Sirait, (2025).

Probiotic dosage: Liquid probiotics were administered at a 2% v/w ratio, i.e., v/w (volume/weight) = The ratio of the volume of liquid probiotics to the weight of the feed, i.e., 2 mL of liquid probiotics/100 g of feed.

Probiotic Mixing Method: Liquid probiotics at a 2% v/w dosage were mixed evenly into the feed before given to the KUB chickens.

Research Methods

This research used a quantitative descriptive study (Sugiyono, 2017) conducted on KUB chickens fed probiotics. Observed variables included feed consumption, body weight gain, and feed conversion. Data were obtained through body weight measurements, feed consumption measurements, and recording over a four-week period, and then analyzed quantitatively.

Research Variables

1. Feed Consumption

Feed consumption is the difference between the amount of feed provided minus the remaining unconsumed feed (g/bird/day).

2. Body Weight Gain (PBB)

Body weight gain is obtained by dividing the final body weight by the initial body weight, divided by the total number of days of the study (g/bird/day).

3. Feed Conversion

Feed conversion is the ratio of feed consumed to the achieved body weight gain.

Data Analysis Model

Data collection was conducted through observations of KUB chickens fed probiotics. The results of the observations were recorded for analysis and description. Feed consumption and PBB data were tabulated using Microsoft Excel for descriptive analysis.

RESULT AND DISCUSSION

Based on observations during the study, data on feed consumption, body weight gain (BWG), and feed conversion ratio (FCR) of KUB chickens were obtained, as shown in Table 1.

Table 1. Average Feed Consumption, Weighted Average (PBB), and Feed Conversion Rate

Variable	Value
Feed consumption (g/ head/ day)	23 ± 13,52
Body weight gain (g/head/day)	12,12 ± 0,57
Feed conversion	1,89

Feed Consumption

The feed consumption of KUB chickens during the rearing period (Table 1) showed an average of 23 ± 13.52 g/head/day. This value aligns with the results of research by Masir et al. (2023), which reported that feed consumption for KUB chickens aged 0–6 weeks ranged from 23.25–23.68 g/head/day, with variation among individuals. This indicates that feed consumption of KUB chickens during the early rearing phase was within the normal range and exhibited considerable diversity.

The feed in this study was mixed with probiotics developed by TRIED management (Sirait, 2025). Probiotics play a role in maintaining the balance of digestive tract microflora, thus supporting gut health and digestive efficiency (Naeem and Bourassa, 2025), but do not directly affect feed consumption in starter-phase KUB chickens, as reported by Hariyanto et al. (2022). The probiotics used were tested using a Total Plate Count (TLC) test, a microbiological analysis method that aims to determine the total number of living microorganisms in a sample, with the measurement expressed in colonies per milliliter (colony forming units, CFU/mL). Laboratory testing results indicated that the microbial count in the probiotic product was below 250 CFU/mL. This is considered low (Sirait, 2025). The microbial content of the probiotics used in this study did not affect feed consumption.

Body Weight Gain

The average body weight gain (BWG) of KUB chickens during the study was 12.12 ± 0.57 g/head/day. This value was slightly below the standard BWG for starter phase KUB chickens of 13.74 g/head/day (Sri et al., 2022), but still within the range reported by Sabrina et al. (2025), which is 11.38–12.79 g/head/day in the starter phase (0–4 weeks). Body weight gain in KUB

chickens is influenced by feed type and quality, as well as husbandry management (Laudengi et al., 2025). In this study, the feed type was switched from BR-21E to PIP SUPER-1 in the second week, then returned to BR-21E until the end of the study. This feed change was thought to have caused a temporary decrease in appetite due to the adaptation process, which subsequently returned to normal after the chickens received BR-21E.

According to Purbarani et al., (2019), administering probiotics to KUB chickens is primarily useful in increasing body weight gain (BWG) and feed efficiency. This is achieved through improved digestive system and maximized nutrient absorption. Research results show that when probiotics were added to feed, body weight gain reached 12.12 g/head/day, which is still considered standard, and does not significantly affect KUB chicken weight gain, possibly due to the low microbial content (Sirait, 2025).

Feed Conversion

The feed conversion ratio (FCR) of KUB chickens during the study was 1.89. A lower feed conversion ratio indicates better feed utilization efficiency in KUB chickens (Hariyanto et al., 2022). This value was considered good because it is below the generally reported FCR range of 2.0–2.5 for KUB chickens (Agricultural Research and Development Agency, 2018). This aligns with Fahrudin et al. (2016) stated that the lower the feed conversion value, the higher the efficiency of feed utilization to produce body weight gain. Feed conversion is influenced by various factors, including feed quality and palatability, husbandry management, environmental conditions, and livestock health status (Lestari et al., 2022). However, in this study, the use of probiotics did not significantly impact feed conversion, possibly because the number of active microorganisms in the probiotics used was relatively low (<250 CFU/mL), making it insufficient to increase feed utilization efficiency (Rezekikasari and Hariyanto, 2019).

CONCLUSION

The addition of probiotics to feed in the study did not have an effect on improving the performance of KUB chickens in the starter phase, which was caused by the low number of active microorganisms in the probiotics used.

REFERENCES

- Amelia, R., R. E. Mudawaroch. dan Nurfaizin, N. Nurfaizin 2025. *Tingkat keberhasilan telur tetas ayam Kampung Unggul Balitbangtan (KUB) terhadap masa simpan yang berbeda*. Jurnal Riset Agribisnis dan Peternakan, 10(2),159–172.
- Badan Penelitian dan Pengembangan Pertanian, 2018. *Budidaya Ayam KUB*.
- Fahrudin, A., W. Tanwirah, dan H. Indrijani. 2016. *Konsumsi ransum, pertambahan bobot badan dan konversi ransum ayam lokal di Jimmy's Farm Cipanas Kabupaten Cianjur*. Skripsi. Fakultas Peternakan, Universitas Padjadjaran.

- Hariyanto, D., M. Dahlan dan A. Fadlilah 2022. *Pengaruh penambahan Effective Microorganisms-4 (EM-4) pada air minum terhadap performa ayam KUB fase starter*. *International Journal of Animal Science*, 5(2), 217-223.
- Hosseinzadeh, M. T., M., A., Ebrahimi. Tukmechi, dan G., Najafi 2025. Enhancing immune modulation, growth performance and gut health in broiler chickens through *Pediococcus acidilactici* supplementation and influenza vaccination. *Veterinary Medicine and Science*, 11(6), 1-13.
- Laudengi, S., N., U, S., Hasan, F., Ilham, S., Dako, dan S., Zainudin 2025. *Produktivitas ayam Kampung Unggul Balitnak KUB pada periode starter*. *Prosiding Seminar Nasional Mini Riset Mahasiswa*, 4(1), 122-126.
- Lestari, S. P., Sjoftan, O., A., Sjoftan Furqon, Y., F., Nuningtyas dan M., H., Natsir 2022. The effect of feeding with different percentages of energy on the growth performance of Jowo Super chicken. *Jurnal Ilmu-Ilmu Peternakan*, 32(3), 388-397.
- Masir, U., Hadrawi, J., Aswin, A. 2023. Performance of KUB (Ayam Kampung Balitbangtan) *Chicken Fed Local and Commercial Feed*. *Jurnal Riset Veteriner Indonesia*, 7(1), 42-46.
- Muslim, C., Agustian, A., Perdana, R. P., Aldillah, R., dan Darwis, V. 2021. Constraints and benefits of KUB chicken cultivate in Central Java Province, Indonesia. *E3S Web of Conferences*, 306, 02027.
- Naeem, M., dan Bourassa, D. 2025. Probiotics in poultry: Unlocking productivity through microbiome modulation and gut health. *Microorganisms*, 13(2), 257.
- Pratama, I. G. A. A. S., Suasta, I. M., dan Suryani, N. N. 2024. Deskripsi ayam KUB: Karakteristik efisiensi konsumsi ransum, ketahanan terhadap penyakit, mortalitas rendah, dan produksi telur tinggi. *Jurnal Peternakan Tropika*, 12(1), 45-52.
- Purbarani, S. A., Wahyuni, H. I., dan Suthama, N. 2019. Pengaruh kombinasi inulin umbi dahlia dan *Lactobacillus* sp. pada pakan protein bertahap terhadap perkembangan vili usus dan pertumbuhan ayam KUB. *Tropical Animal Science Journal*, 42(1), 19-24.
- Rezekikasari, R., dan Hariyanto, R. 2019. Modifikasi media alternatif dari sayuran untuk analisis kuantitatif pertumbuhan mikroorganisme asal tanah gambut Kalimantan Barat dengan metode TPC. *Perkebunan dan Lahan Tropika*, 9(1), 1-8.

- Sabrina, S., Arlina, F., Subekti, K., Hellyward, J., Firdaus, S., Wulandari, M., dan Wulandari, C. 2025. Optimisation of KUB-2 Chicken Growth to Increase Feed Efficiency Through Feed Restriction. *Agritropica*. 8(1), 23-32.
- Sami, A., dan Fitriani. (2019). Efisiensi pakan dan penambahan bobot badan ayam KUB yang diberi fitobiotik dengan berbagai konsentrasi. *Jurnal Galung Tropika*, 8(2), 147-155.
- Sirait, I. B., 2025. Penggunaan Probiotik Dalam Air Minum Terhadap Performa Ayam Kampung Unggul Balitbangtan (Kub) Fase Starter Studi Kasus. Skripsi. Fakultas peternakan, Universitas Samratulangi, Manado.
- Sri. D., H. Nurcahya., I. Rizki. 2022. Penggunaan pakan komersial berbeda pada ayam lokal Silangan fase pertumbuhan sampai umur 10 minggu. Seminar nasional teknologi dan agribisnis peternakan seri 9 STAP IX.
- Sugiharto, S. 2016. *Role of probiotics in improving gut health and growth performance of poultry*. *Journal of the Indonesian Tropical Animal Agriculture (JITAA)*, 41(3), 137-146.
- Sugiyono. (2017). *Metode penelitian kuantitatif, kualitatif, dan R,D*. Bandung, CV Alfabeta.