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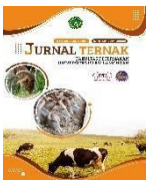

Analysis Of Quail Productivity Based On Difference Type Feed And Difference Strain In Cv Didin Farm

Nasifatul Mas'amah [1], Badat Muwakhid [2], Inggit Kentjonowaty [3]

[1, 2, And 3] Postgraduate Program in Animal Husbandry Studies, Islamic University of Malang, Indonesia

email: nasifatul@gmail.com

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ABSTRACT

This study aimed to analyze the productivity performance of quail (Coturnix coturnix japonica) based on differences in feed types and quail strains at CV Didin Farm. Quail farming has significant potential to support animal protein availability; however, productivity is strongly influenced by nutritional intake and genetic characteristics. The research employed an experimental approach by comparing several commercial feed types and different quail strains during the laying period. Productivity parameters observed included feed consumption, feed conversion ratio (FCR), and Hen Day Production (HDP). Data were analyzed descriptively and inferentially to identify performance differences among treatments. The results showed that variations in feed type and strain significantly affected quality productivity, particularly in feed efficiency and egg production rates. Certain combinations of feed and strain demonstrated superior performance, indicating the importance of precise feed selection and strain management in quail production systems. This study contributes practical insights for quail farmers in optimizing production efficiency and provides empirical evidence to support decision-making in feed and strain selection for sustainable quail farming development.

1. Introduction

Indonesia, as a country that relies heavily on the agricultural sector, possesses abundant natural resources. There is significant potential in developing the agricultural sector to accelerate economic growth. One important component of the agricultural sector is livestock, which plays a strategic role in development efforts. As a subsector of agriculture, livestock plays a crucial role in meeting the population's food needs, especially in the rural areas. in aspect nutrition protein animal. Farm become Wrong One pillar important in the progress of overall development, because this sector has the capacity to produce high-quality food ingredients, such as milk , meat and eggs so that it can meet domestic demand to increase consumption. protein animal. Ningrum, (2021) state that, "raising" in "Rural

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areas have a significant impact on increasing the income of livestock farmers." One real example is quail farming.

Quail is a popular poultry commodity in Indonesia, as proven by... with increasing interest public in look after bird quail and the consumption of their products, both eggs and meat. Other advantages of quail include their easy maintenance, rapid productivity, and high resistance to disease. Besides being rich in will protein (13.6 %) And fat (8.2%) in egg quail, meat bird quail too known delicious And own mark nutrition Which tall. This No lost with mark egg nutrition chicken race Which contain 12.8% protein And 11.5% fat according to The Directorate of Nutrition of the Indonesian Ministry of Health in 1989. Quail farming has become a popular poultry farming activity among the community due to its numerous benefits in managing agricultural land, adding to savings, and impacting social status. Nizar, (2018) in his research state that bird quail including in kind poultry from genus Coturnix Which can utilized as provider egg and meat. Female quail begin laying eggs at 41 days old with efficient feeding.

Poultry farming, especially quail farming, is growing in Indonesia. along with increasing request to egg And meat quail. Bird quail (Coturnix coturnix japonica) is Wrong One poultry Which Quail are known for their high egg and meat productivity, as well as their relatively short production period compared to other poultry species. Therefore, quail farming is a promising livestock business option, especially for small- to medium-scale farmers. However, to achieve optimal productivity, several important factors must be considered in quail farming, including the type of feed and the quail strain used.

Feed is component important in cultivation Because related directly affects the growth, reproduction, and health performance of quail. The various types of feed available on the market have varying nutritional content, so choosing the right feed significantly impacts production results. Furthermore, the strain or breed of quail also plays a role in determining productivity. Each strain has its own characteristics. characteristics genetics Which different, Good from aspect ability production Egg production, meat quality, and disease resistance. Bambang et al. (2022) stated that one important factor in maintaining egg production is the amount of feed given and the complete nutritional composition of the feed. general, breeders bird quail egg layers usually give feed Ready used products produced by feed companies. Adding probiotics to quail feed is one way to improve feed digestibility, allowing optimal absorption of nutrients from the consumed feed (Kalsum et al., 2016). According to (Al Jawawi et al., 2023), lower feed consumption leads to decreased nutrient availability in the body, which in turn affects quail egg production.

Eggs are a food component that plays a vital role in providing a source of animal protein for the community. They are a complete food source, relatively inexpensive, readily available, and easy to process, making them affordable for the middle class (Muzadi I 2022). Egg production in livestock quail female influenced by a number of factor among them density cage (Ali et al., 2020), feeding and body weight (Ali et al., 2022). Several problems Which Can influence production egg quail between other disease the one that can infect quail is caused by by bacteria, virus, mold, And parasite (Anggita et al., 2021) and costs feed because is a determinant of business success because it accounts for almost 70% of the total production costs incurred (Louw et al., 2013). Quality egg is term general Which referring to on various standard to assess both internal and external quality. Internal quality includes aspects such as egg white (albumen), yolk shape, and yolk strength (Veronicha et al. 2022).

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Based on the above study, it is necessary to conduct research on the effect of selecting different quail body weights with different types of commercial quail on feed consumption, feed conversion and Hen Day Production (HDP) in quail (Coturnix coturnix japonica) during the egg-laying period, so that breeders can maximize quail production based on the type of quail raised and the initial weight used. CV Didin Farm is a livestock business that focuses on quail cultivation. This farm has implemented various types of feed and uses several strains of quail to see the differences in productivity produced. Therefore, this study aims to analyze the effect of feed types and strains on quail productivity at CV Didin Farm, so that it can provide appropriate recommendations for breeders. in manage feed And strain For increase productivity business. It is hoped that this research will provide a positive response from poultry farmers. especially quail in nursery DOQ And can give benefit or what kind of benefits are expected.

2. State of the Art

Research on quail (Coturnix coturnix japonica) productivity has predominantly focused on nutritional management, genetic potential, and environmental factors as key determinants of egg production and feed efficiency. Previous studies emphasize that feed composition, particularly protein and energy balance, plays a crucial role in optimizing egg production, feed conversion ratio (FCR), and Hen Day Production (HDP). Several scholars have demonstrated that variations in protein levels and nutrient composition significantly affect laying performance and egg quality in quail and other poultry species. In addition to nutritional aspects, genetic strain differences have been widely acknowledged as an important factor influencing productivity. Prior research indicates that different commercial strains exhibit varying growth rates, feed efficiency, and egg-laying performance due to inherent genetic characteristics. Studies on laying hens and quail have shown that strain-specific responses to feed composition can lead to substantial differences in production outcomes, suggesting that optimal productivity cannot be achieved through a one-size-fits-all feeding strategy.

The study by Najiwal Mas'amah et al. (2020) contributes to this body of knowledge by empirically examining quail productivity based on differences in feed types and strain variations at a commercial farming scale. Unlike earlier studies that often examined either feed or strain in isolation, this research integrates both variables simultaneously, providing a more comprehensive understanding of their interaction effects on quail productivity. The findings highlight that certain combinations of feed type and strain result in superior performance, particularly in terms of egg production efficiency. However, despite these contributions, existing studies including Najiwal et al. (2020) tend to prioritize production output indicators such as feed intake, FCR, and HDP, with limited attention to initial body weight stratification as a moderating variable during the laying period. Moreover, most studies were conducted under controlled or semi-controlled experimental conditions, leaving a gap in understanding how these factors interact within diverse commercial farming contexts. Therefore, the present study advances previous research by incorporating initial body weight differences alongside feed type and strain as an integrated analytical framework. This approach offers a novel contribution by proposing a more nuanced productivity model that aligns genetic potential, nutritional input, and physiological readiness of quail during the laying phase. By doing so, this research not only extends the findings of Naciriul Mas'amah et al. (2020) but also provides practical recommendations for

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farmers to optimize production strategies based on specific strain characteristics and body weight profiles.

3. Method

This study employed a case study approach to examine the effect of feed type and quail strain on productivity. The case selected was CV Didin Farm , a commercial quail farm located in Batu Aji Village, Ringin Rejo District, Kediri Regency. The case was chosen based on data availability, relevance to the research objectives, and the application of multiple feed types and quail strains within one production system. The study was conducted at CV Didin Farm for two months , following the quail production cycle from the starter to pre-layer phase (day-old quail to six weeks of age). The population consisted of approximately 7,000 quails . The sample included 90 quails , consisting 30 birds from each strain . Three strains were observed : Japanese , Golden, and Blaster quail. A cluster sampling technique was applied , where each quail strain represented one cluster. Each cluster received a specific commercial feed type, allowing comparison across strain–feed combinations. The experimental factors consisted of: 1). Feed type : Feed A, Feed B, and Feed C, 2). Quail strains : Japanese, Golden, and Blaster. Each strain was assigned one type of feed during the study period.

The dependent variable was quail productivity , measured using: Body weight (g), Egg production (eggs/bird/day), Average egg weight (g), Feed conversion ratio (FCR), Eggshell thickness. Data were collected through: 1). Direct observation of farm conditions, feeding systems, and bird performance, 2). Interviews with the farm owner regarding feed management and strain characteristics.3). Direct measurements , including daily egg counts, weekly egg weight measurement using a digital scale, and eggshell thickness assessment. Environmental factors such as temperature, humidity, water supply, and bird health were monitored to minimize bias. Data were analyzed using descriptive statistics and One-Way Analysis of Variance (ANOVA) . Prior to ANOVA, normality (Shapiro–Wilk test) and homogeneity of variance (Levene's test) were conducted . When significant differences were detected ($p < 0.05$), post hoc tests (Tukey HSD or Duncan) were applied to identify differences between treatment groups. Statistical analysis was performed using SPSS or Microsoft Excel.

4. Results and Discussion

This study evaluated the initial weight of three quail strains, namely the Japanese, Blaster, and Golden , at 2 days old. Observations showed that the initial weight of quail was relatively homogeneous, but there were small variations between strains reflecting genetic differences. The Japanese strain had a relatively stable initial weight and was known as a strain with high adaptability and quickly reached productive age. The Blaster strain showed a tendency for a smaller initial weight than the Japanese strain, in line with its characteristics as a strain with a lighter body size. Meanwhile, the Golden strain had a relatively larger and more varied initial weight, reflecting the potential for body growth and larger egg size. This difference in initial weight is an initial factor that influences the response to feed treatment and egg productivity in the subsequent phase.

This study used three types of commercial feeds: Feed A (Sinta Prima SP-26), Feed B (Pokhpan 5104P), and Feed C (New Hope 6198) . All three feeds have relatively balanced nutritional content, particularly in protein (±19–21%), fat (maximum 7%), crude fiber (maximum 7%), and calcium and phosphorus levels, which support eggshell formation.

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Feed A is designed for the intensive production phase with an optimal balance of protein, energy, essential amino acids (lysine and methionine), vitamins, and minerals. Feed B has a slightly higher protein content and is formulated to maintain stable egg production. Feed C emphasizes nutritional balance and additional additives to maintain feed quality and digestive health. In general, differences in nutritional composition between feeds affect egg production levels and feed utilization efficiency by quail.

The analysis results showed a significant interaction between feed type and quail strain on egg productivity . The combination of Feed A with the Japanese strain resulted in the highest egg production, both in terms of daily egg count and average egg weight, and was significantly different compared to other treatment combinations. In the Golden strain, Feed B provided better productivity results compared to Feed A and Feed C. This indicates that each strain has a different nutritional response, so the effectiveness of the feed is highly dependent on the genetic characteristics of the quail. These findings confirm that selecting the appropriate feed for the strain is a key factor in increasing the productivity of laying quail.

Feed efficiency was evaluated using the Feed Conversion Ratio (FCR) , which is the ratio of feed consumed to egg production. A lower FCR indicates better feed efficiency. The results showed that Feed A had the lowest FCR , making it the most efficient in producing eggs compared to other feeds. This efficiency correlates with the nutritional balance and essential amino acid content that support optimal metabolism and egg production.

The research results show that feed type significantly influences quail productivity at CV Didin Farm. The feed provided affects egg production , feed conversion , and egg quality. Quail Which given Feed A show results productivity egg the better one compared to Feed B and Feed C. Increased productivity in Feed A This is thought to be because the nutritional composition is more balanced and specially designed. For increase production egg, so that bird quail can obtain optimal nutrition.

Feed B No produce productivity Which equivalent with Feed A caused by an imbalance of nutrients in the feed, or by microbial changes that affect the quail's metabolism. thus, Feed B Still give results Which more Good than Feed C. As for Feed C give productivity lowest. Possibility This caused by a lack of protein or fat content in important herbal feeds For production egg. This in accordance with study previously which shows that feed based herbs usually more effective For guard health quail than increase productivity egg.

These results support the hypothesis that feed type significantly influences quail productivity, with commercial feed yielding the best results compared to fermented and herbal feeds. This suggests that commercial feed with its balanced nutritional content is more capable of supporting increased quail egg productivity than other feeds. Which given feed A show results Which more Good in weight thicker eggs and shells.

Combination Feed And Strain

Quail strain was also shown to significantly influence productivity. The Japanese strain demonstrated the highest productivity compared to the Golden and Blaster strains. This is consistent with the strain's genetic characteristics. Japan Which known own ability production egg Which more Good compared to strain other. Strain Japan show results Which most superior in terms of egg production, with higher productivity compared to the Golden and Blaster strains .

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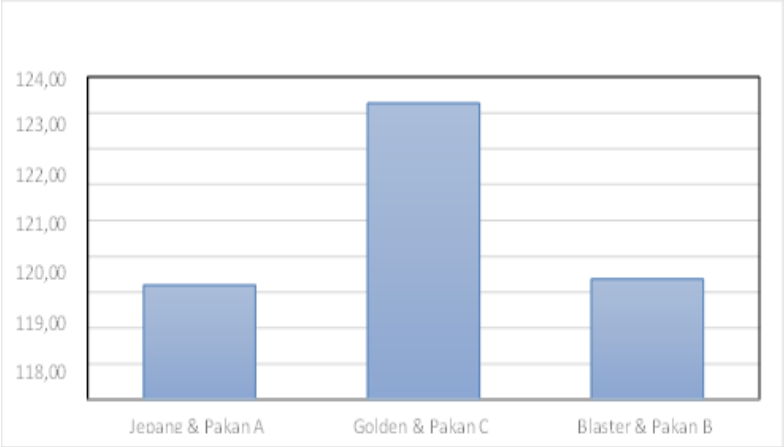
The Golden strain offers productivity results that fall between the Japanese strain and the Blaster strain. Although this strain has better performance than the Blaster strain, its productivity does not reach the level of the Japanese strain. strain Golden Possible originate from combination genetics Which provides a balance between growth and egg productivity, although not as great as the strain Japan. Even though so strain Golden own weight body And size egg which is big compared to Japanese eggs.

The Blaster strain, on the other hand, produced the lowest productivity results. Genetic factors influencing the productivity of this strain may be related to adaptation to the local environment, but it is less optimal in terms of egg production compared to other strains. These results support the hypothesis that quail strain significantly influences productivity, with the Japanese strain showing the best results, followed by the Golden strain and the Blaster strain.



Gambar 1. Combination Diagram Type Feed And Strain To Egg Weight

Based on the diagram Which describe combination type feed And strain to weight egg bird quail, can seen that combination strain Golden. Feed C produced the highest egg weight, at around 123 grams. This indicates that feed C can significantly increase egg weight. However, it should be noted that Japanese strain combination with Feed A, even though it has a lower egg weight than Golden & Feed C, is still classified as optimal Because mark weight egg Which produced Still is at in The ideal standard weight range for quail eggs is around 118 grams. This indicates that the Japanese strain is relatively stable and capable of producing eggs of a decent weight, especially when fed appropriately.

In a way overall, data show that interaction between type feed and strains affect egg weight, where the combination of Feed C with the Golden strain gives the highest results, while Feed A with the Japanese strain shows stable performance and meets standards. The results of the interaction test between feed type and strain showed a significant effect on quail productivity. The combination of Feed A and the Japanese strain yielded the best productivity results compared to other combinations. This indicates that selecting the right feed for the optimal strain can significantly improve production quality. The combination of Feed B and the Golden Strain yielded quite good productivity results, but not exceeding the combination of Feed A and the Japanese Strain. However, the combination of Feed B and the Golden Strain resulted in higher quail body weight compared to the other strains. This suggests that while fermented feed is not optimal for all strains, there are potential benefits for the Golden strain, which has specific genetic characteristics.

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Meanwhile, the combination of Feed C and Strain Blaster produced the lowest productivity. This indicates that both feed and strain do not support high productivity. Strain Blaster fed with herbal feed No capable reach results optimal, possibility Because nutritional imbalance and lack of genetic capacity to increase production. Overall, the interaction between feed type and strain indicates that selecting the appropriate feed for a particular strain is crucial for maximizing quail productivity. These results provide evidence that the interaction between these two factors plays a significant role in increasing quail productivity at CV Didin Farm. The results of this study provide several important implications for the management of CV Didin Farm. First, selecting the right feed, especially Feed A, can significantly improve quail productivity. Therefore, the use of commercial feed with a special formulation for quail is recommended as a step to improve egg quality. Second, the results of this study indicate that the Japanese quail strain has the potential for higher quality productivity than other strains. Therefore, selecting the optimal strain can improve production efficiency on farms. Third, the results of the interaction between feed type and strain provide additional insights. that combination optimal between both of them can give results best. With combine strain Japan And feed commercial that appropriate, CV Didin Farm can achieve significantly higher productivity.

5. Conclusion

Based on results study regarding analysis productivity bird quail at CV Didin Farm Which influenced by type feed And strain, as well as in between both, then some conclusions that can be drawn are as follows:

- The type of feed has a significant influence on quail productivity. A produce productivity best in matter quality egg Which produced, followed by feed B and herbal feed C.
- Quail strain also influences productivity. The Japanese strain showed the highest productivity results, followed by the Golden strain and the Blaster strain.
- From the research results, the most optimal combination of feed and strain in increasing quail productivity at CV Didin Farm is the Japanese strain with type feed A. Partners use combination the Because from aspect Egg weight and shell thickness show stable values in terms of productivity. Strain Japan proven own productivity Which more tall compared to with other strains in this study . This strain can be a profitable choice in the long term, especially for breeders who prioritize stability in production results, the Japanese strain with feed A can be choice Which Good. Partners still maintain combination strain Golden and feed B and Blaster strain with feed C because in terms of price it is relatively cheap and the seeds are easy, even though in terms of quality it is less but it is still worthy

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