Jurnal Agro Veteriner (Agrovet)

https://e-journal.unair.ac.id/agrovet/

Original Article

Price Fluctuations of Quail Eggs at The Farm Level and Their Contributing Factors in The Jabodetabek Area and East Java

Ratu Reni Budiyanti[1]*, Vony Armelia[2], Magfira[3], Akbar Satria Bahari[4]

[1]Department of Food Technology, Faculty of Agriculture, Sultan Ageng Tirtayasa University, Serang Regency, Serang, 42163, West Java, Indonesia
[2]Department of Animal Science, Faculty of Agriculture, Sultan Ageng Tirtayasa University, Serang Regency, Serang, 42163, West Java, Indonesia
[3]Department of Animal Science, Faculty of Agriculture, Sultan Ageng Tirtayasa University, Serang Regency, Serang, 42163, West Java, Indonesia
[4]Post Graduate Department of Animal Husbandry, Faculty of Animal Husbandry, Jenderal Soedirman University, Purwokerto, 53122, Central Java, Indonesia

ABSTRACT

Quail eggs offer numerous health benefits, including enhancing the immune system, supporting brain growth and development, and repairing damaged cells. Indonesia has key quail egg production centers in East Java, with the Jabodetabek area serving as the primary consumer market. This has led to price disparities between the two regions at the producer level. From October 2023 to September 2024, the average price of quail eggs at the producer level in East Java was IDR 30,738 per kg, while in the Jabodetabek area, it was IDR 32,738 per kg. The highest prices in both regions were recorded in May, with the lowest prices observed in December. In May, the price of quail eggs in Jabodetabek reached IDR 36,000 per kg, while in December, it dropped to IDR 22,000 per kg. In East Java, the price in May was IDR 34,000 per kg, and in December, it decreased to IDR 20,000 per kg. The most significant price fluctuations in Jabodetabek occurred in February, with a coefficient of variation (CV) of 0.739, while in East Java, the highest fluctuations were recorded in both November and February, with a slightly higher CV of 0.740. These fluctuations in quail egg prices are primarily driven by inflation, which results in increased production costs. These costs include the price of feed, particularly ingredients such as corn, soybeans, and wheat, which are key components in the cost structure of livestock farming.

Keywords: Quail, eggs, fluctuation, price

ARTICLE INFO

Original Research

Received: October 11, 2024
Accepted: November 30, 2024
Published: December 04, 2024
***Corresponding Author:**
ratu.reni@untirta.ac.id
DOI:
https://doi.org/10.20473/agrovet.v8i1.65304

Introduction

Quail eggs are a rich source of animal protein and offer numerous health benefits, such as boosting the immune system, supporting brain growth and development, and repairing damaged body cells. A quail egg consists of 47.4% egg white (albumen), 31.9% egg yolk, and 20.7% shell and shell membrane. The protein content in quail eggs is approximately 13.1%, while the fat content is 11.1%. The quail egg yolk contains 15.7% to 16.6% protein, 31.8% to 35.5% fat, 0.2% to 1.0% carbohydrates, and 1.1% ash (Mustakim *et al.*, 2023). As such, quail eggs represent an affordable alternative for individuals seeking to meet their protein needs.

Despite their potential as a nutritious alternative food source, fluctuations in the price of quail eggs often occur, particularly in urban areas such as Jabodetabek and East Java. These price fluctuations can affect the purchasing power of the population, particularly for those who rely on animal-based protein as a primary source in their daily diet. According to Ilham et al. (2018), price fluctuations can be influenced by various factors on both the demand and supply sides. An increase in income may lead to higher demand for eggs, which, in the case of stable supply, can result in price

increases (Indriaty *et al.*, 2023). Conversely, a decrease in income can lead to a reduction in demand. Furthermore, Ilham and Saptana (2019) suggest that demand-side factors include religious holidays and cultural events. On the supply side, factors such as feed costs, egg production, poultry health, and fluctuations in input prices and animal feed can contribute to price instability.

Price fluctuations of quail eggs may also be influenced by market dynamics that vary across regions. For instance, in Jabodetabek, which has a large population and diverse consumption patterns, price fluctuations may follow a different pattern compared to East Java, where local quail egg production plays a more significant role. Additionally, external factors such as climate change, government policies, and disruptions in the supply chain also contribute to the price stability of quail eggs in both regions.

This study aims to analyze the price fluctuations of quail eggs in Jabodetabek and East Java, as well as identify the factors influencing these fluctuations. The research is expected to provide a clearer understanding of the causes of price volatility and offer policy recommendations that could help mitigate the impact of quail egg price fluctuations in Indonesia.

Materials and Methods

This study employs a descriptive method with a quantitative approach through secondary data analysis. The data used is derived from the results of a census of poultry farmers in the Jabodetabek area and East Java. It includes the quail egg prices at the farmer level in the Jabodetabek and East Java regions from October 2023 to September 2024.

Data analysis

Price fluctuations are proxied by the coefficient of variation (CV), with a higher CV value indicating greater price volatility. The coefficient of variation is calculated using the following formula:

$$CV = \frac{SD}{\bar{X}} \times 100\%$$

The factors influencing the fluctuation of quail egg prices are analyzed using descriptive and comparative statistical methods. The data obtained is presented through graphs and tables.

Result

Quail Eggs: Price Fluctuations and Influencing Factors

Quail eggs have several advantages that make them highly sought after by the public, both as a food source and for their health benefits. In addition to their high nutritional content, quail eggs are also considered a rarer food item due to the more limited production process compared to chicken eggs, resulting in a higher selling price. Price changes in quail eggs are a phenomenon that often attracts attention, impacting farmers, traders, and consumers alike.

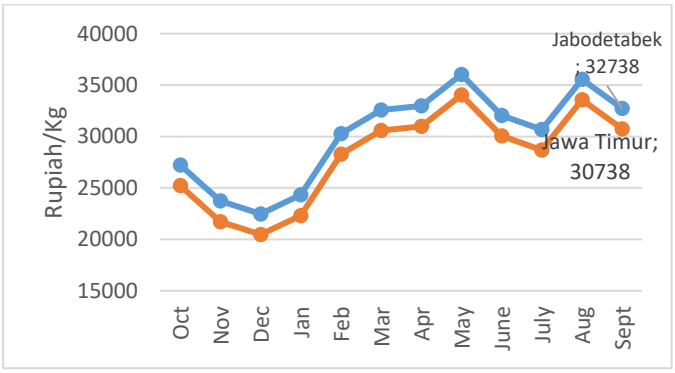

Figure 1. Price of Quail Eggs in the Past Year (October 2023 - September 2024)

In the past year, the price of quail eggs has fluctuated over specific periods. Figure 1 illustrates the price changes from October 2023 to September 2024. According to the data, the price of quail eggs at the farmer level in Jabodetabek, a major consumption hub, reached its highest point in May at IDR 36,000 per kg, and the lowest price was recorded in December at IDR 22,000 per kg. In East Java, a primary production center for quail eggs, the highest price occurred in May at IDR 34,000 per kg, while the lowest price was in December at IDR 20,000 per kg. The average price of quail eggs in Jabodetabek was IDR 32,738 per kg, slightly higher than East Java, where the average was IDR 30,738 per kg.

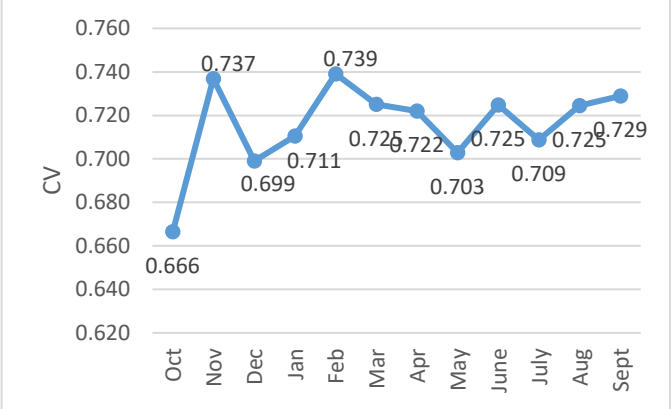

Figure 2. Price Fluctuations of Quail Eggs in Jabodetabek (October 2023 - September 2024)

Price fluctuations over the past year in Jabodetabek can be observed in Figure 2. Price volatility is proxied by the coefficient of variation (CV), with a higher CV indicating greater price fluctuations. According to the data, the highest fluctuation in Jabodetabek occurred in February, with a CV of 0.739, while the lowest fluctuation was in October 2023. In East Java, the price fluctuations were slightly higher than in Jabodetabek, as shown in Figure 3.

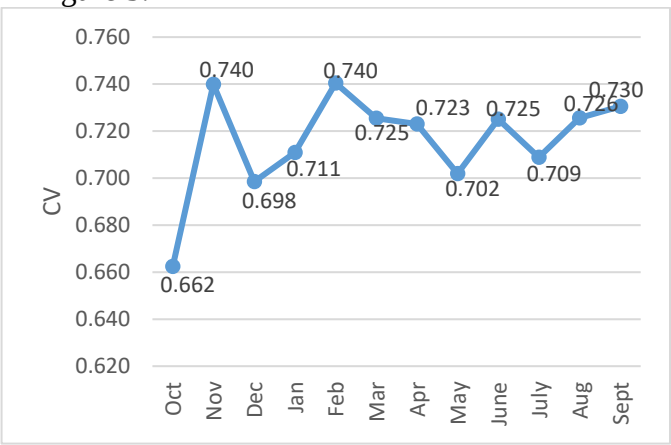

Figure 3. Price Fluctuations of Quail Eggs in East Java (October 2023 - September 2024)

East Java is one of the main production centers for quail eggs. Figure 3 shows the price trends in both East Java and Jabodetabek. Prices in Jabodetabek are generally higher than those in East Java, as Jabodetabek is the primary consumption center in the country, influencing national prices. The price formed in Jabodetabek serves as a reference for traders in East Java and other production centers (Ilham and Saptana, 2019).

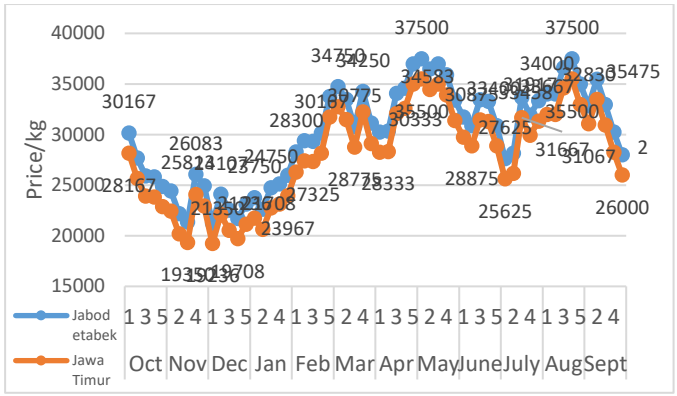

Figure 4. Weekly Average Price Development (October 2023 - September 2024)

Discussion

Factors Influencing the Price of Quail Eggs

Macroeconomic Conditions and Inflation

The price increase in quail eggs observed in May, as shown in Figure 1, was driven by inflation, which directly affected feed production costs. Inflation, triggered by the depreciation of the Indonesian rupiah against the US dollar, caused the price of imported raw materials to rise. According to BPS (Statistics Indonesia), annual inflation in the Jabodetabek area was between 2-3% in 2024, indicating that the prices of goods and services in May 2024 were 2-3% higher than in May 2023. This means that consumers in Jabodetabek had to spend more to purchase the same goods and services. Faustina (2024) found that inflation positively impacts egg prices, which can lead to price shocks. Rising inflation also results in higher feed costs, particularly for feed ingredients such as corn, soybeans, and wheat, which are major components of livestock production costs. Setiawan and Hadianto (2019) noted that fluctuations in food commodity prices impact inflation both in the short and long term. Increased feed costs lead to higher production costs for quail eggs, and in turn, higher egg prices to offset the rising costs of production. Feed costs are a key factor influencing the level of feed management, which directly impacts quail egg production.

The high cost of feed forces farmers to be resourceful to maintain proper nutrition levels for their livestock. According to Hanifah et al. (2019), the level of feed consumption and nutritional content directly affects livestock productivity. Another macroeconomic factor is the periodic

https://doi.org/10.20473/agrovet.v8i1.65304
How to Cite:
Budiyanti RR, Armelia V, Magfira, Bahari AS. Price Fluctuations of Quail Eggs at The Farm Level and Their Contributing Factors in The Jabodetabek Area and East Java J. Agrovet. 2024, 8(1): 104-109.

increase in fuel prices in Indonesia, which affects transportation and distribution costs for goods, including quail eggs. As transportation costs rise, traders or producers may increase their selling prices to cover these additional costs. Additionally, higher fuel prices also raise the costs of other production inputs, such as imported feed ingredients.

Feed Price Increases

One of the main challenges faced by quail farmers is the cost of feed. Variations in feed prices significantly affect the total costs and net income of farmers (Afandi *et al.*, 2020). Feed constitutes a major portion of production costs on farms, and differences in feed composition and characteristics can further increase feed costs, leading to economic losses and environmental impacts (Baki and Yücel, 2017). The cost of feed can account for up to 60-70% of total production costs in poultry farming (Lainawa *et al.*, 2015). With the increasing cost of feed, quail farmers are forced to raise the price of quail eggs to cover losses resulting from higher production costs, contributing to the rise in egg prices in the market.

Demand Increases

According to the law of demand, there is an inverse relationship between price and the quantity demanded (Chintia and Destiningsih, 2022). Increased demand for quail eggs during certain peak periods, such as religious holidays or major celebrations like Eid, Christmas, or New Year's, often leads to price fluctuations. During these times, especially those tied to cultural or family traditions, the consumption of quail eggs tends to rise (Ilham and Saptana, 2019). This increased demand can lead to a shortage of supply, driving prices upward. Farmers or traders, noticing the surge in demand, may take advantage of this opportunity to increase prices, as consumers are generally willing to pay more during special occasions. Once the demand normalizes, prices tend to stabilize or decrease. This fluctuation is also influenced by excess stock after periods of high demand, which can lead to supply exceeding demand in the market.

Livestock Health

The health of quail is another key factor influencing price fluctuations. Livestock diseases are one of the main causes of reduced egg production. Although there has been no major outbreak in quail farms over the past year, diseases such as coccidiosis or bacterial infections can still affect the health of quails, leading to reduced egg production (El Bakrey *et al.*, 2024). According to Samadi et al. (2023), farmers often report higher mortality rates among livestock during the transition from dry to rainy seasons, exacerbating production losses. One such disease is avian influenza (AI), which is deadly to poultry and can be transmitted to humans (Suwito *et al.*, 2013). Additionally, during cold or rainy weather, quail eggshells tend to become more fragile (Dewi *et al.*, 2024), leading to a reduction in egg supply and an increase in prices.

Market Competition

Market competition can also influence price fluctuations (Babaioff *et al.*, 2015). Intense competition among quail egg producers in Jabodetabek and East Java can lead to price fluctuations. There are many independent and medium-sized farmers producing quail eggs in both regions. This competition often results in price wars, where farmers lower their prices to attract buyers, especially when egg supply is abundant. However, when competition becomes too fierce, some farmers may be forced to sell at lower prices to avoid losses, causing market prices to drop. On the other hand, when supply is limited or demand increases, farmers may raise prices to maximize profits, leading to sharp price fluctuations.

In addition to price competition, fluctuations in quail egg prices are also influenced by differences in the quality and size of the eggs offered by different producers. Egg size can be influenced by the nutritional content of the feed, and variations in egg quality may result from differences in farm management practices. Farmers with access to better feeding technology or more efficient management methods can produce eggs of higher quality or in greater quantities, gaining a competitive advantage in the market. However, farmers who struggle to meet these quality standards may be forced to lower their prices to remain competitive.

Jurnal Agro Veteriner (Agrovet). 2024. **8 (1): 104 - 109**
https://doi.org/10.20473/agrovet.v8i1.65304
How to Cite:
Budiyanti RR, Armelia V, Magfira, Bahari AS. Price Fluctuations of Quail Eggs at The Farm Level and Their Contributing Factors in The Jabodetabek Area and East Java J. Agrovet. 2024, 8(1): 104-109.

Conclusion

In the past year, the price of quail eggs has undergone changes in both production and consumption areas. This study focuses on East Java as the production center and Jabodetabek as the consumption center. The average price of quail eggs from October 2023 to September 2024 was IDR 30,738 per kg in East Java, and IDR 32,738 per kg in Jabodetabek. The highest prices in both regions were observed in May, while the lowest prices occurred in December. In May, quail eggs in Jabodetabek were priced at IDR 36,000 per kg, while in December, they dropped to IDR 22,000 per kg. In East Java, the highest price in May was IDR 34,000 per kg, and the lowest in December was IDR 20,000 per kg. The highest price fluctuations occurred in Jabodetabek in February (CV 0.739), while in East Java, the highest fluctuations were in November and February (CV 0.740). These fluctuations were influenced by inflation, increasing feed costs, rising demand, livestock health issues, and market competition.

References

Afandi R, Hartono B, Djunaidi I. 2020. The Analysis of Production Costs of Laying Hen Farms Using Semi Self-Mixing and Total Self-Mixing Feeds in Jawa Timur Regency, East Java. Tropical Animal Science Journal, 43(1): 70-76.

Babaioff, M., Paes Leme R., and Sivan B. 2014. Price competition, fluctuations and welfare guarantees. In Proceedings of the Sixteenth ACM Conference on Economics and Computation (pp. 759-776).

Baki B, Yücel S. 2017. Feed Cost/Production Income Analysis Of Seabass (Dicentrarchus Labrax) Aquaculture. International Journal of Ecosystems and Ecology Sciences (IJEES), 7 (4): 859-864

Chintia RA, Destiningsih R. 2022. Pengaruh Harga Komoditas Pangan Terhadap Inflasi Di Kota Semarang. Jurnal Ilmiah Ekonomi Bisnis Volume 27 No. 2.

Dewi IP, Yovi A, Fitriani D, Dona FR, Putri M, Agustia PL, Rahma. 2024. Meningkatkan Potensi Pasar dalam Mencapai Keberhasilan UMKM Telur Puyuh di Jorong Sawah Tarok Nagari Padang Laweh Selatan. J-CoSE: Journal of Community Service & Empowerment, 2(1).

El Bakrey RM, Helal SS, ElKholy AA, and Eid AAM (2024). Landmarks in Quail Coccidiosis Research with Special Scrutiny to the Available Egyptian Literature: A Review. J. World Poult. Res., 14(2): 181-195. doi: https://dx.doi.org/10.36380/jwpr.2024.19

Faustina RH. 2024. Pengendalian Inflasi Komoditas Telur Ayam Ras di Jawa

Barat. Educationist: Journal of Educational and Cultural Studies, 17 (1): 43-49.

Hanifah FN, Soepranianondo K, Soeharsono, Al Arif A, LOkapirnasari WP, Harijani N, Hadijah, Hutabarat MRT. 2019. Performa Produksi dan Analisis Usaha Puyuh (Coturnix coturnix japonica) yang Diberi Substitusi Black Soldier Fly Larvae (BSFL) pada Pakan Komersil. Jurnal Sains Veteriner, 37(2): 2019-2022.

Haryanto AN, Sarengat W, Sunarti D. 2019. Kualitas Fisik Telur Itik Tegal yang Dipelihara Menggunakan Sistem Pemeliharaan Intensif dan Semi Intensif di KTT Bulusari Kabupaten Pemalang. Sains Peternakan, 17(1): 29-37.

Karimudin, Nafiu LO, Has H. 2021. Kualitas Telur Puyuh (Coturnix Coturnix japonica) yang Diberi Ransum Mengandung Dedak Padi Fermentasi. JIPHO (Jurnal Ilmiah Peternakan Halu Oleo), 3(4): 395 -399

Ilham, N dan Saptana. 2019. Fluktuasi Harga Telur Ayam Ras Dan Faktor Penyebabnya. Analisis Kebijakan Pertanian, 17(1):27-38.

Ilham, N., Saptana dan E.S. Lestari. 2018. Riviu Fluktuasi Harga Telur Dan Daging Ayam Ras Di Tengah Surplus Produksi. Pusat Sosial Ekonomi Dan Kebijakan Pertanian Sekretariat Jenderal Kementerian Pertanian 2018.

Indriaty L, Mulya FRQ, Tjiu H, Santy S, Susiani, Akbar A. 2023. Pengaruh Pendapatan Dan Harga Terhadap Daya Beli Masyarakat. JUMABIS, 7(1): 20-23

Lainawa, J., Santa, N. M., Pandey, J., & Bagau, B. 2015. Pemanfaatan sumberdaya lokal

sebagai bahan baku industri dan pakan alternatif dalam meningkatkan pendapatan ternak puyuh organik di kecamatan Sonder, kabupaten minahasa. Seminar Nasional Masyarakat Biodiv Indon. Vol. 1. No. 2. 2015.

Mustakim., Munir., Irmayani. 2023. Warna Dan Indeks Kuning Telur Puyuh (Coturnix Coturnix Japonica) Yang Diberi Tepung Daun Singkong (Manihot Esculenta) Dengan Level Yang Berbeda. Jurnal Gallus-Gallus, 1(3): 88-98.

Permatahati D, Mutia R, Astuti DA. 2029. Effect of Cricket Meal (Gryllus bimaculatus) on Production and Physical Quality of Japanese Quail Egg. Tropical Animal Science Journal, 42(1):53-58.

Samadi, Khairi F, ilham, Sugito. 2023. Peningkatan Produktivitas Ternak Puyuh Melalui Program Vaksinasi Dan Formulasi Ransum Berbasis Sumber Daya Pakan Lokal Di Kabupaten Aceh Besar. Jurnal Pengabdian Mahakarya Masyarakat Indonesia, 1(2)

Setiawan AF, Hadianto A. 2019. Fluktuasi harga komoditas pangan dan dampaknya terhadap inflasi di Provinsi Banten. JAREE: Jurnal Ekonomi Pertanian, Sumberdaya Dan Lingkungan, 1(2), 81–97

Suwito W, Supriadi, Winarti E, Primatika RA. 2013. Kajian Vaksin Avian Influesa (AI) pada Ayam Buras dengan Sistem Kandang Kurung di Gunung Kidul Yogyakarta. Sains Peternakan, 11(2): 79-83..