

CASE REPORT

PERFORMANCE AND FINANCIAL ANALYSIS IN BROILER (COBB 430 Y STRAIN): A CASE REVIEW ON THE FEED CONVERSION RATIO AND MORTALITY RATE

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How to cite this article:

Vanlalmangaihsanga, Roy NK, Lalrinkima, Praharaj N, Mohanty S, Majumder S. 2025. Performance and financial analysis in broiler (cobb 430 y strain): A case review on the feed conversion ratio and mortality rate. Veterinaria, 74(1), 113-23.

ABSTRACT

This study investigates the operational, production, and financial performance of broiler farming using the COBB 430 Y strain at the Instructional Livestock Complex (ILFC). A total of 1,439 chicks were reared over 40 days, achieving an average Feed Conversion Ratio (FCR) of 1.52 and an average market weight of 2.12 kg by the final selling phase. The farm's mortality rate of 4.65%, which was mostly caused by enteritis (6%), and colibacillosis (44.8%), surpassed the aim of 3.18% even though the farm consistently increased its weight. Financially, the farm made a total expenditure of Rs 2,55,427, including feed, chick procurement, and health management, while generating an income of Rs 2,67,098.95 through broiler sales. This resulted in a modest net income of Rs 11,671.95 and a benefit-cost ratio of 1.05, confirming the economic feasibility of the operation despite the challenges faced. The findings emphasise optimizing health management, biosecurity measures, and environmental conditions to minimize losses and enhance profitability. This report provides valuable insights into raising broiler farming and shows how strategic management techniques can lead to sustainable production. In order to further increase productivity and financial returns, future initiatives should focus on health issues including colibacillosis, bettering feed efficiency, and lowering mortality rates.

Keywords: Biosecurity, feed conversion ratio, mortality, production metrics, profitability

INTRODUCTION

This report sets out the results of the first rearing report on the broiler that was conducted on 1,439 chicks on January 3, 2024. This report aimed to obtain information from the first rearing of the broiler about the broiler's growth, profitability, and mortality. Broilers are one kind of poultry that are reared for mainly meat purposes. It is kept for the commercial production of meat in our country. Compared to other agricultural sub-sectors, in the situation of enhancing the agriculture industry meat farming sub-sector is with the high potential (Ali et al., 2013). In poultry farms focused on meat production, broiler breeds are raised mainly in environmentally controlled poultry houses. Broiler farming has become popular both in urban and rural areas. It encouraged the people of different sections such as small farmers, landless labourers and educated unemployed as well as industrialists to establish broiler farms on small and large scales (Chatterjee and Rajkumar, 2015). The growth performance of broiler birds might simply be a function of higher feed conversion. Feed consumption followed a similar trend to that of weight gain.

In addition to providing food to human beings, the poultry industry concentrates on providing employment not only to those engaged in production directly, but also for the hatchery operations, feed dealers, manufacturers of incubators, building materials, processors of egg and poultry products, and all dealers engaged in the marketing process (Nkukwana, 2018). Many factors may affect the production process in broiler production. The type of the production system is the major one. The intensive production system is a largely adopted production system which decreases prorates inputs per bird during the production period (Castellini et al., 2006).

In Indian conditions, the production of poultry in the backyard was far more prevalent in comparison to ten years ago. As it's evident from the 20th Livestock Census, backyard poultry has touched new highs with an additional of almost 45.78% increase in population time from 217.49 million

in 2012 to 317.07 million in 2019 (20th Livestock Census). This exceptional rate of population increase rate might be attributed to different cases like bringing in the administration's incentives, information programs, and backyard farms' intrinsic merits.

At present, the proper distribution of poultry among various areas all across the country is reported as being at a high level. The role of the mentioned three states, among others, in the commercial poultry sector is of immense significance. States such as Tamil Nadu, Andhra Pradesh, and Telangana are among the states that have the largest share of the poultry population and the most developed poultry farming in India. The share of poultry production in the total poultry livestock in India varies and ranges from a low of 0.3% to even full coverage in some states (Chatterjee & Rajkumar, 2015). In practical terms, this means that poultry flocks have a wider dispersal within states influenced, however, by geographic factors and the type of livestock raised.

Broiler meat is a simple and cheap source of protein. Poultry meat accounts for a significant percentage of the total meat production in India. India ranks 8th in chicken meat production in the world. Poultry meat production in India has emerged as a vital component of the country's meat industry, contributing significantly to overall meat production. In the year 2022-23, poultry meat production continued to dominate, reflecting the sector's growth, technological advancements, and increasing consumer demand for poultry products. This section provides a comprehensive overview of poultry meat production in India, highlighting its contribution, growth trends, and factors influencing its success (USDA, 2019). The meat production from poultry is 4.995 million tonnes, contributing about 51.14% of total meat production (BAHS, 2023). The contribution of poultry to GDP and foreign exchange is essential and increasing day by day. The per capita availability was 5.72 kg per annum during the period 2016-17. There has been a steady increase in per capita availability of meat. The per capita availability reached at 7.10

kg/annum in the year 2022-23, a 0.28-point jump from 6.82 g/annum in the previous year 2021-22 (Singh, 2023). High and fluctuating feed prices are other important obstacles in the development of the broiler industry. Increasing the broiler farm capacity to 25,000 broiler chickens will make farming financially feasible (Al-Sharafat and Al-Fawwaz, 2013). Bird stocks, operating costs, and other costs were important factors to broiler output. Age, education, family size, training and access to credit, were found to be technical inefficiencies of farmers' abilities that largely affected production (Binam et al., 2004). Factors such as feeding system, water quality and the type of ration among the managerial factors have noticed the effect on broiler rearing operations (Manning et al., 2007). Therefore, this aims to assess the operational, production, and financial performance of broiler farming using the COBB 430 Y strain under controlled conditions at the Instructional Livestock Farm Complex (ILFC).

MATERIALS AND METHOD

Operational Highlight

To determine the feasibility of poultry production, this study used a small rental farm located in Instructional Livestock Farm Complex (ILFC) in Binjhagiri, Khordha, Bhubaneswar. On January 3 2024, 1,439-day-old chicks were introduced into a poultry house furnished with sawdust and supplied with heaters, feeders, and drinkers. The chicks were bought at a price of Rs. 22/- each from a local supplier.

Upon arrival, the broiler chicks of COBB 430 Y strain were placed in a carefully prepared brooding area, where the temperature was maintained at a consistent 25 degrees Celsius. This initial stage was critical for the health and well-being of the chicks, as it provided the necessary warmth and environment to support their early development. However, the importance of maintaining optimal conditions was highlighted early in the rearing period when the first-week mortality was attributed to cold shock. This incident underscored the challenges of managing the delicate balance

required in the early stages of chick rearing.

The management of the brooding area was meticulous. The newspaper that lined the brooding area was removed on the second day and the temperature continued to be closely monitored and maintained at 25 degrees Celsius. After eight days, the brooder guard, which had provided the chicks with protection and warmth, was removed. This allowed the chicks more space to move around and adapt to their environment, an important step in their development.

Feeding

Since feed consumption has a direct impact on growth rates, health, and overall performance, feeding was monitored closely throughout the rearing period (Hamra, 2010). There were three stages to the feeding schedule: pre-starter, starter, and finisher. The chicks were fed 500 kg of feed during the pre-starter period, which was intended to give them the vital nutrients they needed for their first development surge. A total of 1,200 kg was consumed by the chicks as they grew and switched to the starter feed. The purpose of the starter feed was to promote quick growth and get the chicks ready for the last stage of rearing. Finally, during the finisher phase, a total of 3,000 kg of feed was allocated, but 67 kg was left over, making the actual consumption 2,933 kg. This phase was crucial as it determined the final weight and market readiness of the birds. In total, 4,733 kg of feed was consumed during the 40-day rearing period.

Feed management was also a critical component of the operation's success. The phased approach to feeding, starting with the pre-starter feed and progressing through to the finisher feed, ensured that the nutritional needs of the chicks were met at each stage of their development. The careful calculation and monitoring of feed consumption allowed the operations team to optimize growth rates and achieve the target FCR. For this reason, managing feed formulas for accuracy is an important step in poultry farm management to safeguard the environment, and reduce operating costs (Karcher, 2009).

Vaccination

Vaccination was another crucial aspect of the rearing process. Viral diseases can be reduced by proper sanitation on the farm, biosecurity measures, and vaccination of the chicks and chickens (Hamra, 2010). The chicks were vaccinated on four occasions during the 40 days to ensure their health and immunity against common poultry diseases. The first vaccination was administered on the 4th day, followed by subsequent vaccinations on the 14th, 21st, and 30th day. The vaccines used were Lasota, IBD (Infectious Bursal Disease), Lasota Booster, and IBD Booster, respectively. Each of these vaccines played a critical role in preventing outbreaks of diseases that could severely impact the flock.

The use of vaccines such as Lasota and IBD, along with their boosters, was particularly important in safeguarding the flock against respiratory diseases and infectious bursal disease, both of which can have devastating effects on poultry, if not properly managed. The strategic timing of these vaccinations helped to build immunity within the flock, ensuring that the birds remained healthy and productive throughout the rearing period.

Throughout the rearing period, careful implementation of all rearing parameters was paid to every aspect of the chicks' environment, health, and nutrition. The operations team worked diligently to maintain the brooding area at the correct temperature, manage feed distribution, and administer vaccinations at the appropriate times. Despite the initial setback of mortality due to cold shock, the overall operation adhered closely to the planned schedule and performance targets.

Data Collection

Data on dead chicks, feed, and body weight used, were collected to monitor the flock's performance. The scope of the study only focused on broiler production performance in the Instructional Livestock Farm Complex (ILFC). The data were gathered from a sample of 150 poultry birds through observations of the weekly performance of the birds. An economic assessment for this

research was carried out to study the profitability of the broiler farm. The different calculations for the performance of the farm are as shown below:

Weekly Body Weight

The weekly body weight gain of the birds and daily feed intake were recorded to assess the growth performance and feeding efficiency of the birds. Body weight was recorded using a digital weighing balance. The body weight and daily feed intake data determined the following growth performance.

Feed Conversion Ratio (FCR)

Feed conversion ratio was calculated as a gram of feed consumed per gram of body weight gain with correction for mortality, if any.

$$FCR = \frac{\text{Feed Intake(g)}}{\text{Body Weight Gain (g)}}$$

Percent Morbidity and Mortality

A record of mortality (if any) was maintained daily. The necropsy examination was done to evaluate any gross pathological lesion and cause of death of each bird. Total mortality in each treatment was then calculated and expressed on a percentage basis.

$$\text{Mortality \%} = \frac{\text{Total number of animals die during the experimental period}}{\text{Total number of animals at the beginning of experiment}} \times 100$$

Economic Analysis (cost of feed/kg weight gain)

The economic viability of the broilers was evaluated based on the total expenditure incurred on these products and the return from the sale of live birds.

Economic efficiency involves evaluating the costs of feed, medication, energy, and other resources of revenue generated from meat production. This article presents the key production indicators of broiler chickens that affect rearing economic efficiency, such as final BW, mortality, and FCR. FCR was calculated by summing the amount of feed used to produce one kilogram of body

weight, which is the main factor in reducing production costs (Marcu et al., 2013). EPEF is an indicator of the production efficiency of a given flock (Allison et al., 2000; Perić et al., 2009) a calf disease. However, it is likely that the vitamin E requirement of the modern dairy cow is very different from that of a calf. This review of the literature investigates the effect of vitamin E supplementation on the health and fertility of the dairy cow. Supplementation of high levels of vitamin E (at least 1000 iu per day. The index was calculated according to the following formula:

$$\text{EPEF} = \frac{\text{Mean BW (kg)} \times \text{Survival rate (\%)}}{\text{Number of rearing days} \times \text{CR}} \times 100$$

All calculations and analysis were done using Microsoft Excel®.

RESULTS AND DISCUSSION

Production Analysis

The 40-day rearing period provided detailed insights into the growth and weight distribution of 150 poultry birds from a sample total population of 1,439 as shown in Table 1.

Table 1 Average body weight distribution of birds

First-week average body weight distribution	
Weight (g)	Count of Body Weight (g)
100-150	101
150-200	48
>200	1
Second-week average body weight distribution	
200-300	20
300-400	81
400-500	49
Third-week average body weight distribution	
500-699	30
700-899	113
900-1099	7
Fourth-week average body weight distribution	
1.19-1.34	45
1.34-1.49	95
1.49-1.64	10
Fifth-week average body weight distribution	
1.7-2	72
2-2.3	77
2.3-2.6	1

This data highlights trends in weight gain and influencing factors, such as diet, and management. During the first week, the average body weight was 142.92 grams, with most chicks weighing between 100 and 150 grams. A few chicks exceeded 200 grams, reflecting variability in early growth. Research by Khalid et al. (2021) on Cobb-500 and Ross-308 broiler strains showed slightly higher average weights of 207.40±14 grams and 196.00±16 grams, respectively.

By the second week, the chicks’ average weight increased significantly to 360.48 grams, with most weighing between 300 and 500 grams. This indicated a more uniform growth pattern as the chicks developed. In the third week, the average

weight rose to 761.33 grams, with a majority weighing between 700 and 899 grams. Growth became more uniform, with many nearing the 1-kilogram mark. By the third week, the average weight nearly doubled to 761.33 grams, with most chicks (113) weighing between 700-899 grams.

In the fourth week, the average weight reached 1.38 kilograms, with most birds weighing between 1.34 and 1.49 kilograms. In the fifth week, the average weight peaked at 2 kilograms, with most birds weighing between 2 and 2.3 kilograms. These figures reflect the effectiveness of the management practices in achieving substantial growth. The flock’s performance culminated in two selling phases (Table. 2).

Table 2 Average Selling Live weight distribution of birds

Weight (kg)	Count of Body Weight (kg)
First Live Weight (750 birds)	
1.5-1.8	20
1.8-2.1	600
2.1-2.4	130
Second Live Weight (609 birds)	
1-1.6	9
1.6-2.2	220
2.2-2.8	380

In the first phase, 750 birds were sold, with the majority weighing between 1.8 and 2.1 kilograms. In the second phase, 609 birds were sold, with most weighing between 2.2 and 2.8 kilograms. By the fifth week, the majority of birds (77) reached 2-2.3 kilograms, nearing market weight. Overall, the production analysis demonstrated a successful growth trajectory, with most birds reaching or exceeding target weights, contributing to profitability.

Production Parameters

The flock’s growth was closely linked to variations in the Feed Conversion Ratio (FCR), a critical metric in poultry production (Table 3). A lower

FCR indicates better feed efficiency, with the industry standard for broiler performance is the achievement of 2.5 kg live weight with a feed conversion ratio of 1.72 at 42 days of age in recent times (Creswell, 2005). During the first week, the chicks had an average body weight of 142.92 grams and an FCR of 1.36, indicating efficient feed conversion. By the second week, the average weight increased to 360.48 grams, but the FCR rose to 1.69, reflecting increased energy demands as the chicks entered a rapid growth phase.

Table 3 Production and selling parameters of broiler

Average Weekly Body Weight	
Week	Average Body Weight (g)
1	142.92
2	360.48
3	761.33
4	1380.78
5	2000
Average Weekly FCR	
Week	FCR
1	1.36
2	1.69
3	1.33
4	1.28
5	1.87
Average FCR	1.52
Selling Parameter	
First Selling (35 days)	2.00
Second Selling (40 days)	2.24

In the third week, the average weight jumped to 761.33 grams, with the FCR improving to 1.33, indicating enhanced feed efficiency. By the fourth week, the average weight reached 1,380.78 grams, and the FCR dropped to 1.28, the lowest recorded. This peak feed efficiency suggested optimal growth conditions. However, by the fifth week, the average weight reached 2,000 grams, and the FCR increased to 1.87, reflecting a slight decline in feed efficiency as the birds approached maturity.

The overall average FCR across the five weeks was 1.52, slightly above the ideal threshold but still within the optimal range. This indicated that the flock efficiently converted feed into body mass, resulting in satisfactory growth rates and economic feed use. Studies by Farhadi and Hosseini (2014) and Premavalli et al. (2020) corroborate similar FCR trends in controlled environments. Adegbenro et al. (2020) from their study revealed the highest final weight, highest weight gain, highest eviscerated weight, lowest feed intake ($2388.00 \pm 1.44\text{g}$, $1716.25 \pm 0.32\text{g}$, $1890.00 \pm 27.00\text{g}$, $3475.75 \pm 36.57\text{g}$, respectively), and best

feed conversion ratio (2.03 ± 0.07) were recorded in birds on fold unit system.

Mortality

Mortality analysis revealed a 4.65% rate (Table 4 and Figure 1), exceeding the target of 3.18% and the industry benchmark of 3-5% (Viban & Mfondo, 2021). Early chick mortality is associated with disease, poor management, inadequate brooding temperatures and heat stress in hot climates (Chou et al., 2004). Colibacillosis, the leading cause of mortality, accounted for 30 of 67 deaths, highlighting the need for enhanced biosecurity and environmental controls. Apart from viral diseases, coccidiosis, necrotic enteritis, colibacillosis and salmonellosis are considered to be the common infectious enteric diseases of birds responsible for decreased feed intake, nutrient absorption, increased feed conversion ratio, reduced body weight gain, high morbidity and mortality thus leading to a huge economic loss (Dahiya et al., 2006; Shirzad et al., 2011; Abera et al., 2017). Enteritis caused four deaths, indicating potential feed or water

quality issues. Nephritis and pneumonia caused three and two deaths, respectively, underscoring the importance of optimal health management. Putrefaction accounted for 12 deaths, emphasizing the need for better monitoring and timely removal of dead birds. Unconfirmed causes contributed to 14 deaths, necessitating improved diagnostic efforts. According to Jacob et al., 1998 the viral diseases which cause major mortality in birds include: Marek’s disease, Newcastle disease,

infectious bronchitis, laryngotracheitis, fowl pox, fowl cholera, and avian encephalomyelitis. Comparisons to studies by Farhadi & Hosseini, (2014) underscore the importance of addressing these challenges to reduce mortality rates. Premavalli et al. (2020) have found the average livability of broiler birds up to 42 days was 91 % and 92 % in Nandanam broiler-2 and Nandanam broiler-3, respectively

Table 4 Cause of mortality

Cause of Death	Number of Birds
Colibacillosis	30
Enteritis	4
Internal Haemorrhage	2
Nephritis	3
Pneumonia	2
Putrified	12
Unconfirmed	14
Mortality Percentage	4.28%

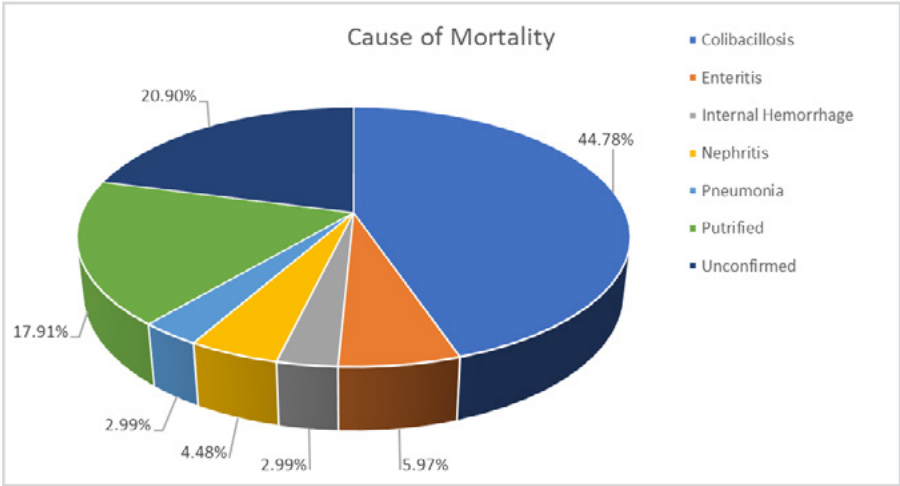


Figure 1
Percentage of cause of mortality in broiler during the 40 days rearing

Economic Impact

The financial overview of the poultry farm over the 40-day rearing period provides a comprehensive

picture of the costs incurred and the income generated, ultimately leading to a modest net profit, as shown in Table 5.

Table 5 Economics of the farm

Particulars	Amount (Rs.)
Total Expenditure from purchasing of chicks (@ Rs. 20/- per chick)	34,500/-
Total Expenditure from feeds	1,68,705/-
Total Expenditure on medicine and miscellaneous	52,222/-
Total Expenditure: (1+2+3)	2,55,427/-
Total income from selling (2863.15kg * Rs. 93+11.8kg * Rs. 70)	2,67,098.95/-
Net income amount (5 - 4)	11,671.95/-
Benefit-cost Ratio	1.05
EPEF	333.76

The financial overview of the poultry farm revealed a total expenditure of Rs. 2,55,427, with feed costs constituting 66% of the total. The farm generated Rs. 2,67,098.95 in revenue from selling broilers, resulting in a net income of Rs. 11,671.95 and a benefit-cost ratio of 1.05. This showed that the farm was making Rs. 1.05 for every rupee invested, indicating a favorable return on investment. Despite obstacles including a higher-than-anticipated death rate, the farm turned a profit, underscoring the significance of ongoing observation and modification for sustained success. Similar findings in the financial analysis of broiler farms are highlighted by studies by Adegbenro et al. (2020) and Premavalli et al. (2020).

In the current study, the average mortality rate was 4.28%, the average BW was 2.12 kg and average FCR was 1.52. Data on the production efficiency of broiler chickens are used to calculate the EPEF. The higher the EPEF value, the more favourable the production result of broiler chickens, and production with an EPEF above 220 is considered effective (Perić et al., 2009). The level of the EPEF index during the rearing period was 333.76, as shown in Table 5. According to Karaman et al. 2023, an EPEF value exceeding 190 can be considered satisfactory. However, many authors believe that the EPEF value should not fall below 220 (Perić et al., 2009; Van Limbergen et al., 2020). Poultry companies are improving breeds used in breeding

programs, resulting in a significant improvement in performance traits compared to previously used chicks, which in turn translates into improved production indicators (Alves et al., 2024; Neeteson et al., 2023; Van Limbergen et al., 2020).

CONCLUSIONS

The obtained results are affirmative for the project conducted with the aim of investigating the impact of Feed Conversion Ratio (FCR) optimization. The farm's ability to generate a net income of Rs. 11,671.95 and a benefit-cost ratio of 1.05 indicate that poultry farming can be a viable business, though it requires attention to detail and effective cost management. The thin profit margins highlight the importance of regular supervision of disease outbreaks, the farm observed a higher-than-expected mortality rate of 4.65% in which 44.8% of the cause of death during the rearing period is due to colibacillosis, followed by enteritis, which is 6%. The main cause of mortality during the first week is mainly due to improper maintenance of the brooding temperature. Therefore, efforts are needed to address health issues, such as colibacillosis and enteritis, to optimize performance and financial outcomes further.

This report is a valuable reference for assessing the poultry farm's performance and guiding future improvements and strategic decisions.

ACKNOWLEDGEMENTS

I would like to extend my heartfelt gratitude to the ILFC Broiler Farm at the Institute of Veterinary Sciences and Animal Husbandry, Siksha 'O' Anusandhan (Deemed to be University), Odisha, for their invaluable support and cooperation in allowing me to conduct a case study on their farm. The insights and data provided have been instrumental in the successful completion of this study. I am particularly grateful to the farm management and staff for their time, effort, and willingness to share their expertise, which significantly enriched the findings of this study.

CONFLICT OF INTEREST

The authors declared that there is no conflict of interest

CONTRIBUTION

Conception: V, SM; Design: V; Supervision: NP, SM; Materials: SM, Data Collection: L, NP; Analysis of Data: SM, V; Literature Review: NKR, V; Critical Review: V, NKR

REFERENCES

- 20th Livestock Census (2020). DADF, DADF, Ministry of Fisheries, Animal Husbandry and Dairying, GoI.
- Abera D, Abebe A, Begna F, Tarekegn A, Alewi M. 2017. Growth performance, feasibility and carcass characteristics of Cobb 500 commercial broiler under small-scale production in Western Ethiopia. *Asian J Poult Sci*, 11(1), 49-56.
- Adegbenro M. 2020. Nutritional significance of tropical vegetables in poultry feeding: A review. *Turkish J Agricult-Food Sci Technol*, 8(6), 1286-90.
- Adegbenro M, Oyedun OI, Aletor VA. 2020. Evaluation of bread waste fortified with moringa leaf meal on performance and health status of broiler chickens. *J Experiment Agricult Int*, 42(2), 152-60.
- Ali AL, Al-Fawwaz TM, Mafrag J. 2013. Economic analysis of different broiler farm capacities: A case study of Jordan. *Int J Bus and Manag*, 8(5), 4-47.
- Allison RD, Laven RA. 2000. Effect of vitamin E supplementation on the health and fertility of dairy cows: a review. *Vet Rec*, 147(25), 703-8.
- Alves AAC, Fernandes AFA, Lopes FB, Breen V, Hawken R, Rosa GJM. 2024. Genetic analysis of feed efficiency and novel feeding behaviour traits measured in group-housed broilers using electronic feeders. *Poult Sci*, 103(7), 103737.
- Binam JN, Tonye J, Nyambi G, Akoa M. 2004. Factors affecting the technical efficiency among smallholder farmers in the slash and burn agriculture zone of Cameroon. *Food Policy*, 29(5), 531-545.
- Castellini C, Bastianoni S, Granai C, Dal Bosco A, Brunetti M. 2006. Sustainability of poultry production using the emergy approach: Comparison of conventional and organic rearing systems. *Agricult Ecosyst Environ*, 114(2-4), 343-50.
- Chatterjee RN, Rajkumar U. 2015. An overview of poultry production in India. *Indian J Anim Health*, 54(2), 89-108.
- Chou CC, Jiang DD, Hung YP. 2004. Risk factors for cumulative mortality in broiler chicken flocks in the first week of life in Taiwan. *British Poult Sci*, 45(5), 573-7.
- Creswell D. 2005. The nutritional requirements of today's broiler. *Asian Poultry J*, pp.18-21.
- Dahiya, J. P., Wilkie, D. C., Van Kessel, A. G., & Drew, M. D. (2006). Potential strategies for controlling necrotic enteritis in broiler chickens in post-antibiotic era. *Animal Feed Science and Technology*, 129(1-2), 60-88.
- Farhadi D, Hosseini S. 2014. Comparison of broiler performance in two conventional and environmentally controlled conditions modern broiler houses in tropics. *Glob J Anim Sci Res*, 2(3), 190-6.
- Farhadi D, Hosseini S. 2014. Comparison of broiler performance in two conventional and environmentally controlled conditions modern broiler houses in tropics. *Global J Anim Sci Res*, 2(3), 190-6.
- Government of India, M. of A. 2012. Basic Animal Husbandry Statistics 13, 1-131).
- Hamra CF. 2010. An assessment of the potential profitability of poultry farms: A broiler farm feasibility case study. Univ. of Tennessee at Martin.
- Jacob JP. 1998. Vaccination of small poultry flocks. University of Florida Cooperative Extension Service, Institute of Food and Agriculture Sciences, EDIS.
- Karaman S, Taşcıoğlu Y, Bulut OD. 2023. Profitability and cost analysis for contract broiler production in Turkey. *Animals*, 13(13), 2072.
- Karcher D. 2009. Managing Nutrients in Poultry Diets, Michigan State University Extension.

- Khalid N, Ali MM, Ali Z, Amin Y, Ayaz M. 2021. Comparative productive performance of two broiler strains in open housing system. *Advan Life Sci*, 8(2), 124-7.
- Manning L, Chadd SA, Baines RN. 2007. Key health and welfare indicators for broiler production. *World's Poult Sci J*, 63(1), 46-62.
- Marcu A, Vacaru-Opriş I, Dumitrescu G, Ciochină LP, Marcu A, Nicula M, et al. 2013. The influence of genetics on economic efficiency of broiler chickens growth. *Anim Sci Biotechnol*, 46(2), 339-46.
- Neeteson AM, Avendaño S, Koerhuis A, Duggan B, Souza E, Mason J, et al. 2023. Evolutions in commercial meat poultry breeding. *Animals*, 13(19), 3150.
- Nkukwana TT. 2018. Global poultry production: Current impact and future outlook on the South African poultry industry. *South African J Anim Sci*, 48(5), 869-84.
- Perić L, Milošević N, Žikić D, Kanački Z, Džinić N, Nollat L, et al. 2009. Effect of selenium sources on performance and meat characteristics of broiler chickens. *J Appl Poult Res*, 18(3), 403-9.
- Premavalli K, Omprakash A. 2020. Comparative hatching performance of normal feathered Nandanam broiler-3, Naked Neck and Naked Neck x Nandanam broiler-3 cross broiler breeders under intensive system of management. *J Entomol Zool Stud*, 8(2), 1495-8.
- Premavalli K, Sangilimadan K, Balasubramanyam D, Omprakash AV. 2020. Comparative production performance of multi colored broiler strains-Nandanam broiler-2 and Nandanam broiler-3 under intensive system of management. *J Entomol Zool Studies* 8(4), 704-6.
- Shirzad MR, Seifi S, Gheisari HR, Hachesoo BA, Habibi H, Bujmehrani H. 2011. Prevalence and risk factors for subclinical coccidiosis in broiler chicken farms in Mazandaran province, Iran. *Trop Anim Health Product*, 43, 1601-4.
- Singh A. 2023. Livestock Production Statistics Of India. (accessed 05.02.25). <https://www.vetextension.com/livestock-production-statistics-of-india-2023/>
- United States Department of Agriculture (USDA). 2019. Report Name: Livestock and Products Annual 2019. Usda, June 2021, 1–18. (accessed 05.02.25). https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?file-Name=Livestock and Products Annual_The Hague_European Union_09-09-2019
- Van Limbergen T, Sarrazin S, Chantziaras I, Dewulf J, Ducatelle R, Kyriazakis I, et al. 2020. Risk factors for poor health and performance in European broiler production systems. *BMC Vet Res*, 16, 1-13.
- Viban B, Mfondo M. 2021. Effect of the management of mortality (chicken death) risk on the production of commercial broiler farms in the city of Douala, Cameroon. *J Entrepreneurship Organization Management*, 10, 306.

PERFORMANSE I FINANSIJSKA ANALIZA BROJLERA (SOJ COBB 430 Y): PRIKAZ SLUČAJA STOPE KONVERZIJE HRANE I STOPE MORTALITETA

SAŽETAK

Ova studija ispituje operativne, proizvodne i finansijske performanse uzgoja brojlera korištenjem COBB 430 Y soja u Instructional Livestock Complex-u (ILFC). Ukupno 1439 pilića je uzgajano duže od 40 dana, pri čemu su dosegli prosječnu stopu konverzije hrane (FCR) od 1,52 i prosječnu tržišnu masu od 2,12 kg do konačne prodaje. Stopa mortaliteta od 4,65% na farmi, uzrokovana uglavnom enteritisom (6%) i kolibacilozom (44.8%), premašila je granicu od 3.18%, iako je farma neprekidno povećavala težinu. Finansijski su ukupni troškovi farme iznosili Rs 2,55,427, uključujući hranu, nabavku pilića i zdravstvenu zaštitu, dok je prodajom brojlera generiran prihod od Rs 2,67,098.95. Ovo je rezultiralo skromnim neto prihodom od Rs 11,671.95, a odnos korist-troškovi od 1.05 je potvrdio ekonomsku izvodljivost operacije uprkos izazovima. Rezultati naglašavaju važnost optimiziranja zdravstvene zaštite, biosigurnosnih mjera i okolišnih uvjeta u svrhu minimiziranja gubitaka i povećanja profitabilnosti. Naše istraživanje pruža značajan uvid u upravljanje farmom brojlera i pokazuje kako tehnike strateškog upravljanja mogu voditi održivoj proizvodnji. Kako bi se dalje povećala produktivnost i povrat finansijskih sredstava, buduće inicijative bi se trebale usredotočiti na zdravstvene probleme uključujući kolibacilozu, poboljšanje kvalitete hrane i smanjivanje stopa mortaliteta.

Ključne riječi: Biosigurnost, mortalitet, obim proizvodnje, profitabilnost, stopa konverzije hrane