

<https://doi.org/10.33003/jaat.2025.1104.21>

ASSESSMENT OF THE PROFITABILITY AND CONSTRAINTS OF RABBIT PRODUCTION IN OYO STATE, NIGERIA

Oladejo, A.Q., Ambali, O.Y., Ifabiyi, J.O., & Mahmud, H.U

Department of Agricultural Economics & Extension Services, Kwara State University, Malete Ilorin

ABSTRACT

Rabbit production is an emerging enterprise in Nigeria with potential to enhance rural livelihoods and food security. This study assessed the profitability and constraints of rabbit farming in Oyo State. A total of 198 respondents were sampled using three-stage sampling method. Data on socioeconomic characteristics, production costs, revenue, and constraints were collected using structured questionnaires and analyzed using descriptive statistics and gross margin analysis. Results indicated that the majority of farmers were economically active adults (mean age = 41.73 years), predominantly male (62.12%), and relatively educated, with 58.59% attaining tertiary education. Small to medium flock sizes (mean = 13.45 rabbits) were common, and most respondents had limited experience (≤ 5 years) in rabbit production. Cooperative societies were the main source of financing, while access to extension services was low (10.6%). Economic analysis revealed that rabbit production was profitable, with a mean gross profit of ₦8,665.80, Net Farm Income of ₦3,750.44, Net Profit Margin of 16.44%, return on investment of 0.20, and a benefit-cost ratio of 1.2. Major constraints faced by the rabbit farmers included high feed cost, lack of training or extension services, fluctuating market prices, poor market access, and high mortality rates. The study concluded that while rabbit farming in Oyo State is economically viable, its sustainability is limited by several constraints. Recommendations include promoting affordable feed alternatives, strengthening extension and training programs, enhancing market access, improving veterinary support, and facilitating access to credit.

Keywords: Rabbit production, Profitability, Constraints, Nigeria, Gross Margin Analysis

INTRODUCTION

Livestock farming is a core of Nigeria's agricultural economy and a growing business in Sub Saharan Africa (Erdaw, 2023). The rabbit (*Oryctolagus cuniculus*) is a distinctive animal that is extremely prolific, has a short gestation interval, and is capable of utilizing forages and agricultural by-products without competition from humans for feed. It is also small in size (CABI, 2018). These attributes make rabbit production particularly suitable for smallholder and resource-limited farmers, especially in rural communities (Ayeni et al., 2023). According to the United Nations Food and Agriculture Organization (FAO), more than 25% of the population in Sub-Saharan Africa suffers from undernourishment, with many communities unable to meet their basic dietary requirements (Adeyeye et al., 2021). Rabbit meat presents a viable strategy to address these nutritional challenges due to its high nutritional quality and adaptability. It is rich in protein, low in fat, and contains essential vitamins and minerals, making it an excellent option for alleviating malnutrition (Dalle Zotte and Szendrő, 2011). Research further indicates that rabbit meat is nutrient-dense, providing important micronutrients such as iron, zinc, iodine, and vitamin B12, while remaining low in cholesterol and sodium (Adeolu et al., 2020). In many developing nations, raising rabbits is a vital source of income. Numerous research from African nations have discovered that rabbit production strongly affects a number of rural household livelihood indicators, including income, food and nutrition security (Akinsola et al., 2021). Rabbit farming offers several advantages for smallholder

subsistence farmers in Nigeria. These traits, combined with the increasing recognition of rabbits' potential to improve food security, nutrition, and reduce reliance on diminishing bush meat supplies, have driven the growth of small-scale rabbit production (Ayeni et al., 2023).

In Nigeria, rabbit farming has gained traction due to its relatively low start-up costs and potential for quick returns. Rabbit farming provides a valuable opportunity for youth and women entrepreneurs, particularly in rural communities. Beyond meat production, rabbits can also be raised for fur, manure, and as companion animals, offering farmers multiple sources of income (Arówólò, 2023). Despite the importance of rabbit in mitigating the problem of animal protein supply and generating employment, its production in Nigeria is plagued with problems of expensive concentrates, non-availability of forage, pests and disease, lack of market information and inadequate knowledge and awareness about the benefits of consuming rabbit meat (Okorie, 2011). All these results in low output and profitability of rabbit production. The major constraint in livestock production is constant feed supply and ever-increasing cost of conventional feedstuffs such as maize and corn bran due to competition between man and livestock for grains (Obun et al., 2010). High feed costs account for about 65.7% of total production costs (Ayinde and Aromolaran, 2021). Farmers face challenges such as disease outbreaks, high mortality rates, and marketing issues, which collectively limit profitability (Baruwa, 2014; Mukaila, 2023). Limited access to credit and quality breeding stock further exacerbates these challenges (Ayinde and

Aromolaran, 2021; Mukaila, 2023). Socio-economic challenges such as limited access to credit, low educational levels of farmers, and inadequate infrastructure further hinder the efficient management and profitability of rabbit farms (Ominikari, 2023). These constraints often result in high mortality rates, poor productivity, and low economic returns, thereby discouraging investment in rabbit production despite its recognized potential. This study, therefore, seeks to assess the profitability of rabbit production, and identify the major constraints of rabbit production in Oyo State, Nigeria.

RESEARCH METHODOLOGY

The study was conducted in Oyo State, Nigeria. The State is located the Southwestern part of Nigeria. It has 33 Local Government Areas with a total land area of 27,249 km². With an estimated population of 7,976,100 in 2022, Oyo State shares borders with Kwara State to the North (337km), Osun State to the southeast (187 km), partially across the River Osun, Ogun State to the South, and to the west by the

Republic of Benin (98 km). Crops including maize, yams, cassava, millet, rice, plantains, cocoa, palm produce, and cashews,.. are all favoured by the weather.

Sampling and Sample Size

The households who raise rabbits in Oyo State's four (4) agricultural zones—Ibadan/Ibarapa, Oyo, Ogbomosho, and Saki made up the study's population. A three-stage sampling process was used to choose the sampled rabbit farmers who provided data for the study. The first stage involved the purposive selection of two agricultural zones (Ibadan/Ibarapa and Oyo) owing to the high number of rabbit farmers in the zones. In the second stage, the Yamane (1967) formula was used to determine the sample size (at a 90% confidence level). In the third stage, 198 rabbit farmers who were registered with the Oyo State Rabbit Farmers Association (OYSRAFA) in the two zones that were chosen were proportionately sampled. The proportionate sampling breakdown is provided below.

Zone	Population Size of stratum (Nh)	Sample size of each stratum (nh)	Sample size % from each population
Ibadan/Ibarapa	429	123	29%
Oyo	263	75	29%
Total	792	198	

Method of Data Analysis

Rabbit farmers in the study area were classified according to their socioeconomic status and demographics using descriptive statistics, which comprise counts, percentages, means, and averages of the data. Descriptive statistics was also used to identify the constraints faced by rabbit farmers in the study area.

Gross Margin Analysis

The Gross Margin Analysis was used to examine the profitability of rabbit production in the study area. It will be expressed as follows:

$$GM = TR - TVC \dots\dots\dots 1$$

Where GM = Gross Margin
 TR = Total Revenue
 TVC = Total Variable Cost

Profitability index (PI);

$$NPM = \frac{NR}{TR} \times 100 \dots\dots\dots 2$$

Where: NPM= Net Profit Margin
 NR =Net Return
 TR Total Revenue

RETURN ON INVESTMENT (ROI);

ROI

$$= \frac{TC}{TR} \dots\dots\dots$$

Where ROI = Return on Investment
 TR = Total Revenue
 TC = Total Cost

BENEFIT COST ANALYSIS

BCR

$$= \frac{TR}{TC} \dots\dots\dots$$

Where BCR = Benefit Cost Ratio
 TR = Total Revenue
 TC = Total Cost

RESULTS

Demographic and Socio-economic Characteristics of the Respondents

Table 1 reveals socioeconomic characteristics of 198 respondents engaged in rabbit farming, presented through frequency, percentage, and, where applicable, mean values. The respondents' ages range from ≤30 to above 60 years, with a mean age of 41.73 years. The largest age group is 31–40 years (28.79%), followed closely by 41–50 years (27.27%). Respondents of ages ≤30 years account for 18.18%, while those above 60 years are the smallest group (6.06%). Most respondents are in their prime working years

(31–50 years), suggesting a relatively mature group engaged in rabbit farming. Majority (62.12%) of the rabbit farmers are male, the remaining 37.88% female, indicating that rabbit farming may be a male-dominated activity in the study area. Female participation is substantial but less prevalent, which could reflect cultural or economic factors influencing gender roles in farming. Most respondents (69.19%) have household size of ≤ 5 members, with a mean household size of 4.42. Smaller households (≤ 5) are predominant, which may imply that rabbit farming is manageable for smaller families. Only 1.52% have households larger than 10, suggesting large households are rare among respondents. Education levels varied among the respondents, Tertiary education is most common (58.59%), followed by secondary (31.82%), primary (4.04%), and no formal education (5.56%). A highly educated sample, with over half (58.59%) having tertiary education, suggests rabbit farming attracts individuals with formal education, possibly due to technical knowledge or resource access. Low representation of those with no formal education indicates that some level of education may be necessary or preferred for this activity. The result also reveals that farming is the most common occupation (29.8%), followed by civil service (25.25%), trading (18.69%), artisan work (17.17%), and students (9.09%). Rabbit farming is often a primary or complementary activity for farmers, but diverse occupations such as (civil service, trading) suggest it is a viable side activity for various professionals. Students' involvement (9.09%) indicates potential interest among younger, educated individuals. Also, cooperatives are the primary funding source (46.97%), followed by personal

savings (31.31%), family support (12.12%), and loans (9.6%). Heavy reliance on cooperatives highlights the importance of collective financial support in rabbit farming. Low use of loans (9.6%) may indicate limited access to formal credit or risk aversion among farmers. Most respondents (82.83%) have ≤ 5 years of experience, with a mean of 3.75 years. The majority are relatively new to rabbit farming, suggesting it may be a growing or emerging activity. Very few (1.01%) have 10–20 years of experience, indicating limited long-term engagement among the respondents. 60.61% are members of cooperative societies, while 39.39% are not. Cooperative membership is common, likely facilitating access to resources, funding, or knowledge sharing. The result further shows that 10.61% have access to extension services, while 89.39% do not. Limited access to extension services suggests a gap in technical support or training for most respondents, which could impact productivity or innovation in rabbit farming. Also, most respondents (58.08%) earn N1,000,000–N2,000,000 annually, with a mean income of N1,677,373. The majority fall in the middle-income range, indicating rabbit farming contributes to a stable income for many. Very few (1.01%) earn below N500,000, suggesting very low earners are rare among the respondents. Most respondents (53.03%) have 11–20 rabbits, with a mean flock size of 13.45. Small to medium flock sizes dominate, suggesting small-scale or semi-commercial operations. A small number (0.51%) have fewer than 5 rabbits, and only 3.54% have more than 30, indicating most respondents operate at a modest scale.

Table 1: Demographic and Socio-economic Characteristics of the Respondents

Characteristics	Frequency N=198	Percentage	Mean
Age			
≤ 30	36	18.18	41.73
31 – 40	57	28.79	
41 – 50	54	27.27	
51 – 60	39	19.7	
Above 60	12	6.06	
Gender			
Male	123	62.12	
Female	75	37.88	
Marital Status			
Single	52	26.26	
Married	126	63.64	
Divorced	10	5.05	
Widowed	8	4.04	
Separated	2	1.01	

Total	198	100	
Household Size			
<= 5	137	69.19	
5 – 10	58	29.29	4.42
Above 10	3	1.52	
Educational Level			
No formal Education	11	5.56	
Primary	8	4.04	
Secondary	63	31.82	
Tertiary	116	58.59	
Primary Occupation			
	Frequency		
Farming	59	29.8	
Trading	37	18.69	
Civil Service	50	25.25	
Artisan	34	17.17	
Student	18	9.09	
Source of finance for rabbit farming			
Personal Savings	62	31.31	
Loan	19	9.6	
Family Support	24	12.12	
Cooperatives	93	46.97	
Years of Experience in rabbit production			
<= 5years	164	82.83	
10 - 20years	2	1.01	3.75
5 - 10years	32	16.16	
Membership in Cooperative			
No	78	39.39	
Yes	120	60.61	
Access to Extension services			
No	177	89.39	
Yes	21	10.61	
Annual Income			
Less than ₦500,000	2	1.01	
₦5,000,000 - ₦1,000,000	52	26.26	
₦1,000,000 - ₦2,000,000	115	58.08	₦1,677,373
₦2,000,000 - ₦5,000,000	29	14.65	
Flock size (number of rabbits available)			
11 – 20	105	53.03	
21 – 30	8	4.04	
6 – 10	77	38.89	13.45
Less than 5	1	0.51	
More than 30	7	3.54	

Source: Field Survey, 2025

Cost and Returns Estimate of Rabbit Production

The cost and returns analysis of rabbit production presented in Table 2. The mean revenue realized from rabbit production was ₦22,816.07 per production cycle. The Total Variable Cost (TVC) incurred was ₦14,150.27, while the Total Fixed Cost (TFC) stood at ₦4,915.36, resulting in a Total Cost (TC) of ₦19,065.63. Among the variable costs, the cost of foundation stock accounted for the highest proportion (43.90%) of the Total Variable Cost, followed by feed cost (17.89%) and feeding materials (13.44%). Labour

cost (7.53%) and veterinary/health care cost (7.52%) also constituted significant proportions of the total variable cost. Water and electricity (2.95%), bedding materials (2.56%), and transportation/marketing cost (4.22%) represented smaller cost components. The gross profit obtained from rabbit production was ₦8,665.80, representing a gross profit margin of 37.98%, while the net farm income was ₦3,750.44 with a net profit margin of 16.44%. The Return on Investment (ROI) was estimated at 0.20, indicating that for every ₦1 invested in rabbit production, a profit of ₦0.20 was realized. The Benefit-Cost Ratio (BCR) of 1.2 implies that rabbit production is economically viable, as revenue generated exceeded total cost.

Table 2: Cost and Returns Estimate of Rabbit Production

Variables	Mean values (₦)	Percentage
Revenue from Rabbit production	22816.07	
Feed Cost	2530.92	17.89
Veterinary drugs/health care	1063.91	7.52
Labour Cost	1065.17	7.53
Feeding Materials	1901.41	13.44
Water and Electricity Cost	417.68	2.95
Bedding/litter materials Cost (In Naira)	362.92	2.56
Transportation/Marketing Cost	596.64	4.22
Cost of foundation stock	6211.62	43.90
Total Variable Cost	14150.27	
Miscellaneous (Maintenance)	1516.67	
Housing Cost (Adjusted for Depreciation)	3398.69	
Total Fixed Cost	4915.36	
Total Cost	19065.63	
GROSS PROFIT	8665.8	
GROSS PROFIT MARGIN	37.98	
NET FARM INCOME	3750.44	
NET PROFIT MARGIN(PI)	16.44	
ROI	0.2	
Benefit Cost Ratio	1.2	

Constraints Faced by Rabbit Farmers in the Study Area

Constraints faced by rabbit farmers in the study area are shown in Table 3. High cost of feed with a mean score of 1.66 was ranked the most critical challenge to rabbit farming. The second major challenge was Lack of training or extension services with a mean score of 1.59. This implies that Limited training likely contributes to inefficiencies in

rabbit management, high mortality rates, and suboptimal profitability, as farmers may lack knowledge on cost-effective practices or disease prevention. Similarly, low or fluctuating prices (Mean Score =1.57) was ranked as the third major challenge to rabbit farming. Market access ranked 4th with a mean score of 1.18. High mortality rates was ranked the 5th major challenge to rabbit production in

the study area with a mean score of 0.88. However, diseases and lack of veterinary care with a mean score of 0.80, lack of access to finance with a mean score of 0.67, security with a mean score of 0.39, theft and predation with a mean score

of 0.36 and inadequate housing/shelter with a mean score of 0.26 were ranked 6th, 7th, 8th, 9th and 10th challenges to rabbit farming.

Table 3: Constraints Faced by Rabbit Farmers in the Study Area

Constraint	Not Severe	Severe	Very Severe	Mean	Rank
Lack of training or extension services	19(9.6)	44(22.2)	135(68.2)	1.59	2nd
Diseases and lack of veterinary care	88(44.4)	62(31.3)	48(24.2)	0.8	6th
Lack of access to finance	111(56.1)	41(20.7)	46(23.2)	0.67	7th
Inadequate housing/shelter	159(80.3)	27(13.6)	12(6.1)	0.26	10th
Market access	45(22.7)	73(36.9)	80(40.4)	1.18	4th
Theft and predation	137(69.2)	50(25.3)	11(5.6)	0.36	9th
High cost of feed	15(7.6)	38(19.2)	145(73.2)	1.66	1st
High mortality rate	65(32.8)	91(46)	42(21.2)	0.88	5th
Low or fluctuating price	20(10.1)	46(23.2)	132(66.7)	1.57	3rd
Security	132(66.7)	54(27.3)	12(6.1)	0.39	8th

Source: Field Survey Data, 2025

DISCUSSION

The demographic and socio-economic profile of rabbit farmers in Oyo State revealed that the majority were within their productive age, with a mean age of 41.7 years. This aligns with findings by Ayeni *et al.* (2023), who reported that rabbit production in Nigeria is concentrated among economically active adults aged 30–49 years. They fall under the FAO's definition of the economically active population, which is defined as people aged 25 to 59 (Ayeni *et al.*, 2023). The predominance of farmers in their prime years indicates that rabbit farming is largely undertaken by individuals capable of providing labour and managing enterprise risks, which enhances its sustainability. Iheukwumere *et al.*, (2018) also reported that age of rabbit farmers has an important bearing on the effectiveness in performing management functions and therefore affects its productivity. The activity was also male-dominated (62.12%), this pattern mirrors earlier reports showing that men often dominate rabbit production, while women remain active contributors. Similarly, Moreki *et al.* (2019) found that among respondents, 55% were men and 45% women, they reported that women’s lower participation was partly due to other household responsibilities (child-care, home duties) that reduce time available for rabbit keeping. Household characteristics further showed that most farmers had small household sizes (≤5 members), consistent with earlier studies of Kitavi *et al.* (2015) who reported average household size was 5 persons. Smaller households may imply limited reliance on family labour and the tendency toward semi-commercial scales of production. Majority of respondents possessed formal education, with 58.6% attaining tertiary education. This finding supports Ogunyinka (2024), who noted that 53.1% of the rabbit farmers had tertiary education and rabbit production often

attracts highly educated individuals with greater access to knowledge and resources. Ayeni *et al.* (2023) reported that education level may also have a favorable impact on the farmers' acceptance of new technologies and access to important information that could boost their output. Rabbitry was also practiced across diverse occupations, including farming, civil service, trading, and artisan work, in agreement Ayeni *et al.* (2023), reported that the majority (65%) of respondents have other employment as their primary occupation, while 35% of them report farming as their main job small-scale rabbit farmers diversify their sources of income. This shows that for many rabbit farmers; rabbit production is not their main activity but rather a complementary or diversification activity. Institutional and economic factors also played key roles. Cooperative societies were the main source of funding, reflecting the importance of collective financing in the absence of formal credit access. Most respondents were relatively new to rabbit farming, with 82.8% having ≤5 years of experience, consistent with reports of Gatesi *et al.* (2025) who found out that respondents have few years of experience in rabbit farming. A major limitation identified was low access to extension services, with only 10.61% of farmers reporting contact, in line with broader observations of weak extension penetration in West Africa. Low access to livestock extension is widely documented across West Africa (Pousga *et al.*, 2022). Limited extension could hinder knowledge transfer, disease control, and productivity growth. Deficiencies in extension training programs, lack of veterinary services, and insufficient knowledge/experience among small-scale rabbit producers limit productivity and success (Elkashef, 2019). Most farmers earned between ₦1–2 million annually, which aligns with profitability

analyses in Nigeria showing rabbit production as a viable contributor to household income (Ayeni *et al.*, 2023).

This present study is similar to previous studies. Rabbit production is generally profitable but profitability is strongly influenced by input costs especially feed and breeding stock and by access to veterinary services and markets. Mukaila, (2023) reported that rabbit production can yield a benefit-cost ratio of 2.7, highlighting its economic viability (Mukaila, 2023). The profitability is further supported by factors such as stock size and farmer education, while high feed costs and disease outbreaks pose challenges (Mukaila, 2023). Ayeni (2023) similarly reported that rabbit production increases household income and livelihoods in Nigeria, but emphasized that margins are sensitive to price fluctuations in feed and the cost of foundation stock. Studies in different Nigerian states have repeatedly found that feed and breeding stock constitute the largest shares of production cost and thus the primary targets for efficiency improvements (Idahor et al., 2024). Olagunju and Sanusi (2010), in a study of backyard rabbitry in Oyo State, also recorded favourable profitability ratios for small-scale systems but recommended lowering feed and start-up (stock) costs to raise net returns.

The most critical constraint identified in this study was the high cost of feed. This finding is similar with previous studies in Nigeria which identify feeding costs (and feed availability) as major impediments to rabbit production. Ayinde and Aromolaran (2021) reported that in Ogun State feed cost accounted for as much as 65.7% of total cost of production, signalling the high burden feed places on profitability. Ayeni et al. (2025) identified availability of feeds and cost of production as the leading constraints among rabbit farmers in Kwara State. The second ranked constraint was lack of training or extension services. Limited extension contact and inadequate training have been repeatedly documented as key factors constraining rabbit enterprise performance in Nigeria. For instance, Masephula and Olorunfemi, (2023) noted that poor access to extension and training contributed to management inefficiencies, including feeding regimes, housing design, disease prevention and marketing behaviour. Similar to this present study market related challenges are well documented in rabbit production in Nigeria. Baruwa (2014) in Osun State reported marketing problems as among the top constraints, noting that even though production can generate profit, weak and unstructured markets limit returns and discourage expansion. In the present study, high mortality rates ranked 5th, while diseases and lack of veterinary care. Bamanga et al. (2023) found that neonatal death and losses from theft/predation were major constraints, and that inadequate housing design and poor peri-natal hygiene were contributory factors. Similarly, a recent study (Petrova, 2019) reported high mortality, high cost of inputs and poor vaccination/medication access as major constraints.

CONCLUSION AND RECOMMENDATIONS

This study revealed that rabbit farming is predominantly undertaken by individuals in their economically active years, with the majority being male and possessing tertiary education. Most respondents operated small to medium-scale rabbitries, with limited experience and little access to extension services. Cooperative societies were the primary funding sources. Profitability analysis indicated that rabbit farming in Oyo State is economically viable. The mean gross margin (₦ 8,665.80), net profit (₦ 3,750.44), net profit margin (16.44%), and benefit-cost ratio (1.2) demonstrated that revenues exceed costs, confirming that rabbit production can generate meaningful income. However, profitability was moderated by several key factors, most notably high feed costs, which accounted for about 17.89% of total variable cost, and the cost of foundation stock, which represented 43.9%. The major constraints confronting rabbit farmers in Oyo State were high feed cost, lack of training or extension services, fluctuating market prices, poor market access, and high mortality rates. The absence of stable market structures and inadequate veterinary care further constrain growth and discourage expansion. In conclusion, Rabbit production in Oyo State offers a profitable venture with potential for income diversification and food security enhancement. To enhance productivity and profitability, efforts should focus on reducing feed costs through the use of locally available feed resources and by-products, and by strengthening extension and training programs to improve farmers' management skills. Establishing organized marketing systems, improving access to veterinary care, and providing affordable credit facilities will further support enterprise expansion. Additionally, research into cost-effective feeding systems, disease control, and value chain development should be prioritized to sustain growth in the sub-sector.

REFERENCES

- Adeolu, A. I., Anosike, F. C., Nwose, R. N., Adeolu, N. I., Awah, E., and Abiola, E. M. (2020). Alleviating Micronutrient Malnutrition within 1000 Days' Window Period Using Rabbit (*Oryctolagus cuniculus*) Meat. *Pakistan Journal of Nutrition*, 19 (5), 239–244. <https://doi.org/10.3923/pjn.2020.239.244>
- Adeoti, M. D. (2024). Estimation of the Cost and Revenue of Rabbit Production in some Selected LGAs in Kwara State, Nigeria. *African Journal of Agricultural and Social Research*, 6(1), 136–142.
- Adeyeye, S. A. O., Ashaolu, T. J., Bolaji, O. T., Abegunde, T. A., and Omoyajowo, A. O. (2021). Africa and the Nexus of Poverty, Malnutrition and Diseases. *Critical Reviews in Food Science and Nutrition*, 63 (5), 641–656. <https://doi.org/10.1080/10408398.2021.1952160>

- Akinsola, G. O., Odum, E. E. B., and Oyedapo, O. O. (2021). Effects of Cuniculture Commercialization on Household Poverty Status in South Western Nigeria. *Pesquisa Agropecuária Gaúcha*, 27(1), 26-42.
- Arówólò, E.A. (2023). 10 Proven Ways to Make Money in Rabbit Farming. AgroNigeria. © 2024 AgroNigeria. All rights reserved. Developed by Godswill
- Ayeni, M.D., Adewumi, M.O., Bello, M.A., AdiAdi, K.F., and Osungade, A.A. (2023). Effects of Rabbit Production on Income and Livelihood of Rural Households in Nigeria. *Heliyon*, 9(8), e18568. doi: 10.1016/j.heliyon.2023.e18568.
- Ayeni, M., Manga, T., Aledare, J., and Alhassan, Y. (2025). Technical Efficiency and Constraints To Rabbit Production in Kwara State Nigeria. *Journal of Arid Agriculture*, 26(2), 24–34. <https://doi.org/10.63659/jaa.v26i2.84>
- Ayinde, I. A., and Aromolaran, A. B. (2021). Economics of Rabbit Production in Abeokuta South Local Government Area Of Ogun State, Nigeria. *Nigerian Journal of Animal Production*, 25(1), 100–105. <https://doi.org/10.51791/NJAP.V25I1.2274>
- Bamanga, M. U., Asuku, S. O., Timta, M. H., Ali, R. I., Abba, A., Alkali, I. M., Iliya, D., Mustapha, A., Bukar, M. M., and Waziri, M. A. (2023). The Constraints and some Reproductive Problems of Rabbit Production in Maiduguri Metropolitan Council and Jere Local Government Area of Borno State, Nigeria. *FUDMA Journal of Agriculture and Agricultural Technology*, 9(1), 27-35.
- Baruwa, O. I. (2014). Profitability and Constraints to Rabbit Production under Tropical Conditions in Nigeria. *Journal of Livestock Science*, 5, 83–88.
- Baruwa, O. I. (2014). *Profitability and Constraints to Rabbit Production under Tropical Conditions in Nigeria*. 5, 83–88. <http://livestockscience.in/wp-content/uploads/rabbit-nigeria-Baruwa.pdf>
- CABI, (2018). *Oryctolagus cuniculus* (Rabbits) in Invasive Species Compendium Accessed @ www.cabi.org
- Dalle Zotte, A., and Szendrő, Z. (2011). The Role of Rabbit Meat as Functional Food. *Meat Science*, 88 (3), 319–331. <https://doi.org/10.1016/j.meatsci.2011.02.017>
- Elkashaf, O. M. (2019). Evaluation of Extension Training Program on Small-Scale Poultry and Rabbit Production Projects at Alexandria Governorate, Egypt. *Asian Journal of Agricultural Extension, Economics & Sociology*, 37(4), 1-12.
- Erdaw, M. M. (2023). Contribution, Prospects and Trends of Livestock Production in Sub-Saharan Africa: a review. *International Journal of Agricultural Sustainability*, 21(1), 2247776.
- Gatesi, J. F., Ayuke, F., Musinguzi, S. P., and Hirwa, C. D. (2025). Assessment on Status and Challenges in Rabbits Farming in Rwanda. *Discoveries in Agriculture and Food Sciences*, 13(01), 17–28. <https://doi.org/10.14738/tnc.1301.18216>
- Idahor, K. O., Fatai, R. B., Kaye, J., Igoche, L. E., Sati, N. M., Emennaa, P. E., and Jayeoba, O. J. (2024). Comparison of Compounded and Commercial Feeds in Kuroiler Production. *Nigerian Journal of Animal Production*, 1325–1329. <https://doi.org/10.51791/njap.vi.6842>
- Iheukwumere, C. C., Ahaotu., E. O., and Nwoye, E. O. (2018). Studies on Benefits and Problems of Rabbit Production in Abia State, Nigeria. *International Journal of Animal and Veterinary sciences*, 5: 23-28.
- Kitavi, S. M., Kibet, L. K., Lagat, J. K., and Koech, W. (2015). Evaluation of Technical Efficiency of Rabbit Production in Buuri Sub-County, Meru County, Kenya. *Asian Journal of Agricultural Sciences*, 7(3), 24-35. <https://doi.org/10.19026/ajas.7.2197>.
- Masephula, L., and Olorunfemi, O. D. (2023). Correlates of Smallholder Poultry Farmers Extension and Marketing Information needs: Evidence from north-eastern South Africa. *Information Development*, 026666692211486. <https://doi.org/10.1177/02666669221148694>
- Moreki, J. C., Mpho, K., and Manyeula, F. (2019). A Survey on Rabbit Production in the City of Gaborone, Botswana. *Journal of Animal Science and Veterinary Medicine*, 4(3), 90-99.
- Mukaila, R. O. (2023). Measuring the Economic Performance of Small-Scale Rabbit Production Agribusiness Enterprises. *World Rabbit Science*, 31(1), 35–46. <https://doi.org/10.4995/wrs.2023.18660>
- Obun, C. D., Yahaya, S. M., Kibon, A. A., Olafadehan, O. A. and Alison, D. (2010). Evaluation of Daetarium Microcarpum Meal as Feed Ingredient in Rabbit Diets. *Electronic Journal of Environmental, Agricultural and Food Chemistry*, 9 (2), 308-314.
- Ogunyinka, A. I., Omoniyi, I. O., Ogunyinka, M. O., and Ewegbemi, O. T. (2024). Analysis of Adoption of Improved Rabbit Production Technology in Akure South Local Government Area of Ondo State. *Nigerian Journal of Animal Production*. Advance online publication. <https://doi.org/10.51791/njap.vi.5320>.
- Okorie, A.U. (2011). Requirement in Protein and Amino Acid by Rabbits. New York: A. A. Academic Press.
- Olagunju, F. I., and Sanusi, W. A. (2010). Economic Recovery of Backyard Rabbitry for Self-Sufficiency in Oyo State, Nigeria. *African Journal of Agricultural Research*, 5(16), 2232–2236.

- Ominikari, A. G. (2023). Analysis of Farmers Perception on Socio-Economic Benefits of Rabbit Production in Gokana Local Government Area, Rivers State, Nigeria. *Journal of Agricultural Economics, Environment and Social Sciences*, 9(1), 201-213. Retrieved from <https://jaeess.com.ng/index.php/jaeess/article/view/171>
- Petrova, Y. (2019). Pasteurellosis and Eimeriosis - Worldwide Problems in the Rabbit Farms: a review. *Trakia Journal of Sciences*, 17(1), 67-74. <https://doi.org/10.15547/TJS.2019.01.011>
- Pousga, S., Magnusson, U., Moumouni, I., Dayo, G.K., Kante, A., and Boqvist, S. (2022). Extension Services for Livestock Keepers in Low-Income Countries-A Low Priority? *Animals* (Basel). 12(6):726. doi: 10.3390/ani12060726.