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EVALUATION MANAGEMENT CAGE BANGKOK CHICKEN IN TALIKURAN KAWANGKOAN VILLAGE, MINAHASA DISTRICT, NORTH SULAWESI PROVINCE

Heidy Jultje MANANGKOT, Merri Diana ROTINSULU, Delly BJ RUMONDOR, Wahidah MA'RUF

Faculty of Animal Husbandry, Sam Ratulangi University, Campus Bahu Unsrat Street, Manado, 95115, Indonesia

Corresponding author email: hmanangkot@gmail.com

Abstract

This study aims to evaluate the management of Bangkok chicken coops in Talikuran Village, Kawangkoan District, Minahasa Regency. The observed parameters include cage model, cage size, location, and construction materials. The research used a quantitative descriptive method, based on primary and secondary data collected through surveys, observations, and interviews. Data were analyzed using Excel for descriptive statistics, correlation, and simple linear regression to examine relationships between breeder characteristics and coop parameters. Results show that among 30 breeders, 60% use stilt coops, 23% postal coops, and 17% umbaran coops. Cage sizes vary: 43.3% are under 8 m², 26.7% between 8–10 m², and 30% above 10 m². Most coops (93%) are located within 100 meters of the breeder's home. Construction materials include bamboo (67%), wood (17%), wire/iron (10%), and mixed materials (7%). Correlation analysis indicates a weak negative relationship between age and education, and a strong positive correlation between the number of chickens and both cage size and land area. The findings suggest that breeders in Talikuran Village demonstrate good understanding of coop management and resource utilization.

Key words*: Bangkok chickens, cage, management.*

INTRODUCTION

Bangkok chickens are introduced chickens from Bangkok (Thailand) from crosses between Malay chickens and local chickens in the Ayutthaya area, North Bangkok, which have been successfully developed as superior breeds, both as laying and broiler chickens and as fighting chickens (Sitanggang et al., 2015).

Thai Bangkok chickens may have the same adaptability as the native breed Pradu Hang Dum Bangkok chicken, which is well suited to local conditions but requires effective management to overcome challenges such as disease and accidents (Loengbudnark et al., 2024). To improve management of Bangkok chicken farms using Convolutional Neural Networks technology (CNN which can identify early signs of disease, to reduce mortality rates and economic losses in poultry farming. This approach supports sustainable agriculture by ensuring stable animal food production and maintaining food security (Dwicahyo et al., 2024).

The demand for Bangkok chickens is increasing day by day, we can see this with the increasing number of people raising Bangkok chickens which is leading to cultivation as ornamental chickens. The important demand for non-pollutant eco-agrifood products, with a reduced level of harmful influence on human health, requires increasing concern for the production, management and marketing of agricultural products (poultry included), obtained under ecological condition (Custură et al., 2012; Custură et al., 2024). Cage conditions that are not in accordance with good cage management will cause various problems, both for the chickens. as well as workers. The density of chickens in a cage is one of the factors that causes stress, which is indicated by changes in eating patterns and several behavioral changes in chickens (Iskandar et al., 2009). This intensive maintenance means that Bangkok chickens kept by farmers are kept in cages all day long (Ozian, 2019). Housing management influences good chicken productivity results, because the cage has the function of protecting livestock from predators, weather and other disturbances from outside the cage. Housing includes several things that breeders need to pay

attention to in the process of setting up cages, including conditions, location, function, systems and raw materials for cages (Murni, 2009).
Problems with developing Bangkok chickens in Talikuran Village, Kawangkoan District, Minahasa Regency include poor cage management, simple maintenance, high mortality, high ration costs, traditional maintenance, inappropriate application of cages and inappropriate use of technology for Bangkok chickens. It is necessary to carry out non-physical activities, namely increasing the knowledge and skills of Bangkok chicken breeders in managing Bangkok chicken cages through the introduction of appropriate technology such as the use of hatching machines, good cage systems, application of cage models, cage size that suits the needs of Bangkok chickens, location selection. the right cage and the raw materials used. This aligns with current global trends in poultry production, where technological innovation and socio-economic efficiency are increasingly emphasized, even in small-scale or traditional farming systems (Moise et al., 2024). Bangkok chicken livestock so that there is an increase in income for Bangkok chicken farmers in Talikuran Village, Kawangkoan District, Minahasa Regency. Based on the background above, researchers want to examine the extent of management of Bangkok chicken coops in Talikuran Village, Kawangkoan District, Minahasa Regency (Figure 1).

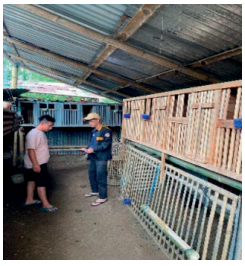


Figure 1. Bangkok chicken livestock (original)

MATERIALS AND METHODS

This research was carried out in June-July 2024 at Talikuran Village, Minahasa Regency. Sampling in this study was taken from 3 groups with 30-50 livestock. The data collection method used was a quantitative descriptive method. The data sources used in this research are: Primary data and secondary data

Data Collection Techniques

Data collection techniques through: observation, interviews. Recording, documentation, literature study, data processing.
The parameters observed in this research are:
1. In general: general description of the location of the farm and characteristics of the respondents, age, gender, education, business objectives, ownership status, farming experience, employment.
2. Specifically: Bangkok chicken coop management in Talikuran Village, Kawangkoan District, Minahasa Regency includes parameters: Cage Model, Cage Size, Cage Location, Cage Raw Materials.

Data analysis

The data will be analyzed descriptively or find causal relationships between variables based on phenomena in the field (Sukardi, 2021). Descriptive research is research that attempts to describe and interpret objects according to what they are. This research was analyzed descriptively so the research did not test a hypothesis, but to explain the data and then the data obtained was analyzed descriptively and tabulated in table form to describe the characteristics of Bangkok chicken breeders. And next, correlation analysis and simple regression will be tested to determine the relationship between breeder characteristic factors and research variables.

RESULTS AND DISCUSSIONS

Overview of Research Location

Talikuran Village, Kawangkoan District is located at an altitude of 400-800 above sea level with flat to sloping topography. The dominant soil types are reysol and andosol with a pH of 4.5-7.5. Like other Minahasa areas, Kawangkoan District has two seasons, namely the dry season and the rainy season. In the rainy season (November-April) it rains an average of 23 days each year, with an average rainfall of 244.53 mm per month. In the dry season, rainfall is less than 13 days, with an average rainfall of 177.53 cm per month. The average maximum absolute air humidity per month is 93.93% and

the average minimum humidity per month is 80.50%. The population in 2023 is 26,335 people with an average growth of 4.81% per year and the population density is 613 people/sq km. The total workforce is estimated at 16,811.

Respondent characteristics

Characteristics of 30 respondents in Talikuran Village, Kawangkoan District, Minahasa Regency include: age, gender, education level, livestock ownership status, maintenance goals and employment.

Table 1. Age of Respondents

Age (years)	Number of Respondents	Precentage (%)
<18	-	-
18-65	28	93
>65	2	7
Amount	30	100

Primary data source processed in Excel (2024).

It shows that the age of most of the respondents is quite varied, between <18 years, the number of 0 respondents with a percentage (0%), followed by those aged 18-65 years, namely 28 respondents with a percentage (93%) and those aged > 65 years 2 respondents with a percentage. (7%) (Table 1). The age group of Bangkok chicken breeders in Talikuran Village, Kawangkoan District, Minahasa Regency is divided into three categories, namely productive age (18-65 years), highly productive age (less than 18 years) and less productive age (more than 65 years). According to Saputra et al. (2021), someone at a younger age usually has the enthusiasm to want to know what they don't know, so they try to adopt innovation more quickly even though they actually have no experience in adopting innovation.

Table 2. Education

Education Final	Number of Respondents	Precentage (%)
Elementary school	2	7
Junior High School	1	3
Senior High School	21	70
Bachelor degree	6	20
Amount	30	100

Primary data source processed in Excel (2024).

It can be seen that the education level of the respondents varied quite a lot from elementary school (SD) to college (S1). For more details, see Table 2, showing the level of education in Talikuran Village, Kawangkoan District, Minahasa Regency, namely, those who graduated from high school with a total of 21 respondents with a percentage of (70%) followed by those who graduated from college with 6 respondents with a percentage of (20%), who graduated from elementary school in the amount. 2 respondents with a percentage (7%) and the lowest was SMP only 1 respondent with a percentage (3%).

Table 3. Business Objectives

Business Objectives	Number of Respondents	Precentage (%)
Tree	13	43
Side	17	57
Amount	30	100

Primary data source processed in Excel (2024).

It can be seen that in general the business objective of respondents in raising Bangkok chickens in Talikuran Village, Kawangkoan District, Minahasa Regency, was chosen as their main business with a percentage of (43%) and as many as (57%) (Table 3) other respondents were raising Bangkok chickens for a side business and respondents only made chickens. Bangkok as a hobby.

Table 4. Breeding Experience

Breeding Experience	Number of Respondents	Precentage (%)
<1 Year	-	-
1-2 Year	-	-
3-5 Year	6	20
>5 Year	24	80
Amount	30	100

Primary data source processed in Excel (2024).

The results of interviews with 30 respondents can be seen in Table 4. Length of experience in raising Bangkok chickens varies from less than 1 year to more than 5 years. The highest percentage of respondents' business experience is >5 years (80%), for respondents who have 3-5 years business experience it is (20%) and respondents who have 1-2 years business experience (0%) have farming experience <1 year of (0%). Stated that the longer a person's farming experience, the more knowledge the farmer will know to encourage development and increase livestock business skills (Mastuti et al., 2021)

Table 5. Ownership Status

Owner Status	Number of Respondents	Precentage (%)
One's own	30	100
Worker	-	-
Cooperate	-	-
Amount	30	100

Primary data source processed in Excel (2024).

The results of interviews with 30 respondents show that the percentage of respondents who work on their own livestock is (100%), the percentage of respondents who hire workers is (0%) and the percentage of respondents who choose to work together is (0%) (Table 5). This is in accordance with the opinion of Rasali et al. (2013) who stated that whether large or small the number of livestock owned by breeders is very helpful in increasing income and meeting needs. This is in line with the opinion of Faturochman (2005) which states that the size of livestock ownership greatly influences income levels.

Table 6. Respondent's Occupation

Work	Number of Respondents	Percentage (%)
Self-employed	24	80
Civil servants	1	3
Private	-	-
Employees/Laborers	3	10
Farmers/Ranchers	2	7
Amount	30	100

Primary data source processed in Excel (2024).

It can be seen that the jobs engaged in by Bangkok chicken breeders in Talikuran village, Minahasa Regency sub-district are the percentage of self-employed jobs of (80%), civil servants (3%), private/labor employees (10%) and farmers of (7%) (Table 6). This is in accordance with the opinion of Faturochman (2005) who states that the higher the job scale, the greater the respondent's income level. Work is an effort that aims to earn a person's job income, a factor that determines a person's level of success in his career, there are some respondents who choose to become employees and there are some respondents who prefer to be self-employed (Priyono, 2012).

Table 7. Cage Model

Cage Model	Number of Respondents	Precentage (%)
Umbaran Cage	5	17
Postal Enclosure	7	23
Stage Enclosure	18	60
Amount	30	100

Primary data source processed in Excel (2024).

There are 3 types of cage models used by respondents in Talikuran Village, Kawangkoan District, Minahasa Regency, namely outdoor cages, postal cages, and stilt cages. It can be seen in Table 7. The majority of respondents have a stilt type cage with a percentage of (60%), a stilt type cage (17%) and others use a postal type cage (23%). Respondents preferred stilt type cages because this prevents chickens from stepping directly on droppings. Bangkok chicken coops consist of several types, including stilt, postal and umbaran coops (Sitanggang, 2015).

Table 8. Cage area

Cage Area	Number of Respondents	Precentage (%)
< 8m²	13	43,4
8-10m²	8	26,7
> 10m²	9	30
Amount	30	100

Primary data source processed in Excel (2024).

The area of the cages in Talikuran Village, Kawangkoan District, Minahasa Regency, as seen in Table 8, the size of the cages varies from 2m² to 20m². The area of each respondent's cage can be divided into 3 categories, namely small sized farms less than 8m² (43.4%), medium sized 8-10m² (26.7%), and large sized farms greater than 10m² (30%). From these results it can be seen that most of the respondents in Talikuran Village, Kawangkoan District, Minahasa Regency fall into the small-sized livestock category. Respondents in Talikuran Village, Kawangkoan District, Minahasa Regency built a cage with an area of less than 8m² because the number of livestock the respondents kept was only around 30-50 Bangkok chickens. Increasing cage density or area can affect final body weight and feed use efficiency and a hot and humid pen will make it difficult for livestock to balance their body heat, so the optimum density or cage area is 8 animals/m² (Nuriyasa, 2003).

Table 9. Cage Location

Cage Location	Number of Respondents	Precentage (%)
0-100m	28	93
>100m	2	2
Amount	30	100

Primary data source processed in Excel (2024).

The results of the survey in the field, the location of Bangkok chicken coops is in Talikuran Village, Kawangkoan District, Minahasa Regency for coop locations adjacent to houses 0-100 m with a percentage (93.3%) where almost all respondents place their coops in the yard. house at the back and side of the house (Table 7). This is to make it easier to monitor and clean the environment around the pen and allows respondents to properly control the condition of the livestock, and respondents chose a pen location with a distance of >100m with a percentage of only (2%). This is in line with the opinion of Sholikin (2016) who states that the location requirement for a chicken coop is that the land used is allocated for livestock, the land is available at an affordable price and in accordance with the calculation of available capital gains, far from crowds but still accessible by transportation routes. , preferably at least 250 m from other farms and 1 km from chicken breeding farms, close to feed factories and close to consumers. Choosing the location of the cage must also pay attention to soil conditions, entry of sunlight, availability of water sources, wind direction, smooth transportation, isolation and easy expansion (Mastuti et al., 2021).

Table 10. Building Raw Materials

Cage raw materials	Number of Respondents	Precentagae (%)
Wood	5	17
Iron	3	10
Bamboo	20	67
Combined	2	7
Amount	30	100

Primary data source processed in Excel, (2024).

Based on Table 10, the results of observing the raw materials for cages in each respondent in Talikuran Village, Kawangkoan District, Minahasa Regency, it can be seen how many types of raw materials are used by respondents, the percentage of cages made from wood (17%) wire/iron with the percentage (10%), the cage material is made from bamboo with a percentage (67%) and there are also respondents who use more than 2 cage raw materials with a percentage (7%).

Based on Table 11, correlation analysis of demographic factors with livestock numbers shows mixed results. Factors such as age, education, business goals, and farming experience have a very weak correlation with livestock size, with correlation coefficients ranging from 0.022 to 0.108. Farmer age showed the strongest negative correlation among demographic factors (-0.108), indicating that younger farmers tend to have slightly more livestock. However, this relationship remains very weak and may not be of practical significance. Physical factors such as enclosure area and land area show a much stronger correlation with livestock numbers, both having a correlation coefficient of 0.634. This indicates a fairly strong positive relationship between space availability and livestock numbers. Regression analysis shows that each addition of 1 m^2 of cage area is correlated with an increase of around 7 head of livestock (Y = 6.8X - 3.03), while each addition of 1 m^2 of land area is correlated with an increase of around 5 head of livestock (Y = 5.27X - 3.03).

Table 11. Results of Correlation Analysis of Demographic Factors

Variable Correla-tion	Gradient	Constant	Correla-tion	Correlation Coefficient	Simple Regre-ssion
Age-Number of livestock	-16.25	91.25	-0.108	0.108	Y= -16.25X + 91.25
Education-Number of livestock	-1.18	61.24	-0.022	0.022	Y= -1.18X + 61.24
Business objectives-Number of livestock	-3.43	63.05	-0.045	0.045	Y= -3.43X + 63.05
Breeding experience-Number of livestock	-2.91	68.75	-0.031	0.031	Y= -2.91X+ 68.75
Cage area-Number of livestock	6.85	-3.03	0.634	0.634	Y= 6.8X - 3.03
Land area-Number of livestock	5.27	-3.03	0.634	0.634	Y= 5.27X -3.03

Primary data source processed in Excel (2024).

CONCLUSIONS

In conclusion, correlation analysis and simple linear regression can have a negative correlation between age and education, showing that the older the age, the level of education tends to be lower and the number of livestock has a strong positive correlation with the cage area, cage model, cage location, raw materials for the cages have a positive correlation with each other, showing that the relationship in aspects of livestock infrastructure shows that there is a trade-off in the selection of raw materials and breeders in Talikuran Village, Kawangkoan

District have an understanding of Bangkok chicken coop management.

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