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Comparation of Production and Financial Analysis of Broiler Farm with Close House and Open House Farm System in Partnership Patterns

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Abstract

This research aimed to determine the comparation of production and financial analysis of broiler farm with close house and open house farm system in partnership patterns. This research was conducted on August 2019 in Surakarta. The variable measured were feed intake, average of final body wieght, average slaughter age, depletion, Feed Convertion Ratio (FCR), Performance Index (PI), Average daily gain (ADG), R/C Ratio and income. Data were analysed descriptively. The result shows the difference between broiler farm with close house and open house farm system in partnership patterns. The result showed that feed intake, PI, ADG, R/C Ratio of broiler farm with open house system were higher than that of close house system. Farmer income per production with open house system is higher (Rp. 4,334) than that of close house system (Rp. 4,001). In conclusion, broiler farm with open house system in partnership patterns is more beneficial than close house system.

Key words : broiler, closed house, income, open house.

Introduction

The development of broiler farms has prospects for development, both on a large scale and a small scale farm. Broiler farms compared to other livestock commodities, one of the advantages is the short production cycle (4-6 weeks) broilers are harvested. So that the capital issued by farmers will quickly return, so that profits will be obtained by farmers. Open markets for broilers cause many people to try broiler chicken farming business opportunities, so good management is needed. Marom et al., (2017) states that broilers are meat-producing poultry that have a fast growing speed in a short time, so that it can be a potential business.

Some of the obstacles faced in the business of broiler farming include fluctuations in the selling price of broilers, DOC prices, feed prices and prices of medicines. This can have a direct impact on the income of broiler breeders. One way to reduce this obstacle is to do a broiler breeding business with a partnership pattern. The partnership is carried out by two parties. The first party is this company and breeders as plasma, better known as the core-plasma concept. The pattern of partnership is mutual need, benefit and strengthen each other's responsibilities (companies and breeders). Mahyudi and Husinsyah (2019) added that the partnership pattern is a form of erasure between ranchers and farmers in terms of the management of livestock business. Factors driving farmers to use partnership patterns are the availability of livestock production facilities, the availability of experts, working capital from the core, and guaranteed marketing.

Companies in this study will provide livestock production facilities, including DOC, feed and medicine. The company is also responsible for repurchasing the production according to the contract agreement. Breeders will provide pens and labor.

The livestock business that developed in Indonesia is currently using close house and open house systems. Open house systems are commonly used commonly referred to as open the cages. The close house system uses a closed cage where contact with other organisms can be minimized and ventilation arrangements properly with the aim to minimize stress on broilers.

Animal husbandry businesses by using the open house and close house systems of partnership began to develop in many areas in Indonesia. Its development is also very rapid using the close house and open house systems. So we need a research related to this. This research aims to determine the comparative production and financial analysis of broiler business using a close house and open house farm system in a partnership pattern.

Materials and Methods

Time and Location of the Research

This research was conducted in August 2019. The research was conducted in the city of Surakarta.

Sampling Method

The sampling method is done by using the Purposive Sampling method because breeders in Surakarta City are breeders with a partnership pattern. Determination of respondents using 5 close house breeders and 5 open house system breeders.

Data analysis method

The variables observed in this research were: intake, average body weight, average age of harvest, depletion, Feed Convertion Ratio, Performance Index, Average Daily Gain, R / C ratio and income . The data obtained were analyzed descriptively.

a. Feed Intake is the total feed consumed by livestock. The formula used to calculate feed consumption is:

   Feed Intake = Feed given - feed consumed

b. Average body weight, calculated by weighing the weight at the time of harvest.
c. Average age of harvest, calculated by calculating the age when harvesting broiler chickens.
d. Depletion shows the level of mortality and culling in a period of raising broilers. Depletion is calculated by:

   Depletion = number of dead animals / total population x 100

e. Feed Convertion Ratio,

   Feed Convertion Ratio (FCR) = Feed Consumption / Weight Increase

f. Performance Index, an illustration of the measurement of the success of broiler production.

IP = [(100-% Mortality) x average body weight (kg) x 100] / FCR x harvest age

g. Average Daily Gain, weight gain per day.
   Average Daily Gain = Weight / day
h. R / C Ratio is the ratio between revenue and cost. The R / C ratio formula is:
   R / C Ratio = R / C
   R = Revenue (Rp / production period)
   C = Cost (Rp / production period)
i. Income. Revenue is calculated by calculating the difference in revenue with the total cost. The formula for calculating income is:
   Π = TR – TC
   Π = Profit (Rp / production period)
   TR = Total revenue (Rp / production period)
   TC = Total cost (Rp / production period)

Results and Discussion

Maintenance of broiler partnerships

Broiler maintenance with a partnership pattern has been done in several regions in Indonesia. Surakarta is one of the cities in Indonesia that implements maintenance with a partnership system. The following is a chart of a broiler farm with a partnership pattern in the city of Surakarta.

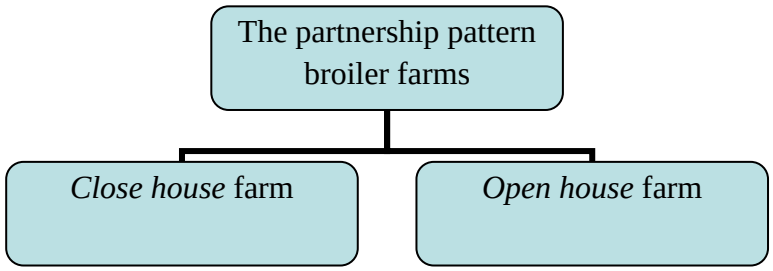

Figure 1. the partnership pattern broiler farms

Based on Figure 1. shows that the partnership pattern broiler farms can be done using a system of close house farm and open house farm. Maintenance of broiler partnership patterns is done by agreeing to the contract between the company and the farmer. The things listed in the contract cover a variety of things, including feed, DOC prices, live chicken prices at harvest, medicines and so on. Breeders are obliged to take care of chickens that are kept so that the maximum yield.

In Indonesia the ambient temperature is not supportive for the maintenance of broilers, so it is necessary to regulate the temperature in the cage so that the problem can be overcome. Open house system is a cage whose walls usually use wood or

bamboo. While the type of closed house walls are closed and made of permanent material. Inflammation system is a factor that plays an important role in the business of broiler farming. This is in accordance with Andreas (2016) which states that the maintenance of broilers in the close house and open house cage systems affects the consumption of feed, body weight and FCR.

The pattern of animal husbandry using the close house farm system is currently starting to attract many farmers in Indonesia. Marom et al. (2017) stated that the advantage of a close house enclosure system is that it has good ventilation so that it can reduce the impact of high humidity.

Financial analysis of livestock business

The results of the analysis of the business of broilers with close house farm and open house farm systems in the partnership pattern are shown in Table. 1

Table 1. Result of production and financial analysis of broiler business using a close house and open house farm system in a partnership pattern.

Variable	Closed house farm	*Open house* farm
Feed Intake (g)	3,400	3,300
Average body weight (kg)	2.07	2.06
Average age of harvest (day)	36.12	35.94
Deplesi (%)	5.57	5.99
FCR	1.64	1,61
IP	328	336
ADG	57.21	57.31
R/C ratio	1.1	1.12
Income (per head)	4,001	4,334

Feed Intake. Feed intake or consumption is the amount of rations eaten by livestock to meet the needs of the body. Animal feed plays a very important role in ensuring the survival of livestock businesses because feed affects the high and low growth rates of broilers. Based on Table 1. shows that the consumption of broilers' feed systems is 3,400 grams, while the open farm system is 3,300 grams. Bell and Waever (2002) states that the factors that influence feed consumption are feed energy content, temperature, and the amount of feed given. Rasyaf (2008) added that feed consumption is a very influential factor in broiler growth and consumption is influenced by temperature, feeding system, chicken health, feed quality and genetic characteristics of broilers.

Average body weight. The results of the research in Table 1. show that the average body weight of chickens with a close farm business is 2.07 kg while the open house system is 2.06 kg. The weight of the close house system is 0.01 kg greater than that of the open house system. Chickens will produce optimally if they are in a zone that

matches their habitat. Average body weight is closely related to feed consumption. The higher feed consumption is expected to increase the weight of broilers.

Average age of harvest. The average harvest age for broilers is generally 4 to 6 weeks. The average age of broilers harvesting for close house farming systems is 36.12 days while the open house system is 35.94 days.

Depletion. Depletion shows the level of mortality and culling in a period of raising broilers. Table 1. shows that the depletion of broiler farms is 5.57% while the open farm system is 5.99%. The depletion rate in this study is above 5%. A depletion rate of the broiler farm business with the open house system is higher than the close house system. Research Marom et al. (2017) shows that the average depletion of close house cages is 2.150%, while in open house cages is 3.252%. The depletion rate in this study is higher than in previous studies. This can be caused by several factors, including environmental, genetic and the presence of diseases that attack broilers. Depletion is a factor that determines success in broiler farming.

Feed Convertion Ratio. Feed Convertion Ratio means the amount of feed spent to produce chicken weight per kg. The close house farming business produces an FCR of 1.64 while the open house system produces an Feed Convertion Ratio of 1.61. Feed Convertion Ratio is used as an indicator of the success of a livestock business. Open house farming business produces lower Feed Convertion Ratio compared to close house system. Astuti et al. (2015) the higher feed conversion shows that more feed is needed to increase body weight. The lower the feed conversion value means the better feed quality. Siregar (2005) adds that Feed Convertion Ratio is influenced by genetic factors in feed form, environmental temperature, feed consumption, body weight, and gender.

Index Performance. Index Performance is an illustration of the size of the success of broiler production, the greater the value of IP, the better the success of production, and the market bonus (if the market price is higher than the contract price). Based on Table 1. shows that the Index Performance value of a closed house broiler business system is 328 while the Index Performance value of an open house broiler business system is 336. The value indicates that the IP business of an open house system is better than the close house system. Ulfa and Djunaidi (2019) stated that good IP is above 300. Index Performance numbers in this study can be said to be good because the IP numbers of livestock businesses with open house and close house systems show numbers above 300. Factors that influence Index Performance numbers are chicken weight, depletion and Feed Convertion Ratio. This is in accordance with Ulfa and Djunaidi (2019) which states that the factors that can influence the performance index value are the average body weight of chickens at harvest, the percentage of deaths, average age of harvest, and feed conversion.

Average Daily Gain.

Table 1. shows that the close house system of livestock business produces an Average Daily Gain of 57.21 while the open house system produces an Average Daily

Gain of 57.31. Astuti et al. (2015) states that if chickens consume large amounts of feed but body weight gain is not high then it is suspected that absorption of food in the digestive tract is imperfect. Other factors are gender, temperature and feed quality.

R / C Ratio. R / C Ratio is the ratio between income and costs incurred. R / C ratio is said to be feasible if it is greater than 1, R / C Ratio is said to break even if it is equal to 1, R / C ratio is said to be unfit if it is less than 1. R / C Ratio is used in an attempt to find out whether or not the business is feasible to proceed to the next period or vice versa. Table 1. shows that the R / C ratio of close farm broiler farm systems is 1.1 while open farm is 1.12. This shows that the broiler breeding business partnership pattern is feasible to be continued into the next period both for the close farm system and the open farm system. If the R / C Ratio is more than 1 it shows that the livestock business provides benefits for farmers and deserves to be continued. Soekartawi (2003) states that a business is said to be profitable if it has a ratio between Revenue and Cost (R / C) of value greater than one. R / C ratio is the ratio between revenue and cost.

Revenue (per head). Table 1. shows that the income (per head) of the closed house farming business was Rp. 4,001.00 while the open house system is Rp. 4,334.00. Open house system revenue is greater than the close house system. Bahari et al., (2012) states that the level of income is largely determined by the amount of revenue from a livestock business and the income of livestock businesses is largely determined by the amount of chicken production and the selling price. Pambudi et al. (2013) added that the greater the benefits of a business, the more efficient the business is and the more feasible it will be developed.

Conclusion

The results showed that the broiler farm partnership with an open house system was more profitable compared to the close house system.

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