The Comparison of Financial Performance among the Broiler Duck Farming Based on Farm-Scales at Banyuwangi Regency of Indonesia

H D Utami and E Purwanita

Social Economic Department, Faculty of Animal Science, Brawijaya University, Malang, Indonesia

E-mail: hmamiek@yahoo.co.uk

Abstract. Study was held at Banyuwangi Regency, East Java of Indonesia. The research aimed to investigate financial performance of the broiler duck farming based on farm-scales. 10 respondents who joining in farmer group were obtained by multistage sampling method that categorized into three farm-scales namely, small-scale (having 200-1,266 birds, n = 6), medium-scale (controlling 1,266-2,533 birds, n = 2) and large-scale: rearing more than 2,533 birds, n = 2). Data were collected during one year with six production periods. Analysis data involved profit, break-even point (BEP), R/C ratio, and rentability. Results discovered that the third production period for the large-scale achieved the best profit of IDR 6,681/bird. It was IDR 22,809 of production cost that composed by 60.53% of concentrate feed cost and 27.51% of DOD; and IDR 28,923 of revenue with consisting of 99.01% from the selling of live broiler duck and 0.99% from others (feed bags, excreta and cardboard). This farm also exhibited the efficient venture on the basis of IDR 21,797 of price BEP; 1.40 of R/C ratio; and 36.45% of rentability.

Keywords: cost, profitable, BEP, R/C ratio, rentability

1. Introduction
Duck farming discovered as promising venture in which Peking duck supply can fulfil about 50% only of its demand [1]. This farm has a good contribution to household income which women more participating in these farm activities [2]. Population of local and Muscovy ducks in year 2018 is predicted 5,696,190 birds and 1,501,646 birds, respectively [3] Technical efficiency of duck farming in Philippine ranged between 0.61-0.90 which influenced by farmer’s education, access to credit, farm size, and management practices, being member of organisation [4] Therefore, research addressed to compare the financial performance of the broiler duck farming based on farm-scales.
2. Methodology

The 10 respondents who joining in farmer group were obtained by multistage sampling method that categorized into three farm-scales namely, small-scale (having 200-1,266 birds, n = 6), medium-scale (controlling 1,266-2,533 birds, n = 2) and large-scale: rearing more than 2,533 birds, n = 2). Data were collected during one year with involving six production periods. Survey method using structured questionnaire was to obtain primary data. Whereas, secondary data were provided by the farmer group and the related institution. Analysis data involved profit, break-even point (BEP), R/C ratio, and rentability.

3. Result and discussion

Profit and loss statement of broiler duck farming

Overall mean for profit per bird during one year increase in accordance with the more number of the livestock reared the highest of IDR 5,689 for the large-scale (Table 1). In contrast, small-scale has the highest revenue about IDR 26,694, whilst the second and third orders were 26,433 and IDR 26,357 for medium-scale and large-scale, respectively.

Table 1. Profit and loss statement of broiler duck farming

|                | Small-scale (IDR/bird) | Percentage (%) | Medium-scale (IDR/bird) | Percentage (%) | Large-scale (IDR/bird) | Percentage (%) |
|----------------|------------------------|----------------|-------------------------|----------------|------------------------|----------------|
| I. Revenue     |                        |                |                         |                |                        |                |
| 1. Selling live broiler duck | 26,412               | 98.94         | 26,146                  | 98.91          | 26,070                 | 98.91          |
| 2. Others      | 282                    | 1.06          | 287                     | 1.09           | 287                    | 1.09           |
| Total Revenue  | 26,694                 | 100.00        | 26,433                  | 100.00         | 26,357                 | 100.00         |
| II. Production cost |                    |                |                         |                |                        |                |
| 1. Fixed cost  | 3,851                  | 16.92         | 2,325                   | 10.98          | 1,836                  | 8.88           |
| 2. Variable cost | 18,910                | 83.08         | 18,846                  | 89.02          | 18,332                 | 91.12          |
| Total Production costs | 22,761              | 100.00        | 21,171                  | 100.00         | 20,668                 | 100.00         |
| III. Profit    | 3,933                  | 5.262         | 5,689                   |                |                        |                |

Selling live broiler duck among farming scales fluctuated along the six production periods and it ranged 98.84%-99.04%. The highest percentage (99.04%) existed on the fourth production period of small-scale. On the other hand, the fifth production of scale-3 has only provide lowest (98.84) revenue from selling this livestock.

On average, farming scales expenses will decrease in-line with the improving of farm sizes with the efficient cost existing on the large-scale (IDR 20,668/bird) existing (Table 1). The production costs composed with the fluctuation of concentrate feed cost with decreasing trend (Figure 1). The large-scale structured with the lowest (60.53%) and the highest (64.23%) of concentrate feed expenses on the third and fourth production period, in order.
Figure 1. Concentrate feed cost of duck farming

The structure of DOD cost fluctuated with the decline trend during one year production and its cost ranged about 21.43% - 27.51% (Figure 2). DOD cost of the large scale obtains efficient (23.60%) on the fourth production period, while it was very costly (27.51%) in the third production period.

Break-even point for broiler duck farming

Break even point (BEP) among farm sizes indicates inefficient farming especially on the fifth and the sixth production periods since they have fluctuated and inclined trending. It is clear to expect that large-scale appears more efficient (IDR 22,812) than those of medium-scale (IDR 23,224) and small-scale (25,624) in producing one bird of broiler duck. The second production period particularly for large scale confirms to have a lowest BEP which only require cost about IDR 20,459 in producing one broiler duck (Figure 3.). In contrast, the sixth production period has the inefficient BEP about IDR 22,812.

Figure 3. BEP broiler duck farming

The revenue cost ratio (R/C ratio) in broiler duck farming

The average of R/C ratio increase in accordance with farm sizes and it is starting from 1.17 (small-scale) into 1.25 (medium-scale) and 1.28 the large scale. The R/C ratio show fluctuation with the decline trend among the three scales (Figure 4). The large scale reaches the best R/C ratio about 1.40
in the third production period, whereas the lowest value approximately 1.16 occurs in the sixth production period.

![Figure 4. R/C ratio of broiler duck farming](image)

**Rentability in broiler duck farming**

Overall, rentability has fluctuated and decrease trend along the six production periods (Figure 5). The small-scale presented the lowest rentability of 14.34% in the first period, then drop into 6.02 in the sixth period. Likewise, the small-scale was about 23.53% in the first period and intends to reduce into 12.21% in the sixth production period.

![Figure 5. Rentability of broiler duck farming](image)

The large-scale represented the best rentability about 24.39% in the first production period, while the highest number of 1.40 exhibited in the third production period. Likewise, the same period of the medium-scale can reach very little different (1.39) of those in the large-scale. It was interesting to discover the high of rentability happen in the third production period with the larger (36.45%) for the large-scale, followed by the medium-scale (34.51%), and the lowest on the small-scale (26.88%).

### 4. Conclusion

The study of broiler duck farming on three farm-scales namely, small-scale (having 200-1,266 birds), medium-scale (controlling 1,266-2,533 birds) and large-scale (rearing more than 2,533 birds) have the following finding:

1. The third production period for the large-scale has the largest profit (IDR 6,681/bird). It was IDR 22,809 of production cost that composed by 60.53% of concentrate feed cost and 27.51% of DOD; and IDR 28,923 of revenue with consisting of 99.01% from the selling of live broiler duck and 0.99% from others (feed bags, excreta and cardboard).
2. This large-scale of broiler duck farming exhibited the efficient venture on the basis of IDR 21,797 of price BEP; 1.40 of R/C ratio; and 36.45% of rentability.

References

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