

# Income analysis of layer farm in Sidrap district South Sulawesi province (case study in PT. Cahaya Mario)

*by S Nurlaelah*

---

**Submission date:** 13-Apr-2022 10:36AM (UTC+0700)

**Submission ID:** 1809397142

**File name:** IOP-INCOME-30\_60.pdf (351.33K)

**Word count:** 2684

**Character count:** 13028

**PAPER • OPEN ACCESS**

## Income analysis of layer farm in Sidrap district South Sulawesi province (case study in PT. Cahaya Mario)

To cite this article: S Nurlaelah et al 2021 *IOP Conf. Ser.: Earth Environ. Sci.* **788** 012220

View the [article online](#) for updates and enhancements.

### You may also like

- 2** [Livelihood Features of Seaweed Farming Households: A Case study from Bungin Permai Village, South Konawe, South East \(SE\) Sulawesi, Indonesia](#)  
M Rahim, L O M Aslan, Ruslaini et al.
- 7** [Increasing economic value of mondol and thorn stingray skin through the processing of commercial leather creative products](#)  
Sahubawa and A Pertwiningrum
- 11** [Financial analysis of direct application of reactive phosphate rock fertilizer on corn planting on upland acid soils](#)  
Irawan, A Kasno, Husnain et al.



The Electrochemical Society  
Advancing solid state & electrochemical science & technology

242nd ECS Meeting

Oct 9 – 13, 2022 • Atlanta, GA, US

Abstract submission deadline: **April 8, 2022**

Connect. Engage. Champion. Empower. Accelerate.

**MOVE SCIENCE FORWARD**



Submit your abstract



## Income analysis of layer farm in Sidrap district South Sulawesi province (case study in PT. Cahaya Mario)

S Nurlaelah, A Asnawi and R Rusni

Faculty of Animal Science, Hasanuddin University  
Jalan Perintis Kemerdekaan Km. 10 Makassar 90245, Indonesia

Email: lelaysf@gmail.com

**Abstract.** Laying hen farm business has enormous potential because it plays a role in providing a cheap and easy to obtain the source of animal protein, namely eggs. Besides, for people business, laying hen farm can be used as a source of income for farmers. The different cost structures at each phase will certainly have an impact on farmer income. This study aimed to analyze the farm income of laying hens at PT. Cahaya Mario, Sidrap regency and to determine the scale of his business. This research was a case study research. Data were collected from the recording of the company business and completed with a questionnaire as a research instrument to obtain the information needed in this study. Descriptive statistical analysis was used to calculate the level of income at each phase of breeding and business feasibility using the R/C ratio formula. The results showed that in one production cycle, the level of income obtained was IDR 817,809.94 with the R/C ratio was 2.15. Particularly for the starter to grower phase, which produced a pullet income of IDR 202,659.00 with the R/C ratio was 1.51, while the income in the layer phase or production period was IDR 680,150.94 and the R/C ratio was 2.19. This showed that the business was managed by PT. Cahaya Mario was feasible. This condition was shown by his ability to manage 30 flocks for a layer farm.

### 1. Introduction

The population of layer farms in Indonesia in the last five years has increased but this increase does not apply in South Sulawesi, which has experienced population fluctuations, especially in 2017 and 2018. In 2019, the population of laying hens has increased by 10,945,221 tail compared to the previous year which is quite significant [1].

South Sulawesi as one of the egg-producing provinces comes from Sidrap district with a population of 5,639,971 with egg production of 42,468,982 tons in 2019 [3]. Farmers in Sidrap district run a variety of layer farms, from household to industrial. One of the companies engaged in laying hens is PT. Cahaya Mario Group, which has a population of 300,000 hens with a cage capacity of 30 units.

An increase in the population of laying hens will also increase egg production and old chicken. The breeding of laying hens that have a long enough breed phase to produce egg production is supported by various factors, one of these factors is the costs incurred to produce high productivity. The costs needed to produce high productivity include fixed costs and variable costs.

The breeding of laying hens that takes a long time to produce eggs goes through several breed phases, namely the starter, grower, and layer or production phases. In the starter and grower phases, the output will be in the form of pullet chickens that are ready to be produced, and in the layer or production phase,



Content from this work may be used under the terms of the [Creative Commons Attribution 3.0 licence](https://creativecommons.org/licenses/by/3.0/). Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.

Published under licence by IOP Publishing Ltd

eggs will be produced. In this phase, it requires costs for breeding to reach the output. The final results at each phase will generate income that has an impact on the profits of the farmers.

The layer farm is mostly carried out by farmers by dividing the two phases of breeding, namely the starter phase to the grower phase which produces pullets, and the production phase starting from the pullet breeding to the afkir chickens. PT. Cahaya Mario runs a laying hen business from the starter phase to the production phase, which as a whole requires a large amount of money, but in some layer farms, the effort made is not the whole of the breeding phase. This shows that breeding in each phase requires different costs so that the income will also be different at each breeding phase.

The breeding which aims to bring profit to the company by looking at the cost and income components, the calculation of the ratio between income or revenue, and costs is carried out to see the feasibility of the business. Based on the description, the objective of this research was to know the income of layer farm in Sidrap district.

## 2. Method

This research was conducted at PT. Cahaya Mario Group, Sidrap district South Sulawesi in July 2020 by taking data recording related to the cost components incurred including fixed costs and variable costs IDR/hen. Fixed costs included fixed labor costs, depreciation of units, equipment, and vehicles. Variable costs include the cost of purchasing DOCs for the starter-grower phase, purchasing pullets for the production phase, cost of feeds, costs of medicines, and costs of electricity.

This research was a case study of a layer farm in the starter-grower phase and the production phase during 1 breeding period. The revenue or income obtained in the starter-grower phase was assumed to be the selling price of pullets in the market during the study period, while in the production phase it was obtained from selling eggs and unproductive chickens. In calculating the income of layer farm using the formula:

$$\text{Income/Revenue} = \text{Price} \times \text{Quantity of production}$$

$$\text{Total Costs} = \text{Fixed Costs} + \text{Variable Costs}$$

The efficiency of layer farm using the formula R/C (Revenue Cost Ratio), or known as the ratio between the revenue received and the costs incurred. Mathematically it can be written as follows:

$$\text{R/C Ratio} = (\text{Revenue}) / (\text{Total Cost})$$

Criteria

If the R/C Ratio < 1, not feasible.

If the R/C Ratio = 1, break-even point

If the R/C Ratio > 1, feasible

## 3. Results and Discussion

Research on layer farm at PT. Cahaya Mario with the breeding phase, namely the starter-grower phase for 32 weeks, the production phase for 60 weeks, and the breeding phase from a starter - production which was 92 weeks.

The breeding of laying hens in each phase has the same cost components, namely fixed costs and variable costs. The longer the breeding period for laying hens, the costs incurred will also increase. This cost was not related to the amount of production incurred during the business. Meanwhile, variable costs were the costs incurred for the production of layer-flavored chickens [4]. Business income of laying hens was influenced by the amount of production, namely pullets, eggs, and old chickens, this was what was called business benefits [4].

The fixed cost component consisted of labor costs and depreciation costs, while the variable cost component consists of the costs of feed, medicine, electricity, DOC, and pullets during the production period. Meanwhile, the business feasibility of the layer farm at PT. Mario Group's light was indicated

by the R/C Ratio. calculation of all cost components and the revenue is calculated in rupiah units per hen. For more details, see Table 1.

**Table 1.** Fixed Costs, Variable Costs, Income, and R/C Ratio in the Business of Layer Farm at PT. Cahaya Mario, 2020 (IDR/laying hen).

Description	Starter-Grower Phase	Production phase	Starter-Production phase
<b>Fixed Costs (IDR)</b>			
- Labor costs	1,323.08	2,480.77	3,803.85
- Depreciation Cost	249.48	467.78	717.27
Total fixed costs	1,572.56	2,948.55	4,521.12
<b>Variable Cost (IDR)</b>			
- Feed Cost	119.55	241,548.33	361,094.50
- Medicine cost	35.08	65.77	100.85
- Electricity Cost	1,143.53	2,144.12	3,287.64
- DOC	12,000.00	0	12,000.00
- Pullet	0	64,350.00	0
Total Variable Costs	132,724.77	308,108.22	376,482.99
Total costs (IDR)	134,297.3	311,056.77	381,04.11
<b>Revenue</b>			
- Pullets	65,000.00	0	0
- Eggs	137,659.00	647,479.29	785,138.29
- Old chicken	0	32,671.65	32,671.65
Total Revenue (IDR)	202,659.00	680,150.94	817,809.94
R/C Ratio	1.51	2.19	2.15

### 3.1. Fixed costs and variable costs

The amount of responsibility in management has an impact on the number of labor costs that must be paid. Labor costs at the company PT. Cahaya Mario Group consisted of 2 components, namely the staff employee and the temporary employee. The staff employees were 5 people who take care of all office and housing administration, while the temporary employees were 40 people who take care of the flocks. The temporary employees carried out the activities of feeding, cleaning cages, monitoring cages, and everything related to housing management in 30 housing at PT. Cahaya Mario Group. The labor cost for both staff and cage labor in the starter-grower phase was IDR 1,323.08 the production phase of IDR 2,480.77 and the starter-production phase of IDR 3,803.85. Overall staff labor costs were higher than domestic workers (95.88%), this was job responsibilities as remuneration for employees who contribute to achieving company goals [5].

Depreciation costs derived from the depreciation of housing, equipment, and vehicles will affect the cost structure. This depreciation cost is the same as labor costs which have a fixed value each month in a production process. Depreciation cost for the starter-grower phase was IDR 249.48 the production phase was IDR 467.78 and the starter-production phase of IDR 717.27.

The total fixed cost for the starter-grower phase was IDR 1,572.56 the production phase was IDR 2,948.55 and the starter-production phase was IDR 4,521.12. In percentage terms, labor costs represented the largest cost compared to depreciation, which was around 84.14%.

The variable cost component in the layer farm at PT. Cahaya Mario Group included costs for feed, medicine, electricity, DOC (day old chick), and pullet. The cost of feed was the largest in the starter-grower, production, and starter-production phases, namely 90.07%, 78.40%, and 95.91%. This indicated that the production cycle of laying hens requires a large enough feed cost for growth and egg production. The feed given to layer chickens depended on the chicken's needs so that the feed needs will be in line with the price of the feed. The biggest costs after feed were DOC costs in the starter-grower phase and

the production phase with the purchase of a pullet. The cost of DOC was lower than the pullet because the pullet has passed the breeding period ready to lay eggs so that the lower feed cost conversion in the production phase was accumulated at the pullet cost. Meanwhile, the cost of electricity and medicine did not affect the overall variable costs at each breeding phase.

The total variable cost for the starter-grower phase was IDR 132,724.77, the production phase was IDR 308,108.22 and the starter-production phase was IDR 376,482.99. The total cost incurred by the company in the process of breeding was largely determined by variable costs. This showed that for running a business the variable cost component occupied the largest cost and only about 2% of the cost was obtained from fixed costs. The total costs can be seen in table 1.

### 3.2. Revenue and R/C ratio

The size of the layer farm and the large income does not reflect that the business is efficient. One way to see the efficiency of the business is by calculating the R/C Ratio. Revenue from the business of laying hens at PT. Cahaya Mario Group in the starter-grower phase includes selling pullets and eggs. Egg production in this phase is not optimal because the eggs produced are eggs for the first time in the breeding process, so the selling value obtained is not too large, namely 137,659.00 IDR. While the selling value of the pullet per head was around 65,000.00 IDR. In the production phase, this egg production reaches the maximum because in this phase is the laying phase until the end of production. Whereas for the starter-production phase (afkir) it is the same as the production phase, which is to produce eggs and chicken because the breeding process takes place from the DOC.

The business feasibility of laying farms is considered feasible if the R/C value is more than 1 (one). Comparison between revenue and costs incurred by PT. Cahaya Mario Group has more than one score (see Table 1), namely the starter-grower phase of 1.51, the production phase of 2.19, and the starter-production phase of 2.15. If it is seen from this value that the three phases are feasible to work on, but if you want to get a bigger revenue value and have the largest R/C Ratio value, then the production phase is the most promising to work on. This is when compared with research conducted on various business scales with an average R / C ratio of 1.02 [2].

## 4. Conclusion

Based on the description and explanation of the results of the study, it was shown that the business of the layer farm at PT. Cahaya Mario is worth working on for various breeding phases with an R/C Ratio value in the starter-grower phase 1.51, 2.19 in the production phase, and 2.15 in the starter-production phase.

## Acknowledgments

Layer farm business can be developed with various phases of breeding, but to get a greater income or revenue by doing breeding in the production phase by raising pullets ready to lay eggs.

## References

- [1] Anonymous 2019 Livestock and Animal Health Statistics 2019 (Indonesia: Directorate General of Animal Husbandry and Animal Health, Ministry of Agriculture)
- [2] Nawawi, A M and Sri A D 2017 Analysis of laying chicken farming in cihaur layer farm, maja, Majalengka, West Java *J. Agricultural Sciences and Breeder* **5** 15–29
- [3] BPS 2020 South Sulawesi Province In Figures 2020 (Makassar: Central Statistics Agency of South Sulawesi Province).
- [4] Santoso Z B, Eddy T S and Adi A 2017 Analysis of Production Costs of Layer Farming in Tulungagung *Jurnal Ilmu Peternakan* **11** 21–9.
- [5] Firmandari N 2014 The Effect of Compensation on Employee Performance with Work Motivation as a Moderation Variable (Study at Bank Syariah Mandiri Yogyakarta Branch Office) *J Ekonomi dan Bisnis Islam* **9** 25-34.

# Income analysis of layer farm in Sidrap district South Sulawesi province (case study in PT. Cahaya Mario)

---

## ORIGINALITY REPORT

---

<b>12</b> %	%	<b>12</b> %	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

---

## PRIMARY SOURCES

---

- 1** E S Rohaeni, B Bakrie, A Subhan, S N Ahmad. "The level of rice bran usage in the growth of local chickens reared in rural areas", IOP Conference Series: Earth and Environmental Science, 2021 **3**%  
Publication
  - 2** I Gautama, A Mujetahid, N Dalya, A V Faradiba. "The cost of harvesting process in teak community forest during the covid-19", IOP Conference Series: Earth and Environmental Science, 2021 **2**%  
Publication
  - 3** H Hasanah, E M Ningrum, N Nahariah. "Effect of levels of secang wood powder (Caesalpinia sappan L.) and curing time on the sensory characteristics of salted quail eggs", IOP Conference Series: Earth and Environmental Science, 2021 **1**%  
Publication
-

4

A Abdullah, M H Jamil, J Mustabi, A Asnawi.  
"Strengthening of agent extension capacity in efforts to improve the empowerment of beef cattle farmers", IOP Conference Series: Earth and Environmental Science, 2021

Publication

---

1 %

5

N F Pinem, S K H Nasution, R Gunawan. "Farm analysis and development strategy of strawberry farming (case: Dolat Rayat District, Karo Regency)", IOP Conference Series: Earth and Environmental Science, 2021

Publication

---

1 %

6

D P Rahardja, M Yusuf, V S Lestari, M R Hakim.  
"Effects of pre-, pro-, and synbiotic supplementation on the growth performance and feed conversion rates of Indonesian native chicken – The offspring of in ovo L-gln fed hen", IOP Conference Series: Earth and Environmental Science, 2021

Publication

---

1 %

7

Irawan, A Kasno, Husnain, A Samsun.  
"Financial analysis of direct application of reactive phosphate rock fertilizer on corn farming on upland acid soils", IOP Conference Series: Earth and Environmental Science, 2019

Publication

---

1 %

8

Ekawati, Ellyta, S Sugiardi. "Economic feasibility analysis of service business of

1 %

agricultural equipment and machinery in Kubu Raya Regency, Indonesia", IOP Conference Series: Earth and Environmental Science, 2021

Publication

---

9

Setiasih, Ahmad Mualif Abdurrahman, Catur Hermanto, Moh. Saeri. "Type and Feasibility of Agribusiness of Kub Chicken Household Scale", E3S Web of Conferences, 2021

Publication

---

1 %

10

I Azhar, Riswan, I Risnasari, F R Aulin, Muhdi. " Feasibility analysis of sugar palm ( Merr) by the people around Batang Gadis National Park area ", IOP Conference Series: Earth and Environmental Science, 2020

Publication

---

1 %

11

S F W Thenu. "Corn farming analysis in Babar Island, District of Babar Islands, Southwest Maluku Regency", IOP Conference Series: Earth and Environmental Science, 2021

Publication

---

1 %

12

Bahtiar, Muhammad Azrai. "Challenges and opportunities for the development of national hybrid seed production in the agribusiness perspective in Indonesia", IOP Conference Series: Earth and Environmental Science, 2020

Publication

---

<1 %

---

Exclude quotes      On

Exclude matches      < 5 words

Exclude bibliography      On