

Backyard Layer Flock Economics — How much Does It Cost You to Produce a Dozen Eggs?

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Keeping a small flock of hens in the backyard can serve many purposes. Some people want fresh eggs for their household, others enjoy selling eggs to friends and neighbors, and for many, it's simply an enjoyable hobby for the family. Rising store-bought egg prices can also make home production seem more attractive.

Whatever the reason, it is helpful to understand the economics of egg production before starting. The key question is: how much does it cost you to produce a dozen eggs at home?

For small flocks, the answer is not always simple. Production costs are highly variable, influenced by flock size, breed, feed prices, housing style, climate, and management practices. As a result, the cost per dozen eggs can vary widely.

Regulations and Flock Registration

Before starting, check local laws to confirm backyard chickens are allowed where you live. Some municipalities limit the number, breed, or sex of birds.

- ▶ **Registration:** Many states, including both Maryland and Delaware, require backyard flocks to be registered with the Department of Agriculture.
- ▶ **Bird sourcing:** Always buy chicks or eggs from reputable hatcheries or growers. Look



Figure 1: Example of a backyard coop with run. Note the eggs can be collected without entering the coop, improving biosecurity. Photo by Jon Moyle

for National Poultry Improvement Program certification or disease testing.

Startup Costs – Fixed Expenses

Before getting your first hens, you need a place to house them and the basic equipment to keep them healthy and productive.

Housing

- ▶ Options range from a simple coop and fenced yard to portable “chicken tractor” systems that can be moved periodically.

- ▶ Regardless of the housing type you use, it needs to be located on dry ground, avoiding wet areas and places that frequently flood.
- ▶ Costs depend on whether you buy ready-made housing or build your own.
- ▶ Poultry housing will need to comply with local zoning regulations.
- ▶ Make sure the housing is secure and predator proof to protect your birds.

Basic Equipment

- ▶ Heat lamps or heaters (for brooding chicks or for bird comfort in cold climates).
- ▶ Feeders and waterers for chicks and adults.
- ▶ Rodent-proof feed storage containers.
- ▶ Nesting boxes (often built into coops).
- ▶ Containers for collecting eggs.
- ▶ Perches for the hens to rest on.

Before you start, get price estimates on the housing and equipment that meet your specific situation and system requirements. Often, it's possible to make your own feeders and waterers from everyday items you already have on hand.

Expect to spend several hundred to over a thousand dollars up front to get started, again depending on your flock size and where your flock is located.

If you plan to keep chickens for just a year or two, these startup costs are expensive. However, if you plan to keep chickens for several years, these costs are more economical as the costs are spread over several years of production.

Larger flocks benefit from **economies of scale**: the cost per bird decreases as more birds share the same housing and equipment. Likewise, the cost per bird increases as flock size decreases.

Production Costs – Variable Costs

Production costs in a backyard or small flock are variable — they change with flock size, breed, and stage of production. These are referred to as variable costs, and they are often underestimated.

- ▶ **Feed** – The most significant expense in egg production. Purchasing large quantities of feed can lower the overall cost of feed, helping reduce production costs. Growing your own chicken feed can also significantly reduce feed costs per pound.
- ▶ **Chicks or pullets** – Cost of starting or replacing the flock. Starting with good layer genetics will result in higher egg production and a lower cost of production, even if the initial costs are higher.
- ▶ **Electricity** – Lighting, heating, or cooling.
- ▶ **Bedding** – Floor and nest box material.
- ▶ **Egg washing and packaging** – Cleaning supplies, cartons, and labels.

Backyard Egg Cost Budget Tool

University of Maryland Extension Specialists Dale Johnson and Dr. Jon Moyle developed a simple budget tool to help flock owners calculate the true cost of their eggs. The tool was created using their own experience and with input from other backyard producers.

Because backyard egg production is highly variable, this tool helps flock owners see their cost of egg production so they can price them accordingly.

Download a copy of the spreadsheet here:

<https://go.umd.edu/small-flock-layer-budget>

Table 1 is an example budget outlining production costs. It is important to understand how the budget is calculated since it depends on the size of flock, the length of flock's life, production level, and the cost of inputs. The budget uses assumptions that are explained below. This example will assist you in calculating your own budget estimates based on the number of laying hens you are planning to raise and your intended production system.

Table 1: Small Flock / Backyard Layer Budget Example (3-Year Production Period)¹**Production assumptions**

- Number of birds: 10
- Laying days²: 895
- Mortality: 20%
- Yield: 70%

Value of Eggs

Item	Unit	Quantity	Price	Total
Calculation of value ²	dozen	522	\$6.00	\$3,133

Expenses

Item	Unit	Quantity	Price	Total
Chicks ³	Per chick	10	\$6.00	\$60
Chick starter feed ⁴	50 lb. bag	1	\$17.00	\$17
Early bird grower feed ⁴	50 lb. bag	2	\$16.00	\$32
Layer feed ⁴	50 lb. bag	47	\$15.00	\$705
Bedding ⁵	Bale	3	\$15.00	\$45
Egg cartons ⁶	Carton	50	\$0.50	\$25
Electricity ⁷	Total	1	\$200.00	\$200
Labor ⁸	0.33 hours/day	361 hrs.	see notes	n/a
Infrared heater for brooding ⁹	Startup cost	n/a	n/a	\$50
Feeder and waterer ⁹	Startup cost	n/a	n/a	\$75
Feed storage containers ⁹	Startup cost	n/a	n/a	\$50
Housing ⁹	Startup cost	n/a	n/a	\$500

Summary

Summary	Amount
Total Expenses	\$1,759
Value of Eggs Minus Expenses	\$1,374
Expense per Dozen Eggs	\$3.37

Assumptions:

- 1) This budget is based on 10 layers over a three-year lifespan, with the laying hens being raised from chicks.
- 2) Over three years, about 200 days are non-production days when hens are involved in growing and molting. Production is calculated as 895 days x 10 hens x 70% egg yield per day. A 20% mortality is factored into the 70% egg yield. This egg yield also assumes supplemental lighting in winter is provided to maintain egg production.

The price of eggs is variable and subjective. If the eggs are sold, the price should cover costs and provide a profit. If the eggs are used for home consumption, the price should be compared to store price adjusted for additional intrinsic value or satisfaction from producing the eggs.

- 3) Chick prices are highly variable. Most backyard producers buy chicks at the local feed store or online, with chicks shipped to a post office. This budget is based on high egg-yielding type layer breeds such as Leghorn or Rhode Island

Red Crosses. Multi-purpose type breeds will have lower egg production. Make sure chicks have been vaccinated for Marek's disease and Coccidiosis at the hatchery. If you choose to buy higher-priced mature pullets instead of chicks, you do not need to purchase the chick starter and early bird grower feeds. Verify the age of the pullets. Less than 5 months is desirable.

- 4) Purchase feed from a reputable feed company. The feed conversion ratio in this budget is 4.5 pounds per dozen eggs. This can be reduced slightly by letting the hens graze in the chicken tractor or by feeding garden and table refuse. However, hens should always have access to high quality layer feed.
- 5) Saw dust or other purchased bedding. Grass clippings from lawn mowing or other clean organic material may also be used.
- 6) Egg cartons over the life of the flock if cartons are reused.
- 7) Electricity for brooding lamps, light, heating, and hot water for washing eggs.
- 8) Total labor for three years estimated at 20 minutes a day to take care of the flock. This includes feeding and watering, collecting and washing eggs. A true economic analysis would value labor but valuing labor would discourage backyard producers.
- 9) Startup costs are highly variable, particularly the housing costs. The budget includes a simple "chicken tractor" type coop and run. Some producers spend much more while others build their own for much less. The entire startup costs are included in the three-year of production. These items will last several years so if layers are kept for more than 3 years, i.e., additional flocks, costs per dozen eggs will decrease.

In this example, the cost of producing eggs is **\$3.37 per dozen** (this does not include labor). Cost per dozen can be reduced through good management to improve efficiency, by increasing flock size, or by spreading startup costs over additional years or flocks. Poor management, however, will result in even higher costs per dozen.

When selling eggs to neighbors, both the production cost per dozen and the value of your labor should be considered when setting the price.

Record Keeping

Maintaining accurate records is essential for managing a successful backyard flock. It helps you track expenses, monitor productivity, and evaluate profitability.

Key records to maintain include:

- ▶ **Flock Inventory:** Breed, age, and number of birds
- ▶ **Health Records:** Vaccinations, illness treatments, and mortality
- ▶ **Feed:** Type, amount, and cost
- ▶ **Egg Production:** Daily or weekly egg production numbers
- ▶ **Sales and Income:** Number of eggs sold, price per dozen, total income
- ▶ **Expenses:** Both fixed and variable, recorded when they occur

Consistent record keeping allows you to identify trends, reduce unnecessary expenses, and make better decisions over time.

Marketing

Knowing your costs of production is the first step in successful egg marketing. The price you set should not only cover these costs but also include a reasonable profit, making the enterprise worthwhile.

Before selling, eggs should always be cleaned and sanitized to ensure food safety and to maintain consumer confidence. Presentation matters—clean, attractive eggs and cartons add value and encourage repeat customers.

It is also important to check with your state and local authorities before selling eggs. Regulations can vary by location and may cover topics such as licensing, labeling, packaging, storage, and sanitation requirements. Following these rules helps you avoid fines and ensures that your product is legally marketable.



Figure 2: Basket of fresh eggs from a backyard flock. Photo by Jon Moyle

There are many potential outlets for selling eggs on a small scale. Common options include direct sales to neighbors, church groups, schools, and local 4-H clubs. Community markets and roadside stands can also provide steady customers. In addition, social media platforms can be powerful marketing tools, allowing small producers to advertise, connect with buyers, and even arrange delivery or pick-up.

Keep Your Birds Safe – Practice Biosecurity

Biosecurity is one of the most important ways to protect your birds — and your investment — from disease. Good biosecurity is built on three key principles:

1. **Isolation** – Keep your flock separate from other birds.
2. **Traffic Control** – Limit who and what comes in contact with your flock.
3. **Sanitation** – Keep housing, equipment, and people clean.

Basic biosecurity practices include:

- ▶ **Restrict access:** Keep unnecessary people away from your chickens.
 - Lock doors.
 - Use fences and signs to keep visitors out.
- ▶ **Dedicated clothing:** All family members should have specific clothing for poultry chores (boots, shoes, gloves, hat, etc.) that are not worn when visiting friends or going to town.
- ▶ **Avoid other flocks:** Try to avoid visiting other backyard or commercial flocks to prevent carrying disease home.
- ▶ **Clean equipment:** Clean and disinfect all equipment before it is brought onto the farm/residence and again before it leaves.
- ▶ **Dead bird disposal:** Remove and properly dispose of dead birds.
 - Poor disposal can spread disease and attract flies and scavengers.
 - Follow local guidelines on proper disposal.

- ▶ **High mortality response:** Contact your Department of Agriculture State Veterinarian’s office immediately if high mortality is observed.
 - Sick or dying birds should be sent to a state laboratory for diagnosis.
 - Do not visit other farms, residences, or 4-H events with poultry if experiencing high mortality.
- ▶ **Quarantine after fairs/shows:** Birds returning from exhibitions should be quarantined for 2–3 weeks before rejoining the flock.
 - Keep them as far from the home flock as possible and care for them separately.
 - Wash hands and shoes after handling exhibition birds and before visiting the main flock.
 - Visit your main flock first before caring for the birds under quarantine.

Conclusion

Raising a small flock for fresh eggs can be a rewarding experience. The spreadsheet developed by the University of Maryland Extension is a useful tool to help calculate your true cost of production. With this information, you can make informed decisions about pricing your eggs, ensuring that your flock is both enjoyable and financially sustainable.

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