

LAYER CHICKEN ORGANIC REARING MANUAL

**A Practical Guide to Layer chicken Rearing Utilising
Both Organic and Commercial Methods**



**Empowering Communities with
Poultry Production**

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Raising layer chickens provides households and communities with a sustainable, cost-effective source of protein. This manual combines organic and commercial practices to guide beginners in housing, nutrition and feeding schedule. With proper management, layer chickens can consistently produce nutritious eggs while supporting food security.

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Layer Chicken Rearing Manual – A Practical Guide for Egg Production.

Introduction

Raising layer chickens provides households and gardens with a sustainable, cost-effective source of protein and income. This guide is tailored for beginners who want to use both organic and commercial practices to ensure healthy flocks and nutrient-rich eggs. Topics include housing and nutrition, feeding schedules, record-keeping, and egg marketing.

Understanding Layer Chickens

Layer chickens are breeds that are primarily raised for consistent egg production. Common types include:

- Leghorn: Known for high egg output
- Rhode Island Red: Hardy and dual-purpose
- **ISA Brown: Gentle and productive (commonly used breed)**

Egg-laying starts between **18–22 weeks**. With good care, hens can lay consistently for **12–15 months**.



Accommodations

Coop Setup and Housing Requirements

A well-constructed coop is essential to keep hens healthy and productive:

- **Indoor space:** Minimum 2–2.5 square feet per bird.
- **Outdoor space:** 4–5 square feet per bird.
- **Ventilation:** Include vents for airflow or a fully meshed pen.
- **Nesting boxes:** One per 4–5 hens, with clean straw, wood-chips, shavings or grass.
- **Protection:** Secure coop from predators such as snakes, dogs, mongooses and chicken hawks and other predators.

Organic Feeding Principles

Organic feeding relies on natural, chemical-free inputs. Chickens need:

- **Energy:** Carbohydrates from grains
- **Protein:** To grow feathers and produce eggs
- **Calcium:** Essential for hard eggshells
- **Vitamins & minerals:** For immunity and health

Benefits of organic feeding

- Healthier birds
- Better quality eggs
- Reduced exposure to antibiotics and pesticides

Organic Feed Ingredients (Local Alternatives)

Locally available and low-cost options in St. Vincent:

- **Grains:** Cracked corn.

Sprouted Grains (Fodder)

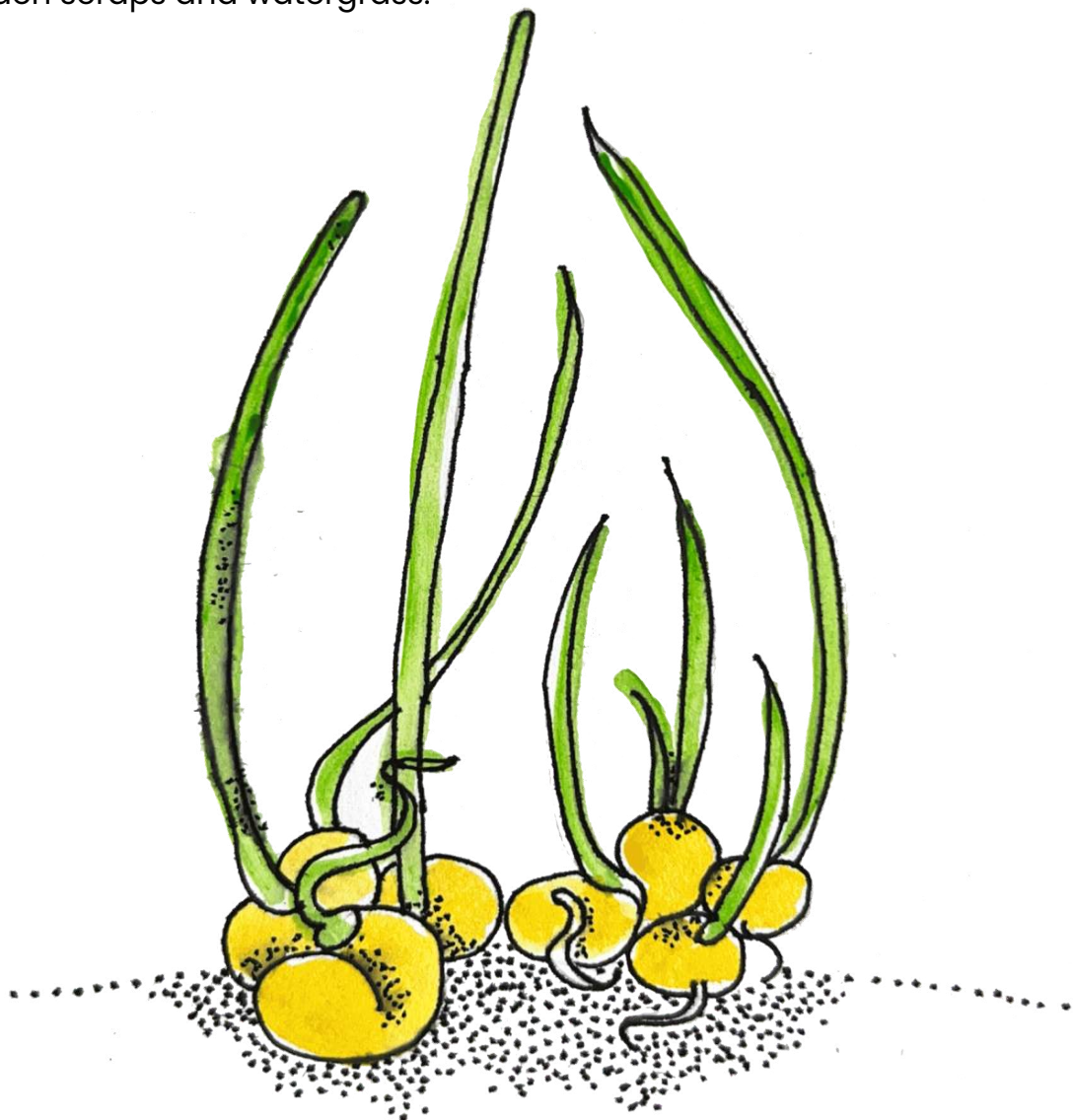
Sprouting boosts nutrition and digestibility. Soak grains like corn, wheat, or mung beans in water overnight. Drain and let them sprout for **3–5 days**. Feed sprouted grains as a protein-rich, green alternative.



Nutrient Sources

- **Protein sources:** Dried moringa leaves, fish meal, termite colonies, black soldier fly larvae and Mealworms.
- **Calcium sources:** Crushed oyster/conch shells, ground eggshells, seaweed (washed and dried).
- **Greens & fruits:** Papaya, callaloo, pumpkin, breadfruit, mango, yam, garden scraps and watergrass.

Ensure clean, non-moldy feed. Introduce new items slowly. While mealworms and dried moringa leaves are good, they should not be the main food source.



Dangerous Foods to Avoid

Feeding chickens certain foods can cause illness or even death.

Avoid:

- Avocado (contains persin)
- Raw dry beans (toxic lectins)
- Chocolate and caffeine (toxic to poultry)
- Green potato skin (contains solanine)
- Moldy food (can cause fungal diseases)
- Processed/salty food.
- Excess citrus, onions, and garlic (can affect egg taste)



Vaccination and Health Management for Layers

Why Vaccination Matters

Vaccination is one of the most effective ways to protect your flock from deadly and economically damaging poultry diseases. Even in organic or small-scale systems, preventive vaccination helps:

- **Boost immunity and reduce disease outbreaks**
- **Maintain consistent egg production**
- **Protect young chicks with early immunity**
- **Reduce losses and treatment costs**

A single disease outbreak (like Newcastle or fowl pox) can reduce laying by 40–80% or even wipe out a flock — prevention is always cheaper than treatment.

Key Vaccines for Layer Chickens

Below is a simple, recommended vaccination schedule commonly used in tropical and Caribbean climates (including St. Vincent):

Age (Weeks)	Disease Prevented	Vaccine Name / Type	Administration Method	Notes
Day 1	Marek's Disease	Marek's	Subcutaneous (neck)	Usually done at the hatchery
1–2 weeks	Newcastle Disease + Infectious Bronchitis	ND-IB (Lasota)	Eye drop or drinking water	Boost
3–4 weeks	Gumboro (IBD)	IBD vaccine	Drinking water	Important for immunity development
6–8 weeks	Fowl Pox	Fowl Pox	Wing web stab	Provides long-term protection
10–12 weeks	Newcastle Disease (Booster)	ND	Eye drop or water	Maintain
16–18 weeks	Fowl Typhoid / Fowl Cholera	FT / FC bacterin	Injection (under skin or breast)	Essential before laying begins
Every 3 months (adults)	Newcastle (LaSota)	ND LaSota	Drinking water	Regular booster to maintain immunity

Handling and Storage of Vaccines

- Store vaccines in a **cooler or refrigerator** between **2–8°C** – never freeze.
- Use **clean, chlorine-free water** when mixing vaccines for drinking.
- Always **discard leftover vaccine** after 2 hours – it loses effectiveness quickly.
- Vaccinate **early in the morning** when birds are calm and temperatures are cool.
- **Do not mix vaccines** unless specified by the manufacturer.

Best Practices

- Keep a **vaccination record book** for your flock (date, vaccine type, number of birds).
- Always **use new sterile needles** for injectable vaccines.
- **Observe birds for stress** or mild reactions (drooping, low appetite) for 1–2 days – this is normal.
- Combine vaccination with **good hygiene, nutrition, and biosecurity** for maximum protection.

Organic Note

Even in **organic poultry systems**, certain vaccines are permitted as preventive care. They do not affect the “organic” status of your eggs or meat as long as the vaccines are approved and used responsibly. Prevention through vaccination is considered part of animal welfare and sustainable farming.



Feeding Schedules by Growth Stage (Organic Method)

Chicks starter (0–6 weeks):

- **3–4 feedings/day**
- Starter mash (organic): finely ground grain, boiled egg, moringa powder.

Growers (6–18 weeks):

- **2–3 feedings/day**
- Include grains, green forage, protein supplements such as black soldier flies or cooked beans/rice.

Layers (18+ weeks):

- 2 meals/day
- 60% grains, 20% protein, 10% greens, 10% calcium

Free access to clean water is mandatory.



Daily Tasks Checklist

- Feed and water birds twice a day []
- Collect eggs []
- Observe for illness (droopy wings, diarrhea, coughing) []
- Check for signs of predators or damage to the coop []
- Clean water containers []
- Lock coop at night []

Weekly Tasks Checklist

- Clean feeders and waterers with soap and water []
- Inspect birds for mites and lice []
- Replace nesting materials []
- Measure feed usage per bird []
- Track egg production by hen group []

Monthly Tasks Checklist

- Deep clean coop (disinfect with vinegar or lime wash) []
- Inspect housing structure for wear []
- Rotate free-range area to avoid disease buildup (if free-ranging) []
- Record vaccination dates, feed costs, mortality []

Growth Tracking Log

Example Log Entries by Week:

- Week 1–6: Note feather growth, activity level, early foraging
- Week 7–12: Track size, health, preening, coop adaptation
- Week 13–18: Check for signs of comb and wattle development (sexual maturity)
- Week 19–72: Start daily egg count per group

Track using notebook or spreadsheet:

- Daily egg tally
- Feed intake
- Health incidents

Natural Remedies & Organic Health Care:

- Wood ash bath: Place in shallow trays to prevent mites
- Aloe vera: Aids in digestion and immunity (use 1 tsp/liter of water)
- Garlic & turmeric mash: Parasite prevention (1/week)
- Isolation cage: Use for sick birds to prevent spread.

Introducing New Chickens into an Existing Flock

Mixing new chickens with your old layers requires careful timing and quarantine to avoid disease spread and pecking order stress.

Best Time to Mix New Birds

- **Quarantine new birds for 2–3 weeks** before introduction.
 - This allows time to observe for signs of illness (coughing, diarrhea, lethargy, mites, etc.).
- Introduce in the evening or at night.
 - Chickens are calmer when roosting, so aggression is reduced.
- Ideal flock age difference:
 - New birds should be close in size and age to existing ones (within 4–6 weeks difference) to prevent bullying.
- Mix on neutral ground:
 - Use a temporary pen or a divided coop so they can see **but not touch** each other for 3–5 days before full integration.

Avoid Mixing When:

- The older flock is actively laying heavily (it disrupts laying).
- The new birds are much smaller or unvaccinated.
- The coop space per bird is less than 2 sq ft (crowding causes fights).

Integration Tip: Sprinkle some feed or greens when mixing; distraction reduces fighting.

Signs of illness:

- Sudden drop in egg production
- Pale combs
- Lethargy or drooping wings

Egg Handling & Storage:

- Eggs should be collected twice daily
- Avoid washing unless necessary; wipe with dry cloth.
- Store pointed side down
- Store at 10–15°C in a dry, dark area
- Climate determines storage duration
- Rotate stock using FIFO (First In, First Out)

Marketing Your Organic Eggs:

- **Local Sales:** Farmers' markets, small groceries, bakeries, neighbours
- **Packaging:** Use clean, recycled egg cartons
- **Branding Tips:**
- **Label as** "Fresh, Local, Organic"
- **Add farm name and harvest date**
- **Pricing:** Consider cost of feed, labor, and packaging
- **Promotions:** Offer sample dozens or loyalty discounts



Long-Term Tips for Sustainable Production

- Grow chicken forage crops like corn, pumpkin vines, callaloo.
- Use composted chicken manure to fertilise garden beds.
- Plan for phased flocks.
- Join local farming cooperatives or online groups.
- Track expenses to maintain profitability.

Note:

Success in organic egg production comes from consistent care, knowledge of natural remedies, and strong record-keeping. Monitor your flock daily, feed them well, and engage your community through local, nutritious, sustainable egg offerings.

Feeding Layer Chickens Using Factory-Produced Feeds

Feeding layer chickens commercially is one of the most critical aspects of successful egg production. Since feed accounts for 60–70% of total production costs, optimising feeding for **nutrition**, **efficiency**, and **cost** is essential.

Feeding Stages and Feed Types:

Layer chickens have different nutritional needs depending on their age:

Starter – Healthy growth & immunity




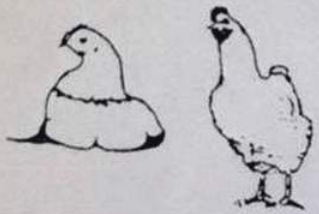
Grower Medicated – Frame & organ development

Grower Plain – Prepare for laying

Layer Feed – Peak egg production



Daily Commercial Feed Quantity Guide:

PERIOD		TYPE OF FOOD	APPROXIMATE CONSUMPTION		
FROM	TO		One Bird Daily	100 Birds Daily	100 Birds Over Period
Day Old	End of 7th Week	20% Chick Starter 	.9 oz	5.6 lbs	274.4 lbs or 6 bags
8th Week	End of 16th Week	16% Medicated Pullet Grower 	1.9 oz	11.8 lbs	743.4 lbs or 15 bags
17th Week	10% Egg Production or (20th-22nd Week)	16% Pullet Grower (Plain) 	2.14 oz	13 lbs	561.57 lbs or 11 bags
20th - 22nd Week	End of Laying Cycle (365 days)	17% Layer 	4 oz	25 lbs	9125 lbs or 182.5 bags

50 LBS

Testimonials

Testimony

"Our connection started with the Backyard garden initiative then elevated to having a chicken coop with it. The layers have been very productive, giving us enough eggs for home consumption and sales. This project has really improved our nutrition and provided extra income for our families."



Testimony

"I used to buy eggs, but now I produce my own and even sell the surplus for extra income. The yolks are richer, the shells are stronger, and they stay fresh longer than store-bought. My family loves them, and we can taste the quality every morning!"

Daily Feeding Schedule:

Time	Feeding Activity
6:00–7:00 AM	Provide ½ of daily feed ration
1:00–2:00 PM	Provide remaining ½ ration
All day	Ensure access to clean, fresh water

Feed Quantities per Cup

Garden owners often measure feed using household cups instead of scales. The following conversions make it easier to portion feed accurately.

Stage	Daily Feed per Bird (grams)	Cups (approx.)	Feedings per Day	Cups per Feeding
Chicks (0–7 wks)	40–60 g	⅓–½ cup	3–4	⅛ cup
Growers (8–16 wks)	60–85 g	½–⅔ cup	2–3	¼ cup
Pre-layers (17–20 wks)	90–100 g	¾ cup	2	⅜ cup
Layers (20+ wks)	110–120 g	1 cup	2	½ cup

1 measuring cup = ~240 ml. Ten laying hens consume about 10 cups (1 kg) of feed daily.

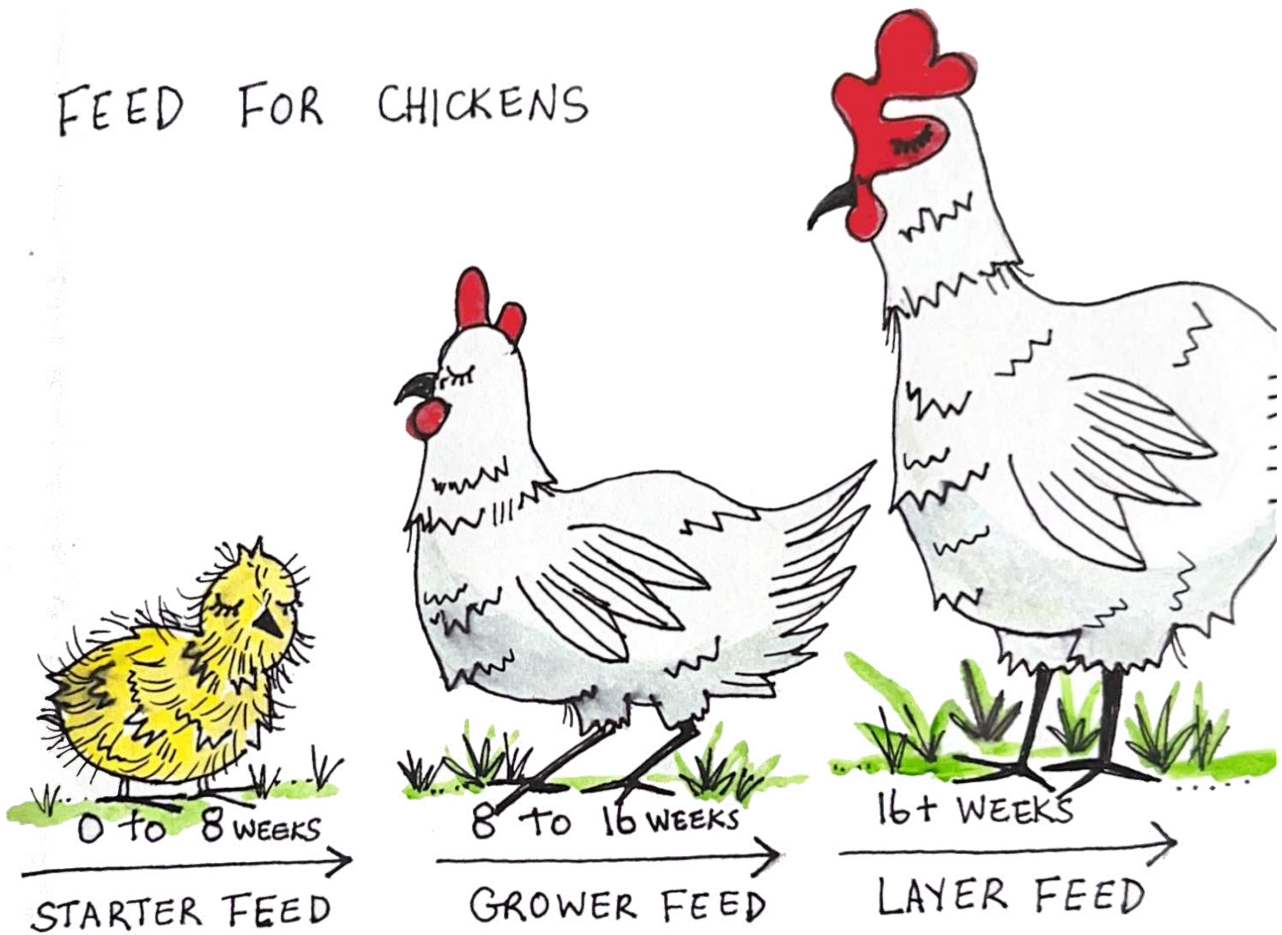
Nutritional Requirements for Laying Birds

Nutrient	Requirement
Crude Protein	16–17%
Energy (ME)	2700–2800 kcal/kg
Calcium	3.5–4.5% (for strong egg shells)
Phosphorus	0.4–0.6%
Lysine	0.75–0.9%
Methionine	0.3–0.4%
Vitamins & minerals	A, D3, E, B-complex, Selenium, Zinc, etc.

Feeding Objectives

- Maximise egg production and egg size
- Maintain good shell quality
- Achieve optimal body weight
- Minimise feed waste and mortality

FEED FOR CHICKENS



FEED AT ALL AGES

POULTRY SCRATCH & OTHER TREATS NO MORE THAN 10% OF DIET.

GRIT HELPS PROMOTE HEALTHY EGG LAYING.

FRESH WATER REPLACE OFTEN.

What Is Grit and Why It Matters

Grit is a small particle supplement (tiny stones, crushed shells, or granite) that chickens need for digestion – especially when they eat whole grains, grass or kitchen scraps.

How It Works

- Chickens don't have teeth!
- They swallow grit, which stays in the **gizzard** – a muscular organ that grinds food.
- The grit helps **break down grains and fibrous material** so nutrients can be absorbed properly.

Types of Grit

Type	Description	Purpose
Insoluble Grit	Crushed granite or small stones	Aids digestion, stays in gizzard for weeks
Soluble Grit	Crushed oyster or eggshell	Source of calcium, dissolves quickly

When & How to Provide

- Offer grit in a **small separate dish** or mixed lightly in feed once or twice weekly.
- Always provide **free access to insoluble grit** for free-range birds.
- Avoid overfeeding – too much calcium (from oyster shells) can harm young pullets

Monitoring & Management

- Track **feed intake daily**
- Monitor **egg production rate**
- Watch for signs of nutritional deficiencies:
 - **Soft shells** → lack of calcium
 - **Poor production** → protein or energy deficit
 - **Pale combs** → anaemia, possibly low minerals/vitamins
- Ensure **feed freshness**

(use within 30 days of production)

- Store feed in **cool, dry, rodent-free place**.

If any problem arise, consult another chicken rearer or a **veterinary professional**.

Switching from Feed to Feed

When switching from Starter to Grower feed, or from Grower to Layer feed, it's best to do it gradually. Start by mixing a small amount of the new feed into the current feed, and slowly increase the amount over 5–7 days. This helps your chickens adjust without upsetting their digestion.

Reminder:

Add natural supplements like charcoal, crushed eggshells, small stones (grit), and watergrass (French weed) to your chickens' diet **twice a week**. These help with digestion, calcium intake, and overall health.



Nutritional benefits of Layer Egg

1. High-Quality Protein

- Eggs provide complete protein, meaning they contain all 9 essential amino acids needed by the body.
- One large egg contains about 6–7 grams of protein.

2. Rich in Vitamins

Eggs are a good source of several essential vitamins:

- Vitamin A – Supports vision and immune function.
- Vitamin D – Important for bone health and immune support (eggs are one of the few natural sources).
- Vitamin B2 (Riboflavin) – Helps in energy production.
- Vitamin B5 (Pantothenic Acid) – Supports hormone production and energy metabolism.
- Vitamin B6 (Pyridoxine) – Important for brain development and immune function.
- Vitamin B7 (Biotin) – Supports healthy skin, feathers, and metabolism.
- Vitamin B12 – Essential for red blood cell formation and neurological function.
- Choline – Essential for brain development, memory, and liver function.
- Folate (B9) – Important for pregnant women to help prevent neural tube defects.

3. Source of Essential Minerals

- **Iron** – Supports oxygen transport in the blood.
- **Phosphorus** – Important for healthy bones and teeth.
- **Selenium** – A powerful antioxidant that protects cells from damage.
- **Zinc** – Supports immune function and wound healing.

The majority of these essential minerals are concentrated in the egg yolk, which serves as the primary source of nutrients for the developing chick and a rich dietary component for humans.

4. Healthy Fats

- Eggs contain about 5 grams of fat, mostly unsaturated, which is beneficial for heart health.
- They also contain omega-3 fatty acids (especially in eggs from hens fed an omega-3-rich diet), which support brain and heart health.

5. Antioxidants for Eye Health

- Eggs contain lutein and zeaxanthin, two powerful antioxidants that protect the eyes from age-related macular degeneration and cataracts.

6. Choline – Essential for Brain Development

- Eggs are one of the best sources of choline, a nutrient important for brain development and liver function.
- Especially important for pregnant and breastfeeding women.

7. Low in Calories

- One large egg contains about 70–80 calories, making it nutrient-dense relative to its calorie content.



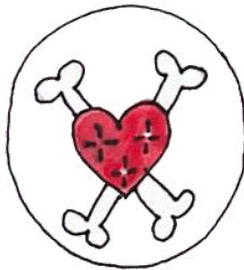
HAPPIER & HEALTHIER CHICKENS



+
HIGHER
ACTIVITY



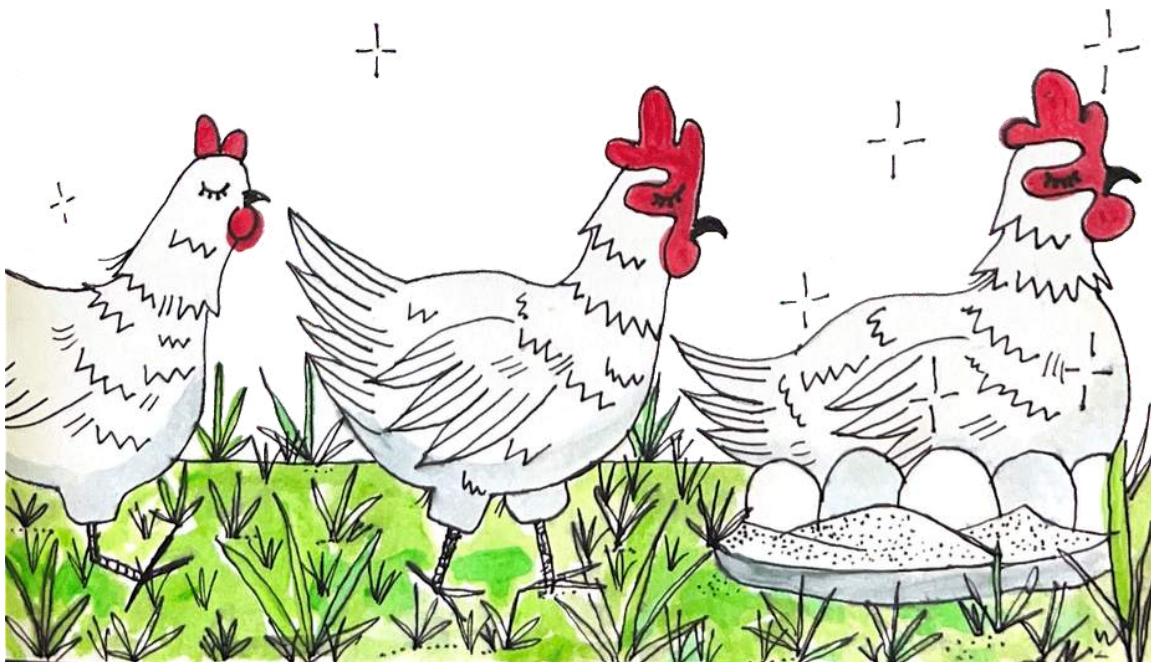
BRIGHTER
COMBS



+
STRONGER
BONES
+



+
SHINIER
PLUMAGE
+



Summary of Key Nutrients per One Large Egg:

Nutrient	% Daily Value (DV)	Key Benefit
Protein	12%	Builds and repairs muscles and body tissues
Vitamin A	5%	Supports eye, skin, and immune health
Vitamin D	8%	Strengthens bones and boosts immunity
Vitamin B12	21%	Aids nerve function and red blood cell formation
Choline	27%	Promotes brain development and liver health
Selenium	28%	Acts as a powerful antioxidant
Iron	5%	Supports oxygen transport in the blood

- Note: "DV" = Daily Value (based on a 2,000 calorie diet)

Having a Rooster within the Layer Coop

Advantages of Having a Rooster with Hens

1. Fertilised Eggs (for Breeding)

If you plan to hatch chicks (naturally or using an incubator), a rooster is essential to **fertilise the eggs**.

Fertile eggs look and taste the same as unfertilised ones for eating.

2. Flock Protection

Roosters are naturally protective and can **guard hens from predators** like hawks, snakes, or cats.

They often alert hens of danger and guide them to safety.

3. Flock Order and Discipline

Roosters help **maintain social order** in the flock and prevent excessive fighting among hens.

They often take on a leadership role.

4. Encourages Natural Behaviours

- Roosters promote natural mating and can encourage hens to go broody (sit on eggs to hatch them).
- This is useful in free-range or traditional systems.



Disadvantages of Keeping a Rooster

1. No Increase in Egg Production

- A rooster does **not increase the number of eggs** laid by hens — egg laying is determined by breed, age, nutrition, and lighting.

2. Aggressiveness

- Some roosters become **aggressive** toward humans or hens, especially in small spaces or during mating season.
- Over-mating can lead to **injury or feather loss** in hens.

3. Noise

- Roosters crow loudly, often early in the morning and throughout the day. This may be a **nuisance**, especially in urban or residential areas.

4. Feeding Cost

- Roosters eat but **do not produce eggs**, so keeping one increases feed cost slightly without direct production benefit.

Recommended Situations to Keep a Rooster:

- You want to **hatch your own chicks**.
- You're doing **free-range or semi-free-range** rearing and need **flock protection**.
- You want to **maintain your own breeding stock**.



About This Manual

This manual was developed as part of Richmond Vale Academy's ongoing effort to support small-scale farmers, youth, and community groups in building sustainable food systems. It combines practical experience, organic methods, and proven best practices for layer chicken management, feeding, and egg production. Our goal is to empower every farmer to produce healthy, high-quality eggs while caring for the environment and improving livelihoods. Whether you're just starting your first chicken coop or expanding an existing flock, this guide is designed to help you succeed every step of the way.

Acknowledgment

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Disclaimer

The information provided in this manual is based on current best practices and local conditions. Richmond Vale Academy is not liable for any losses or damages arising from the application of the practices described. Users are encouraged to adapt recommendations to their specific environments and seek professional veterinary advice when necessary.

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Slogan: "Fresh. Local. Organic. – Eggs You Can Trust."



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NIHR GLOBAL HEALTH RESEARCH ON
COMMUNITY FOOD FOR HUMAN
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