Feedmaster

Your Quality Solution

LAYER GUIDE

Layer poultry production

The poultry industry has developed vastly in the past 50 years. There are many different breeds of chickens available, but selection towards increased productivity has seen the development of specific breeds for meat and egg production. The goal of any layer farm is to produce as many eggs as possible at the lowest cost.

During the growth cycle of a pullet, many management factors may affect the total lifetime egg production of the layer hen. Management and access to information is a very important aspect of egg production.

If you want to be a successful egg producer, you should master the day-to-day management tasks of running a layer farm and the most significant element is the feed. This includes the availability and effective application of feed in the layer house. Feed makes up approximately 60-75% of the total operating cost. Therefore, it is of utmost importance to make use of a well-balanced, cost-effective feed ration.

This is why we at Feedmaster only use quality raw materials, formulated by qualified poultry nutritionists, to supply the poultry farmer with a quality feed solution by adhering to ISO22000 compliance and Quality Assurance.

Different systems of layer farming

Free-range system

The free-range system implies that the hens walk around freely outside but fenced, are not housed, or only partially housed. Animal welfare and initial start-up costs of a battery system are one of the deciding factors when choosing between a free-range production system and a battery production system. Under normal conditions, a free-range system has a higher feed conversion ratio, because the hens move around more. Therefore wasting more energy which increases production costs. The extra production costs of a free-range system is another factor which contributes to whether or not it will be economically viable to produce under these conditions. The producer should also insist on getting a premium

The following factors are important:

- Hens will lay eggs everywhere in dark corners so build nesting boxes to reduce time spent searching for eggs.
- Bring hens into a cage at night to reduce losses from predation.
- Remove eggs daily to avoid hens getting broody.

- Water and feed should always be available
- Do daily check-ups on hens to ensure they are healthy
- Lots of dirty eggs in a free-range system can increase the effort of cleaning eggs.

Battery/Caged system

A battery-caged system keeps many layers caged in a housed environment, mostly elevated from the ground. The system is a more intensive system with normally higher egg yields due to less motion, better control over feed intake, and control over environmental factors. (e.g. temperature fluctuations if compared to free-range chickens). The start-up costs of a battery system are very expensive, but greatly reduces the risk of salmonella contamination and parasite infestation.

The following factors are important:

- Hens cannot look for their food so feed should always be available
- Cage floors need to be cleaned weekly
- Monitor chickens when placed, to ensure water and food is located
- To improve production, add stress powder and vitamins to water at least every two weeks.

The system chosen depends on your market, preference or dislike of either system, availability of space, and finances.

Starting up with layers

You have two options when starting up. You could either get point of lays (hens ready to lay eggs), day-old layer chicks.

Day-old chicks

Advantages

- Buying day-old chickens is a cheaper option than point of lays.
- Raising them yourself is also much cheaper and you can control the quality of the hens you raise.
- Hens stay in production longer when raised correctly.
- You can also control their vaccination and ensure a strong immunity against diseases.

Disadvantages

- Raising your hens from day-old chicks to point of lays, does have the added risk of mortalities.
- You have to have a good cash flow to raise them, as they do not produce eggs in these 18 weeks of raising.
- You carry the vaccination and feed costs and you do not benefit immediately after the purchase.
- Need Skills

Point of lay hens

Advantages

- The hens are in production immediately or short after purchase
- No feed cost to raise the chicks
- Less vaccination cost
- Mortalities are less than day-old chicks
- No roosters.

Disadvantages

- Point of lays are much more expensive than day-old chicks at purchase
- Hens might bring in diseases if not purchased from a trusted supplier
- Signed-off rearing programs not always available for future production claims.

* Always request the feeding, growth, and vaccination schedule when the buying point of lays to ensure quality is maintained during raising.

Housing

- Poultry House should be built with shortest closed sides in an East to West direction.
- The house should have side curtains opening from the top to the bottom. This improves ventilation and avoids direct airflow on hens.
- House can be insulated, prevent big fluctuations in temperatures and conserve heat during the night and cool down during the day.
- Roof overhang should be extended to avoid the hens from being exposed to rain. Gutters can also be used to divert and collect rainwater.
- Concrete floors are ideal and most hygienic, however expensive. All floors need to be covered in bedding. Ground floor rearing is the cheapest option but not recommended.

Make use of metal and plastic when building. These materials are easy to clean

Lighting program

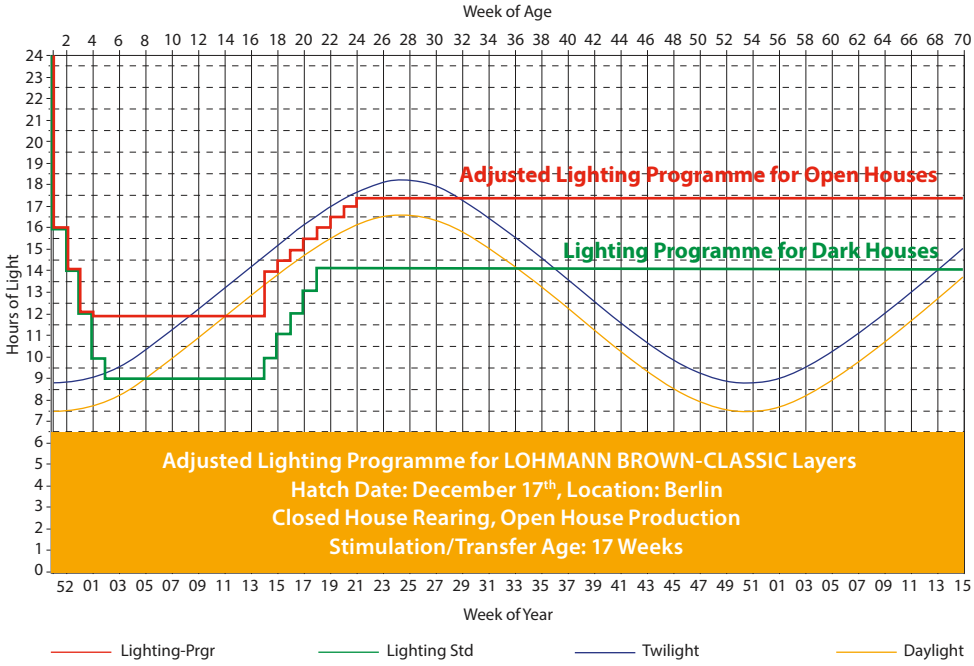
Layer hens tend to be very sensitive to change in lighting. As seasons change from summer to winter, days grow shorter, a hen's production tends to decrease. This can be controlled by using artificial lighting. A period of darkness is also a natural requirement and should be taken into account. Lighting can be more difficult in open houses and free-range systems.

Why is a lighting program important?

- Better egg production because of energy conserved during resting.
- Reduce mortality rate and skeletal defects.
- Stimulates the production of melatonin. Melatonin is important in the development of the immune system.

Do not increase the day length at all during the growth period. Establish what the natural day length will be when the birds are at least 16 weeks old. Provide additional lighting to make sure, that the day length from 8 weeks Is the same as the natural day length at 16 weeks and keep it that way until it is time to stimulate production/ sexual maturity.

An example of a lighting programme for LOHMANN BROWN-CLASSIC Layers adjusted to location, condition and requirements by LOHMANN lighting programme tool



Temperature management

Temperature plays a vital part in egg production. Too low temperatures during the first few weeks can affect your hen's production during her entire egg-laying cycle. At a later stage, the temperature does not have that large effect, but extremes should be avoided. Free-range hens need shelter for the night as temperatures can decrease drastically.

Age	Cage Rearing (°C)	Free Range rearing(°C)
Week 5-72	18-20	18-20

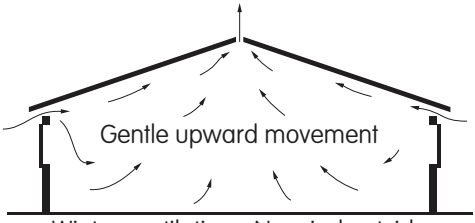
*Body temperature for chicks can be about 40-41°C

Ventilation

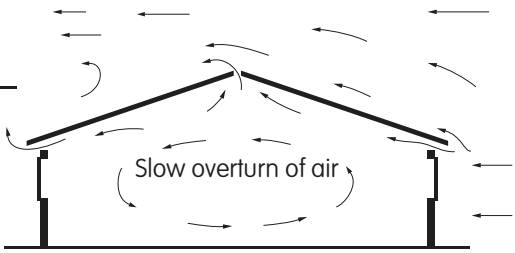
The function of ventilation is not only to supply the hens with an adequate supply of oxygen, but it also assists with the removal of waste products, growth, and combustion from the environment such as:

- Moisture removal
- The provision of oxygen to meet the bird's metabolic demand
- The control of relative humidity
- The maintenance of good litter conditions.

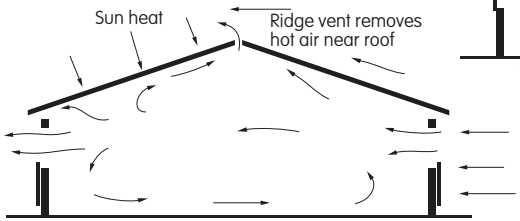
Always ensure that there is a good supply of fresh air at all times, but be careful not to have a cold draft blowing into the brooding house as chicks are more sensitive to cold. Good maintenance of house curtains (if hens in battery cage) are needed. Free-range chickens tend not to have any problems with ventilation.



Winter ventilation - No wind outside



Winter ventilation - Wind blowing



Summer ventilation - Sidewall doors open

Bird Health

Bio-security

Prevention is by far the most economical and best-known method of disease control. Prevention is best achieved by the implementation of an effective bio-security program in conjunction with an appropriate vaccination program. Bio-security is a practice designed to prevent the spread of disease on your farm. It is accomplished by maintaining the facility in such a way that there is minimal traffic of biological organisms (viruses, bacteria, rodents, etc.) across its borders. It is the most effective and cheapest means of disease control on the farm. Below are a few key points to a successful bio-security program:

- Farms should be fenced.
- The all in/all-out principle is the best. It prevents the transmission of the disease from older flocks to younger flocks.
- Limit non-essential visitors to the farm. A logbook should be used to document the visits at the farm. Cars of employees should not be allowed on the premises.
- Farm supervisors should visit the youngest flocks at the beginning of the day and work by age to the oldest flock for the last visit on that day.
- The entrance to the farm must include pressure washing equipment to clean the tires and undercarriage of the trucks that need to enter the premises.
- Sanitize feet/shoes with a foot bath upon entering the cage or hen house entrance.
- Dispose of dead birds immediately.
- Personnel working on a grower or layer should not own birds or work in another poultry farm.
- Clean clothes and boots should be available for everyone entering the premises. Best would be if shower-in/shower-out facilities are available.

Vaccination

A vaccination is the controlled exposure to a disease-causing agent (antigen) and is specific to the one disease. The antigen can be a virus, mycoplasma or bacteria and is so manipulated in the laboratory, that it cannot harm or kill the bird anymore. The vaccination process is preparing the body of the animal to combat the disease by itself through immunity when challenged with the real field organism.

Day old chicks should receive vaccines against following diseases at the hatchery for sufficient protection:

- IBD
- ND
- IB

Please discuss vaccinations with a veterinarian before purchase any vaccines.

A basic monitoring program and regular visits by a poultry veterinarian should take place to diagnose other less seen diseases to advise adjustments and additions to the vaccination program when it is needed.

Change clothes before entering the farm and shoes before entering the house.

Vaccination preperation

Age (weeks)	Vaccine Against Disease	Route
Day-old (Hatchery)	Vectored ND Live Marek's disease Rispens strain	Sub-cutaneous injection
	Live NDV Live IBV (Mass + variant)	Spray cabinet
	Live Coccidiosis	
3	Live NDV/IBV booster dose Live SE Live IBD	Coarse Spray Drinking water Drinking Water
4	Live NDV booster dose	Drinking Water
	Live Pox Live AE	Wing stab
6	Live ILT	Eye drop
8	Live NDV/IBV	Coarse Spray
10	Inactivated Coyza/EDS Inactivated IBV booster dose	IM inject
13	Inactivated Coryza booster dose Live ILT booster dose	IM inject Eye drop
14	Live SE booster dose	Drinking water
15	Live NDV/IBV booster dose Inactivated NDV booster dose	Coarse Spray IM inject
16	Inactivated SE booster dose	IM inject
From week 20 every 6 weeks	Live NDV/IBV booster doses	Spray or Drinking water

These are guidelines only. Every farm will end up developing their vaccination schedule depending on their needs and the type of vaccine being used.
Please discuss vaccinations with a veterinarian before purchase any vaccines.

A basic monitoring program and regular visits by a professional person like a poultry veterinarian should take place to diagnose other less seen diseases to advise adjustments and additions to the vaccination program when it is needed.

Flock Uniformity

Uniformity amongst hens is very important. Equally sized hens is a good indication of future production ability. Uniform hens become sexually mature at the same time, saving money on feed. Uniform hens also tend to stay longer in production resulting in more eggs per life cycle and thus better profits.

How to calculate flock uniformity:

Example:

The total weight of flock is 86260g of which the flock size is 95 hens.
86260g ÷ 95 hens = 908g per hen
908g per hen × 10% = 91g
908g + 91g = 999g (Upper value) 908g - 91g = 817g (lower value)
817g < Uniform Flock > 999g
So for instance, 85 hen's weights lay within this weight range
81 hens ÷ 95 hens × 100 = 85% uniformity
85% + is very good uniformity
70% - is poor flock uniformity

Factors which influence flock uniformity:

- Stocking density
- Feed structure (avoid selective feed intake)
- Trough/ Feeder length and height
- Availability of water

Eggs

Most breeds of layer typically produce eggs economically until the age of 72 weeks. In this period a hen, under the correct circumstances, should lay between 300 and 326 eggs. Egg sizes increase as the hen gets older. Chickens with brown earlobes tend to lay brown eggs and the hens with white ear lobes lay white eggs. A healthy laying percentage is 80% to 100 % laying per day in peak production. This means 80% of the flock will lay an egg a day.

Points to remember:

- Eggs are fragile and should be handled with care. Package in egg trays for the best protection.
- Sell the older eggs first. Do not keep eggs longer than 2 weeks before selling.
- Store eggs at room temperature between 18°C and 25°C. Refrigerated eggs tend to form condensate on shells when removed from the fridge, and causes bacteria such as salmonella to grow on the surface.
- Remove eggs daily to avoid hens eating their eggs.
- Egg colour or shape can indicate disease, contact vet.

- If any blood is found on egg check the hen to avoid cannibalism
- Count the number of eggs daily to determine laying percentage and to identify possible problems in the flock.
- Eggs should not be washed

Nutrition

Layer diets are formulated to provide the energy and nutrients essential for health and efficient egg production. The basic nutritional components required by the birds are water, amino acids, energy, vitamins, and minerals. Sufficient calcium for shell production is specifically vital in our layer mash.

Feedmaster provides the following:

- All our products are specifically formulated by qualified nutritionists to achieve the desired production levels at a lower cost.
- Feedmaster is ISO 22000 accredited.
- All our products are formulated with natural products such as maize, soya, sunflower oil cake, chop, and bran.
- We do not include any animal protein sources or animal-derived products into any of our product ranges.
- We adhere to strict bio-security rules at all times to reduce possible contamination.
- The produced feed adheres to a rigorous quality control process to confirm the quality before being distributed.

Week	Days	Feed intake (g/ bird/day)	Total feed intake per week in (g) per bird	Feed type	Bodyweight target (g)
1	7	11	77	Pullet Starter	75
2	14	17	196	Pullet Starter	130
3	21	22	350	Pullet Starter	195
4	28	28	546	Pullet Starter	275
5	35	35	791	Pullet Starter	371
6	42	41	1078	Pullet Starter	474
7	49	47	1407	Pullet Grower	578
8	56	51	1764	Pullet Grower	679
9	63	55	2149	Pullet Developer	775
10	70	58	2555	Pullet Developer	867
11	77	60	2975	Pullet Developer	956
12	84	64	3423	Pullet Developer	1042
13	91	65	3878	Pullet Developer	1126
14	98	68	4354	Pullet Developer	1207
15	105	70	4844	Pullet Developer	1286
16	112	71	5341	Pullet Developer	1363
17	119	72	5845	Pullet Developer	1437
18	126	75	6370	Pullet Developer	1464-1554

- The previous table is based on Lohman Brown breed standards.
- Changing from one phase to the next is dependant on body weight.
- Pullet grower is given until 5% of the flock are in lay (for every 100 hens 5 must lay). If Pullet Developer os available use until 5% of the flock is in lay.
- Layer Mash 100 Larvadex are given ad lib daily.
- Intake should range between 110g-120g per hen per day.

Requirements to raise a pullet flock

Amount of Pullets	*Pullet Starter* Requirements (kg)	Amount of bags *Pullet Starter*	*Pullet Grower* Requirements (kg)	Amount of bags *Pullet Grower*	Total Bags
100	200	4	550	11	15
200	350	7	1100	22	29
300	550	11	1651	33	44
400	700	14	2201	44	58
500	900	18	2751	55	73
600	1100	22	3301	66	88
700	1520	25	3851	77	102
800	1400	28	4402	88	116
900	1600	32	4952	99	131
1000	1750	35	5502	110	145

Layer Mash 100 Larvadex feed requirements

Amount of hens	Intake (g)	Total intake in a month (kg)	Amount of bags in a month (50kg)	Amount of bags in a year
100	110	341	7	84
200	110	682	14	168
300	110	1023	21	252
400	110	1364	28	336
500	110	1705	35	420
600	110	2046	41	492
700	110	2387	48	576
800	110	2728	55	660
900	110	3069	62	744
1000	110	3410	69	828

* Daily feed intake may differ between different breeds due to different environmental factors.

Feeding schedule by product - variant

Pullet Starter Mash

Feed one-day-old chick until 6 weeks of age.

Intake in this phase is of utmost importance as the frame of the bird, as well as organs, are developing during this period.

Pullet Grower Crumble

Feed from 7 weeks until 5% of hens are in lay.

Maintain the same growth rate as the previous phase to ensure that the frame developed can support the final mass of the hen.

Layer Mash 100 With Larvadex

Feed from point of lay until culling.

Average intake 110g per day, depending on health status and environmental condition.

Water Management

- To ensure optimum egg quality and overall health, the water supplied to the hens should be of a good standard.
- Chicks and pullets which do not drink enough water will have an inadequate feed intake and bad growth. This effects future egg production ability.
- Do regular checks to ensure that drinkers are working properly and/or are full.
- Make sure drinkers are at crop level and the water pressure is correct.
- When temperatures are high or if birds have health problems, they consume more water to regulate body temperature.
- Add chlorine tablets to the water to sanitize water and check ph levels, but not during vaccination days.
- Under normal conditions, hens drink between 250 ml -500 ml of water each day.
- Do not feed water directly out of a borehole or big tank. Divert water to a smaller catchment tank to help with medicating and vaccination of hens.
- A 500-liter tank is ideal for a 100 hen setup.

Round Drinker

Fountain Drinker

Nipple Drinker

Important notes

- The amount of feed per bird is a suggestion, stick to the recommended feeding days indicated on the feeding table.
- For the first 10 days, feed should be on the pan feeders or paper.
- From day two, feed should also be in feeding troughs so that the chicks can learn to eat from it.
- Do not place feed or water directly under the heat source as this may cause the chicks to eat or drink less than they should.

Record keeping

The biggest purpose of accurate records is for the farmer to utilize the information in future decision making. Accurate record-keeping is essential to monitor the performance and profitability of a flock.

Daily records that should be taken:

- Amount of eggs collected
- Amount of misshaped eggs
- Feed consumption
- Water consumption
- Egg sizes
- Water treatments
- Minimum and maximum daily temperatures
- Mortalities amongst hens
- Management changes

Flock records (a summary at the end of the flock's cycle)

- Feed deliveries (supplier/amount/type/date of consumption)
- Feed sample from each feed delivery
- Live weight (daily/weekly/daily gain)
- Medication (type/batch/mount/date of administration/date of withdrawal)
- Lighting program followed
- Chick delivery (number/date/time/truck temperature and humidity)
- Stocking density in case of battery cages

* All the information of this guide was based on the most common breed of layers in Namibia - Lohman Brown. The above information may vary for different breeds.

Record Keeping Sample

House: _____ Amount: _____ Date of placement: _____

Age	Water consumed L	Feed consumed kg	Total amount of eggs	Number of cracked eggs	Number of whole eggs	Total of mortalities	Number of culls	Number of mortalities	Treatments

NB: - A hen consumes 110g of Feedmaster layer mash daily.

- A hen needs a minimum of 270ml of water daily. An egg is made up of 86% of water.
- A healthy well taken care of flock is productive, compared to an unhealthy one.

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Epungulo lomauyelele

Oshikuku : _____ Omuvalu weexuxwa : _____ Efiku eexuxwa da tulwa moshikuku: _____

Eedula/ oivike	Omeva apewa eexuxwa	Oikulya yapewa eexuxwa	Omuvalu aushe womai a dalwa	Omuvalu womai a tatuka	Omuvalu womai eli nawa	Omuvalu aushe weexuxwa dasa	Omuvalu weexuxwa da kufwako kudikwao (tai vele, yateka)	Omuvalu weexuxwa de li sila	Eyandjo lomiti/ eevitamini

Koneka: - Keshe oxuxwa nai pewe 110g mefiku do Feedmaster is Layer Mash

- Keshe oxuxwa oya pumbwa 270ml domeva keshe efiku. Keshe eyi oli na 86% domeva.
- Eexuxwa di hena ouwehame, dalya nodakuta nawa ohadi dala omai nawa, shi dulife edi dina ouwehame.

- Ovayadjimayele vetu : Beata Mudjanima 0811254913
  Markus du Plessis 0816354061

Feedmaster

Your Quality Solution

LAYERS LIFE CYCLE

DAY OLD CHICK UNTIL 6 WEEKS OLD PULLETS

7 WEEKS OLD UNTIL 20 WEEKS OLD PULLET

(Till point of lay)

21 WEEKS OLD TO 72 WEEKS'OLD

(Point of lay till cull)

ProPet

RELIABLE QUALITY, NO COMPROMISE

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