

Small-scale poultry keeping – feeding

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Nutrients

Fowls have a simple digestive tract like humans, and therefore eat similar food, such as cereals and meat. Their food is composed of a number of nutrients that are essential to their health, maintenance and egg and feather production. The six main nutrients are protein, carbohydrates, fats, vitamins, minerals and water.

- **Protein** is needed for growth, replacement of old cells and production of eggs and feathers. Sources of protein include meatmeal and fishmeal, oilseeds (such as soybean meal and sunflower seed meal), peas and lupins.
- **Carbohydrates** are sources of energy, needed for normal body maintenance and activity. They are provided by cereals such as wheat, barley, maize, oats and sorghum.
- **Fats** are also sources of energy, and are needed for body maintenance and storage. They are very high in energy; therefore, added fats are usually used only in high-energy broiler (meat chicken) feeds.
- **Vitamins** are needed only in very small amounts, but are essential to chemical processes taking place in the body. Examples are vitamin A (required for normal growth) and vitamin D (needed to prevent rickets).
- **Minerals** are also only needed in small amounts. Examples are calcium and phosphorus, in the form of limestone or bone flour, which are needed for eggshell formation.
- **Water** is an essential nutrient needed for all chemical processes in the body, and must always be available.

Buying and mixing feed

It is usual to have feed available to poultry at all times, in the form of a mash or pellets. Commercial feed for layers is available from produce stores and

most supermarkets. Buying these feeds is convenient and saves time, as they are complete, 'balanced' rations. For people who prefer to mix feed at home, a [list of suitable rations](#) is given in the next section of this Primefact.

Mixing procedure

1. The cereals should be weighed out first, and should be coarsely ground.
2. The protein supplements, such as meatmeal and lucerne meal, should then be mixed in, followed by the vitamin and mineral premix. The premix can be bought from produce merchants or directly from chemical suppliers.
3. The mixing can be done in special mixing machines or concrete mixers, or by turning the ingredients over a few times with a shovel on the floor. The mix should always be turned inwards, to ensure proper mixing.

Notes

- Feed must be given when it is fresh, so that it does not become stale and the vitamins do not deteriorate. Mix feed at least once a month. Always buy fresh feed and premixes, and do not allow them to stand for long periods.
- Store vitamins and mineral premixes in a cool, dry, dark place (e.g. under the house).
- If you wish to feed a wet mash, put out only enough for a day's needs, otherwise it will become rancid. A day's feed for a single hen is about 120 g.
- Feed first thing in the morning.
- Allow 100 mm of feed trough space for each bird, and place the water troughs or drinkers close to the feed.
- If available, greenfeed can be fed daily. This helps to maintain a good yolk colour.
- Hard grit, such as fine blue metal chips, should be made available, to promote digestion. Shell grit should be available in a separate container at all times if limestone is not included in the rations.



- Household scraps can be fed or mixed with cereals as a wet mash. It is important that the scraps have a high content of meat or are high in protein, and that they do not contain much salt.

Rations for starter, grower and layer birds

The table below lists rations for feeding to layers. It takes account of the three main growing phases – starter (0–6 weeks of age), grower (6–18 weeks) and layer (18 weeks and onwards). The following protein levels are recommended for the rations given in the table, whether you mix them yourself or purchase them as complete rations:

- starter – minimum 20% protein
- grower – 15–16% protein
- layer – 16–17.6% protein

Table 1. Rations for starter, grower and layer birds

Ingredient	Starter (0–6 weeks)	Grower (6–18 weeks)	Layer (18+ weeks)
Wheat – ground	65 kg	40.00 kg	54.8 kg
Barley or oats	5 kg	15.00 kg	10.0 kg
Maize or sorghum	5 kg	15.00 kg	10.0 kg
Meatmeal (50% protein)	10 kg	7.00 kg	10.0 kg
Sunflower meal (38% protein)	8 kg	7.00 kg	7.0 kg
Soybean meal	6 kg	–	–
Bran or pollard	–	15.25 kg	–
Shell grit	–	–	ad lib
Limestone (flour or chips)	–	–	7.0 kg
Salt (fine)	250 g	250 g	500 g
Vitamin premix	500 g	500 g	500 g
Methionine	125 g	–	75 g
Lysine	125 g	–	125 g
Total weight	100 kg	100 kg	100 kg
Crude protein	20%	16%	17%

Free-choice feeding

The free-choice system of poultry feeding lets laying hens balance their own diet from whole grains and a protein or grain-balancer concentrate, which are offered in two separate feeders. The hens take what they need from the different feeders, and can balance their own diets quite well. The system also enables small flock owners to achieve high egg production while using home-produced cereal grains. It can be a cheap and convenient way of feeding poultry.

Laying hens need a diet which provides enough energy, protein, minerals and vitamins to lay to their full genetic potential. The free-choice system is designed to give the hens a choice of feeds, to enable them to satisfy their dietary needs. The grains may be wheat or barley, or a mixture of both. Oats can be included, but should not exceed 25% of the grain mixture, because they are more fibrous and have a lower feeding value.

The grains supply the energy, and the grain-balancer concentrate provides the protein, minerals and vitamins. The concentrate can be bought from a stockfeed manufacturer, or can be mixed on the farm. A suitable formula for farm-mixed concentrate can be found in Table 2.

Table 2. Formula for farm-mixed concentrate

Ingredient	Percentage
Meatmeal	60.0
Lucerne meal	14.5
Ground limestone or shell grit	25.0
Vitamin premix	0.5
Total	100.0

A vitamin-mineral supplement should also be added to the protein concentrate, at three to four times the amount recommended in the manufacturer's instructions for addition to a dry-mash ration. Vitamin-mineral supplements can be bought from produce merchants and from poultry equipment and supplies companies. Take particular care with the vitamin-mineral supplement when mixing the ingredients. It is a good idea to mix the supplement with a kilogram or so of pollard or mill mix before mixing it into the concentrate.

Water

Laying hens need a good supply of clean, fresh water. A minimum drinking space of 100 mm is recommended for each hen. Extra drinking space should be provided during hot weather.

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