

CHICKENS: housing, feeding, breeding.

Dr Cameron McPhee, (2002). ADRA Mongolia. (English Version)

HOUSING LAYING CHICKENS

We can build a chicken house in many different ways. Many existing buildings can easily be used for chickens but a chicken house has to provide certain basic needs. A good house protects the birds from the weather, wild birds and animals, injury and theft and makes them comfortable so they are happy to lay eggs.

Chickens need comfort

Think carefully when designing a chicken house for Mongolia where winters are very cold. Perhaps two houses are necessary, one for summer and one for winter.

Give the chickens a house which is warm and well ventilated without draught and which has a dry, well-drained floor.

The best place for a chicken house is at the top of a slope facing south with the outside run below it. This allows the sun to warm and dry the house and soil.

Carefully choose the building materials for the house. These should be local, cheap and have good insulating properties. Suitable materials are wood, earth, felt and straw. One way is to dig the house into the ground at the top of a south-facing slope.

Chickens do best in the temperature range from 10 to 30 degrees. This poses problems for Mongolian chickens in winter. In winter, birds could be transferred to housing similar in construction to an earth root-cellar but some heating, light and ventilation would be needed. A separate fire or ashes taken from the kitchen fire could be used to heat the house during periods of extreme cold so long as the birds have enough fresh air to breathe. You could share the warm air of your own ger or house with the chickens by connecting the two houses together. Consider housing the chickens of several families together over winter.

Chickens need protection

Keep chickens in an area which is fenced and covered with mesh. This gives them protection from their enemies such as wild birds, dogs and wolves. A 1 metre grid made from thick string overhead will give good protection from wild birds. A ground cover of tall leafy vegetation (e.g. quinoa) will also give shelter for the birds to hide under. To protect the birds from theft, lock them in their house at night and whenever you are not at home. A dog kept near the poultry house can keep predators and unwanted visitors away

Open windows and doors inwards and securely cover them with wire netting when opened. When building the house remove any loose wire, nails, or other sharp objects to prevent injury to the birds. With outside runs, the netting should be buried at least 30 cm deep along the bottom since animals always dig there. If outside runs are not safe, lock the chickens in their house at night.

Chickens need to eat, drink, sleep and lay eggs

Give the chickens plenty of space for movement and exercise as well as areas to nest and perch. They also need somewhere to eat and drink.

A house about 1 metre square gives plenty of space for a flock of 5 or 6 hens provided the birds can run outside during the day.

Chickens like to sit on a perch at night but do not like to be too close to each other when they are asleep. A perch needs to be about 5 cm square with corners rounded to give the birds a comfortable grip. Perches should be about 30 cm apart and 30 to 60 cm above ground level. Between 1 and 2 metres of perch space would be adequate for a small flock of 5 or 6 hens. Other than perches, there should be no areas where the birds could sit such as window sills and nest box tops.

Chickens like to lay their eggs in a clean and comfortable nest away from other birds. Provide one or two nests for every 5 or 6 birds. Nests should be about 20 to 30cm high, deep and wide and be 30 to 60 cm above the floor. Dry, clean nesting material such as wood shavings will keep eggs clean. Build a perch close to the front of the nest. This will help the birds climb into it.

Give each bird about 8 cm of space at the feeding trough. To prevent feed being wasted, the lip of the feeder should be level with the height of the birds' back and the trough should be kept less than half full. Make feeders and waterers from cheap materials such as wood and old tyres.

Provide at least 0.5 litres of water per bird (2.5 litres for 5 birds). The container should always contain fresh water.

Chickens need light to feed and lay eggs

To get maximum light, place windows on the south side of the house. This will also give fresh air in summer and warmth in winter. To continue laying throughout the winter, give birds 14 hours of light each day. An electric bulb (40 watts) could be switched on for a few hours in the evening to add both heat and light. Most small chicken houses do very well with one light above the feeding and watering area.

Chickens prefer a healthy environment

Supply the chickens with plenty of fresh air but no draught. Fresh air brings in oxygen. As the stale air moves out of the house, excess moisture, ammonia and carbon dioxide are removed. Dampness and ammonia build-up are signs that there is not enough ventilation. Wood shavings or sawdust on the floor of the house will help to absorb moisture. Remove and replace these with clean shavings each week.

For small houses, windows or vents on one side of the house usually provide plenty of ventilation. Well-ventilated houses must also have plenty of

insulation. Insulate and ventilate the house properly so that moisture will not collect on the walls and ceiling in cool weather. Chickens can handle cold very well if they are dry but cool and humid conditions can create many health problems. Put openings such as windows and doors on the side away from prevailing winds. The south side is usually best.

Design the house for the chicken

Figure 1 gives a design of a small poultry house for 5 or 6 laying hens. This design is strong, easy, and cheap to build. It gives the birds a safe, secure environment and can be easily moved to allow the birds to feed on different patches of ground. The house is best for summer conditions but could be used in winter as well if it was protected from the cold.

FEEDING

Chickens have similar digestive systems to us so they like the same food. They need certain nutrients to keep healthy, grow and lay eggs. These nutrients are protein, carbohydrates, vitamins, minerals and water.

Chickens need certain nutrients: **Protein** is needed to grow and to produce eggs and feathers. Chickens can get their protein from plant seeds such as beans, peas, sunflowers and quinoa, from wheat bran, or from animals such as meat or fish. Grasshoppers and dried animal blood are also good proteins for chickens.

Carbohydrates are used to keep the chicken warm and active. They are also needed to produce eggs. The chicken usually gets its carbohydrate supply from grains such as wheat, barley, oats and other seeds such as quinoa. Grain which is not suitable for humans because it is broken is a good, cheap carbohydrate source for chickens. This grain can often be bought cheaply from a flour mill.

Vitamins and **Minerals** are needed only in very small amounts but they are necessary to keep birds healthy. Vitamin A is for normal growth, and vitamin D for strong bones. The best way to give birds the vitamins they need is to give them fresh plant material from the vegetable garden. Minerals such as calcium and phosphorus are needed to make strong egg shells. Give these to birds in the form of limestone or ground up animal bones. When using animal bones, make sure they are clean.

Water Give chickens clean water at all times because they like to drink water often.

Chickens do best on a mixture of different foods

When mixing feed, weigh out the grains first and grind them coarsely. Wheat soaked in hot water does not need to be ground. Then mix in the protein, followed by the crushed bone. A suitable mix would be 70 parts of grain, such as wheat, 10 to 20 parts of protein, 10 parts of crushed bone. If quinoa is used, the protein can be left out of the mix. When mixing, turn the ingredients over a few times with a shovel on the floor. Always turn the mix inwards inwards to ensure proper mixing. Mix feed at least once a month. Always store feed in a cool dry place safe from vermin such as rats. Only give fresh food to chickens.

Chickens kept in a house need careful feeding

Each bird should eat 50 to 70 grams per day of this feed. Give birds plenty of space at the trough for feeding and place the water bowl close to the feed. Throw wet food away as this will go stale. Stale feed often has a bad smell, particularly if it is wet, and will make birds sick. Feed fresh green plant material each day if available. This helps to make good quality eggs.

Make a supply of coarse gravel or glass chips available so that chickens can digest their food. Crushed bone flour, in a separate container, should be fed at all times. When feeding household scraps, ensure they have a high content of meat or are high in protein, and that they do not contain much salt.

The above mixed diet is necessary for chickens which are confined to a coop and do not forage areas where plants are growing.

Foraging chickens need less food

Feed all chickens their grain ration every day of the year. This includes those chickens allowed to forage in vegetable gardens or pasture for part of their lives. The most important time of the year for feeding is in the spring when birds are recovering from winter and starting to lay eggs. At this time of year they cannot find their protein needs by foraging so give them a complete mixed ration which includes grain, protein and a source of calcium and phosphorus such as ground bones.

In early summer let the birds out to forage each day but lock them in their house at night. If they are allowed to feed over a wide, well vegetated area, their grain ration fed at night should be sufficient. They should be able to get their protein from grass seeds, insects, worms etc. Let the birds forage in the vegetable garden after harvest. This will feed the birds and cultivate and fertilize the garden at the same time. Chickens should be able to forage a Quinoa crop in June since it will be tall enough to be safe from damage from birds.

From July to September chickens on pasture should be able to add grasshoppers to their diet and gain body condition to help them survive the winter.

BREEDING

Choosing the breed

Modern white breeds of poultry lay many eggs but are not good at producing chicks. The ability to be a good mother has been bred out of them. The local coloured Mongolian hen does not lay as many eggs as the white breed but is a good mother. The local breed can also survive in colder conditions and on less food than the white breed.

Mating the hens

Chickens breed best in summer in the second year of their lives. Give both male and female birds a good diet before and during mating. Adequate protein and green plant material in the diet is most important (see 'Feeding Laying Chickens'). Do not mix too

many males with the females as they will disturb the females too much and waste too much food. One male with 10 to 15 females is adequate for mating.

Sitting on the eggs

The hen will sit on and hatch the eggs of any hen laid in the same nest. If eggs are not removed from the nest each day, one of the hens will choose to remain in the nest and sit on the eggs. She can sit on up to 15 eggs in this way. Once a hen is sitting it is best to separate her from other hens. Place her with her eggs in a nest in a separate cage or pen but make sure she has food and water at all times.

Hatching the chicks

Chicks will begin to hatch from 3 to 4 weeks after the hen begins to sit on her eggs. Do not help them to hatch from their shells. It is important that they arrive into a clean, warm and comfortable environment. It is also important that they be protected from other animals and birds such dogs and hawks.

Rearing the chicks

Give chicks high quality food as soon as they hatch. The food should be finely ground and higher in protein than food fed to adult birds (see 'Feeding Laying Chickens'). They should also be allowed to pick up food from fresh ground. A vegetable garden is a good place for chicks to feed. They will not damage mature plants but they must be protected from other animals and birds as they feed. Give them clean, fresh water at all times.

Growing birds

As the chicks grow, remove almost all the males, keeping the best 10% for mating in the future. Males look different from females from about two months of age. Change the diet to that described under "Feeding laying hens" as the hens reach their egg laying age of 5 to 6 months.