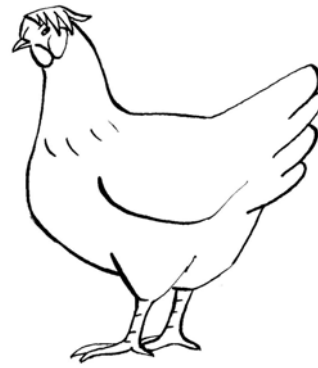




*Fig. 6.1 A healthy and strong cock*



*Fig. 6.2 A healthy egg-layer*

### **Introduction**

Selection of healthy animals in the villages or markets is important if you want to assure a healthy flock and high productivity.

You should therefore know how to judge the quality of both sexes of different breeds at various ages, based primarily on their looks, sound, and behaviour. Judging a day-old chick, a full-grown cock, or a laying hen, naturally demands different skills. The features to look for become even more complicated when dealing with different breeds with distinct looks, behaviour, and purposes, i.e. egg laying or meat producing. In the following, we will introduce simple guidelines on how to select a sound animal at different ages, and introduce what to consider in terms of breed selection.

### **Animal Selection**

It is important to look for different features in chicks, growers, hens, and cocks. Select or buy your new animals early in the day, as stress from lack of water, feed, and rest, will make most animals look rather sick and drowsy. Stress caused by lack of water and feed, can lower the bird's resistance to diseases and it may even die.



*Fig. 6.3 A soft belly and a clean, dry navel are important features of a healthy, newly hatched chick*

A healthy, newly hatched chick should have the following features (Fig. 6.3):

- Well developed body length and depth;
- Shiny, dry, thick, and coloured down feathers;
- Soft belly;
- Clean, dry navel;
- Thick shanks with spaced and straight toes;
- Big, clear eyes;
- Lively behaviour.

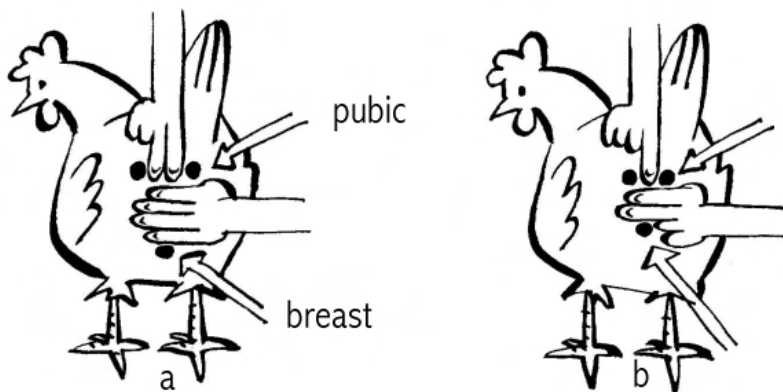
A healthy and good grower should have the following features:

- Appear healthy and lively;
- Feathering shiny and normal for the breed;
- Large size for the age;
- Eyes clear and shiny;
- Clean and dry beak and nostrils;
- Clean feathers around the vent;
- Straight legs and toes.

A healthy and good egg-layer should have the following features (Fig. 6.2):

- Should appear healthy and lively;
- Feathering normal for the breed;
- A red comb (brighter coloured when in lay);
- Eyes clear and shiny;
- Clean and dry beak and nostrils;
- Clean feathers around the vent;
- Straight legs and toes, with no signs of scaly legs;
- Legs less coloured in lay;

- The breast bone should not be sharp;
- A big broad bottom (laying status can be checked, see fig. 6.4).



*Fig. 6.4 Hen in lay (a) and outside lay (b)*

In small flocks, it is relatively easy to check whether the hens are laying or not (Fig. 6.4). Check with your hand. The distance between the pubic bones (top) will be equivalent to two fingers when the hen is in lay. Only one finger may pass between the pubic bones when the hen is outside lay. The distance between the pubic bones (top) and the breast bone (bottom) will be equivalent to three to four fingers when the hen is in lay. Only two fingers may pass when the hen is outside lay.

A healthy and good cock should have the following features (Fig. 6.1):

- Alert and protective nature;
- Shiny and normal plumage for the breed;
- Clear and shiny eyes;
- Clean and dry beak and nostrils;
- Clean feathers around the vent;
- Straight legs and toes with no signs of scaly legs;
- Large size relative to the hens.

It may be an advantage to keep records on the growth and productivity of each bird in order to select birds according to features such as egg production, growth (meat production), and broody behaviour. Keeping records may help you select the best layers or the best mother to protect the chicks. See chapter 5 for examples on record keeping.

If new birds are bought on the market, it is important to isolate them in separate houses or baskets for the first two weeks. This will enable you to discover possible diseases or disorders in the new birds. If they show signs of any kind of illness, you

should return them to the seller or slaughter them. When you buy the birds, ask whether they have been vaccinated, and if so, against which diseases.

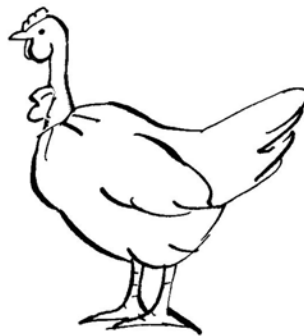
### Breed selection

When you have succeeded in improving your productivity and survival of local free-range poultry through improved management, housing, feeding, chick protection etc., you may want to further increase productivity by introducing better breeds.

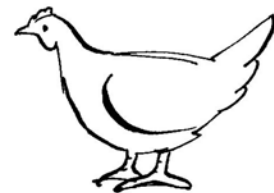
A breed is a group of poultry with a characteristic body form and feather contours. These unique characteristics are inherited from one generation to the next. Also features such as the comb, colour of ear lobes, and shank colours and length are usually determined by breed. In every breed, different varieties can occur, usually determined by plumage colour. Thus a white and a black hen may just be different varieties of the same breed. Figures 6.5–6.7 show three different breeds commonly found in tropical regions, i.e. Frizzled Feathers, Naked-Neck, and the Dwarf. Naked-Neck genes are found in almost every village and are believed to be a natural adaptation to avoid heat stress. Frizzled Feathers may look ill at a first glance, but is also a common breed in most village-based systems. In some countries, Frizzled Feathers are higher priced in the markets than normally feathered poultry. Dwarf poultry show standard colours and plumage, but tend to be 2/3 of the normal size for poultry, mostly because of the short shanks.



*Fig. 6.5 Frizzled Feathers*



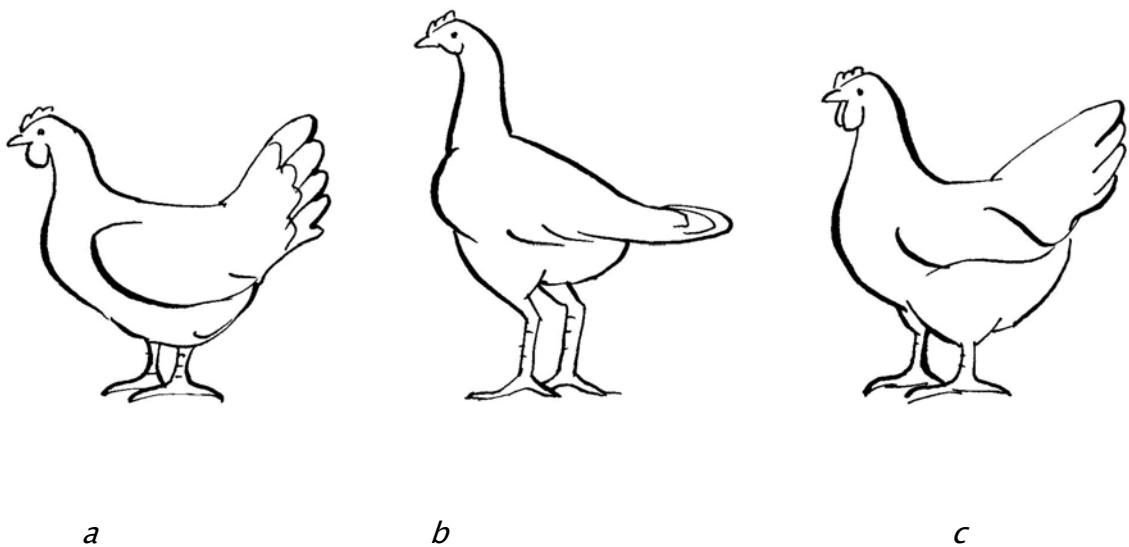
*Fig. 6.6 Naked-Neck*



*Fig. 6.7 Dwarf breed*

Chickens and ducks in industrialised systems are usually kept for two distinct purposes, that is, either egg or meat production. High productivity in either egg or meat production is a result of specialised breeding programmes. The so-called dual-purpose breeds are also results of breeding programmes and may produce more eggs as well as more meat than traditional birds. It is important to select birds that are suited for the kind of production you have in mind, and that are fit for the conditions under which they are kept, e.g. free-range or confinement. You must also check out whether they are able to adapt to hot climates.

The features of birds specialised in egg production, meat production, or both (dual-purpose) are shown in figures 6.8 a, b, and c. Laying hens are “boat-shaped” with a long straight back and a big bottom. Meat producers (broilers) are long-legged, have an upright position and wings placed in high position on the body. Dual-purpose breeds have body forms in-between layers and broilers. Local breeds often have the form of a dual-purpose breed, though much less heavy in body form and size.



*Figures 6.8 a, b, and c Typical breeds producing eggs a) (layers 1.5–2.0 kg) b), meat (broilers 3.5 kg and both c) 3.0 kg*

The commercial sector has developed highly specialised hybrids (crosses of several breeds), of which layers can produce 300 eggs per year and broilers can reach 2 kg in 6–7 weeks. To obtain this high production, the hybrids have very specific requirements to management, feeding, and disease management, and production costs are high. They are therefore not normally suited for free-range and improved free-range systems.

### **Cross-breeding**

To increase production from local chickens, crossbreeding with other breeds can be practised. It is, however, important to consult professional breeders or breeding companies, who may recommend suitable and available breeds to increase egg production, growth, or both. It is important to be aware that the offspring will obtain different qualities depending on whether the cock or the hen of the new

breed is used. This is because some qualities are, linked to the sex of the chicken, and thus it is important to consult a breeder.

In Bangladesh, the female of an Egyptian breed, Fayoumi, and the male of an American breed, Rhode Island Red (RIR), were crossed to produce a crossbred layer suitable for a semi-scavenging life under village conditions. The result was a laying capacity of up to 160 eggs/hen/year and a growth rate under semi-scavenging conditions of 10 g/day. Furthermore, the brown-golden feathers were highly praised by the farmers, who named the breed "Sonali" (meaning "Golden" in Bangla). The cross of male Fayoumi and the female RIR did not give the same satisfactory results.

It is also important to stress that if a cross-breed is introduced at village level, it is crucial that management, feeding, and health protection schemes are improved and secured at all times.

#### **Cockerel exchange programs**

In many countries, a common attempt to increase production from local chickens has been to establish so-called cockerel exchange schemes. The idea was to improve the productivity of local birds by mating them with improved cocks. For several reasons, these schemes usually failed to work. First of all the introduced breeds could not adapt to the hot climate, low feeding, and extensive management, and thus many of them died. Furthermore, the improved cocks were not as lively and active under village conditions as the local cocks and therefore lost in the mating competition for the hens. When reproduction succeeded, the first generation of these cocks often showed a slight increase in production, but as no strict breeding schemes were maintained, the effect was gone after a few generations. Other important potential disadvantages were loss of broodiness, reduced scavenging capacity, and reduced survival. Diseases such as Newcastle Disease and Leucosis were introduced to new areas, and the result was high mortality among local birds. For all these reasons, it is very important that selection of breeding birds take place in the existing environment. Simple cockerel exchange programmes as such are not recommended.

#### Ten simple rules for animal and breed selection

1. Practice judging the external features of cocks, hens, growers, and chicks, to know which features indicate a good healthy animal.
2. Always choose birds with a lively behaviour.
3. Always check whether the hens are in lay (Fig. 6.4).
4. A potentially good layer has a long straight back and a broad bottom.
5. Always check the belly and navel spot of newly hatched chicks (Fig. 6.3).
6. Keep new birds isolated for a few weeks before introducing them into the flock.
7. Make sure that new birds are vaccinated and free of parasites before being introduced into the flock.
8. The results of crossbreeding should always be monitored carefully.
9. Uncontrolled use of exotic cocks in free-range village production should be avoided.
10. If you use crossbred or exotic breeds, be sure that housing, feeding, and health management are improved and available at all times.