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keeping chickens



BETTER FARMING SERIES

Twenty-six titles have been published in this series, designed as handbooks for a two-year intermediate level agricultural education and training course. They may be purchased as a set or as individual documents.

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1. The plant: the living plant; the root
2. The plant: the stem; the buds; the leaves
3. The plant: the flower
4. The soil: how the soil is made up
5. The soil: how to conserve the soil
6. The soil: how to improve the soil
7. Crop farming
8. Animal husbandry: feeding and care of animals
9. Animal husbandry: animal diseases; how animals reproduce

SECOND YEAR

10. The farm business survey
11. Cattle breeding
12. Sheep and goat breeding
13. Keeping chickens
14. Farming with animal power
15. Cereals
16. Roots and tubers
17. Groundnuts
18. Bananas
19. Market gardening
20. Upland rice
21. Wet paddy or swamp rice
22. Cocoa
23. Coffee
24. The oil palm
25. The rubber tree
26. The modern farm business

keeping chickens

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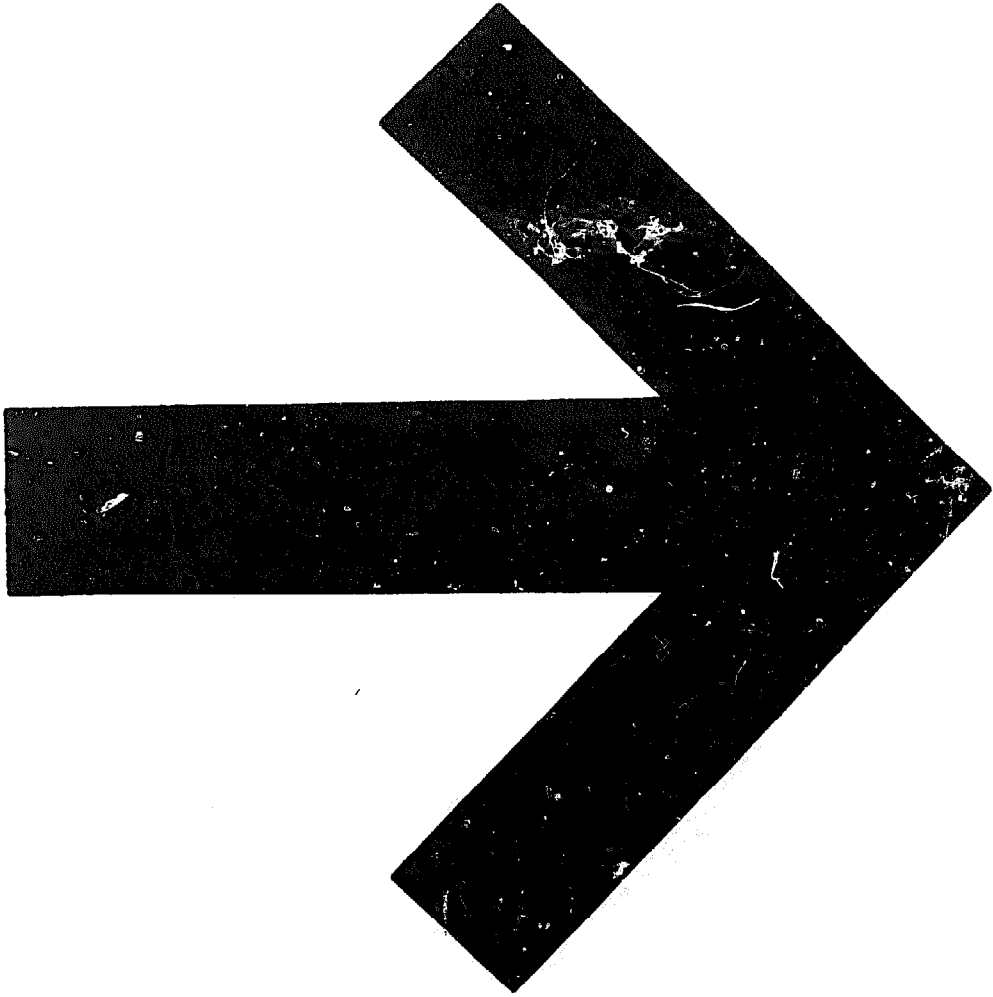
PREFACE

This manual is a translation and adaptation of "L'élevage familial des poules," published by the Agri-Service-Afrique of the Institut africain pour le développement économique et social (INADES), and forms part of a series of 26 booklets. Grateful acknowledgement is made to the publishers for making available this text, which it is hoped will find widespread use at the intermediate level of agricultural education and training in English-speaking countries.

It should be noted that the original texts were prepared for an African environment and this is naturally reflected in the English version. However, it is expected that many of the manuals of the series — a list of which will be found on the inside front cover — will also be of value for training in many other parts of the world. Adaptations can be made to the text where necessary owing to different climatic and ecological conditions.

Applications for permission to issue this manual in other languages are welcomed. Such applications should be addressed to: Director, Publications Division, Food and Agriculture Organization of the United Nations, Via delle Terme di Caracalla, 00100 Rome, Italy.

The cover illustrations were prepared by Asun Balzola.



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SMALL LIVESTOCK FARMING IN THE VILLAGES

- 1. Small livestock farming is common in villages all over the world. Everywhere you see around the houses numbers of sheep, ducks, pigs, and above all chickens.**

- 2. The villagers raise all these animals in order to have meat on feast days — for the arrival and departure of visitors, for sacrifices, marriages, births and funerals. And certain families have even got into the habit of eating meat fairly often and, for instance, giving eggs to their children.**

- 3. Very often, too, villagers sell animals when they need money:**
 - to pay taxes,**
 - to pay the expenses of children going to school,**
 - to buy medicines, salt, cement, sheet iron, tobacco, paraffin.**

Small livestock farming is a way to build up reserves of food and money.

LITTLE WORK BUT YIELDS LITTLE

LITTLE WORK

4. Not much trouble is taken about **feeding** these animals. The animals find their food by scavenging among the houses of the village. They get what is left over from the harvest and from people's food.

5. Not much trouble is taken about **watering** these animals. Very often they do not get enough to drink, or they get dirty water that gives them diseases.

6. Not much trouble is taken about **housing** these animals. They are not put in an enclosure or under a shelter to protect them against wind and rain, and to guard them against thieves. Animals that are not kept in an enclosure go into the houses and into the fields and damage everything.

BUT YIELDS LITTLE

7. **Many animals are small**

Animals that are not of a good breed and are poorly fed do not grow well.
They do not yield much meat.
You cannot sell them at a good price.

8. Many animals are sick

Animals that run about everywhere catch diseases. When a hen has a contagious disease all the hens in the village get it.

A sick animal does not grow well, and it often dies.

9. Many animals die very young

Diseases, predators, and lack of care and food kill many chicks.

- 10.** Very often out of 15 chicks that are hatched there remains at the end of a year only one sound chicker. The others — 14 out of 15 — are either dead or sick or too small.

11. They yield little meat for the villagers ...

Very often the animals, even those more than two years old, remain small and yield very little meat. So that on feast days and at funerals, for instance, a lot of animals have to be killed to get enough meat.

12. ... or for the country

The country has to buy abroad good meat to feed the people in the towns.

So it loses a lot of money.

The money used to buy meat abroad cannot be used to make roads, build schools, or pay for nurses and medicines.

Enough good meat must be produced so that the country does not have to buy it abroad.

13. They yield little money

The hens and chickens are too small to be sold at a good price.

All the chickens that are dead or sick have been fed for nothing.

All the remains of food or of the harvest eaten by these animals have brought the farmer nothing.

The farmer has spent very little, but he has not earned all the money that he might get with his livestock.

CHICKEN FARMING MUST BE IMPROVED

14. Hens can be much better fed and much better looked after without the farmer spending much money.

15. As it is, in many villages you see hens of a good breed, that are well-fleshed, resist diseases well, yield a lot of meat and many big eggs.

16. Near the towns, there are even large poultry farms that produce eggs and chickens to be sold to the people in these towns. These are industrial farms. In this booklet we are speaking especially about **raising poultry at home.**

When raising poultry at home:

- the farmer and his family themselves look after the birds;
- the greater part of the birds' food is not bought;
- most of the meat and eggs are used by the family; only the surplus meat and eggs are sold.

THE ANIMAL HUSBANDRY SERVICES HELP

17. These services are trying to find out:

- what are the breeds that yield more, that are more resistant to heat, dampness and diseases;
- what food to give these good breeds;
- what vaccinations protect poultry from diseases.

They also sell cocks, hens and chicks of good breeds.

18. They teach farmers how to:

- house poultry;
- feed them better;
- protect poultry from diseases;
- organize livestock farming.

The work of the animal husbandry centres and animal husbandry services is very important.

19. Assistants of these centres and services should:

- have a good knowledge of traditional livestock farming; and observe carefully what farmers are doing, so as to advise them better;
- win the confidence of farmers so that the advice is listened to and followed;
- have a good knowledge of the modern way of livestock farming so as to produce more.

The work of the assistants is also very important.

20. A male is called a **cock**.

A mother bird is called a **hen**.
Their little ones are called **chicks**.

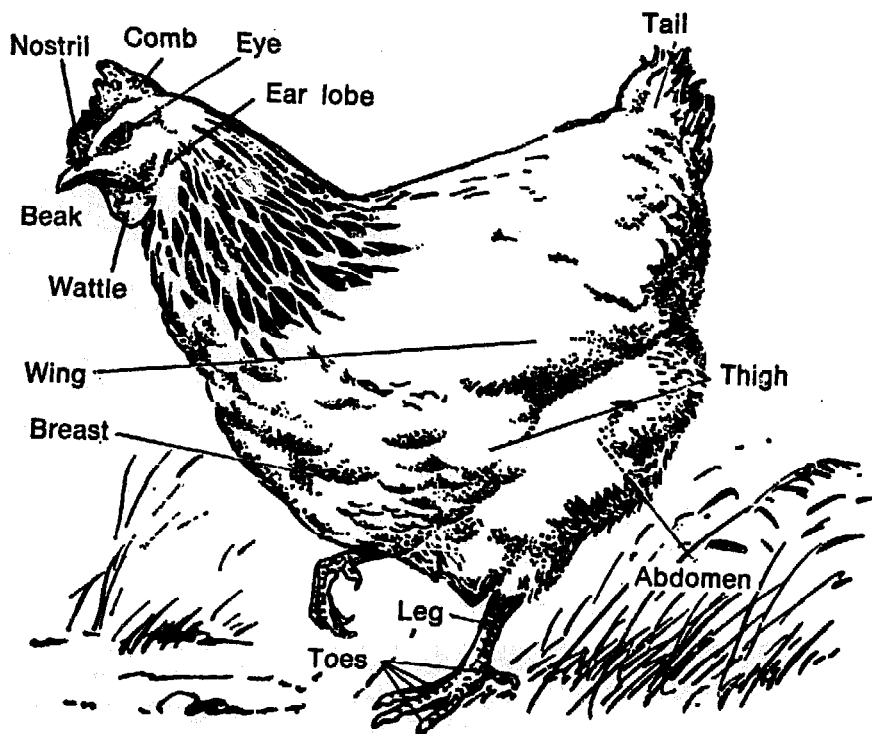
When the chicks have grown big enough to be sold,
they are called **chickens**.

All the birds in the poultry house (cocks, hens, chicks
and chickens) are called poultry.

To succeed in keeping poultry, you must:

- choose hens of a good breed;
- feed them well;
- house them well;
- protect them well against diseases.

A family poultry unit should not cost much, but it
should yield a lot



HOW TO CHOOSE POULTRY

TRADITIONAL TYPES OF POULTRY

21. They do not ask much in the way of looking after.

Often they are quite resistant to dampness, heat, and even to certain diseases: they are called hardy.

But:

22. They are small.

They do not weigh much.
They do not yield much meat.

23. They do not grow quickly.

You have to wait at least six months before you can eat or sell them.

24. They do not produce many eggs.

Their eggs are often small.
They produce only 30 to 50 small eggs a year.
So the traditional types of poultry must be improved.

TO IMPROVE POULTRY

GOOD COCKS MUST BE SELECTED

- 25.** In several areas animal husbandry centres and services are carrying out what is called cock distribution. The village cocks are taken away and replaced by cocks of good breeds.

As you know, the qualities of an animal's father and mother are passed on to their young.

The qualities of a cock of good breed and the qualities of a hen of local breed are passed on to their chicks.

Thus the chicks born of a cock of good breed and a hen of local breed are **improved poultry**.

The male chickens must be sold or eaten.

Then another cock has to be bought next year and mated again to hens of the first cross.

After that the new breed can reproduce itself without further introduction of cocks.

- 26.** Cock distribution is a quick way to get a better product for eating and selling. It costs the farmer little — the price of the male, the cost of the vaccination and some improvement in the poultry shed, better feeders and drinkers, which he can make from scrap material.

GOOD HENS MUST BE SELECTED

27. The hens of improved breeds

Those that come from foreign countries make better use of their feed than the local hens do.

They grow quickly, become fat, yield a lot of meat and produce many big eggs.

28. if a farmer decides to feed his local hens well he will not earn much money and will not get much meat.

A local hen grows fat very slowly, uses a lot of feed and uses it badly.

On the other hand, a chicken of improved breed needs only 3 to 5 kilogrammes of feed from its birth to the day when it can be sold or eaten.

29. You get more meat and you earn more money by feeding well a hen of improved breed than a local breed of hen.

30. The animal husbandry centres and services have selected the improved breeds of hen with good resistance to diseases, and well adapted to the climate.

It is best to buy these hens from the animal husbandry centres and services.

GOOD CHICKS MUST BE SELECTED

- 31. You can buy either day-old chicks, or three-month-old pullets.**

Day-old chicks

Cost less than three-month-old pullets.

But you have to know how to raise them.

You have to be able to house them well, for they are very delicate and can die easily.

Three-month-old pullets

Cost much more.

But they require less looking after.

They have been vaccinated and they are more resistant to diseases.

- 32. When you begin modern poultry keeping it is better to buy three-month-old pullets.**

They are easier to raise than the day-old chicks.

They need less looking after.

They do not die so easily.

They are vaccinated.

33. It is no use selecting cocks, hens and chicks of a modern breed —

● **unless you feed them well**

The cocks, hens and chicks bought from the animal husbandry centres have been well fed.

You must go on feeding them well.

If you do not, they will not get fat.

They will catch diseases and they may die.

In a well-run poultry farm with 100 laying birds, not more than 5 or 10 birds should die in the course of one year.

● **unless they are vaccinated**

All poultry should be vaccinated.

If the birds have not been vaccinated at the animal husbandry centre, you must vaccinate them at once.

● **unless you look after them well**

If you buy cocks and hens and then do not take good care of them, of their food, their housing and their health, you are wasting all your money.

Traditional poultry raising means little work, costs nothing, but yields little.

Modern poultry raising means work, costs a little money, but can yield a lot.

IMPROVED BREEDS

34. **At the animal husbandry centres you can get improved breeds of poultry.**

For example, here are some of the more successful crosses. In naming the crossed breeds, the breed of the male is always given first.

Rhode Island-Sussex cross

The hen is a light mahogany colour; the cock is white speckled with black.

The hen is a good layer.

In 10 months, that is about 300 days of laying, it will lay 165 to 180 eggs.

Sussex-Rhode Island cross

This cross gives birds that are white speckled with silvery black.

The hen is quite a good layer.

A three-month-old pullet will weigh from 1.5 to 1.7 kilogrammes.

Rhode Island-Wyandotte cross, also called P-60, is a bird of dark mahogany colour.

Often the hens have a flat curly comb.

The hen is a good layer.

But it dislikes damp.

The adult hen weighs between 1.7 and 2 kilogrammes.

New Hampshire-Leghorn and Rhode Island-Leghorn crosses.

These crosses often produce white birds and sometimes birds with mahogany feathers.

They produce white eggs.

There are also the Gold-Hen and Harco crosses.

Other new breeds are being introduced which carry trade names.

The animal husbandry centre can tell you which of them are suitable for your particular conditions.

HOW TO FEED POULTRY

TO FEED POULTRY WELL IS IMPORTANT AND DIFFICULT

- 35.** In modern poultry raising you must take a lot of care in feeding the birds.
You want to have birds that grow quickly and yield a lot of meat and eggs.
For that you have to work more and provide most of the feed yourself.
Often you have to buy part of this feed.

- 36. Poultry are difficult to feed. They need a lot of different types of feed.**

For instance, a hen is not like a goat, and cannot feed only on grass.

Poultry need rich feed.

For instance, to produce eggs a hen needs to get in its feed plenty of proteins and calcium.

Poultry need a certain quantity of each type of feed.

For example, if, to build your house, you have 10 kilogrammes too much cement and not enough sheet iron, you cannot use the cement instead of the iron. If, to build its body, a hen has too much protein and not enough calcium, the protein cannot replace the calcium.

It is useless.

**You must give poultry
the exact quantity of each feed that is needed.**

POULTRY NEED GOOD FEED

37. To build up their bodies

The muscles

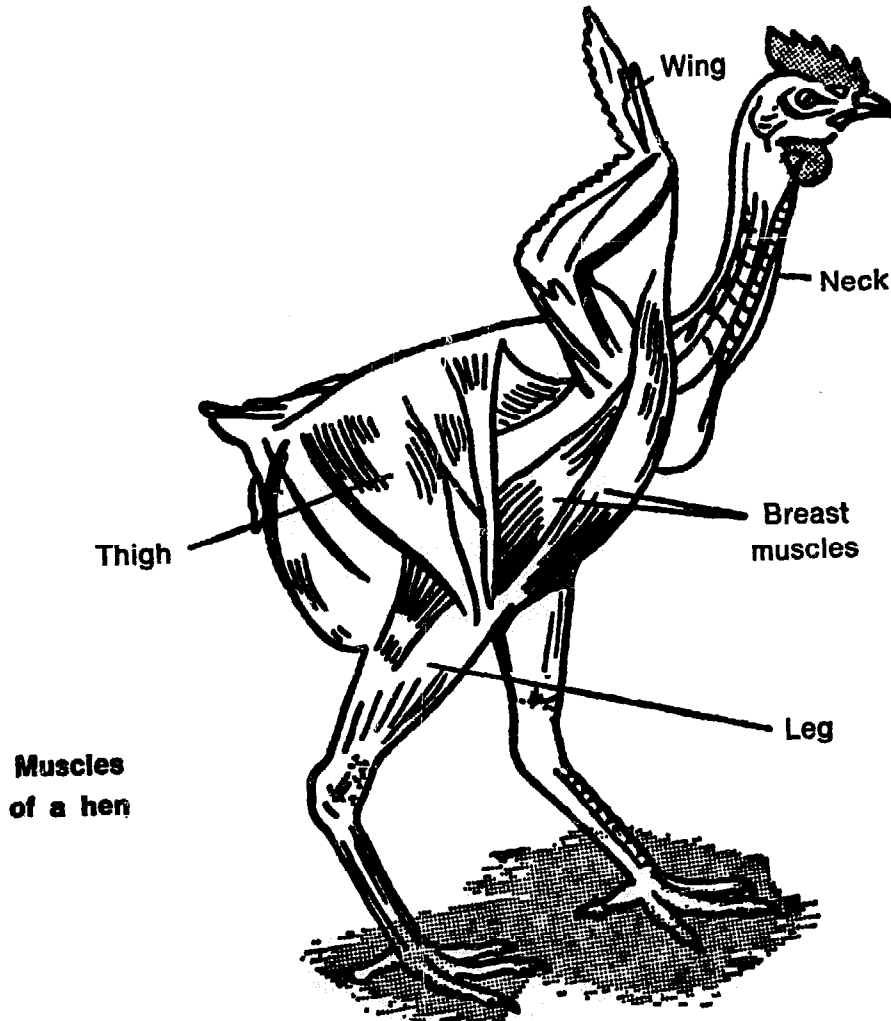
It is the muscles of poultry that yield meat. Poultry are good if they yield a lot of meat in a short time, if the meat is not hard, and is white.

The local breeds of hens that are not well fed are thin and their meat is hard.

The hens of improved breeds have well-developed breast and thigh muscles.

If poultry eat plenty of protein feeds, they develop good muscles.

The protein feeds are also part of body-building feeds.



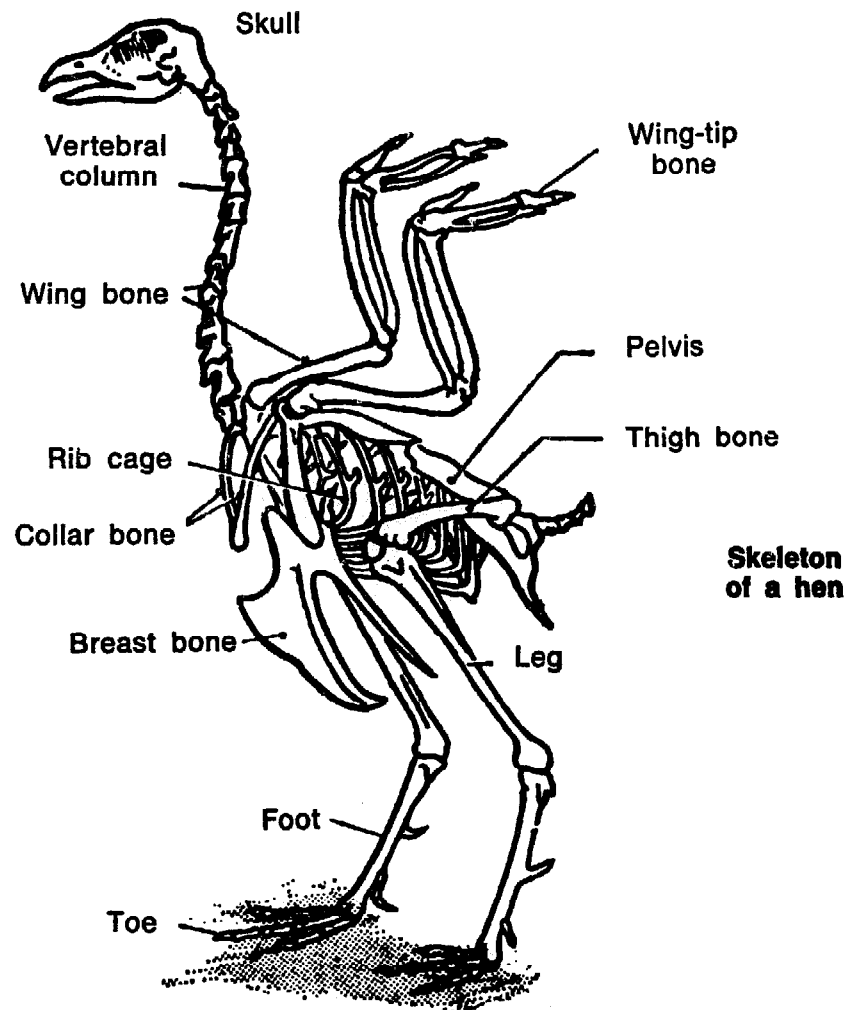
**Muscles
of a hen**

The bones

If poultry have well-formed bones, they can walk well. Poultry bones are long and thin. They are light, but hard.

In order to have strong hard bones, poultry must eat mineral salts; if they lack mineral salts their bones are badly formed.

Mineral salts are part of the body-building foods.



38. To make big eggs

A hen has only one ovary.

The ovary produces **ovules**.

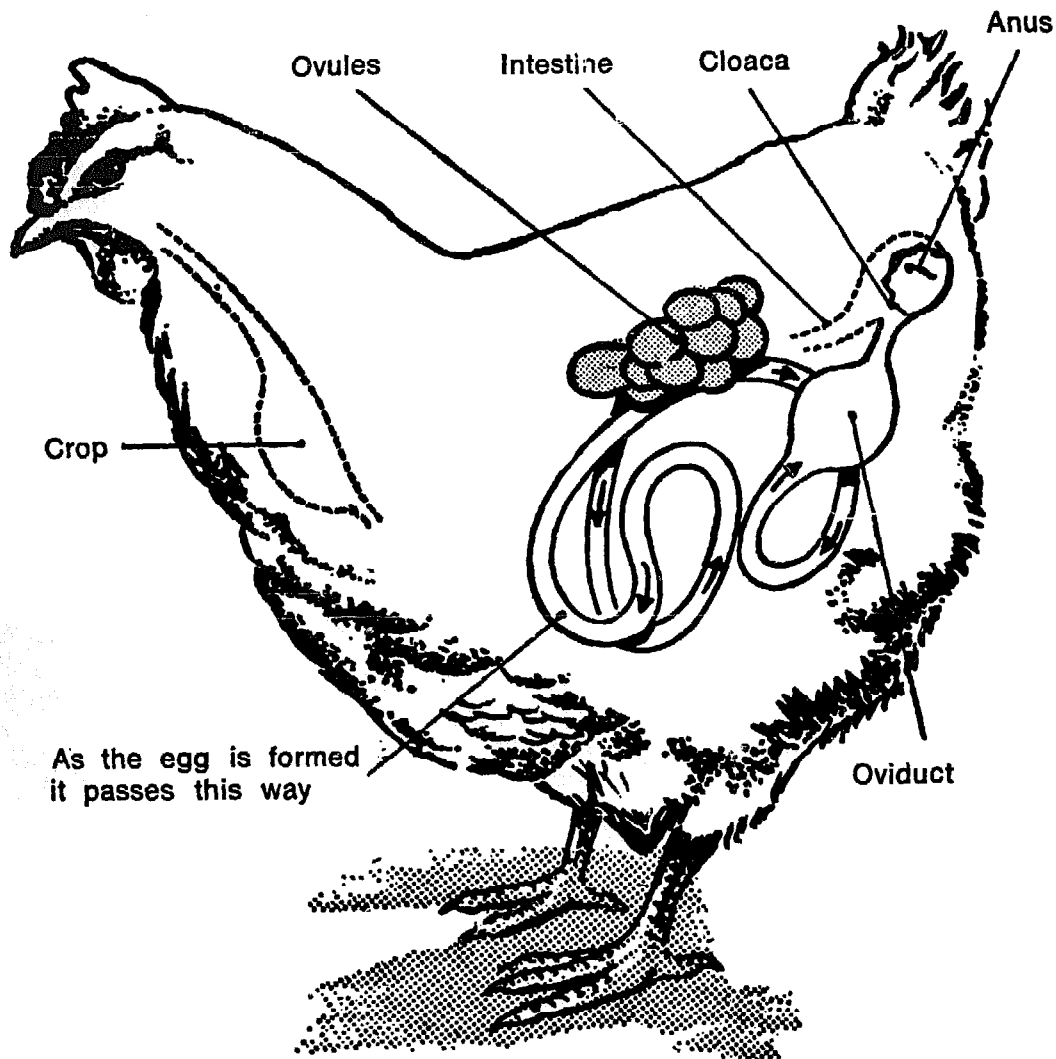
The ovule consists of a germ and reserves.

It is these reserves which make the egg yolk.

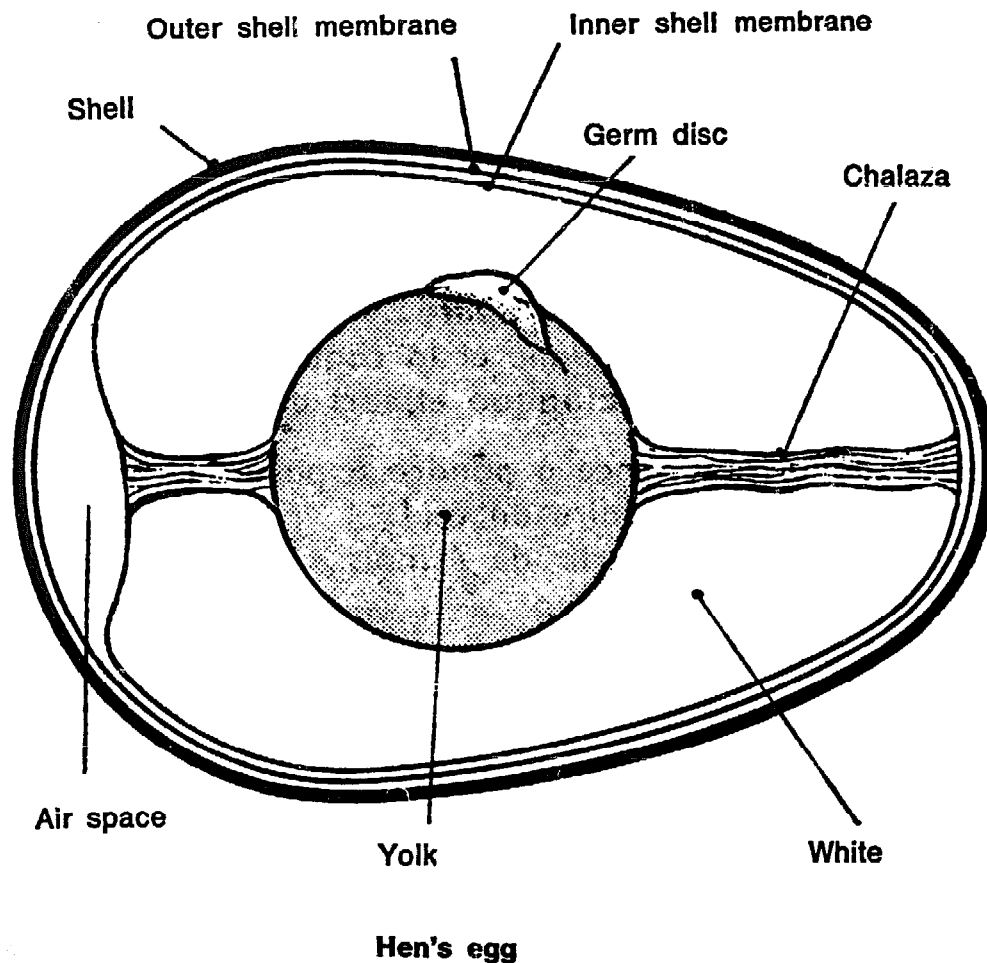
The ovule passes into the **oviduct** where the white and the shell of the egg are formed.

The egg passes into the **cloaca** and out of the hen.

39. A hen begins to lay from the age of five months, and can produce an egg nearly every day from the age of seven months.



Reproductive system of a hen



40. The egg shell is made of mineral salts, especially calcium.

The egg white contains a lot of water, protein substances and mineral salts.

The egg yolk contains a little water, a lot of protein substances, fat and vitamins.

41. To reproduce themselves and have fine chicks

If you want to have chicks the hen must be fertilized by a cock.

You will then have fertilized eggs which will produce chicks. To improve the quality of the chicks you will want to take part in a cock distribution scheme. (See paragraph 25.)

The cock makes a lot of sperm.

So it also needs to be well fed.

A cock eats more than a hen.

One cock can fertilize ten hens

On the other hand, you should not keep cocks if you do not want chicks, but only eggs.

42. To be always in good health

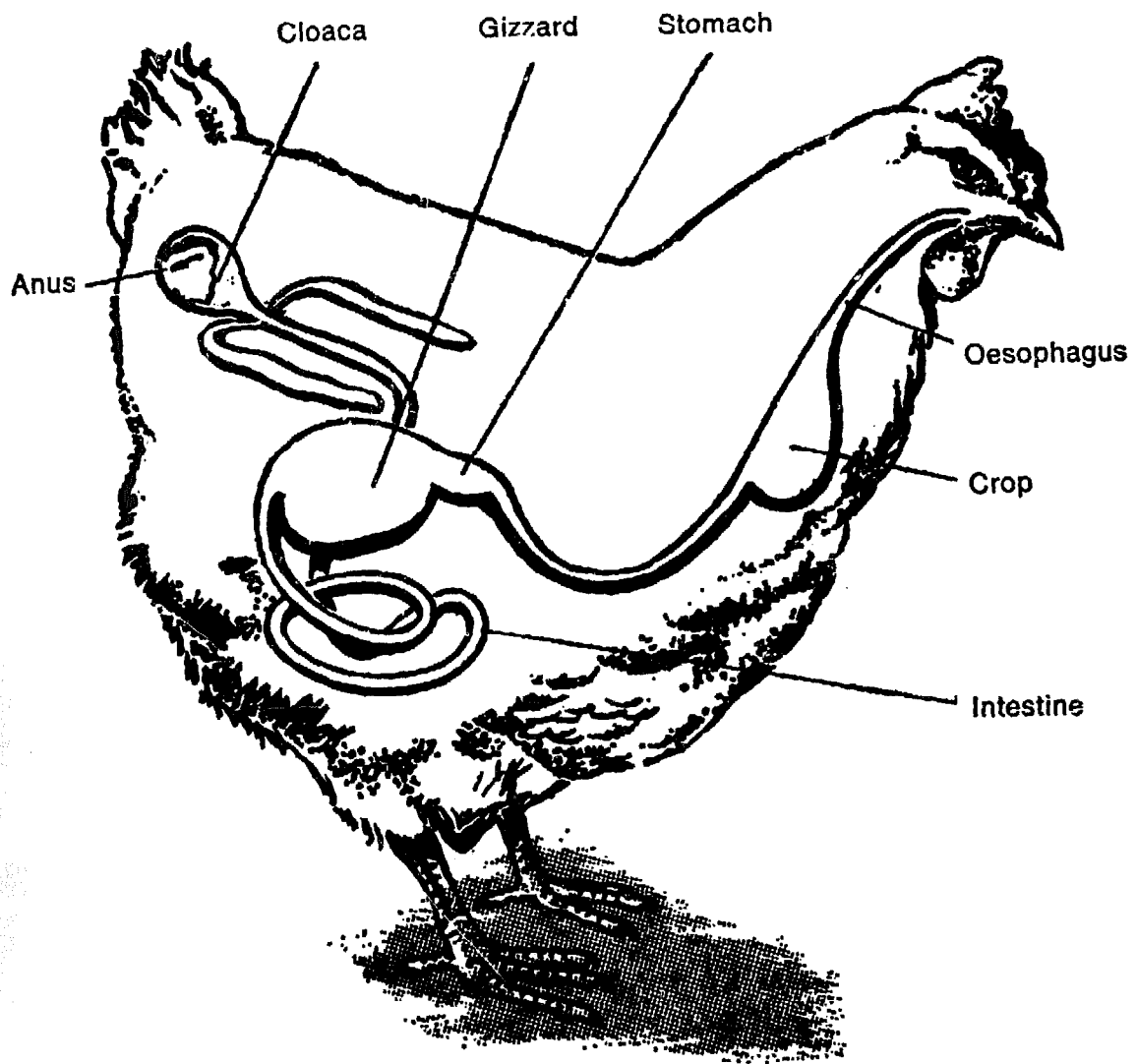
In order to grow and produce eggs, poultry need foods that we call body-building foods.

Poultry also need feeds that give strength (**energy feeds**).

They need them to live, eat, digest, walk, and to resist cold, heat, and diseases.

HOW POULTRY MAKE USE OF FOOD AND WATER

- 43.** The digestive system of poultry begins with the **beak** and ends with the **cloaca** and **anus**.
A hen has no teeth to grind its feed; it swallows down its food at once.
- 44.** The food swallowed passes into the **oesophagus** and then into three different organs:
- **the crop**
where the food is moistened,
 - **the stomach**
where the food begins to be digested,
 - **the gizzard**
where the food is ground up.
- 45.** You often see hens swallow little stones.
These stones stay in the gizzard; when the feed arrives in the gizzard, it is ground up by the stones.
- 46.** After this the feed is digested.
The digested part goes into the blood and feeds the whole body.
The remainder passes out through the cloaca; this is the **excrement**.



Digestive system of a hen

ENERGY FEEDS

47. Poultry feed must contain above all energy feeds. Often the farmer can himself produce these feeds.

The main energy feeds are:

- **Maize, sorghum, millet, rice**

You can give these in the form of grain or of meal. Poultry like maize; they can eat a lot of it without harm.

- **Cassava**

You can give it in the form of meal, or boiled. You must not give too much.

In 10 kilogrammes of feed there should not be more than 2 kilogrammes of cassava.

- **Rice bran**

In 10 kilogrammes of feed, there should not be more than 1 kilogramme of rice bran.

- **Palm-kernel oil cake**

This is both an energy feed which can replace maize, and a body-building feed which can replace groundnut oil cake.

In 10 kilogrammes of feed there should not be more than 1.5 kilogrammes of palm-kernel oil cake.

BODY-BUILDING FEEDS: PROTEINS

48. Body-building feeds are rich in proteins.
Poultry need proteins that come from animals and also proteins that come from plants.
For instance, if you give poultry 2 kilogrammes of feed containing proteins, there should be:
1.5 kilogrammes of vegetable proteins,
0.5 kilogramme of animal proteins.

49. Proteins that come from plants

Oil cake contains a lot of proteins.

Oil cake is the name for what is left when the oil has been taken from groundnuts, cotton, palm kernels, coconuts.

Groundnut oil cake

Poultry digest it well.

In 10 kilogrammes of feed, 1.5 kilogrammes can be groundnut oil cake.

Cotton oil cake

Poultry cannot digest a big amount of this.

In 10 kilogrammes of feed, not more than 0.5 kilogramme should be cotton oil cake.

Palm-kernel oil cake

This can take the place of maize and groundnut oil cake, but you should not give more than 1.5 kilogrammes of it in 10 kilogrammes of feed.

50. Proteins that come from animals

Boiled blood, meat meal, milk powder or fish meal.

You should not give poultry too much protein.

It costs a lot and, if you give too much, it may make the poultry ill.

51. Energy feeds and body-building feeds are not well used by poultry unless you give at the same time:

- mineral salts, vitamins and clean water.

MINERAL SALTS

- 52.** In 10 kilogrammes of feed, there should be 200 grammes of mineral salts.
Bones, oyster and snail shells, and egg shells are rich in mineral salts.
If you do not give mineral salts, poultry cannot grow well; their bones will be small and badly formed.

VITAMINS

- 53.** You should mix vitamins in poultry feed if the birds are kept in a yard.
Otherwise the birds get vitamins by eating grass.
Vitamins are given in very small quantities.
The farmer cannot produce them.
You have to buy them.
Vitamins can be bought in shops or from the animal husbandry centres.

CLEAN WATER

- 54.** It is very important to give poultry plenty of clean water.
Poultry do not make good use of their food if they do not drink enough water.
- One hen can drink a quarter of a litre of water a day.**
For 20 hens, you need about 5 litres of water a day.
If the weather is very hot, the birds will drink more.
Each hen will drink about half a litre of water every day.
Put the water in fairly big drinking troughs so that several hens can drink at the same time.
Put the drinking troughs in the shade, near the feeding troughs.
- Never let drinking troughs be empty.**
The water must always be clean.
If it is dirty, it must be changed.
Dirty water gives poultry a lot of diseases.
- To make good use of feed poultry must drink a lot.**

SPECIAL NEEDS OF CHICKS, LAYING HENS, AND TABLE POULTRY

- 55.** In domestic poultry keeping, the farmer produces and prepares most of the poultry feed himself. In this way he does not spend much money; he uses up what is left over from the family's food and from his harvest.

But he must take care.
He has to give all the birds their complete feed, and this means different feed to birds of different ages.

56. From birth to 8 weeks

Chicks need above all body-building foods.

You should give them water and a feed containing, for instance:

in every 10 kg of meal:

- 7 kg of crushed maize and/or other grains,
- 2 kg of groundnut oil cake,
- 1 kg of a mixture consisting of remains of meat, fish or blood, of oil or vegetables, of bones and crushed shells, of termites.

57. From 8 to 14 weeks

The feed should be more plentiful. There should be in every 10 kg of meal:

- 8 kg of crushed maize and/or other grains,
- 1.5 kg of groundnut oil cake,
- 0.5 kg of a mixture consisting of remains of meat, fish, blood, grass, termites, vegetables.

58. After 14 weeks

Give only maize grain or a mixture of maize with other grains.

Remember!

If the poultry are in a yard, you must also give them feeds that are

rich in vitamins: grass
 vegetables;

and rich in proteins: termites
 meat scraps
 fish scraps.

59. Laying hens

To make the shells of their eggs, laying hens need plenty of mineral salts.

To make the reserves in the egg, laying hens need plenty of proteins.

For instance, give in every 10 kg of feed:

8 kg of crushed grains (maize, sorghum),

1.5 kg of groundnut oil cake,

0.5 kg of a mixture consisting of meat or fish, boiled blood, grass and vegetables, and especially 300-500 grammes of crushed bones, oyster or snail shells or egg shells.

60. During the first three months of life a bird eats about 5 kilogrammes of feed.

61. The food must be well mixed.

You must not make the mixture too long before giving it to the poultry, otherwise the food may go bad.

Feeding and drinking troughs and the drinking founts must always be very clean.

62. If a farmer buys poultry feed

- **Either he buys all the feed**

That is, a meal containing all the foods that poultry need to live and grow.

He should not give any other food.

This meal is costly.

He must follow the seller's instructions and only give the necessary quantities.

- **Or he buys only part of the feed - the concentrates**

These are the kinds of meal that contain chiefly proteins, mineral salts and vitamins.

If the farmer buys concentrates, he must also give
crushed grain
oil cake.

- 63. If you buy poultry feed, you have less work to do, but you may lose a lot of money.**

Follow the advice of the animal husbandry centres.

HOW TO PROTECT POULTRY AGAINST DISEASE

PREVENTING POULTRY FROM GETTING ILL

64. Buy at the animal husbandry centres day-old chicks or three-month-old pullets

That way you get poultry of a good breed that resist heat, dampness and diseases. These birds are in good health and have usually been vaccinated.

65. Pay attention to cleanliness

The poultry house, and the feeding and drinking troughs must always be very clean. You must clean them out often.

66. Do not put too many birds together

If you put too many birds together, they may wound or even kill each other. The stronger ones peck the weaker. The grass in the run is soon eaten up by the birds, and cannot grow again. Diseases are passed more easily from one bird to another.

67. You must not put hens together with ducks, guinea fowls, turkeys.

The diseases of ducks, guinea fowls and turkeys can be given to the hens. For 50 laying hens, you need an area of about 25 x 20 metres.

68. Take any sick birds out of the run

You must not eat sick poultry.
You must kill them and burn them so that the microbes are not left in the ground to be passed on to the other birds.

It is also better to take out of the run hens that are too thin and do not grow any more.
They do not resist diseases well and can give them to the poultry in good health.

69. Ask the animal husbandry service for advice

When a bird is sick or dead, take it to the animal husbandry service, or to the nearest veterinary assistant. Then you must follow his advice, so that the disease is not passed on to all the poultry in the village. Often you see all the poultry of a village killed by the same disease. This must be avoided.

70. Get all poultry vaccinated

All poultry bought at animal husbandry centres that have not already been vaccinated, for instance day-old chicks, must be vaccinated.

VACCINATION

71. All poultry must be vaccinated when they are very young, before they have begun to lay eggs.

Young birds that have not been vaccinated do not resist diseases, and die.

If you have to vaccinate a hen that is laying, it will not lay any more eggs.

Vaccination is generally used against fowl pox, cholera and Newcastle disease.

There are two chief ways of vaccinating:

- mixing the vaccine with the drinking water;
- by making injections.

The animal husbandry service teaches farmers how and when to give injections.

Ask the animal husbandry service for clear instructions and vaccine.

MAIN DISEASES OF POULTRY

There are many poultry diseases.
Some of them are difficult to recognize.
We shall deal only with the main diseases.

72. Bone disease

The birds walk with difficulty; they limp.
The leg bones are badly formed.

This disease is chiefly caused by lack of vitamins and mineral salts.

So these birds must be given food that contains more vitamins and mineral salts, such as vegetables and crushed bones and shells.

73. Pullorum disease

The chicks are listless, walk with difficulty.
They have a very big belly and drag their wings.
Their excrement is liquid and turns white.
Many of the birds die at the age of 8 days.

The disease is transmitted by the hens' eggs.
A hen that has had pullorum, even if it has been cured,
always produces infected eggs.
All its chicks will be diseased.

Such hens can be kept to eat or to sell the eggs, but
should not be kept in order to have chicks.
To prevent poultry from catching this disease, do
not buy chicks from unknown sources.

The animal husbandry service that sells chicks gives
farmers a certificate saying that the chicks are free
from this disease.

74. Fowl pest (Newcastle disease)

Fowl pest is a very common disease and very dangerous.

It kills very quickly a large number of poultry.

The birds breathe very heavily and very badly.

They digest their food badly.

When they have this disease, they cannot be treated: there is no medicine.

But you can prevent the birds from getting this disease.

You must not mix chickens of local breeds with the chickens bought from the animal husbandry service.

All poultry must be vaccinated.

75. Coccidiosis

Parasites living in the digestive system are the cause of this disease.

Blood is seen in the excrement of chicks between 10 days and 3 months old.

If the chick is not dead in 30 days, it will always remain thin and will be very late in laying.

To cure diseased poultry, you can mix in the water coccidiostats that stop the disease.

But to prevent poultry from catching this disease, you must:

- not put too many birds together;
- be very careful about the cleanliness of drinking troughs and poultry houses;
- put coccidiostats in the drinking water.

There is no vaccine against coccidiosis.

The coccidiostats are provided by the animal husbandry service.

76. Pecking

The birds peck each other.
They pull out feathers and make the skin bleed.
Then the birds become more and more vicious.

If there are too many poultry in a run, if their house is not shaded from light, if the drinking and feeding troughs are not big enough, the birds are quick to fight, and may even kill one another.

You should:

- take out of the run all the wounded birds and those which are most vicious;
- treat the wounds with a bad-smelling medication;
- sometimes cut off the tip of the beak.

You can also hang bundles of vegetables or green grass from the roof of the poultry house.
Then in reaching for this food the poultry get tired and become less vicious.

**77. There are many other diseases such as fowl pox, spirochetosis and cholera.
There are vaccines and drugs against several of these diseases.**

Ask your animal husbandry service for advice.

HOW TO HOUSE POULTRY

78. 100 birds at various ages need the following:

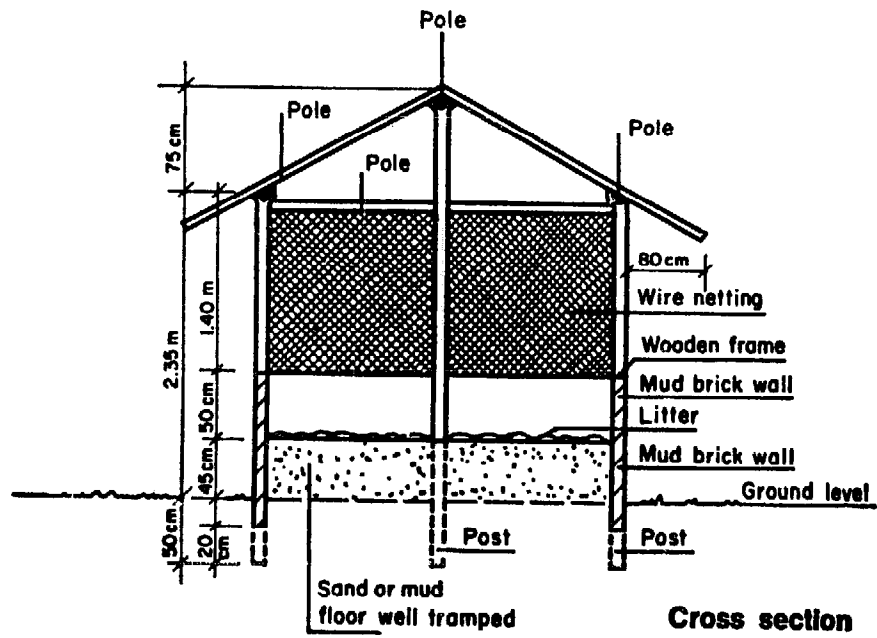
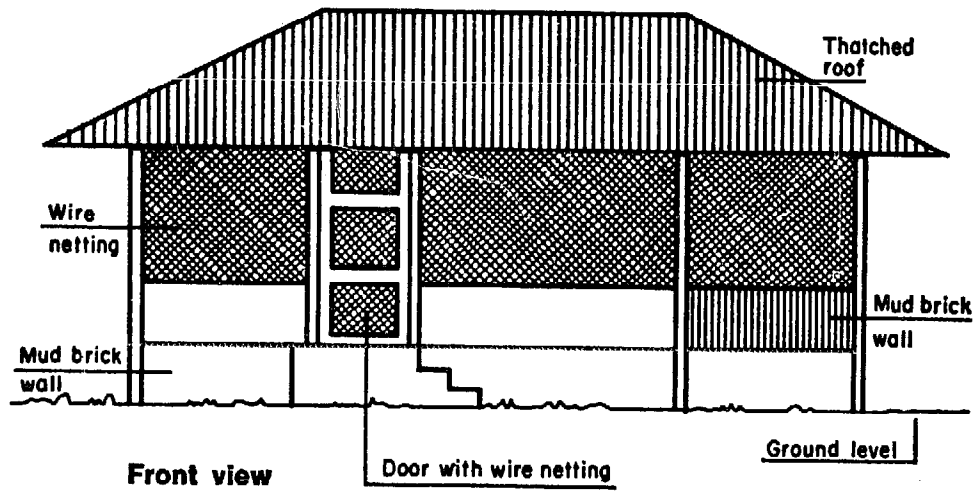
Age	Space in the poultry house	Drinking troughs		Feeding troughs accessible from both sides
Weeks	Square metres	Number	Capacity, litres	Length, metres
1	4	2	4	1.2
2-4	6			2
5-11	8-15	2	10	4
12 onward	20-30			5-7
Adult birds	30			7

NOTE: 1 metre of perch is sufficient for 5 or 6 adult birds.

HOW TO BUILD A POULTRY HOUSE

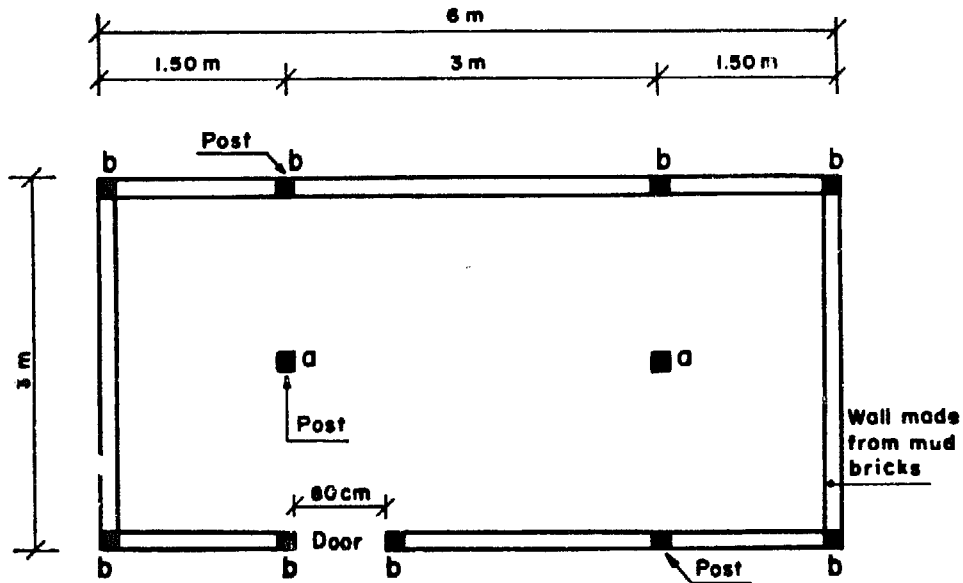
You will need:

- 5 poles, 4 metres
- 9 poles, 2.5 metres
- 2 poles, 8 metres
- 8 poles, 3 metres
- 1 pole, 3.5 metres
- 70 laths for the roof
- 17 mats
- Hay or straw for thatching
- Poultry wire netting, 22 metres
- One roll of wire
- Fittings for the door
- 300 mud bricks
- Sand
- Nails, 6 kilogrammes
- Inside all poultry houses put feeding troughs and drinking founts.
- If you want to raise chicks, put in brooders.
- If you want to raise laying hens, put in nests.



Vertical poles

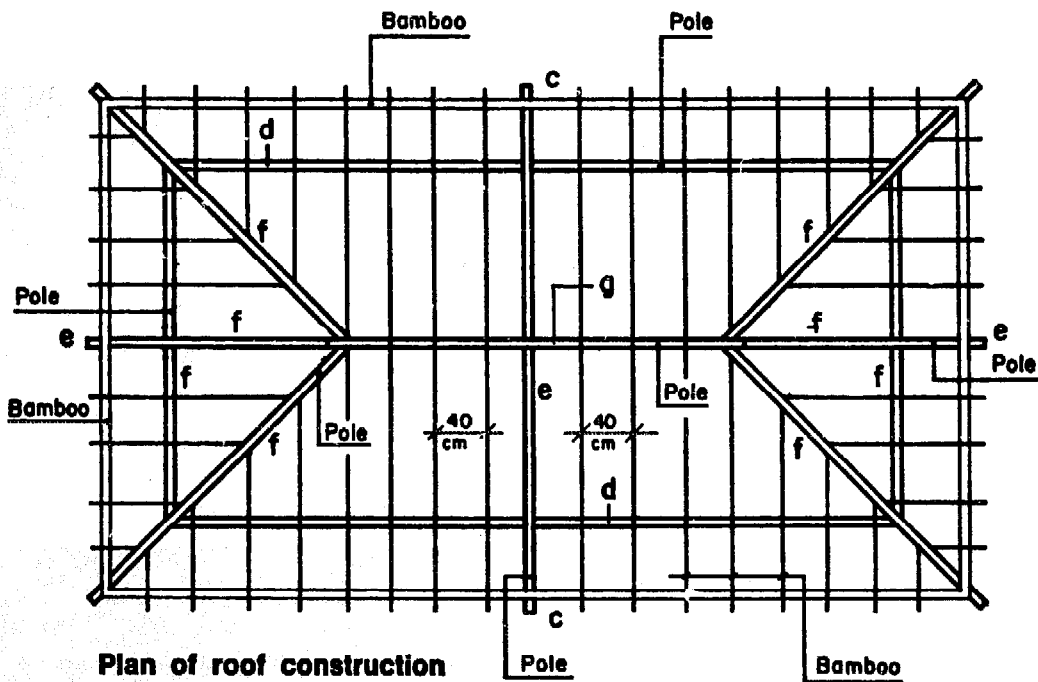
- a** 2 poles, 4 m
- b** 9 poles, 2.5 m



Floor plan

Horizontal poles

- c** 2 poles, 8 m
- d** 2 poles, 6 m
- e** 3 poles, 4 m
- f** 8 poles, 3 m
- g** 1 pole, 3.5 m



Plan of roof construction

79. You can build the poultry house that was described without spending much money. You make the walls of earth with wooden posts or with clay bricks. You can make the roof with straw or with big leaves, or even with old sheet iron. The ground of the poultry house must be well firmed. You can also cover it with concrete.

80. The poultry house must be built

Near the farmer's own house

Because he has to go to the poultry house several times a day.

On dry ground

Damp ground is dangerous for poultry, which get diseases as a result.

If the ground slopes, you must dig a ditch all round the poultry house to get rid of rain water.

Sheltered from sun and wind

You must build the poultry house in such a way that during the greatest heat it is sheltered from the sun, so that, in the evening when the heat is less strong, the sun can shine in.

Orient the ridge from east to west.

During the rainy season put mats and branches on the sides of the poultry house to prevent the rain and wind from getting in.

For 50 hens

The poultry house can be: 4 metres wide × 4 metres long × 2 metres high.

For 100 hens

The poultry house would be: 6 metres wide × 6 metres long × 2 metres high.

Do not make solid walls more than 0.5 metre high. Close the remainder of the space with wire netting or bamboo laths.

NESTS

- 81.** In the poultry house put wooden boxes or baskets.
Put straw into them.
These are the nests in which the hens lay eggs.

Collect the eggs three times a day: every morning, at noon, and in the evening.

There should be a sufficient number of nests.
You need one nest for every five hens.

On page 43 a laying nest for 50 hens is shown.
The perches are hinged so that they can fold up and enclose the nests at night.

82. Poultry runs

These are needed so that the poultry can walk about and find green grass, insects, worms.
Put a fence round the run so that the poultry do not run about everywhere, and to protect them against animals.

Leave trees to give shade.

Divide the run into two parts.
One part only is used while grass is growing again in the other part.

The runs should be big enough:
for 50 hens you need a run
about: 25 metres wide,
20 metres long.

FEEDING TROUGHS

- 83.** Feeding troughs should be sufficient in number and long enough for each bird to have its place when it wants to eat.

Feeding troughs should not be too wide, so that the birds cannot leave their droppings in them. Hollowed out bamboos could be used, for example.

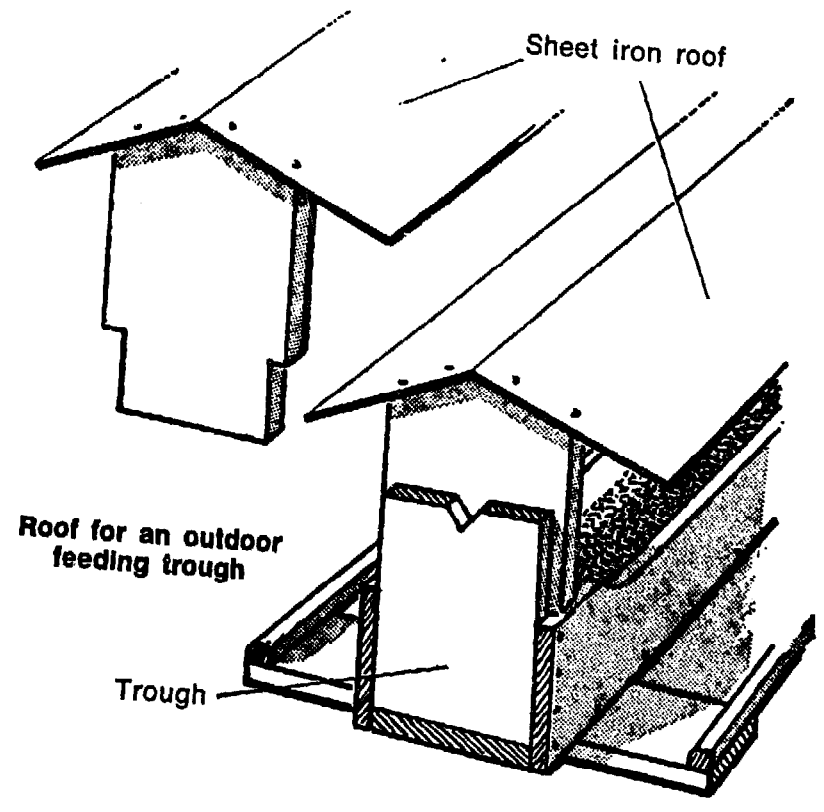
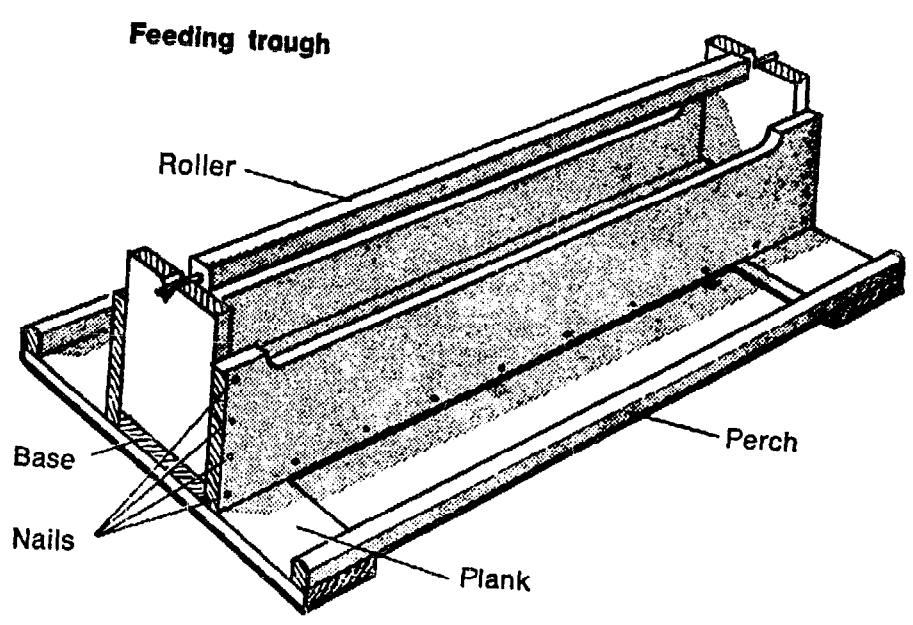
On the next page is a good type of feeding trough.
It can be made in the village.

Nail the bottom of the trough to two planks.
To the right and left of the trough nail two perches.

The sides of the trough are made of thinner boards.
They are higher if the trough is for hens.
They are lower if the trough is for chicks.

To prevent the hens from leaving their droppings in the troughs, add a wooden bar that turns (a roller).

If the trough is outside the poultry house, make a little roof of sheet iron.
In that way the food is sheltered from the rain and stays clean.
Take off the roof to fill the trough.



DRINKING TROUGHS AND FOUNTAINS

84. The hen drinks a great deal.

A hen can drink more than a quarter of a litre of water a day.

Drinking troughs must:

- be big enough and in sufficient numbers to hold plenty of water;
- be big enough for a number of birds to drink without getting in each other's way;
- keep the water clean;
- not let the chicks fall into the water.

You can use:

Bowls or buckets put on a stand or let into the ground and partly covered by netting.

Home-made drinking troughs and fountains with founts

For chicks: put the water in a shallow bowl or can at which the chick can drink easily; take a bottle and fill it with water; turn the bottle upside down and put the neck in the bowl; lean the bottle against a wall or make a support as shown on page 43.

As the chick drinks, the water in the bottle flows into the bowl.

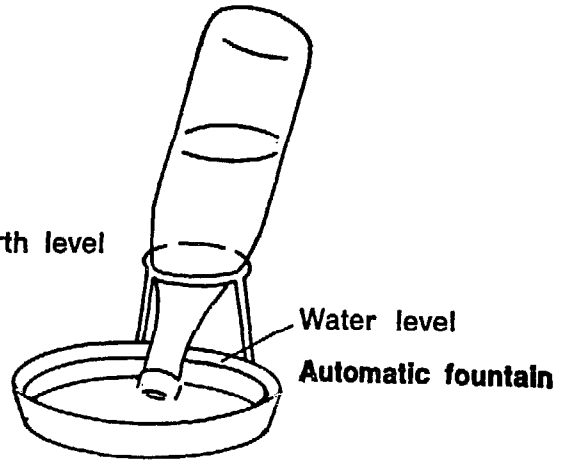
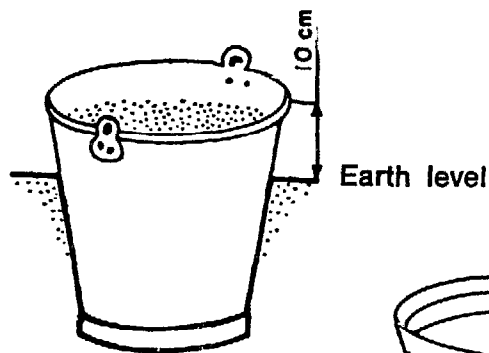
An ordinary 10- or 15-litre bucket serves very well too. Sink it in the ground so that only about 10 centimetres are out. Be sure to change the water frequently.

You can make a very good drinking trough from an old kerosene can, as shown on the facing page.

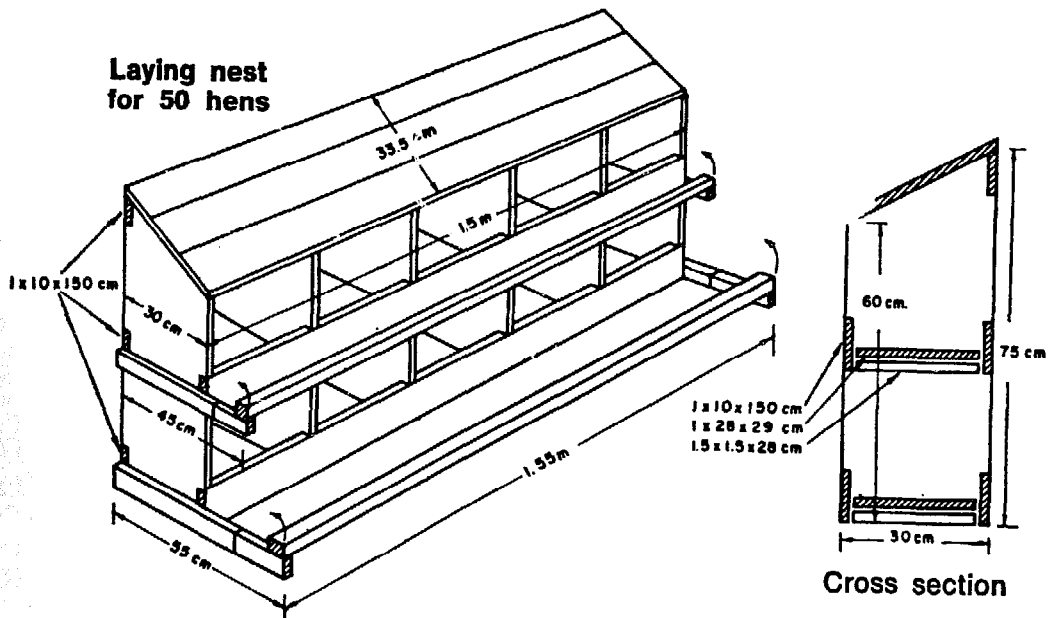
Bought drinking troughs with founts.

If you have a lot of poultry, and you take very good care of them, and if you can sell them easily, it is better to buy drinking troughs with founts.

10- or 15-litre bucket

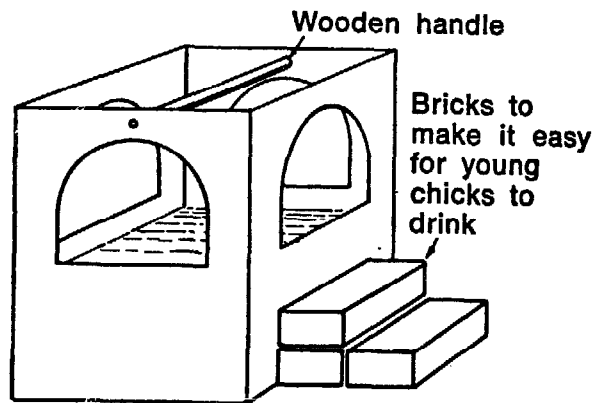


Laying nest for 50 hens



Nests to be closed with the perches by night

Water trough made from a kerosene can



THE BROODER

- 85.** If you buy day-old chicks, you must protect them from cold and from animals — rats, snakes, cats.

Put the chicks in the brooder for three or four weeks.

To protect the chicks from predatory animals put them in a big wooden case or in a big basket. See the picture on page 45.

Put netting over the top.

To protect the chicks from cold, put a storm lantern in the middle.

Surround the lantern with netting so that the chicks do not burn themselves.

A storm lantern gives enough warmth for 20 to 40 chicks.

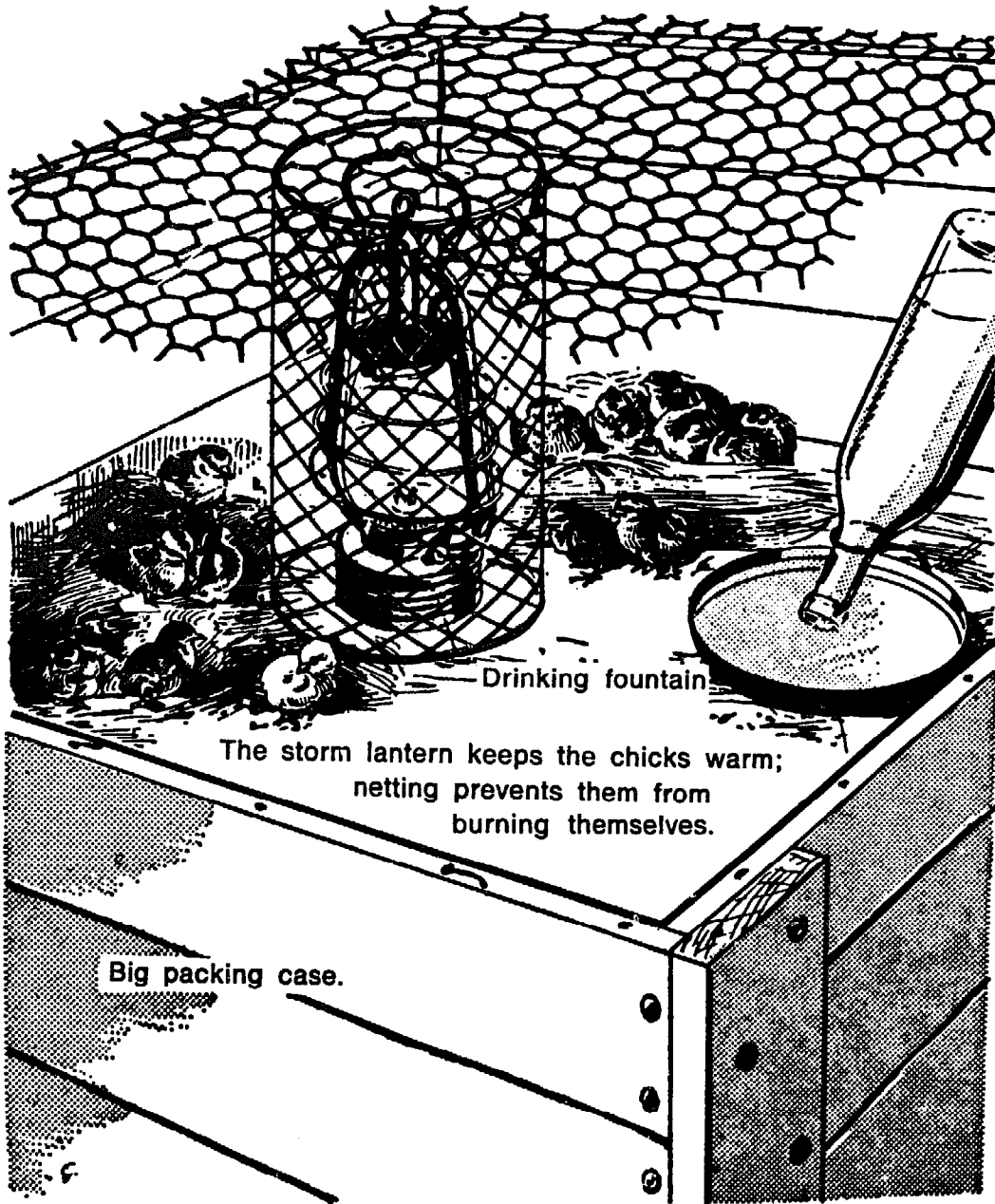
Reduce or increase the warmth when the chicks are too warm or when they are too cold.

The chicks are too warm when they go away from the lantern.

The chicks are too cold when they crowd up to each other.

To feed the chicks, put a feeding trough and a drinking fount inside the brooder.

The case is covered with netting to protect the chicks from dogs and cats.



Drinking fountain

The storm lantern keeps the chicks warm;
netting prevents them from
burning themselves.

Big packing case.

HOW TO CHOOSE AND LOOK AFTER HENS TO PRODUCE CHICKS

Summary

86. Choose hens of a good breed, that do not have pullorum disease.

Mate them with a cock of good breed that also does not have pullorum.

In that way the eggs are fertilized: they produce chicks.

Choose hens that give a lot of big eggs.

In order to know which hens produce a lot of big eggs, they are made to lay in nests that close after the hen has gone in.

Choose hens that sit on the eggs.

These hens should be big, in good health and have plenty of feathers.

Separate them from the other hens.

Put them in a corner of the poultry house surrounded by netting, with a feeding trough and drinking trough with fount.

Feed them very well and protect them well against parasites.

As broody hens do not move, they can easily catch parasites.

Kill these parasites with wood ashes or with products that are sold for the purpose.

HERE IS AN EXAMPLE

87. I am a farmer:

I have very little money to spend but all the same I want to keep chickens.

Then my family and I can eat more meat.

I can give my children more eggs.

I can sell hens and eggs and have more money.

What can I do?

I must buy as little as possible.

I shall use as much as possible what I can find in the village, such as wood, remains of food and the harvest:

I shall look after my poultry with great care.

- **I choose the site.**
- **I build the poultry house.**

All I have to buy is a few nails, a few planks and a little netting.

For the roof, the walls, the fence, and the troughs I use what I find in the village.

At the animal husbandry centre I buy chicks.

They are not sexed: there are males and females.

When the chicks are two months old I separate males from females. I dispose of the males when they weigh 1 kilogramme or more.

- **I vaccinate the chicks.**
- **I feed my poultry**
with grain that I produce myself,
with the remains of food and harvests,
with green grass or vegetables.
- **I take as food for my family**
the young cocks,
the eggs,
hens that have ceased to lay.
- **I sell**
the cocks that my family does not eat,
the eggs that my family does not eat,
the rejected hens that my family does not eat.

SUGGESTED QUESTION PAPER

UNDERLINE THE RIGHT ANSWER

- The hen has teeth **Yes or No**
- A cock is needed for producing eggs for eating **Yes or No**
- The hen drinks a lot **Yes or No**
- Hens of improved breeds remain small and make bad use of their food **Yes or No**

FILL IN THE MISSING WORDS

- Raising is a way of building up of food and money.
- Lack of and food, and diseases kill many
- Feeding is very important and
- Oil cake contains plenty of

ANSWER THE FOLLOWING QUESTIONS

- Describe the cock distribution scheme.
- What are its advantages?
- Name two improved breeds of poultry.
- What are the main qualities of hens of improved breeds?
- What is a hardy hen?
- Why must poultry be well fed?
- What is an animal husbandry centre for?
- Have you already visited an animal husbandry centre?
- What animals are found there?
- What energy foods do people give to hens where you live?
- What body-building foods do you know?
- How do you prevent poultry from being ill?
- What must you do to keep chickens?
- Draw a hen's egg. Show the different parts.

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