

UNDERSTANDING SCIENCE

Pupil's Book

5



2ND EDITION

Kaweesi Publishers Ltd



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Theme: Science in human activities and occupations

Topic 1: Keeping poultry and bees

Section 1.1: Poultry keeping

Poultry refers to all domestic birds. Domestic birds are also called **fowls**.

Poultry keeping is the rearing of domestic birds.

Types of poultry

- Turkeys • Geese • Ducks • Chicken • Guinea fowls
- Pigeons

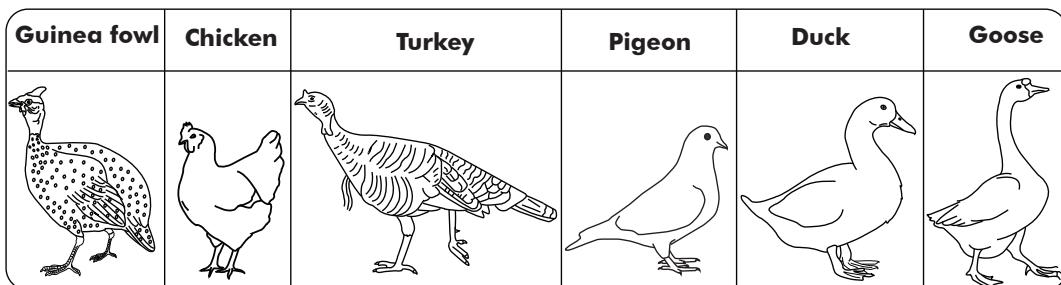


Figure 1.1: Types of poultry.

Importance of keeping poultry

- Birds provide meat and eggs as sources of proteins.
- Birds provide droppings used as manure in crop gardens.
- Birds are sources of income after selling eggs and poultry birds.
- Birds are used for various traditional functions and ceremonies.

Terms used in poultry keeping

- **Hen:** It is a mature female chicken.
- **Cock:** It is a mature male chicken.
- **Chick:** It is the young one of a chicken.
- **Capon:** It is a castrated male chicken.
- **Pullet:** It is a young female chicken that has not laid eggs.
- **Cockerel:** It is a young male chicken that has not yet mated.
- **Broilers:** It is a type of chicken kept for meat production.
- **Layers:** It is a type of chicken kept purposely for egg production.
- **Non-setter:** A hen that does not go broody.



Activity 1.1

1. How is a cock different from a cockerel?
2. Apart from selling them to get money, how else are eggs important to people?
3. Why would you advise school children to start a poultry project?

External features of a bird

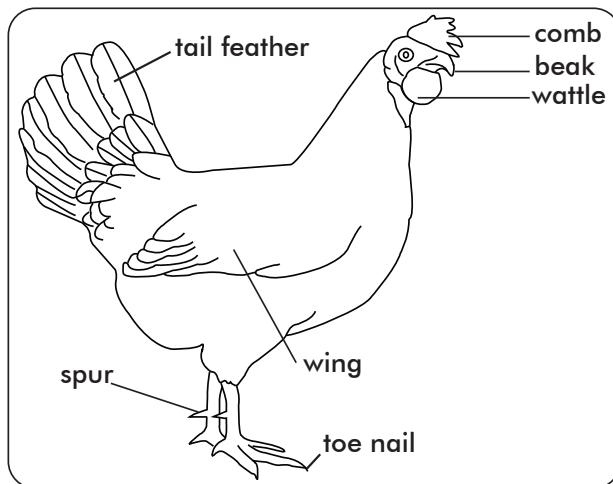


Figure 1.2: External features of a bird.

Functions of the external features of a bird

- **Beak:** It is used for pecking and picking food from the environment.
- **Spur:** It is used for fighting and self-defence.
- **Wattle and comb:** Release excess heat thus keep the bird cool in hot weather.
- **Feathers:** They have the following functions.
 - (i) To keep the bird warm.
 - (ii) To help the bird fly when moving.
 - (iii) They protect the bird from mechanical injury and harsh weather conditions.

Types of feathers

There are four types of feathers.

- Quill feathers or flight feathers
- Down feathers
- Covert or body feathers
- Filoplume feather

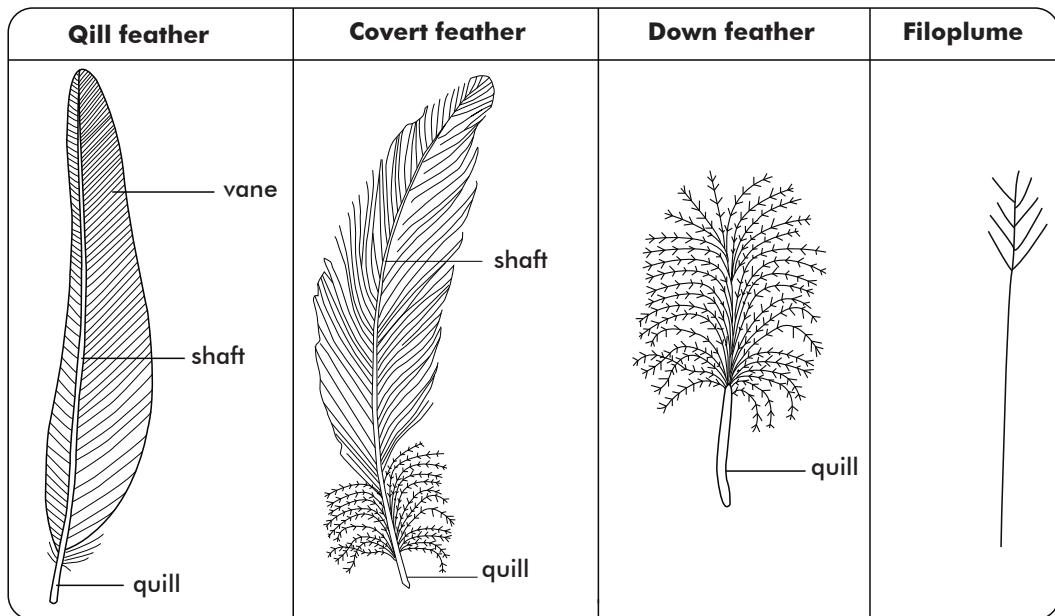


Figure 1.3: Types of feathers.

Quill feathers

- They are also called **flight feathers**. This is because they enable the birds to fly.
- They are found on the wings and tail.
- They have a quill which is used for attachment of the feather into the skin.
- Quill feathers on the tail help birds to balance when flying.

Covert feathers/contour feathers

- They cover most of the bird's body.
- They provide a waterproof coat to the bird's body.
- They prevent heat loss from the bird's body by trapping a layer of air close to the body, thus keeping the body warm.
- They streamline the bird's shape.
- Coloured contour feathers help birds to camouflage.

Down feathers

- These are the feathers on the body of a newly hatched chick.
- They are found on the lower part of the body.
- They are very small and soft.
- They prevent heat loss from the bird's body by trapping a layer of air close to the body, thus keeping the body warm.

Filoplume feathers

- These are found all over the body.
- They are the tiniest feathers.
- They are used for sensitivity.

Differences between hens and cocks

Hen	Cock
<ul style="list-style-type: none">• Has a small comb and wattle.• Has short spur.• It is smaller in size.• It lays eggs.• It has short feathers.• Has short dull hackle feathers.	<ul style="list-style-type: none">• Has a big comb and wattle.• Has long spur.• It is bigger in size.• It mates the hen.• It has long feathers.• Has long shiny hackle feathers.

Table 1.1: Differences between a hen and a cock

Note: Cocks have shiny feathers in order to attract hens for mating.

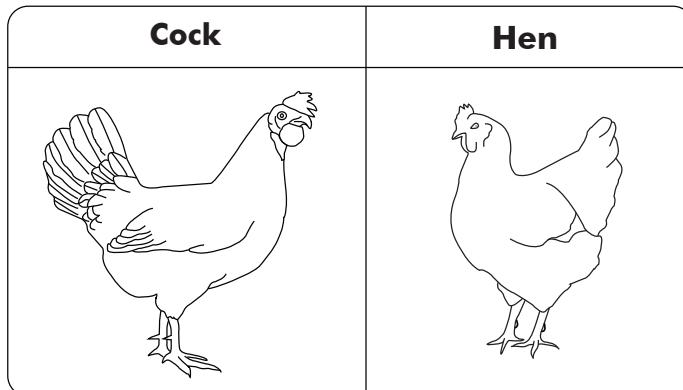


Figure 1.4: A cock and a hen.

Activity 1.2

1. Apart from using a spur, how else does a bird protect itself?
2. Apart from keeping the bird's warm, how else are feathers useful to birds?
3. How do feathers keep birds warm?
4. State any two ways in which you can identify a cock from hens.
5. Why do cocks have brightly coloured feathers?
6. Name one part of the body where flight feathers are found.

Section 1.2: Breeds of chicken

A **breed** is a group of animals with similar characteristics. Examples of such characteristics include; body shape, size, meat and egg production of the bird. There are majorly two types of breeds of chicken kept in Uganda.

- Local/indigenous breeds of chicken.
- Exotic breeds of chicken.

Local breeds of chicken

Local breeds of chicken are breeds of chicken which are of tropical origin. They are also called indigenous breeds of chicken.

Characteristics of local breeds of chicken

- They are resistant to diseases and harsh weather conditions.
- They produce high quality meat.
- They take long to mature.
- They lay few eggs.
- They have good adaptations to high temperatures.

Advantages of local breeds of chicken

- Local breeds are more resistant to tropical diseases than exotic breeds.
- They can withstand harsh weather conditions unlike exotic breeds.
- They produce high quality meat and eggs.

Disadvantages of local breeds of chicken

- They take long to mature.
- They produce less products, that is, meat and eggs.
- They have long laying intervals.

Exotic breeds

Exotic breeds are breeds imported into Uganda from other continents.

Examples of exotic breeds of chicken

- | | | |
|-----------|-----------------|-----------------|
| • Minorca | • Ancona | • White leghorn |
| • Sykes | • New hampshire | • Light sussex |

Characteristics of exotic breeds of chicken

- They produce more products, that is, meat and eggs.
- They are less resistant to harsh weather conditions.
- They grow faster.
- They have specific colours.

Advantages of keeping exotic breeds of chicken

- They grow faster than local breeds.
- They produce more meat than local breeds.
- They produce more eggs than local breeds.

Disadvantages of keeping exotic breeds of chicken

- They are less resistant to harsh environmental conditions.
- They are less resistant to diseases than local ones.
- They are expensive to buy and maintain.

Differences between exotic and local breeds of chicken

Exotic breeds	Local breeds
<ul style="list-style-type: none">• Produce much meat.• Lay many eggs.• Grow faster.• Have a low resistance to diseases.	<ul style="list-style-type: none">• Produce little meat.• Lay few eggs.• Grow slowly.• Have a high resistance to diseases.

Table 1.2: Differences between exotic and local breeds of chicken

Cross breeding

Cross breeding is the mating of pure animals belonging to different breeds. **Hybrids** (cross breeds) are animals (birds) obtained by mating two different pure breeds. **Selective breeding** is the choosing of animals with desired characteristics and allowing them to mate.

Advantages of cross breeding in poultry keeping

- It encourages faster growth of birds.
- It improves on the productivity of poultry.
- The offsprings produce much meat and many eggs.

How to improve the local breeds of chicken

- By cross breeding
- By selective breeding

Types of chicken

There are three types of chicken.

- Layers
- Broilers
- Dual purpose chicken

Layers

Layers are chicken kept for egg production. Examples of layers are white leghorn, ancona, minorca, sykes and Rhode Island red.

Broilers

Broilers are chicken kept for meat production. They can also be called **heavy breed or table birds**. Examples of broilers are new hampshire, light sussex and black australorp.

Dual purpose chicken

Dual purpose chicken are chicken kept for both meat and egg production. Examples of dual purpose chicken are New Hampshire, Plymouth Rock, Rhode Island Red and Black Australorp.



Activity 1.3

1. State one difference between a type and breed of poultry.
2. Why do some farmers prefer rearing local breeds of chickens to exotic ones?
3. Why should a commercial farmer rear exotic breeds of chickens?
4. Mention any one breed of chicken.
5. Give one advantage of keeping dual purpose chicken.

Section 1.3: Systems of keeping poultry

These are the different ways of keeping poultry. They include:

- Free range system (open range system)
- Battery system (cage system)
- Deep litter system
- Fold/pen system

Free range system

Free range system is a system of keeping poultry where birds are left to move freely looking for their own food. Birds are provided with shelter at night. It is commonly carried out in rural areas since there is enough land for keeping birds.

Illustration of free range system

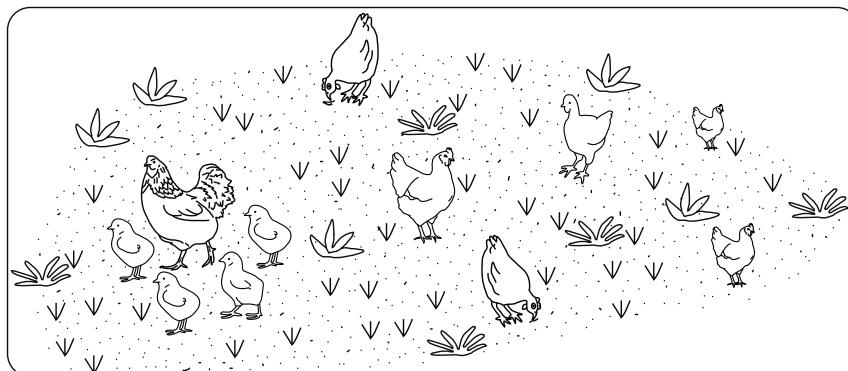


Figure 1.5: The free range system.

Advantages of free range system

- Birds get a variety of food.
- It is cheap to maintain since the farmer does not buy food.
- Birds make enough physical exercises since they have enough space.
- Poultry vices are reduced since there is enough space.
- Requires less labour since there is minimum supervision.

Disadvantages of free range system

- Birds destroy people's crops.
- Birds can easily be attacked by wild animals.
- A large piece of land is required.
- Birds can easily get diseases from other farms.
- Manure and egg collection is difficult.
- The production of the birds is low. They spend a lot of energy meant for production in movement.
- Birds are exposed to bad weather conditions.
- Birds can easily get lost.

Activity 1.4

1. Why do most farmers in rural areas use free range system of keeping poultry?
2. What makes the free range system of keeping poultry cheaper than other systems?
3. Why is it not possible to use free range system of keeping poultry in urban areas?
4. How does the free range system of keeping poultry minimise poultry vices?

Deep litter system

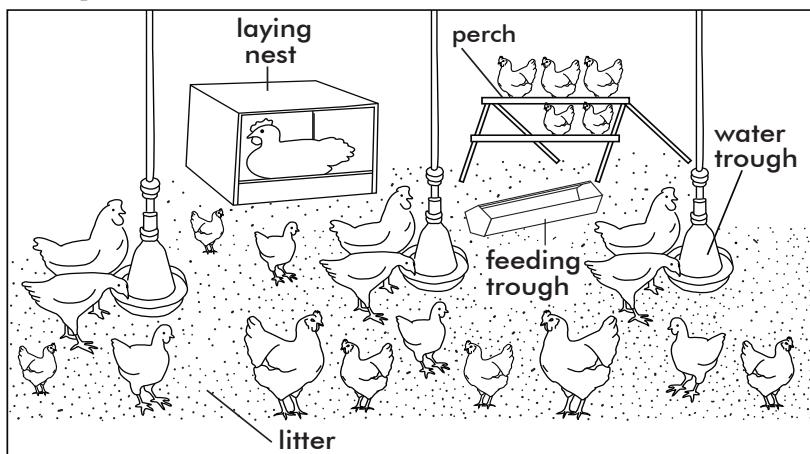


Figure 1.6: A deep litter system.

Deep litter system is a system of keeping poultry where the birds are kept in the house all the time. This system gets its name from the litter which is put on the floor.

Components of a deep litter house and their functions

- **Perches:** They have the following functions.
 - (i) They enable birds make physical exercises.
 - (ii) They reduce bullying in the house.
 - (iii) Increase space in the house since some birds rest on them while others are on the floor at the same time.
 - (iv) Allow easy collection of manure since manure is deposited in one place.
- **Feeding trough:** It contains feeds for the birds.
- **Water troughs:** They contain water for the birds.
- **Laying nests:** It is where layers lay eggs. They should be darkened to prevent egg eating and broodiness. **Broodiness** is the action of sitting on eggs to incubate them.
- **Litter:** Litter are the bedding materials that are put on the floor in a poultry house. The following are materials that are used as litter.

(a) Wood shavings	(b) Saw dust
(c) Coffee husks	(d) Crushed maize cobs

Importance of litter in the poultry house

- It absorbs moisture from the poultry droppings and keeps the house dry.
- It provides warmth to the birds.
- It prevents eggs from breaking.

Advantages of deep litter system

- Many birds are kept at a time. This is the system commonly used for commercial purposes because many birds are kept.
- Birds are protected from thieves and predators.
- Old litter is used as manure.
- Manure collection is easy.
- Eggs are easily collected from the laying boxes/nests.

Disadvantages of deep litter system

- It encourages poultry vices.
- Litter can be a fire hazard (can catch fire).
- Pests and parasites can hide in litter.

- It is expensive since a lot of money is needed to construct a poultry house and maintain birds.
- It requires a lot of labour since there is need to always change litter and feed the birds.
- Birds lack enough exercises.
- It is difficult to keep records for individual birds.



Activity 1.5

1. Why is the deep litter system of keeping poultry called so?
2. How does litter help to keep the poultry house warm?
3. State any one danger of litter in a poultry house.
4. Why should the handle of a feeding trough be made in a way that it rotates whenever a bird tries to rest on it?
5. Why is deep litter system used by farmers who keep poultry for commercial purpose?

Battery/cage system

Battery system is a system of poultry keeping where birds are kept in individual cages. Feeders are placed outside the cage to reduce contamination of feeds by the birds. The cages are well ventilated.

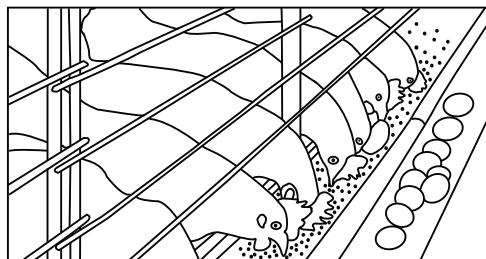


Figure 1.7: The battery system.

Advantages of battery/cage system

- Record of each bird can be kept.
- Manure is easily collected.
- Diseases are easily controlled.
- It is easy to identify sick birds.
- Food and water are not easily contaminated.
- Clean eggs can be easily produced.
- Bird's production is high since they spend less energy in movement.
- It requires less labour for management of large flocks.
- A large number of birds can be kept on a small piece of land.

- Bullying amongst birds is easily controlled since the birds are confined in the cage.
- Culling is easily done. **Culling** is the practice of getting rid of unproductive birds or birds with problems from the farm.
- It reduces poultry vices.

Disadvantages of battery/cage system

- Birds do not make enough exercises.
- The system is expensive to start and maintain.
- It may require skilled labour to run the system.

Fold/pen system

Fold system is a system of keeping poultry where birds are kept in small movable structures. These structures are called **folds** or **arks**. The folds are moved daily to a fresh area. In this system, few birds are kept.

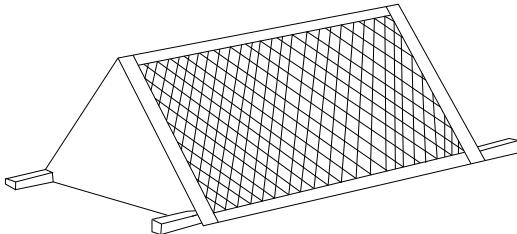


Figure 1.8: A fold

Advantages of fold system

- Manure is easily collected.
- Production is relatively high since birds spend less energy in movement.
- Birds can easily get vitamin D from the sun.
- Spread of diseases can easily be controlled.
- Birds are protected from wild animals.

Disadvantages of fold system

- Vices like egg-eating are common.
- Birds do not make enough exercises.
- It is tiring to change the fold daily.
- The unit is quite expensive for peasants.
- Few birds are kept.



Activity 1.6

1. Why should the cage for rearing poultry be properly ventilated?
2. How does battery system of keeping poultry make record keeping easy?
3. Why are poultry vices in battery system not common?
4. Why is fold system of keeping poultry not common in many areas?

Section 1.4: Vices in poultry production

A vice is a bad behaviour practised by birds. Examples of vices include the following.

- Egg eating • Feather pecking • Toe pecking • Cannibalism

Egg eating

Egg eating is where birds eat their eggs or eggs laid by other birds.

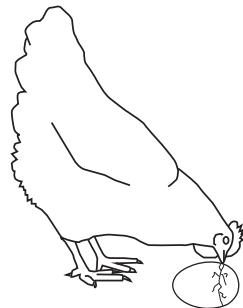


Figure 1.9: A hen eating an egg.

Causes of egg eating

- **Lack of minerals in the diet:** This leads to mineral deficiency in the body.
- **Lack of enough laying boxes:** This causes breakage of eggs and exposes eggs to the birds.
- **Bright light in the laying boxes:** This makes the eggs to be easily seen.
- **Inadequate feeding:** This results into starvation.

Control of egg eating

- Providing enough laying boxes which should be darkened.
- Debeaking all the birds in the poultry house.
- Removing any broken egg from the poultry house.
- Feeding birds on balanced feeds (balanced diet).



Activity 1.7

1. Why should laying boxes be put in dark corners of the poultry house?
2. State one danger of failure to collect eggs in time from the poultry house.
3. Why should overcrowding of birds be avoided in a poultry house?
4. Give one way in which a poultry farmer can avoid egg eating on his farm.

Feather pecking

Feather pecking occurs when one bird pecks or pulls the feathers of another.

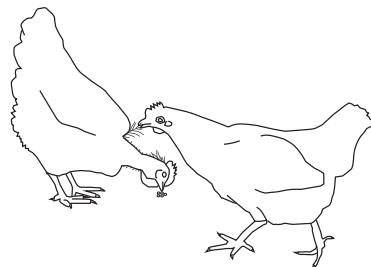


Figure 1.10: A hen pecking the feathers of another hen.

Causes of feather pecking

- Overcrowding in the poultry houses: The birds become more close to each other prompting pecking.
- Presence of external parasites on feathers.

Control of feather pecking

- Overcrowding of birds in the poultry house should be avoided.
- Controlling external parasites by dusting the poultry house.

Toe pecking

Toe pecking occurs when one bird pecks the toes of another using its beak.

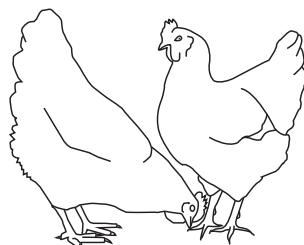


Figure 1.11: A hen pecking the toes of another hen.

Causes of toe pecking

- **Bright light in the poultry house:** This makes the chickens' toes to shine and attract other birds to peck at them.
- **Wetness in the poultry house:** This makes feeds to stick on the toes, resulting into toe pecking.

Control of toe pecking

- Providing dim light in the poultry house.
- Keep the poultry house dry all the time.

Cannibalism

Cannibalism is defined as the consuming of skin or tissue of another bird.

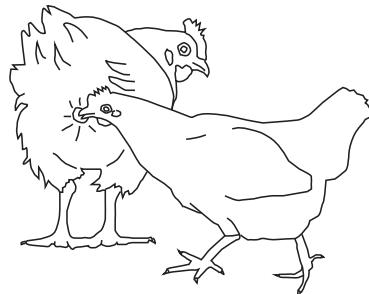


Figure 1.12: Cannibalism

Signs of cannibalism

- Blood on beaks.
- Bleeding vents.

Causes of cannibalism

- Presence of diseases like gumboro. This can cause cloaca pecking since droppings usually stick in that area.
- Exposure of wounds of birds.
- External parasites on the skin of the birds.
- Lack of minerals in the diet.
- Inadequate feeds causing starvation.
- **Prolapse.** It is a condition whereby the oviduct comes out during laying and does not invert back.

Control of cannibalism

- Controlling external parasites by dusting the poultry house.
- Isolating and treating the wounded birds.
- Providing birds with balanced diet.
- Isolating and treating the birds with diseases.
- Provide adequate feeds to the birds.



Activity 1.8

1. Give one way in which a poultry farmer can identify the practice of cannibalism in a poultry house.
2. State any one danger of too much light in a poultry house.
3. Mention one advantage of early treatment of sick birds in a poultry house.
4. Why should wounded birds be isolated from healthy birds immediately they are identified?

Section 1.5: Management of poultry (routine practices)

Management of poultry refers to practices done in proper care of birds for proper growth. It should be done from the time when fertilised eggs are laid up to maturity. The following are the routine practices done on a poultry farm.

- Feeding
- Debeaking
- Deworming
- Record keeping
- Incubation
- Egg collection
- Dusting
- Brooding
- Vaccination
- Culling

Feeding

The feeds for chicken are called **mash**. Mash is grouped into four types, that is, chick mash, grower's mash, broiler's mash and layer's mash. The table 1.3 shows the type of feeds given to each type of birds.

Type of birds	Type of feeds	Age
Chicks	<ul style="list-style-type: none">• Chick mash (for layers)• Starter's mash (for broilers)	0-8 weeks (for layers) 0-4 weeks (for broilers)
Growers	Grower's mash (for layers)	8-16 weeks
Broilers	Broiler's mash	4 weeks-up to maturity.
Layers	Layer's mash	Over 16 weeks.

Table 1.3: Types of feeds

Chick mash

Chick mash refers to feeds that are fed to chicks. It contains high protein content to support faster growth. Chick mash is composed of bone meal, silver fish, maize meal, sea shells and common salt.

Layer's mash

Layer's mash refers to feeds that are fed to layers. The mash contains mineral salts like calcium and phosphorus to enable the birds lay hard shelled eggs. Green vegetables contain these mineral salts and therefore should be given to layers.

Importance of green vegetables in poultry feeds

- To supply mineral salts to birds to enable them lay hard shelled eggs.
- To keep birds busy and reduce vices.
- To supply vitamins to the birds.

Note: Crushed stones in poultry feeds help in digesting food.

Equipment for feeding birds

- **Feeding trough:** It contains feeds for the birds.
- **Water trough (drinker):** It contains water for the birds.

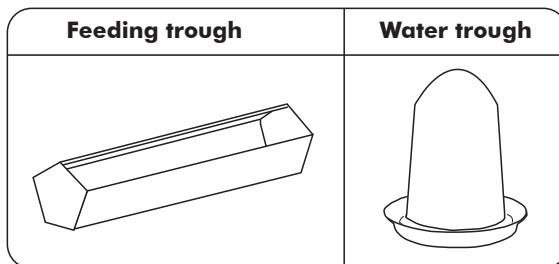


Figure 1.13: Feeding equipment for birds.

Activity 1.9

1. State one importance of including calcium and phosphorus in the feeds of layers.
2. Apart from keeping birds busy, give one other reason for hanging green vegetables in a poultry house.
3. How does hanging green vegetables in a poultry house help to minimise poultry vices?
4. Mention one material used for making feeding troughs.
5. Why should feeding troughs be regularly cleaned?

Debeaking

Debeaking is the removal of the upper or bottom part of the beak of a chicken. Debeaking makes the beaks blunt. This process should be done when the chicks are 8 to 12 weeks old. It is mainly done in layers. It is carried out to reduce vices like cannibalism, feather pecking and egg eating.

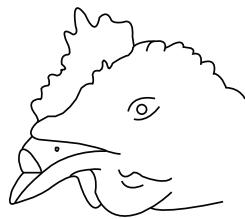


Figure 1.14: A debeaked hen

Egg collection

Egg collection is the removal of eggs from the laying nests. It should be done at least 2-3 times a day to avoid breakages, getting dirty and encouraging egg eating. It should also be done at the same time of the day to avoid frightening the birds.

Vaccination

Vaccination is done to protect birds against diseases such as gumboro, newcastle disease, fowl pox and fowl typhoid.

Deworming

Deworming is the giving of drugs to an animal to control internal parasites. Such parasites include tapeworms and round worms.

Dusting

Dusting is the spreading of powdery chemicals onto an animal's body to kill ecto parasites. External parasites in birds include mites and fleas.

Culling

Culling is the practice of getting rid of unproductive birds or animals with problems from the farm. Culled birds include; those with old age, low productivity, slow growth rate and bad habits (vices).

Methods of culling

- Slaughtering
- Selling off

Importance of culling

- To create more space for the more productive birds.
- To create more feeds for the more productive birds.
- To prevent the spread of diseases.

Record keeping

Record keeping is the process of creating and maintaining records. The records about the daily activities on the farm must be created and maintained.

Farm records

Farm records refers to written information about daily activities on the farm.

Categories of farm records

- Production records • Farm accounts

Production records

Production records involve records of what takes place in the production process. Production records include;

- **Feeding records:** Show the amount of feeds given to animals in a specific period of time.
- **Health records:** Show cases of diseases, their diagnosis and treatment. It also shows dates for vaccination and health conditions of different animals.
- **Financial records:** Show the daily expenditure and total sales.
- **Labour records:** Show the number of employees, number of hours worked and cost of labour.
- **Records on the farm history:** It shows ownership of the farm and date of setting up the farm.
- **Inventory records:** Show the total physical property of the farm.

Farm accounts

Farm accounts include financial documents, financial books and financial statements. Examples of financial documents are receipts and invoices. Cash book is an example of financial books. Profit and loss account is an example of financial statement.

Importance of keeping records

- Helps to know the income and expenditure of the farmer
- Helps to know the profits and losses made on the farm.
- Helps in decision making regarding the future of the project.
- Records can be used as reference when a farmer wants to get loans.
- It helps a farmer to be taxed fairly by the government.

General problems farmers face while keeping birds

- Limited capital to start and maintain poultry projects.
- Outbreak of diseases that attack their birds.
- Unstable prices of poultry products leading to losses.
- Lack of enough labour.
- Inadequate demonstration farms.
- Risks like theft and fire hazards on the farms.



Activity 1.10

1. How does debeaking help to minimise egg eating in poultry?
2. Why should a farmer set specific time for collecting eggs in a poultry house?
3. State the best way of controlling internal parasites in poultry.
4. Give one problem faced by a poultry farmer who does not carry out regular culling.
5. Mention one kind of farm record kept on a poultry farm.
6. Why should schools engage in poultry projects?

Section 1.6: Parasites and diseases of birds

Poultry parasites

A **parasite** is an organism that depends on another organism for food on which it causes harm.

Types of parasites

- Ectoparasites (external parasites)
- Endoparasites (internal parasites)

Ectoparasites (external parasites)

Ectoparasites are parasites that live on the body of an animal, either permanently or temporarily. Examples of ectoparasites in birds are fleas, mites and lice.

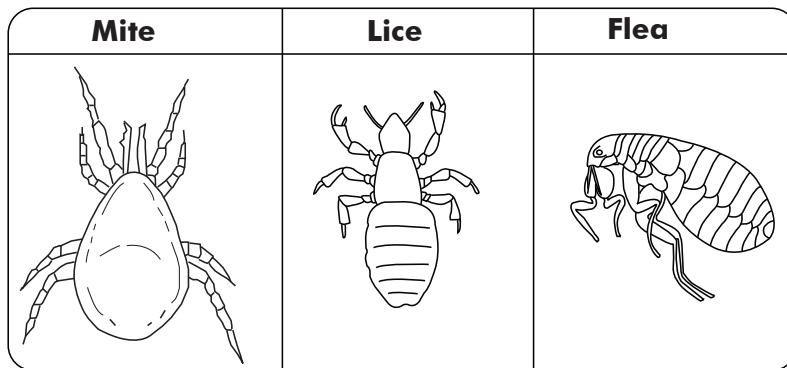


Figure 1.15: Examples of external parasites in birds.

Ways of controlling external parasites in birds

- Dusting birds and poultry houses with dusting powder.
- Burning infested litter.
- Spraying the poultry house with insecticides.

Effects of external parasites on birds

- They cause irritation to the birds.
- They cause anaemia by sucking blood from the birds.
- They retard growth in birds since they obtain a lot of nutrients from them.
- They can lead to death of the birds.

Endoparasites (internal parasites)

Endoparasites are parasites that live inside the body of an animal. Examples of endoparasites in birds are coccidia, tape worm, lung worm and liver fluke. Coccidia are single-celled parasites that attack the walls of the intestines. Coccidia cause a disease called **coccidiosis**.

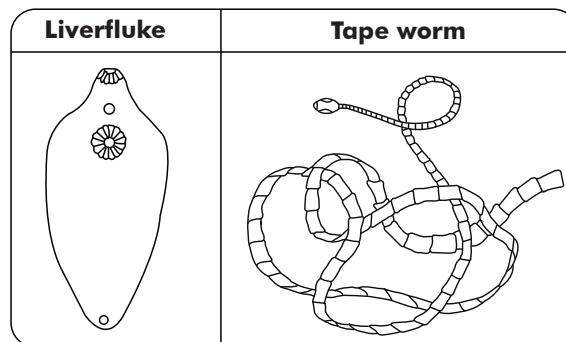


Figure 1.16: Examples of endoparasites in birds.

Ways of controlling internal parasites in birds

- Through regular deworming.
- Providing birds with clean water and feeds.
- By proper disposal of faeces to avoid infection of birds.
- By treating water to kill water snails.

Effects of internal parasites on birds

- They lead to loss of appetite in birds.
- They can lead to death of the birds.
- They damage the internal organs such as the intestines.
- They retard growth in birds since they obtain a lot of nutrients from the birds.
- Some parasites are vectors of diseases that affect birds.

Activity 1.11

1. How does regular dusting of the poultry house help to control external parasites of poultry?
2. Give one danger of failure to control parasites on a poultry farm.
3. How do parasites lead to retarded growth of birds?
4. How does proper disposal of human faeces help to control parasites in poultry?

Diseases

Ways through which diseases are spread on the farm

- Introduction of sick birds on the farm.
- Use of contaminated water and feeds.
- Use of contaminated equipment like vaccination equipment.
- Through infected bird's products, for example eggs can spread newcastle to chicks.
- Improper disposal of dead birds that have died due to a certain disease.

Causes, signs, symptoms and prevention of diseases in birds

Disease	Cause	Signs and symptoms	Prevention, control and treatment
Newcastle	Virus	<ul style="list-style-type: none"> • Difficulty in breathing. • Drooping wings. • Twisting of the neck. • Watery faeces (diarrhoea) that is yellowish-green in colour. • Sneezing and coughing. • Discharge from the nostrils. • Depression. • Loss of appetite. 	<ul style="list-style-type: none"> • Vaccinate the birds. • Proper sanitation in the poultry house. • Proper disposal of dead birds and disinfect the poultry house.
Coccidiosis	Protozoa	<ul style="list-style-type: none"> • Blood stained droppings. • Diarrhoea. • Disorderly feathers. • Dullness and drooping of wings. 	<ul style="list-style-type: none"> • Keep the litter dry. • Isolate the infected birds. • Add coccidiostats in the feeds and drinking water.
Gumboro	Virus	<ul style="list-style-type: none"> • Trembling. • Disorderly feathers. • Loss of appetite. • Diarrhoea. • Pecking at own cloaca. • Sleeping with the beak touching the floor. 	<ul style="list-style-type: none"> • Vaccinate day old chicks. • Proper disposal of dead birds and disinfect the poultry house.
Fowl typhoid	Bacteria	<ul style="list-style-type: none"> • Greenish-yellow diarrhoea. • High death rate. • Disorderly feathers. 	<ul style="list-style-type: none"> • Buy chicks from disease-free parent stock. • Vaccinate the birds.
Fowl pox	Virus	<ul style="list-style-type: none"> • Loss of appetite. • Sores on the bird's skin. • A drop in egg production. 	<ul style="list-style-type: none"> • Vaccinate the birds.
Pneumonia	Virus or bacteria	<ul style="list-style-type: none"> • Loss of appetite. • Breathing difficulty. 	<ul style="list-style-type: none"> • Vaccinate the birds. • Proper ventilation of the poultry house.
Avian leukosis	Virus	Enlargement of the abdomen.	<ul style="list-style-type: none"> • Proper sanitation in the poultry house. • Buy chicks from disease-free parent stock. • Vaccinate the birds.

Table 1.4: Diseases in birds



Activity 1.12

1. Mention one viral disease which attacks poultry.
2. How does early vaccination help to prevent some diseases in poultry?
3. Why should a poultry house be cleaned regularly?
4. Mention two diseases which attack both poultry and rabbits.



Testing exercise 1

1. What are poultry?
2. What is poultry farming?
3. State one difference between poultry and poultry keeping.
4. Write any three examples of poultry kept in Uganda.
5. Why do people rear poultry?
6. Give the meaning of each of the term used in poultry keeping below.
(i) Hen (ii) Cock (iii) Cockerel
(iv) Capon (v) Pullet (vi) Chick
7. The diagram below shows external features of a bird. Use it to answer the questions that follow.

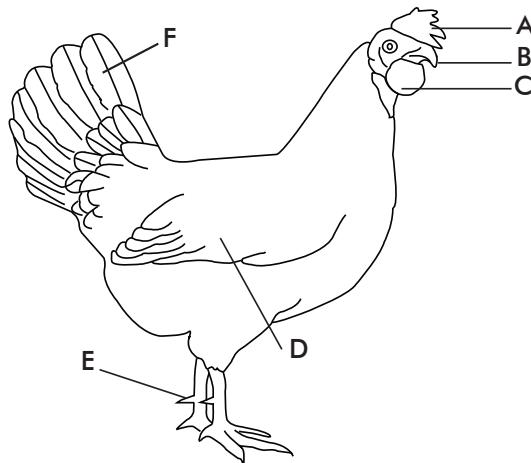


Figure 1.17:

- (a) Name the parts marked A-F
 - (b) Give the importance of parts labelled A, C, D and E.
- 8(a) Mention any two uses of feathers to birds.
(b) How do feathers keep the bird warm?
 - 9(a) Write any two types of feathers.
(b) Which type of feathers help a bird during flight?
(c) Name the type of feather that gives the bird colour and shape.

- (d) Mention the tiniest feather on the bird's body.
10. Below is a feather. Use it to answer the questions that follow.

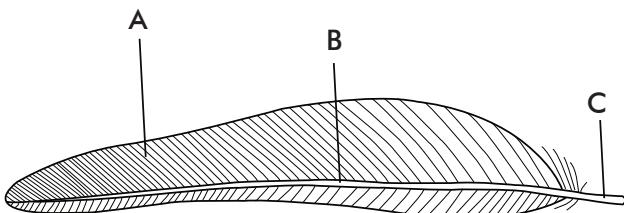


Figure 1.18

- (a) Name the feather above.
(b) How useful is the above feather to a bird?
(c) Name the parts of the feather labelled with letters A - C.
11(a) Give any three physical differences between a hen and a cock.
(b) Which structure does a cock use for protection?
(c) Apart from the above structure, give any other two parts on the body of a cock used for protection.
12(a) Mention the three types of chicken.
(b) Mention the purpose for each type of chicken below.
(i) Layers (ii) Broilers (iii) Dual purpose
13. Apart from broilers, mention any other name used to refer to birds kept for meat production.
14. State any three characteristics of exotic breeds of birds.
15. Why do most farmers prefer keeping local breeds of chicken to exotic ones?
16. How do farmers improve on the quality of their local chicken?
17. What is cross breeding?
18. What name is given to birds kept for both meat and egg production?
19. Write down two breeds of chicken kept for both egg and meat production.
20. Name any two equipment used in feeding chicken.
21. Name the special food given to chicken kept for meat production.
22. State the importance of each of the following in poultry feeds.
(a) Greens (b) Stones
23. How do greens provided to birds prevent vices?
24. What mash is given to chicken between 1 day to 8 weeks?
25. Name the type of feeds given to each of the following.
(a) Off layers (b) Broilers (c) Layers
26. At what age is broiler's mash given to chicken?
27. State any two systems of rearing poultry.

- 28(a) What is free range system as used in poultry rearing?
(b) Why is free range system commonly carried out in rural areas?
(c) Give any three advantages of free range system of keeping poultry.
29. State the system of keeping poultry where the birds are kept indoors.
- 30(a) What is litter as used in poultry management?
(b) Outline three materials that can be used as litter.
(c) Of what importance is litter in a poultry house?
- 31(a) Mention at least four advantages of deep litter system.
(b) State any three disadvantages of deep litter system of keeping birds.
- 32(a) Mention two components of a deep litter house.
(b) How useful are laying nests in a deep litter house?
- 33(a) Name the system of keeping birds where the pen is movable.
(b) State any two advantages of the above system.
(c) Give one disadvantage of the system named in (a) above.
34. Below is a system of keeping birds. Use it to answer questions that follow.

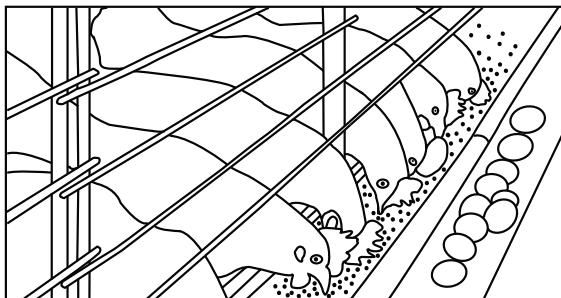


Figure 1.19

- (a) Name the system shown above.
(b) Mention the system of keeping birds that is suitable for commercial purpose.
- 35(a) Name the system of poultry keeping where vices are easily controlled.
(b) Which system of poultry keeping allows easy control of pests and diseases?
- 36(a) What are vices in poultry?
(b) State three examples of vices common among poultry.
(c) Mention one cause of vices in poultry.
- 37(a) Explain the term culling as used in poultry.
(b) Of what importance is culling in poultry?

38 Mention the poultry vice commonly controlled by debeaking.

39. Why should perches be put in the poultry house?

40. Mention three ways of preventing poultry vices in poultry.

41(a) What is debeaking?

(b) Give one reason for debeaking in poultry.

42. State two signs of cannibalism in birds.

43. What does prolapse mean in chicken?

44. What vice results into prolapse in chicken?

45(a) What are parasites?

(b) What are endoparasites?

(c) State two examples of endoparasites in poultry.

46(a) Name two examples of ectoparasites in poultry

(b) State one difference between ectoparasites and endoparasites.

(c) Mention any two ways of preventing endoparasites.

(d) State any two ways of preventing ectoparasites.

(e) Give two effects of parasites to poultry.

47(a) What causes coccidiosis in poultry?

(b) Mention any three signs of coccidiosis in poultry.

(c) How best can coccidiosis disease be controlled in poultry?

48(a) Name two viral diseases of poultry.

(b) Name the disease that requires slaughtering of all infected birds to control it.

49(a) What causes fowl typhoid?

(b) Name any three signs of fowl typhoid.

(c) Mention two ways of controlling fowl typhoid.

50 Name the causes of following diseases in poultry.

(a) Gumboro disease (b) Avian leukosis

51(a) What are farm records?

(b) Give two categories of farm records.

(c) State two advantages of farm records.

52(a) Give three importance of production record.

(b) How useful are financial records to a poultry farmer?

53. Give the importance of feeding records.

54. State any two problems a farmer may face while keeping birds.

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