MODULE: POULTRY PRODUCTION TRAINING COURSE

TRAINEES' MANUAL

Purpose: to provide both women and men with sufficient information and knowledge to allow them to farm poultry in a commercial and semi-commercial way, and to decide if they can make money out of the venture

Objectives: to learn about all aspects of raising poultry for their meat and eggs. Then to develop a business plan which will tell them if they can make money out of a poultry farming operation in East New Britain under the present conditions

Course: there will be trainers who will guide the participants through all aspects of producing poultry. There will be 'hands on' practical work, visual demonstrations and a manual that will have diagrams, photographs and illustrations. Towards the end of the course, commercial poultry production will be dealt with in two specialised areas : 1. For meat (broiler) production and 2. For egg production

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UNIT 1

1.0 Introduction

There is no point in setting up a farming venture unless it can be *sustained*; that is, it can *survive over the long term*. Therefore it is essential to make a *survey* in which key questions must first be answered honestly *before* the farmer decides to launch into a poultry enterprise in which he or she will have to *invest* time and precious money.

It is assumed that all trainees have a particular interest, but little information, in setting up a small poultry enterprise on a commercial or semi-commercial scale and are here to learn some basic management skills. It is only from practice and experience that the farmer will become an efficient poultry producer and this course forms the foundations of a poultry enterprise.

The other important aspect is that the farming of poultry must *not harm the environment* by polluting water ways with plastic bags, poultry waste or chemicals used in the farming industry for example. Each one of us has the responsibility *to protect* the land we farm.

Any poultry farm will be part of a *farming system* (vegetables, plantation crops, special crops, trees, other livestock) and all parts must be catered for and must not be compromised. In other words the new poultry venture will be part of the existing system.

(a) Your first task is to *introduce* yourself and give us some information on your *background*. We would like to know what you *do*, why you *are* here and a little about your *village and family*.
(b) Now that we know a little about you I will now tell you a bit about *myself*
(c) I am sure that you may have some *questions* to ask. These may relate to the course or to any other matter. So please ask them.

1.1 What will I learn from this course?

At the end of the course you should understand the basic facts about keeping poultry for *egg* production and *meat* production.

You should have a g*ood knowledge* of
*their housing
*the different systems of how chickens are kept
*their feeding
*management
*health and hygiene
*poultry farming as a business. It is essential to have a business plan
*the importance of forming a poultry cooperative or forming an association of producers with the same interests in poultry production

Space is given throughout this manual so that you can make notes and please ask questions about any matter. This is most important.

1.2 Why keep chickens?

Can you make a list of why people keep chickens? There are at least 6 reasons although not all of them apply to PNG. Write down what you think here and we will discuss them

_____
_____
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_____

I will add some of the most important reasons that relate particularly to the health of your children.

Chicken meat and eggs contain special proteins that:

- Allow your children to *grow strong*
- Allow pregnant mothers to produce *healthy babies*
- Allow their brain to develop so that they will be *clever* at school

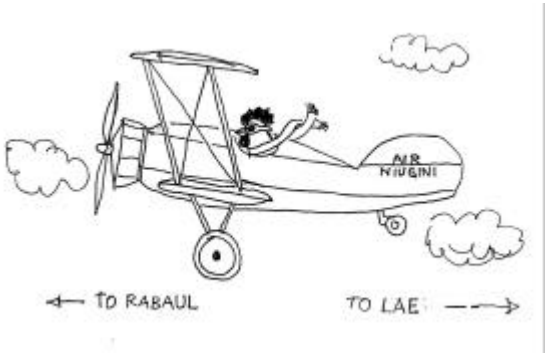
- Allow them to be healthy and not to catch *cold and coughs*

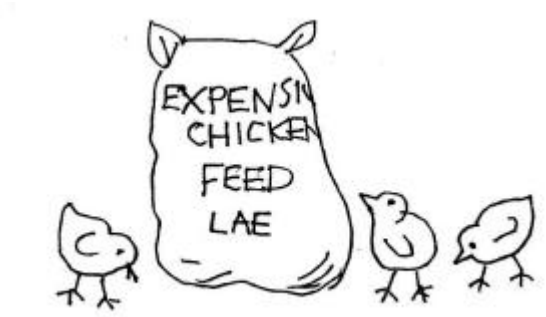
Eggs and meat also contain vitamins and minerals that are *essential* in your diet.

If you decide to raise poultry always remember *to keep* some meat and eggs for your own family to eat

1.3 The business of poultry farming

There are many small farmers that are making money out of raising meat birds (broilers) in East New Britain (ENB). They buy day-old chicks from Lae and usually sell them live after 7-8 weeks. They also buy their feed in from Lae and this means that it is expensive.





Sometimes the chicks arrive sick or dead, because of unreliable transport. We are trying to hatch chicks at the University of Vudal and mix poultry feed there so that we do not have to rely on companies on the mainland for chicks and feed. That is to make chicken meat production *sustainable.*

Producing eggs is more *difficult* and there are only a *few* farmers on ENB who keep commercial hens. The day-old chicks are very *expensive* and you have to wait more than *18 weeks* before they will lay an egg. They are not easy to rear as they must be grown *slowly* and according to a *plan*. They also need to have good *housing* and nest boxes so there is a higher initial capital cost than growing meat birds. There is a shortage of eggs in ENB and they have to be imported from Lae so there is great *opportunity* to farm commercial hens starting with a few and then expanding. But the system is currently *unsustainable* because most things have to be brought in from outside ENB. There is great *opportunity* to have commercial egg farms here and we hope that we will also be able to produce day-old layer chicks in ENB and some feed to make poultry production *sustainable.*

Opportunity for commercial egg production in ENB.

When you finish this course, we plan to be able to help you with your chicks, their feed supply and the trainers will be able to give you advice. You will see during the course that there are many different ways to keep *layin*g hens and *broiler* chickens.

1.4 Background information

- You will need to look at *all aspects* of commercial poultry production before you decide to become a poultry farmer
- This means that you will have to seek out information in a *survey*
- On the basis of this information you will make *a business plan*. This will tell you how much money you can expect to make (or lose) each year
- A good business plan will allow you to go to the bank to *borrow money* to get your commercial poultry farm started

You will *not start* with a feasibility study now but towards the *end of the course* when you will know more about poultry and what farming poultry keeping entails. But you should *look* at it from time to time throughout the course so that you can gather the necessary information

End Unit I

Unit II

2.0 Poultry Breeds

There are many different breeds of chickens. We will only mention here those that have commercial potential (meat and/or eggs)

***Dual Purpose*.** These are used to produce *both meat and eggs* such as Rhode Island Reds or Plymouth Rock.

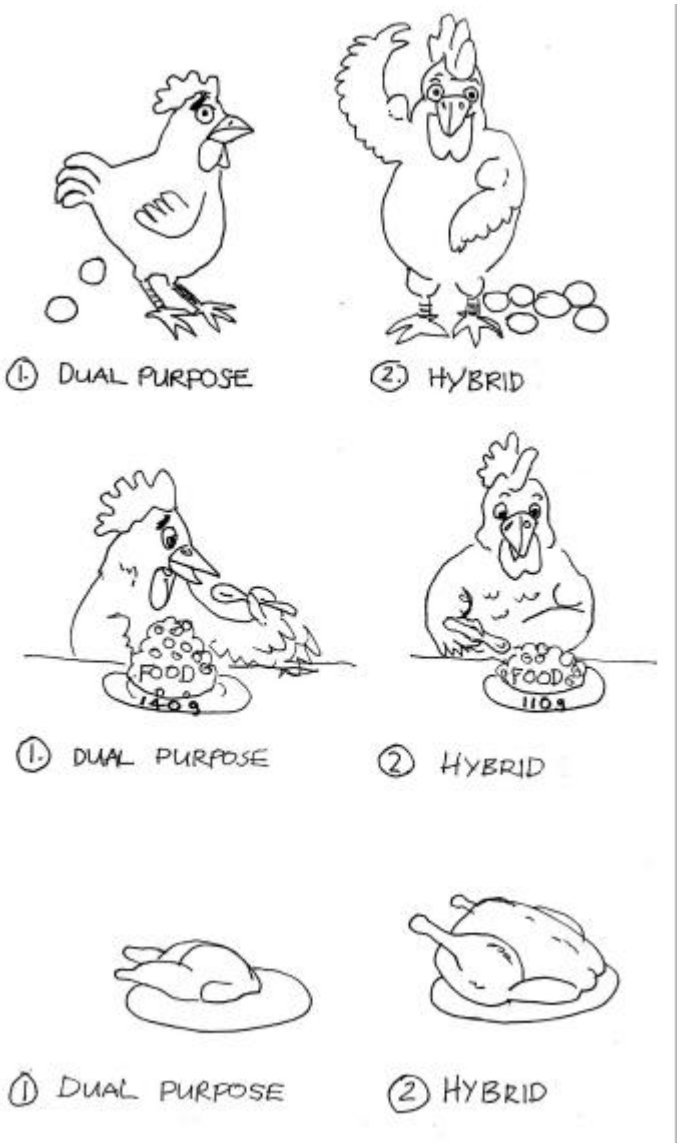
- Today they do not produce *enough eggs*
- nor do they *grow fast* enough for meat production
- they eat *too much feed*
- they are *not efficient* in converting feed to eggs and meat.

Special Breeds. These have been selected for *egg* production

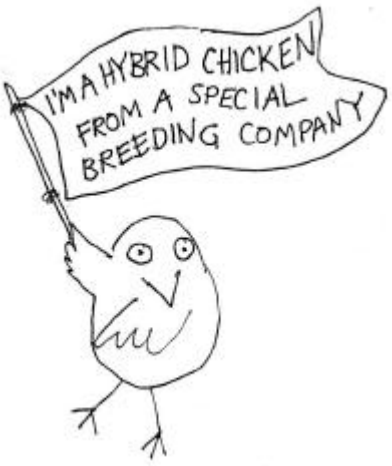
- the White Leghorn was very *popular* for many years
- it has a small body (1.5 kg) and lays many *white* eggs
- the Black Australorp is another *popular* breed
- it is very *docile* (quiet) and lays a tinted (light brown) egg
- it is medium-heavy body weight (2.2 kg) and therefore *eats* quite a lot of feed
- it is good for free-range (out doors)

***Hybrids*.** In the commercial world today only hybrids (cross-breeds) *selected* for either meat or egg production (*not both*) are used because

- they lay *more eggs* than special breeds
- they lay *large, brown* eggs
- they eat less *feed* per kg of weight gain or per kg of eggs
- the male chicks from hybrid layers grow *very slowly* and normally have to be *killed.* They are too expensive to rear
- the hybrid broilers *grow faster* than pure breeds
- they produce *more breast meat* than the pure breeds



Hybrid chicks are only *available* to the small farmer through a *breeding* company. The farmer will not have the parent breeding stock and therefore can not *breed* the chicks himself.



EXERCISE

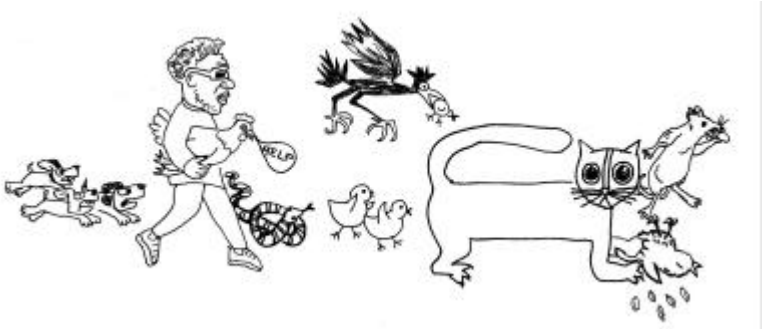
In a few words list all the characteristics (eg many brown/white eggs) that you would like to see in 1.a laying hen, and 2. a broiler chicken

_____
_____
_____
_____

3.0 Housing

There are many *reasons* why poultry should have a well-constructed house

- to *protect* them from floods, rain and the sun
- to protect them from *predators* - dogs, cats, snakes, birds of prey, rats and thieves
- from mice, rats and other birds from eating their feed and transmitting disease
- to give hens a *safe* place to lay their eggs

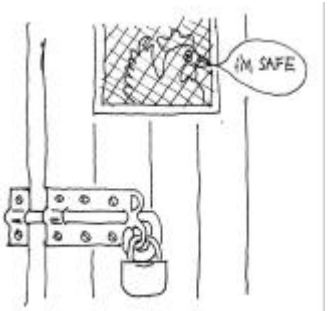


You must protect your chickens.

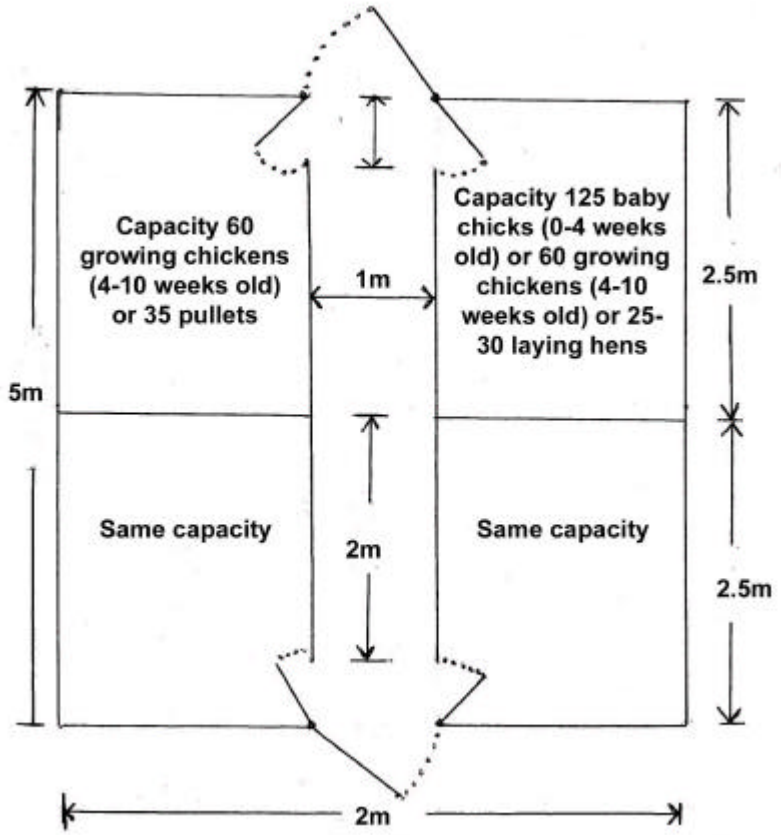
Chickens must be protected from the weather.

What are the basic *requirements* for a poultry house? It must be

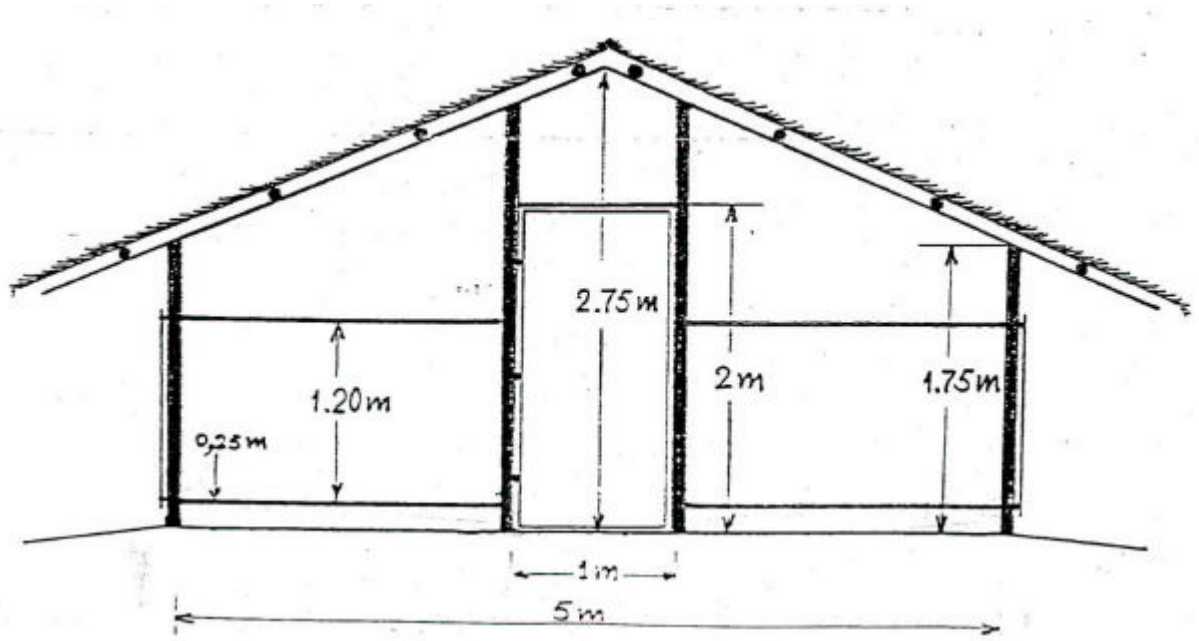
- rain proof
- protect the birds from direct sunlight and keep them cool
- must have good *drainage* around the house
- easy to *clean*
- have a strong door with a secure *lock*



Housing will likely be your biggest *investment* and to cut costs *local* material can be used. Positioning of the house is *important* to conform with some of the basic requirements (mentioned above). High ground will stop *flooding* in rain storms



Sketches of a simple poultry house for keeping about 250 broiler chickens or 120 laying hens.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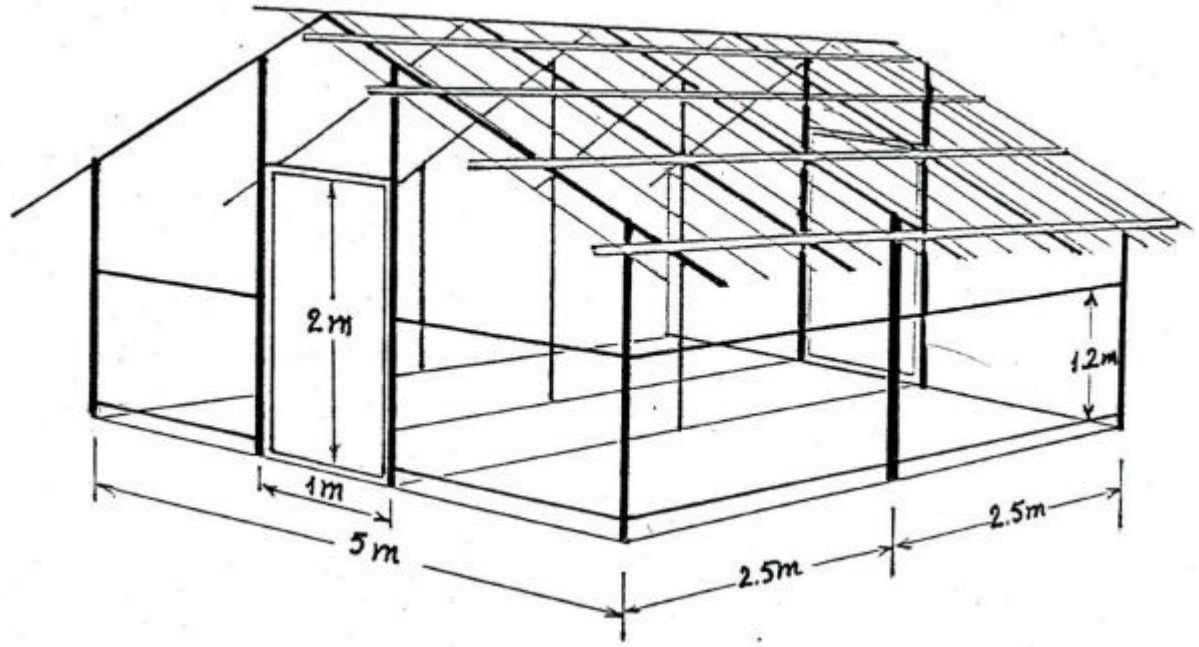
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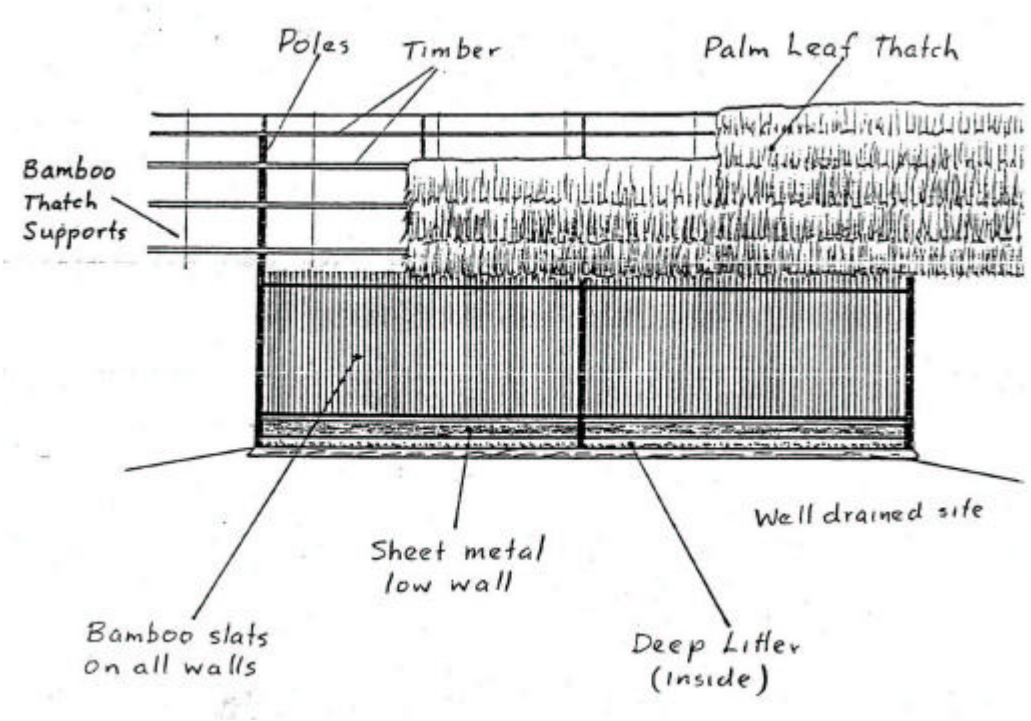


3.1 Floor

The floor must be:

- flat and *smooth*

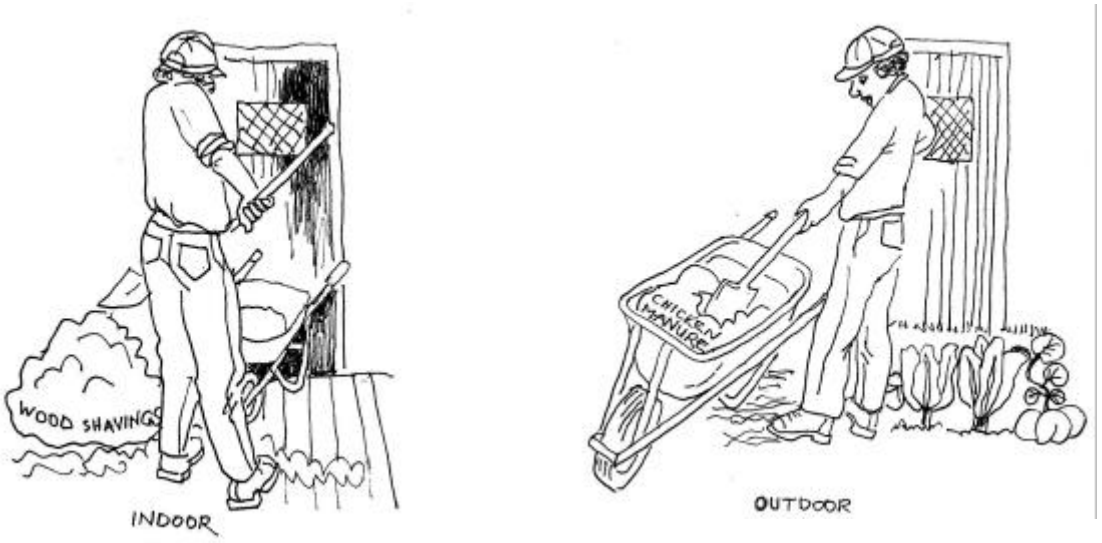
Have a good depth of *litter* cover (sawdust, shavings, dried grass, leaves, chopped straw, crushed coffee hulls, peanut hulls).

Litter:

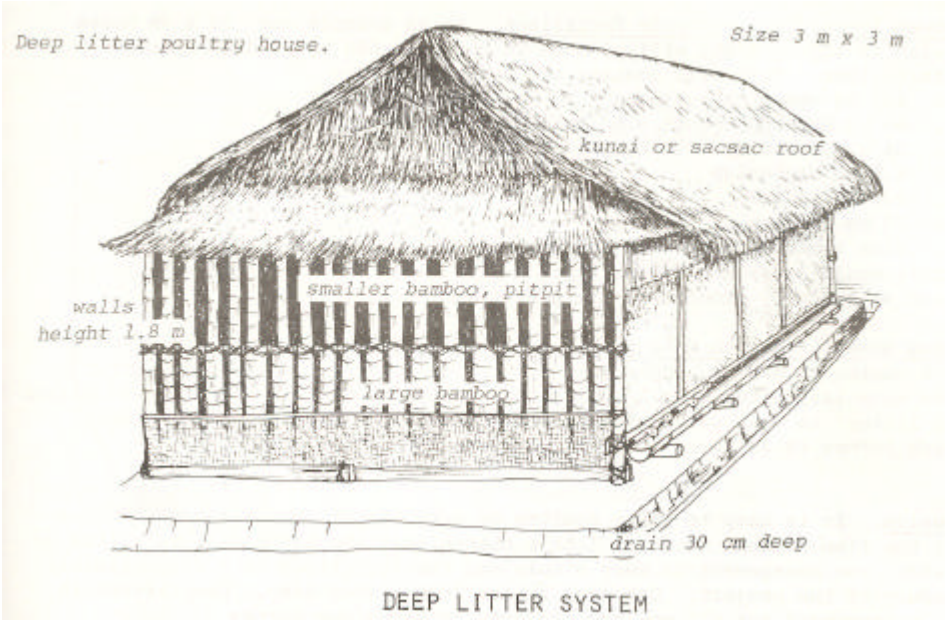
- should be *raked* weekly
- *changed* every two batches of meat birds or every batch of layers
- makes excellent *fertiliser* for your garden
- makes an excellent *compost* when mixed with leaves, grass, vegetable waste etc

Fresh poultry manure must be *stored* for six months, otherwise it might *burn* plants.

Adequate floor *space* is most important particularly in ENB where it is always hot.



Remove manure from empty house and replace with clean litter.



DEEP LITTER SYSTEM

EXERCISE

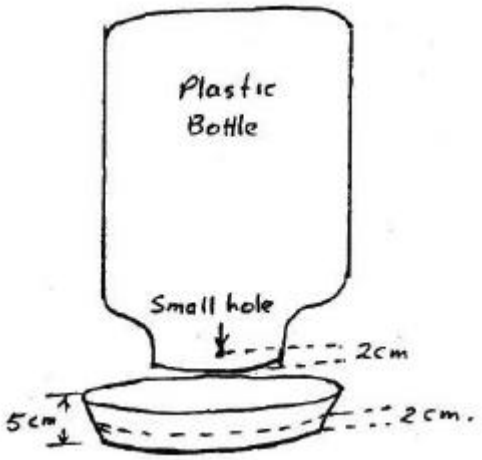
Do you have a suitable place to build a chicken house? If so describe the site. Are there suitable materials to construct the house from? What are they? Will you have to purchase some of these materials? What are they and their cost?

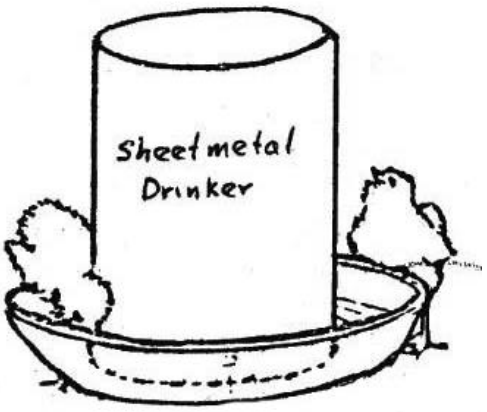
_____
_____
_____
_____

4.0 EQUIPMENT

4.1 Drinkers

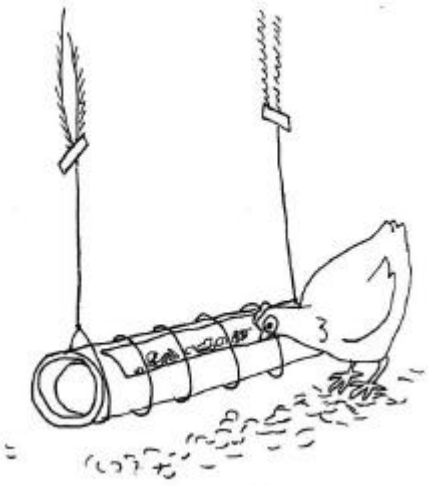
Give your birds, *clean*, fresh water. You can make your own drinkers or buy them.
They must be *adjusted* to the correct height so that birds can drink easily

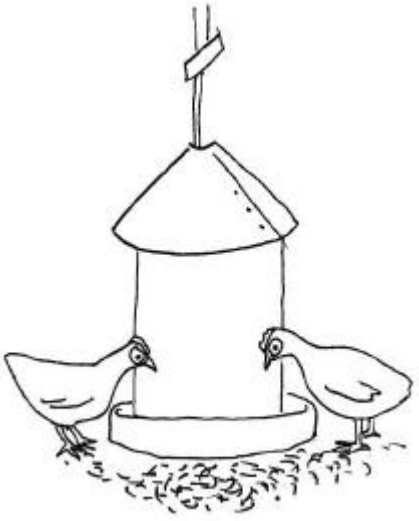




4.2 FEEDERS

Poultry must have *continual* access to feed in properly-adjusted feeders, otherwise they will not *grow* or *lay* well. These can also be made from *local* material, or purchased.
Feeders must always have a *lid* to stop birds from entering the feeder
An inexpensive spring balance for weighing birds, feed, eggs and other things, you will find to be very useful





EXERCISE

Make a list of the important characteristics of a poultry house

_____
_____
_____

Make a list of the equipment that must be available in the house

_____
_____
_____

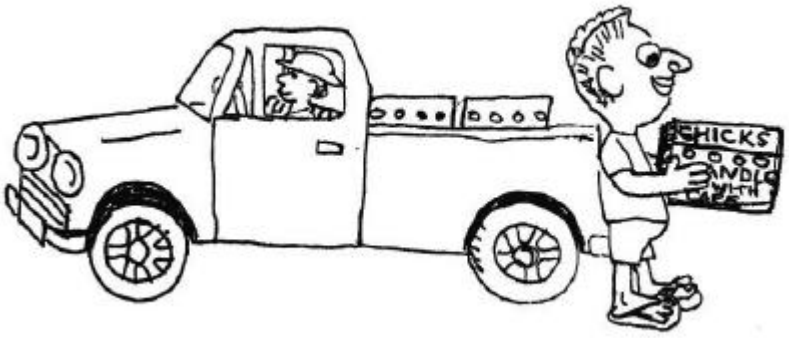
[Trainees will now visit the demonstration unit to discuss the poultry house and how much a similarly equipped house will cost and what improvements/changes could be made. Use of old litter to make compost or to spread on the garden will also be discussed]

End of Unit II

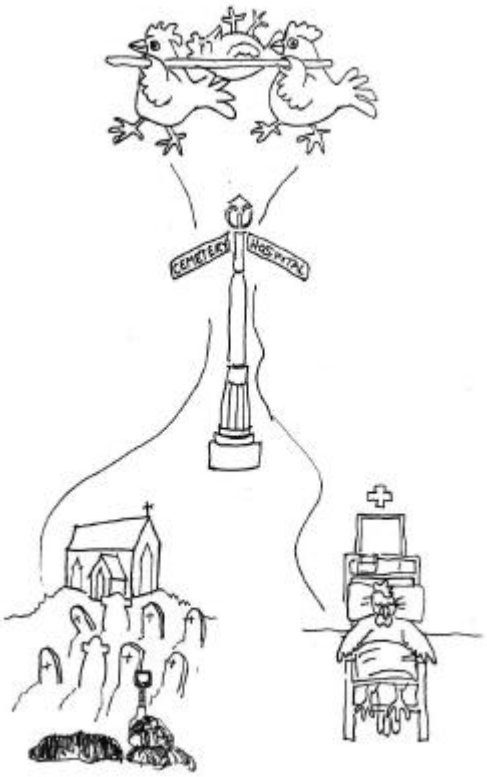
UNIT III

5.0 BROODING

This is a term which means, *keeping chicks warm and comfortable.*



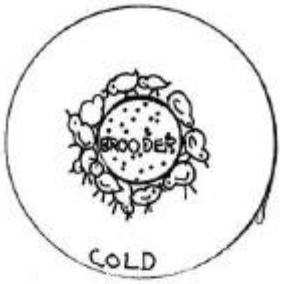
When your baby chicks arrive they will need *special care*. This is the time when you can expect a few chicks *to die.*



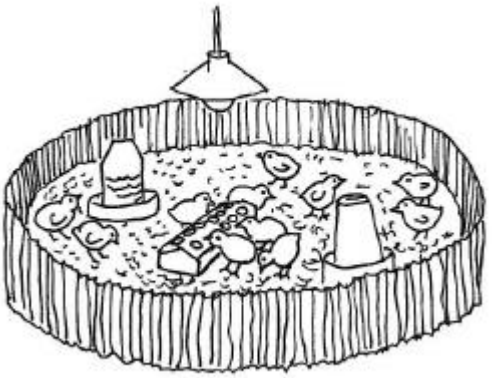
Dead chicks should be removed and *buried deep* in a hole in the ground.

Chicks should be given water immediately and shown how to drink.

Electricity may be *unreliable or unavailable* and a small *kerosene* lamp can provide heat.



- *Weak* chicks need to be watched carefully. They rarely survive. Often it is better to *destroy them*.
- The chicks are placed in a *brooder* made from cardboard or woven bamboo, leaves or grass
- It may be necessary to provide *extra heat* during the night



Chicken brooder

A *cold-box brooder* can be used but only for up to 50 chicks. It needs no heat source. The chicks keep each other warm in an insulated box *without* additional heat.

EXERCISE

Make a list of what you will need to do to prepare your chicken house for the arrival of a batch of day-old chicks

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_____
_____
_____
_____

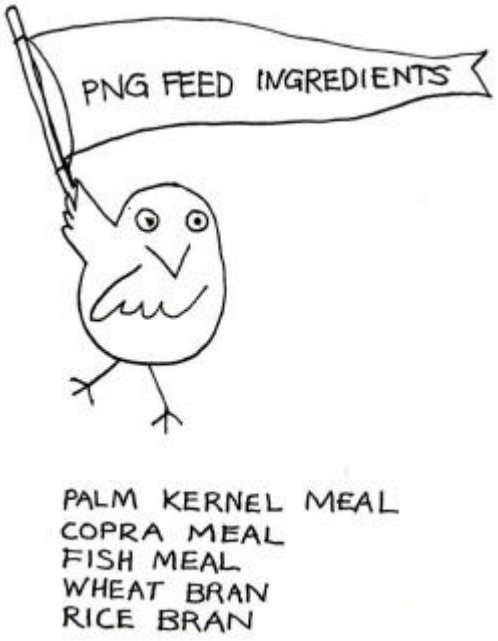
6.0 FEEDING

Feed is *60-70% of the costs* of producing commercial poultry.

Feed is the major *constraint* (difficulty) to producing poultry in ENB

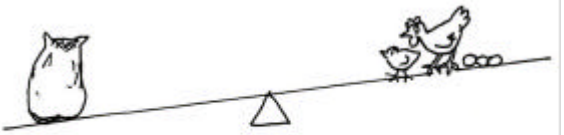
Compounded (mixed) feed is *expensive*. There is *no feed mill* and mixed feed is not produced in ENB. It comes by ship from Lae.

70% OF COST OF RAISING MEAT



Only *very few suitable ingredients* (feedstuffs) are produced in PNG. Most are imported.
Fish meal is produced in PNG, also palm kernel meal, copra meal, wheat bran and rice bran.
Feed ingredients are mixed according to a *special recipe* to provide a *balanced* diet.

WELL BALANCED FEED



POORLY BALANCED FEED

Baby chicks need a feed of the highest quality. That is one that is high in good quality *protein* (eg.fishmeal) to match the protein found in meat and eggs.
Chicks also need a source of feed *energy* (wheat bran, cereal grains) to make them grow well.
Chicks also need other *nutrients* (minerals and vitamins) but only in small amounts
A specialist person *formulates* (puts together) diets suitable for chickens. That person should also give you good *advice* on what to and how to *feed* your poultry.

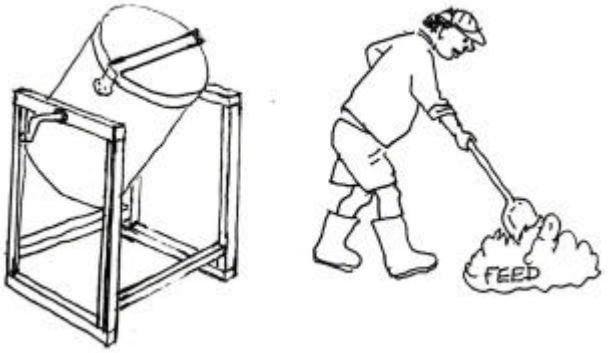
Farmers who receive the right advice

First there is a need to get in a stock of the *raw*

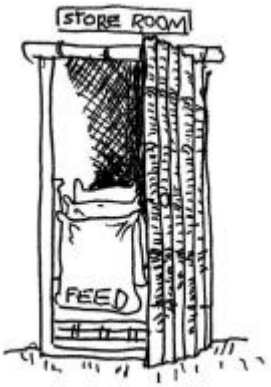
may want to *mix* their own ingredients.

materials (ingredients). You will need to *weigh* out the ingredients or have *containers* which will hold known *weights* of different feedstuffs

The feedstuffs must be thoroughly *mixed* with a shovel or in a home-made mixer. It can be made from a drum. A cement mixer can be used.

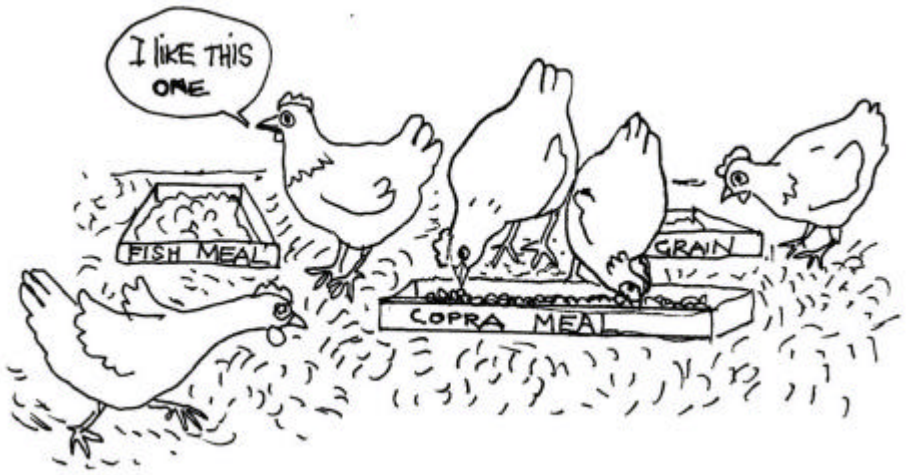


Ingredients and the mixed feed must be *stored* in a *dry place* and safe from *birds* and *rats*



6.1 Choice feeding

Sometimes it is better to let the birds *select* their own feed and *balance* their diet themselves. This is called *choice feeding* or *self-selection*. Feed ingredients are *not mixed* together but are placed in separate feeders (maximum 3) and the chickens in this way *balance* their own diet. There are only certain situation where this can be done, usually when the birds are on the *ground* or *floor*



EXERCISE

What are those things that are most important in feeds for feeding chickens?

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_____
_____

Make a list of suitable poultry feeds that may be available in your village

_____
_____
_____

END UNIT III

UNIT IV

7.0 HEALTH AND DISEASE PREVENTION

Chickens are fragile and can get *sick* very easily especially when young.

There are *two* major sources of disease:
Diet if not correctly formulated can result in the bird getting a *metabolic disease* due to a nutrient deficiency (vitamins or minerals) in the diet.

Other diseases are caused by minute organisms called *bacteria* and *viruses*. It is often necessary to treat the chicks as soon as they hatch with a *vaccine* which allows them to resist the disease if it occurs. This is normally done at the hatchery.

Remember that prevention is better than cure!

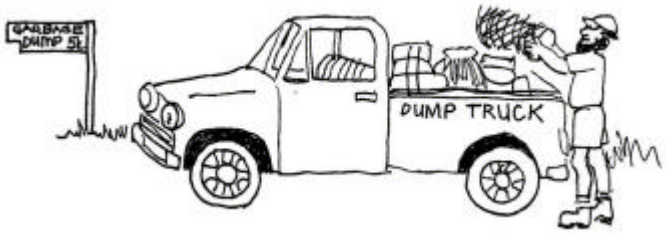
- Many diseases can be *prevented* by keeping your poultry house *very clean*
- *Overcrowding* of birds can cause *disease*
- Do not keep other *poultry* on your farm
- Do not allow other poultry *farmers* to enter your shed

Place a *foot bath* with a disinfectant in it or limestone outside the door of your poultry house

Have a special pair of *boots/shoes* that you will use *only* when you are working in your poultry house

Leave sufficient *time* between batches of birds to *clean* the house and *get rid* of diseases that need to have a bird *(host)* to survive

Remove *old litter*, dirty bags and contaminated rubbish and dump them far away



- All in-all out systems in which birds are all the *same age* help to reduce disease out breaks
- Discard damp, old feed. It can grow mould which can produce *toxins.* They can kill or make your chickens sick

- External *parasites* such as mites, lice and fleas can make your poultry feel *uncomfortable.* This will *affect* their growth rate and egg production
- *Insecticides* are used to treat the infected birds. A *dust bath* will also help to reduce these external parasites
- Internal *parasites* such as different worms and minute protozoa causing coccidiosis can be prevented by medication
- This is done routinely by adding a *coccidiostat* to the mixed feed for broilers

Remove immediately sick birds and *bury* dead birds.
Never eat sick birds they will make your family ill.

EXERCISE

What will you do to stop your chickens from getting sick? Make a short statement

_____
_____

What will you do if they do get sick? Make a short statement

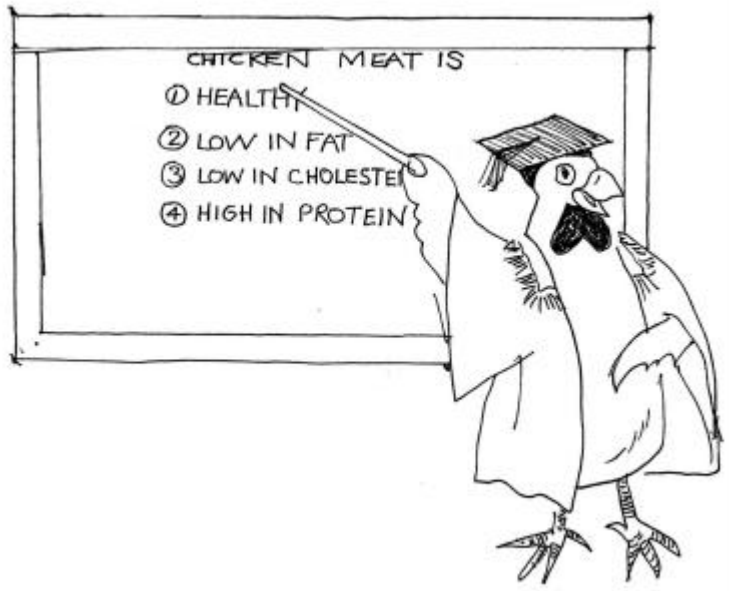
_____
_____
_____

We will now discuss the two *specialised* areas of commercial (intensive) poultry production: broiler (meat) production first and then egg production.

END OF UNIT IV

UNIT V

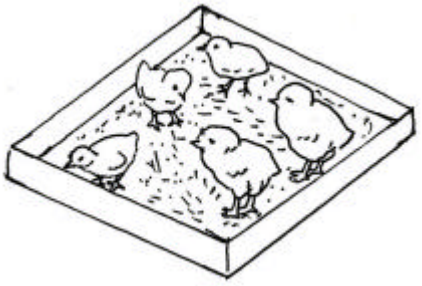
8.0 COMMERCIAL BROILER PRODUCTION



Chicken meat is very *popular* throughout the world. It is seen as a *healthy* meat low in fat and rich in protein (lean meat)

To prepare for the chicks' arrival it is best that you have a time plan or schedule

- the house will be thoroughly cleaned and disinfected
- shavings on the floor
- the brooder surrounds in place
- the brooder heater checked and adjusted (if there is one)
- feeders and waterers in place
- a supply of starter feed paper on the floor of the brooder with a *small* amount of feed placed on it so that the chicks can start to eat



- For the first 7-10 days the chicks will be *brooded* (see 6. BROODING) Broiler chickens can grow very *fast* but only when well looked after and given good feed

- After 3 weeks of age when the house *temperature* is less than 28 –30^{o} C they grow best. In ENB, the temperature is normally above 30^{o} C in the day time so they will grow a bit *slower* than usual

He's developing a work plan.

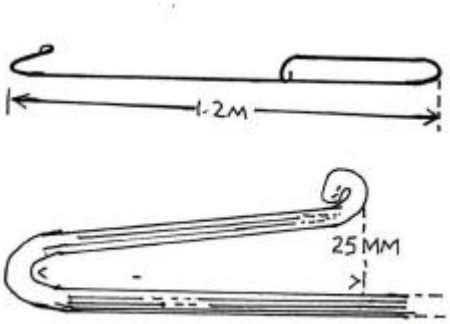
Some chickens will *die* in the first week particularly those that are small and weak. You must remove and *bury* them immediately

You can expect to lose about *4-5 chicks* out of 100 in the first 3 weeks. Another 2 *may die* later

- Chicks should be given a bought *formulated* feed. A commercial *starter diet* should be purchased and fed for at least the first 10 days because they need to get off to a *good* start
- They will have eaten only about *450 g* of feed during this time. This will cost you less than *1 Kina/bird*
- A grower diet will then be introduced by *mixing* what remains of the starter feed with the same amount of the grower feed. This will mean that they can *adjust* easily to the new feed
- When the mixture is *finished*, chicks will be on the *grower* feed only
- Check chicks *several* times a day to see that they are comfortable and have feed and water

Check your chickens frequently. They do not like it too warm.

It will be helpful if you have *weighing scales* so that you can weigh feed given to the chickens and get the live weight of a sample of 10 birds every 2 weeks caught with a simple leg catcher. This will tell you how well your chickens are *performing*



- Do your birds reach *targets* at 3 weeks and 6-7 weeks? This should be your marketing *age range* for best growth and feed consumption?
- Weight *gain* is weight of bird divided by age in days then divided by the total number of birds to obtain the average weight gain of one bird
- Feed *efficiency* is feed consumed (kg) during a fixed number of days divided by the total weight of all birds (kg) consuming that amount of feed
    - As a guide the average weight of your chickens at *6 weeks* should be *1650 g* and at *7 weeks* 1800 g
    - Feed efficiency should be *2.5 kg feed* for 1 kg of weight gain at 7 weeks of age [a worked example of these calculation is given at the back of the manual]

Although your chickens look healthy you must still *inspect* them several times a day. You do not want to lose any. They are now becoming valuable and attractive to a *thief*

8.1 MARKETING

Selling your chickens *profitably* is essential

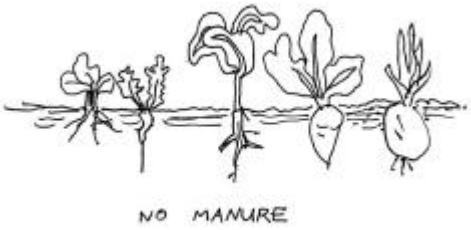
You can sell them

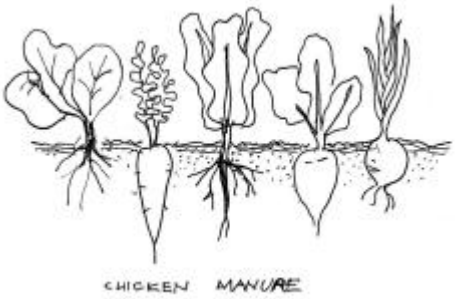
- alive on a bird or on a *weight* basis
- through a middle man who will take some of your *profit* for himself
- dressed, plucked, eviscerated (guts) and organs (lungs, liver, heart) removed. This is *time-consuming*
- sell to an *abattoir* for processing

8.2 MANURE

Chicken litter will produce very valuable manure rich in *nutrients*
You can:

- use it on your garden
- make it into a compost
- sell it





8.3 RECORD KEEPING

It is essential that you keep good *records* of feed used, dead birds, weight of birds at the end. These records will then be used to determine if you made a *profit* or a *loss.*

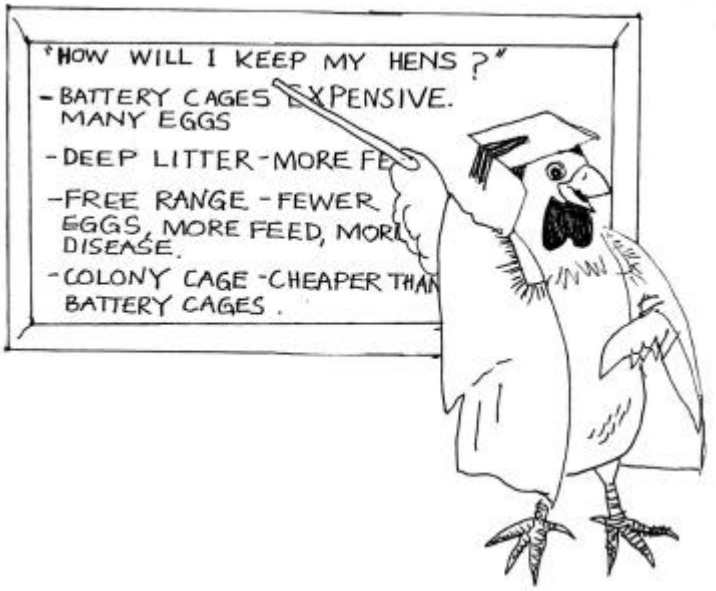
[a broiler record sheet is given at the end of this manual. The trainer will work through an example with you]

*No mention has been made here of vaccination of chicks. This is normally done at the hatchery.

END OF UNIT V

UNIT VI

9.0 COMMERCIAL EGG PRODUCTION



There are several choices of how you *house* your hens for egg production:

- in group cages of 2-5 hens (*expensive* but saves floor space)
- indoors on the floor (barn hens or deep litter)
- free-range out-of-doors during the day
- large group or colony cages (indoors, see later)

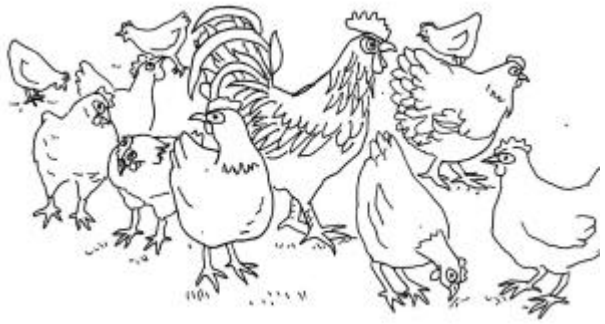
For *replacement* or point-of-lay pullets (young hens not yet in lay) there are two options

- the farmer can *purchase* hybrids or pure breed chicks from a hatchery (expensive) or
- the farmer can *hatch* and raise his own chicks

9.1 HATCHING CHICKENS

The farmer:

- can have a *flock* of breeder hens with one rooster for 10-12 hens.

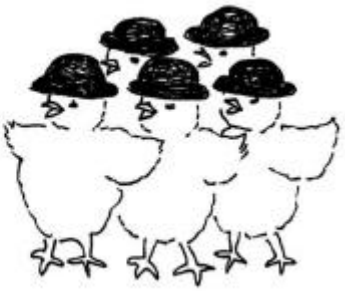


- will store the fertile eggs in a cool place for 1-6 days
- will allow a broody hen to incubate the eggs or own a small incubator (expensive and needs a reliable power supply)
- water and feed should be placed close to the broody hen in an isolated place
- the nest should have a 2 cm layer of *sand* then 2-3 cm of *litter* on top

- will need nest boxes with litter and placed in a secure, dry place

- at *day 21* eggs will hatch out

Half will be *females*. The farmer must decide what to do with the *males.* They will grow much slower than broiler chickens but can be given a *lower-quality* feed than broilers after 4 weeks of age. They still may not be *profitable* to keep and sell or grow them



9.2 PULLETS

They are raised *indoors* in the same way as broilers. They grow *slowly* and may need brooding until *4-6 weeks* old. They are then given *more space* than broiler chickens.

They should be given *500 g* of *broiler starter* feed for the first 4-6 weeks. When this feed is used up it is replaced with a *lower-quality* pullet-rearing diet until *17 weeks* of age. They are then given a *layer diet* which is high in calcium (3%) and phosphorous (0.5%). This is needed for sound eggs with hard shells. Pullets will now be *transferred* to their layer house

9.3 BATTERY CAGES

- can hold 1-5 hens per cage
- are *expensive* but can be made from local material
- hens may *peck* one another and may need to have their *beaks* trimmed
- can *scratch* one another if claws are long with loss of feathers
- must be given a *high-quality* layer diet
- will lay *more* eggs and eat *less* feed than hens in any other housed system
- may be in future *welfare* issues as birds have little space. This worries the public

9.3.1 Small scale cage unit

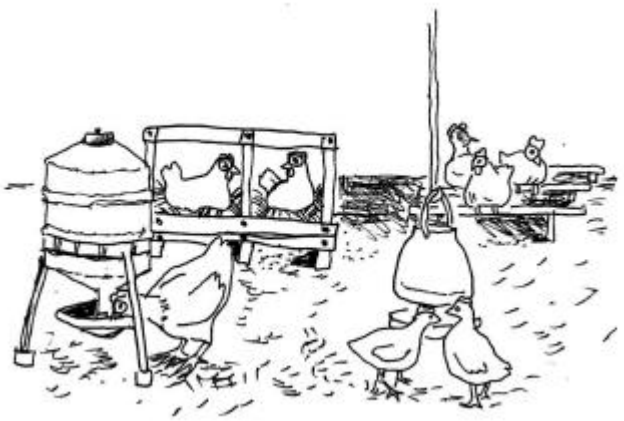
This is designed for a *household* wanting to keep only a few hens and have eggs for their family and to sell

- a single cage unit of 3 compartments holding 12 layers (total)
- cage on legs or on a stand constructed cheaply from bamboo

- can be moved easily out of rain and weather to a safe place
- thatched roof or without a roof if kept under *cover*

- bamboo feeders and home-made waterers (see illustration)
- hens must receive *high-quality* feed to lay 9 eggs /day
- system *sustainable* if 5 eggs sold and 4 eggs consumed by the household
- money from egg sales used to buy more feed
- hens sold after *12 months* for eating
- money from egg and hen sales *used* to buy replacement birds or layer chicks and grown to pullets but starting these 20 weeks before selling old hens

9.4 BARN HENS



- hens kept *indoors* and on the floor with adequate floor space
- house must be well constructed and *safe* from thieves
- feeders, waterers, perches and nest boxes must be *provided*
- floor *litter* is necessary and later used for *fertiliser/compost* on gardens
- some eggs will be laid on the *floor* and some will get *dirty*
- *green* feed can be given easily to hens

9.5 FREE RANGE

- similar to the barn system except
- need a *docile* (quiet) breed who will not fly over the surrounding fence
- hens are allowed to *scavenge* in a *secure* outdoor enclosure during the day
- allowed to go *indoors* at any time
- locked up at night
- house similar to that for *barn* hens with nest boxes, waterers and feeders
- waterers also provided in the *outside* enclosure floor space per bird in house is a little *less* than for barn hens

Advantage of free range system is that the hens can *scavenge* for some of their feed and pick up some *essential* nutrients. Hens need green feed and there should be *two separate* outdoor pens which can be *rotated.* One will be rested to allow the grass to grow back

Disadvantage: hens will eat a little *more* feed and lay *fewer* eggs than a battery (caged) hen. More likely to pick up a *disease* outside

EXERCISE

Do you understand the different systems of housing poultry? If not write down what you do not understand about them and what you do understand about them

_____
_____
_____

What *system* of keeping hens do you prefer. Why and will suit you best?

_____
_____
_____

Do you have the *skills* available in your village and the building *materials locally* to build a layer house and cages. Explain?

_____
_____
_____

9.6 FORCE MOULTING

This is to stop old hens from laying for about a month

- replacement pullets are *expensive*
- egg production *drops* when hens get old
- egg shells will get *thin* and break when birds get old
- may be economical to put hens through a *second* laying cycle
- hens are put *out of lay* by feeding a poor-quality diet for 7-10 days when about 60-70 weeks old but must always have water
- hens then are put back on a *layer* diet and will come into lay *2-3 weeks* later
- eggs will have sound *hard* shells
- hens will lay *more* eggs than before and for more than the next 20 weeks
- will lay *large* eggs

Disadvantage: hens are out of lay for about *4-5 weeks* during moulting

9.7 EGG QUALITY

9.7.1 Internal

- eggs get *stale* quickly in hot weather
- store eggs in a cool place

- when the egg yolk *spreads* into the white the egg is stale
- a stale egg may not taste *different* from a fresh egg
- some people like eggs with a deep *orange-yellow* yolk
- others like the yolk a *pale yellow* colour
- colour can be *measured* with a yolk colour *fan*

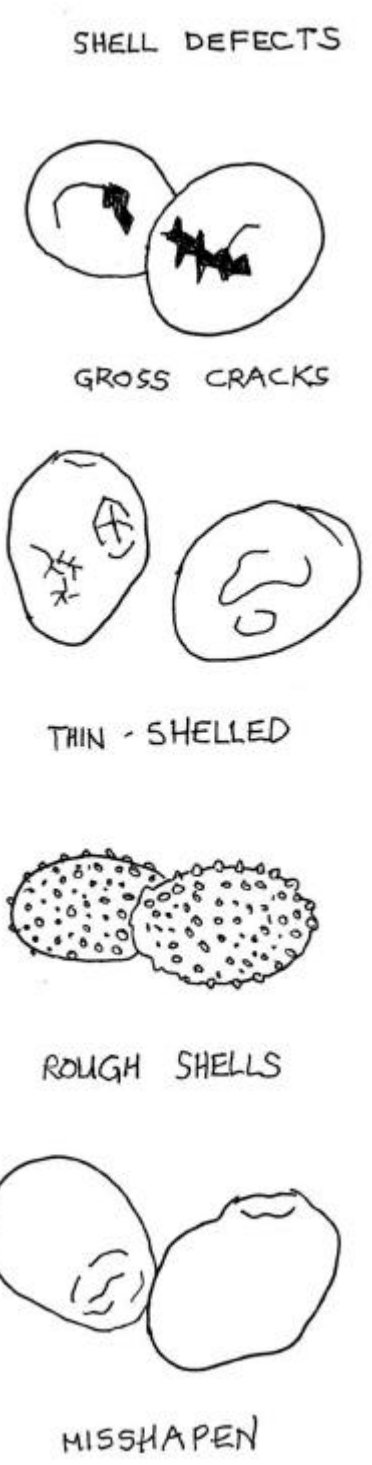
there are sometimes *blood spots* in the egg yolk but we are not sure why

STALE EGG

FRESH EGG

9.7.2 External

- eggs can be misshapen, *soft-shelled*, with pimples and rough surfaces
- egg *breakage* occurs easily especially if the hens are old
- these eggs are classified as *seconds* and fetch a much lower price in the market
- dirty eggs, blood stained eggs and fly marks on the shell make the eggs *unattractive* to the customer
- consumers like eggs either *white* or *brown* shelled but both have the same nutritional value



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[END OF UNIT 5]

UNIT 6

UNIT VI

10.0 RECORD KEEPING

It is essential that you keep *good records* of feed consumed, eggs produced and bird deaths and removal of sick hens and non layers. A sample *record sheet* is given so that you can know accurately how your flock is *performing.* [Example of a layer record sheet at the end of this manual]

11.0 CONCLUSION

Keeping poultry is *not easy*. It is a *learning* process. You should start *slowly* and expand as you gain experience. You may have set backs but you must persevere and seek advice when you have problems and need help. If you are *kind* to your birds and *treat* them well they will respond.

12.0 SURVEY

Before you *decide* that you want to become a poultry farmer you must undertake a *feasibility* study that is researched *thoroughly* in all aspects of meat production or egg production to determine if you are going to make a *profit*. Otherwise you may be *wasting* time and *money*. When you have done your research you can then make a *business plan.* Your business plan will get you a better chance of *borrowing* money from the bank to give your enterprise started

Some of the *questions* you need to ask are given below.

Chick costs

How much are day-old?

Layer chicks?

Broiler chicks?

Where can you buy them from?

How far away is the supplier from you?

Does the supplier deliver?

If the chicks are delivered, how much does it cost?

If no delivery, how will you collect them and what is the cost of this?

Broiler costs(It may be possible to buy brooded chicks from a farmer who broods chicks for sale)

Can you buy 3-week-old or 5-week old broilers? If so where?

How much do 3-week-old or 5-week old broilers cost?

Do they deliver and charge, is there a minimum batch size?

How much will it cost me to deliver if they don't?

Layer costs

What is the cost of point-of-lay (16-18 weeks) pullets?

Do they deliver free or charge?

How much do they charge?

If no delivery, how much will it cost to pick them up?

Feed costs

Where is there a supplier close to me?

How much per bag and size (kg) for broiler starter?

How much per bag and size (kg) for broiler finisher?

How much per bag (kg) and size for pullet finisher?

How much per bag and size (kg) for layer feed?

Does the supplier deliver, if so at what charge?

If not, how will I get the feed and cost?

Equipment and water

Where can I get medical supplies and vaccines?

Where can I get medical advice?

Where can I get floor litter?

How much will it cost?

Where will I get water from?

Do I have sufficient for drinking water and cleaning equipment and the house?

Market survey questions

Where will I sell my broilers?

Who will I sell them to? (neighbours, schools, local market, shop)

Who else is selling chickens in your area?

How much are they charging per bird or per kg?

What age are they?

Why will people buy from you?

What will you charge per bird/kg?

How many birds can you sell per week or month?

How do you know that you can sell that many?

Egg sales

Where will you sell your eggs?

Who will you sell them to? (neighbours, schools, local market, shop)

How much will transport be?

How much will you charge for 12 eggs mixed grade?

Who else is selling eggs and as mixed or graded?

How much for 12?

How many can you sell per week?

How do you know that you can sell that many?

13.0 BUDGET

A statement of expected expenses, income and profit or loss is then calculated.

Expenses and Direct Costs	
Chickens (____ Birds x K____ per bird)	K
Feed (_____ bags of each kind x K____ per bag)	K
Heating (cost of fuel)	K
Medicine, vaccines, disinfectants	K
Transport for everything	K
Litter	K
Other costs (5%)	K
A. TOTAL DIRECT COSTS	**K**
Indirect costs	
Water	K
Electricity	K
Telephone	K
Rent	K
Bank loan interest	K
B. TOTAL INDIRECT COSTS	**K**
Monthly income	
____ broilers sold at K_____ per bird	K
or	
____ dozen eggs sold at ____ K	K
C. TOTAL INCOME	**K**
PROFIT (C-A+B)	**K**

Broiler record sheet

(PHOTOCOPY THIS PAGE FOR RECORD KEEPING.)

Batch No.: Shed No.: Breed:
Hatch date: Starting No.:

Feed given (bags)								
Day	1	2	3	4	5	6	7	Total
Week 1								
Week 2								
Week 3								
Week 4								
Week 5								
Week 6					-			
Week 7								
Week 8								
Total								

Live body weight at 42 days:		FCR:	
No. of birds weighed:		Mortality:	%
Total weight of birds:	kg	Total feed intake:	kg/bird
Average weight of one bird:	kg		

Remarks:

Example of calculation for 100 broiler chickens to determine performance

Starter period	
Weight at 1day old	4.5 kg
Weight at 3 weeks old	62.0 kg
Weight gain (21 days)	**57.5 kg**
Feed at start	100 kg
Feed at finish	13.75 kg
Feed eaten (0-21 days)	**86.25 kg**
Feed conversion ratio (0-21 days)	$\frac{86.25}{57.50} = \mathbf{1.50}$
Finisher period (21-49 days)	
Weight at 21 days	62.0 kg
Weight at 49 days	180.0 kg
Weight gain	**118.0 kg**
Feed at 21 days	300.0 kg
Feed at 49 days	5.0 kg
Feed eaten (21-49 days)	**295.0 kg**
Feed conversion ratio (21-49days)	$\frac{295}{118} = \mathbf{2.50}$
Whole period (1-49 days)	
Weight gain	175.5 kg
Feed eaten	381.25 kg
Feed conversion ratio(1-49 days)	
Feed eaten	$\frac{381.25}{175.5} = \mathbf{2.17}$
Weight gain	

Layer record sheet PHOTOCOPY THIS PAGE FOR RECORD KEEPING

Batch:		No:	
Hatch:		Date:	
No. at begging of period:		Age at beginning of period:	

Feed given (bags)								
Day	1	2	3	4	5	6	7	Total
Week 1								
Week 2								
Week 3								
Week 4								
Total								

Death and culls								
Day	1	2	3	4	5	6	7	Total
Week 1								
Week 2 Week 3								
Week 4								
Total								

Eggs laid (Saleable = G **and Non Saleable = B)**															
Day	1		2		3		4		5		6		7		Total
	G	B	G	B	G	B	G	B	G	B	G	B	G	B	
Week 1															
Week 2															
Week 3															
Week 4															
Total															

Mortality %_____ Feed intake_____ g/hen/day Rol_____%
Remarks_____

14.0 POULTRY GROUPS

A poultry group is an *organised* group of like-minded producers who combine to form a farmers' group or partnership. Members share responsibilities and any profit or loss. They speak with a *single voice* and allow the purchase of feed, equipment, chicks, building material and other supplies more *cheaply.* Eventually storage facilities can be established and a supply shop set up. The group can also have a strategic plan to reduce competition between individuals, set prices for poultry products and generally work to help one another to establish an industry on a firm footing. Trainers should provide as much assistance as possible to the farmers in establishing a working party that will spearhead the *formation* of a poultry group. The group may eventually *expand* into other areas of commerce where the farmers can *trade* other farm produce in addition to poultry.

15.0 COMMUNITY OWNERSHIP

This is similar to, but less *rigid* than a poultry group and is run by a *committee* representing a district or village community. For example the committee may be responsible for raising point-of –lay pullets. These they sell at 17-18 weeks to *individual* egg producers and the profits are distributed amongst the community. The egg producers may be individual farmers or a small group of men and women who share the responsibility similar to that in a poultry group.
In both cases there is opportunity to buy equipment, large numbers of chicks and bags of feed. This is usually attractive to the supplier and cheaper for the community.

END UNIT VI and END OF POULTRY TRAINING MODULE