Animal production Level

NTQF Level -II

Learning Guide 15

Unit of Competence: Assist basic husbandry practice of poultry

Module Title: Assisting basic husbandry practice of poultry

LG Code: AGR APR2 M05 L02 LG15

TTLM Code: AGR APR2 TTLM 0919v1

LO 2: undertake poultry raising activities

Instruction Sheet	Learning Guide 15

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Following supervisor instructions and directions
- Undertaking poultry raising activities in safe and environmentally appropriate manner

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, upon completion of this Learning Guide, you will be able to –

- Follow supervisor instructions and directions
- Undertake poultry raising activities in safe and environmentally appropriate manner

Learning Instructions:

1. Read the specific objectives of this Learning Guide 15.
2. Follow the instructions described in number 1 to 6.
3. Read the information written in the “Information Sheet (**1, 2, and 3**) in page **2,4 and 11** respectively
4. Accomplish the **“Self-check 1, Self-check 2 and Self-check 3”** in page**, 3, 10 and 12** respectively.
5. If you earned a satisfactory evaluation proceed to operation Sheet 1-3 in page13 and 4, 5 in page 14 respectively.
6. Do the “LAP test” in page 15 (if you are ready). Request your teacher to evaluate your performance and outputs. Your teacher will give you feedback and the evaluation will be either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advice you on additional work

Information sheet-1	Following supervisor instructions and directions

Following Instructions and directions provided by supervisor

Instructions and directions provided by supervisor are followed and clarification is Sough when necessary. Any employee who works in industry which raises poultry or any farmer who raise his own stock must follow the following instruction and direction:-

Enterprise policies and procedures

Manufacturer instructions

Material safety data sheets (MSDS)

The MSDS is a detailed informational document prepared by the manufacturer or importer of a hazardous chemical. It describes the physical and chemical properties of the product.

MSDS's contain useful information such as:

- Flash point,
- Toxicity,
- Procedures for spills and leaks and
- Storage guidelines.

Information included in a Material Safety Data Sheet aids in the selection of safe products, helps you understand the potential health and physical hazards of a chemical and describes how to respond effectively to exposure situations

OHS standards and procedures

Specifications for tools, equipments and materials

Standard Operating Procedures (SOP)

It is a set of step-by-step instructions compiled by an organization to help workers carry out complex routine operations. SOPs aim to achieve efficiency, quality output and uniformity of performance, while reducing miscommunication and failure to comply with industry regulations

Verbal directions from manager or supervisor

Work instructions and standards

Work notes.

Instructions and directions provided by supervisor must be followed and if we have any question we can ask when necessary. And also employee must observe and follow Enterprise policies and procedures in relation to workplace practices in the handling and disposal of materials

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List down 5 instructions and directions provided by supervisor to be followed by an expert in poultry raising (5pts)
2. Write the useful information contained in material safety data sheet.(5pts)

Note: **Satisfactory rating – 10 points** **Unsatisfactory - below 10 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date _____

1.

- _____
- _____
- _____
- _____

2.

- _____
- _____
- _____
- _____

Information sheet-2.	Undertaking poultry raising activities in safe and environmentally appropriate manner

1.1. Cleaning and disinfecting poultry shed

Majority of the disease in poultry farm are raised from improper cleaning and disinfecting

I. Cleaning

The first requirement for good hygiene is effective cleaning.

II. Disinfection

During disinfecting the poultry farm the following important points should be considered. These are:

- They should kill all pathogens.
- Should not be poisonous to birds and persons operating.
- With minimum of corrosive action on poultry equipment.
- Should be long lasting.
- Easy to use and must be cheap.
- No irritating or objectionable small or bleaching effect.

Factors affecting the action of disinfectants

1. Concentration: follow manufacturer's directions.
2. Time of application.
3. Temperature: important in the tropics since disinfectants work best with warmth.
4. Presence of organic matter, faeces and other protein materials counteract the activity of disinfectants.
5. Distance

The Recommended types of disinfectants

A. Formaldehyde (formalin and potassium permanganate)

It is in gaseous state used for fumigation of hatchery.

B. **Caustic soda (soda lime**)

Use a 2% solution in water. Since it corrodes most materials, it is use should be limited to serious virus disease situation.

C. Chlorine

Use 1% solution of chlorine quaternary ammonium compounds

it is effective when used as a 1% solution in water.

2.2. Selecting layers

During selection of layers the following features are considered. Some of them are:

- Should lay many eggs
- Should be free from broodiness characteristics
- Start laying early
- Have small body size (1.5-2.5Kg)
- Small amount of feed intake (110gm/head/day) as they are small in size
- Have good feed efficiency to convert in to egg

Feeding poultry

The feed, which the chicken consumes, is composed of the following different nutrients: water, carbohydrate, fats, proteins, minerals, and vitamins. Each of the nutrients in feeds serves a particular purpose

Pullet growth initially most sensitive to dietary protein and amino acids where as energy intake becomes more critical as the bird approaches maturity. Energy intake may be the limiting factor for growth of egg strain birds .Manipulation of energy intake is there for best considered in relation to feeding management and in particular method of stimulating feed intake. Minute quantities of vitamins and minerals should be added for the well being of the layer because deficiency may cause a drop of egg production.

Kinds of feed

Chicks: A ration that is fed up to the age 8 weeks.

Growers: A ration to be fed to growing chicks 8 to 20 weeks or until laying commences.

Layers: A ration to be fed to laying birds 20 weeks on ward or after lying commences.

Broiler starter: is fed from day-old until 4 weeks of age.

Broiler finisher**:** is fed from 5 weeks until market

2.3. Undertaking debeaking

De-beaking (beak trimming) is the cutting of the points of the beaks. It needs precision and must be done very carefully. When there is bleeding wound must be cauterized. It causes enormous stress to the birds and for this reason everything must be done to reduce stress before, during and after de-beaking.

Age at de-beaking: Opinions differ as to the best time for de-beaking. In general the younger the bird the less stress the de-beaking causes.

Required care at de-beaking

- Cut beaks in appropriate size,
- don't burn tongue of birds,
- don't cut with junk or very slowly,
- check for bleeding after de-beaking,
- Provide sufficient feed in feeders immediately.

2.4. Egg selection criteria

- Eggs that weigh medium weight are selected for incubation to avoid an uneven distribution of heat, relative humidity and oxygen.
- Eggs must be fertilized (presence of a cock)
- Use undamaged, clean, neither too small not too large. (Medium size).
- Collect eggs regularly /e.g. 3 times a day
- Preferably store eggs not more than a week.
- Handle hatching eggs carefully because they are costly!

NB: Any Dirty or Cracked Egg is Lost as a Hatching Egg

Candling Eggs

Candling is done to identify infertile eggs, early dead embryos and late dead embryos two or three times during the incubation period usually at 7th and 14thday of incubation. Candling on the 7th day of incubation is done to remove infertile eggs and dead embryos.

- Infertile egg: transparent and clean when light is passed through it, Yellowish spot near the centre (yolk) and much less evident air cell
- Early dead embryo: small, none motile black spot fixed at the side of the egg indicate early dead embryo, Absence of blood vessel , Adhering to the shell and Presence of pink ring or blood ring surrounding the embryo
- Live embryo: is spider like with red legs, Are large end floats and Clean air cell and blood vessel

Candling the 14th day of incubation is to remove late dead embryo. Live embryo fills the egg with clearly seen blood vessel and moving motile embryo

Candling of eggs

A simple candling device:

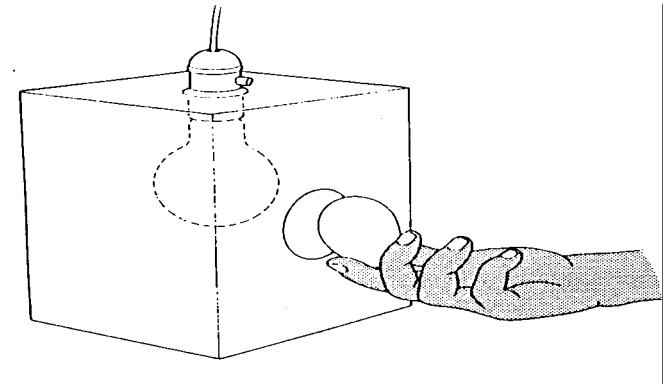

Fig. 1: A simple candling device

2.5. **Incubation: -**

Incubation is the art of bring eggs from laying to successful hatching. It is the process of placing eggs under optimum environmental condition for hatching. Incubation can be achieved either by natural means using broody hen or by artificial means through incubator. Incubation period is a time period or interval between incubation and successful hatching. It is 21days for chicken egg

Fig. 2: Incubator

2.6. Undertaking Brooding

Brooding is the process of caring for young chicks from day-old to eight weeks of age. It entails essentially, the provision of factors like heat, light, humidity, ventilation, feed, water and disease control measures for the survival and rapid growth of chicks.

There are two methods of brooding chicks namely

1 Natural brooding
2 Artificial brooding

Natural brooding:-is chick raising with the help of broody hen (mother), which:

- Provide the heat required
- Communicate feed and water source
- Alert danger conditions
- Provide protection against predation

Disadvantages of Natural Brooding

- Broody hen ceases laying during the incubation period of 21 days
- Few number of chicks are raised at a time and it does not fit to market oriented production system
- Success depends on the maternal instinct of broody hen and prevalence of predators in the area.

Artificial Brooding:- involves the use of special appliances which provide conditions similar to those of the broody hen such as adequate warmth, protection from harsh external factors of weather (wind, rain, temperature) and predators. It also allows good feeding, watering and disease control. Artificial brooding is the best method for the commercial producer. Artificial brooding has some advantages over the natural method namely:

- Chicks may be reared at any time of the year.
- Thousands of chicks may be brooded at once depending on the capacity of the farmer.
- Sanitary conditions may be controlled.
- Temperature may be regulated and
- Feeding may be controlled to meet the production objective

2.8. Rearing chicks

Rearing is the care of chicks from about eight weeks of age to the point they begin to drop eggs, i.e. point of lay. It can also be described as the care of growers. Rearing is critical to the overall success of the poultry industry because it ensures that the development of the birds at this stage of growth is satisfactory.

Important Considerations in Rearing

- The growers need more ventilation than the chicks.
- The growers require lower environmental temperatures than chicks.
- Even though chicks are photo-sensitive, from as early as three weeks old, the effect of light is negligible until the fowl is 7 weeks old.
- The growers are fed on a type of diet called growers mash.

2.9.Dressing:

Dressing is the process of preparing carcass from poultry**.**

1. **Preliminary precautions**
   - fasting
     - ✓ a prior fast of 4-6 hrs, allowing the intestine to be emptied
   - Transportation
     - Shortest possible transportation,
   - Detecting sick birds
     - ✓ a rest of 2 to 3 hr before slaughter is good for detecting sick birds.
   - Catching

     Birds should be caught under least stressful condition

2. **Killing**

The birds are killed by cutting the jugular vein with knife

3. **Plucking**

Means removal of feathers from poultry

- On small /traditional farms chickens are plucked by hand.
- Scalding-
  - ✓ Immersing birds in hot water to speed up plucking

4. **Evisceration**

Removal of visceral organs /intestines by drawing or complete evisceration

2. **Chilling**

It is cooling carcass to avoid bacterial proliferation

3. **Final packaging**

The most popular current packaging is a plastic dish. Storage is affected either in a refrigerator at + 2^0C, in a freezer at 5^0C or with super cooling 18^0C.

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is the advantage of artificial brooding over natural brooding?(5pts)
2. What are the determinant factors of artificial brooding? (4pts)
3. What does it mean when we say brooding and rearing? (6 points)
4. What are the most important cares during debeaking (5pts)

Note: **Satisfactory rating – 20 points** **Unsatisfactory - below 20 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date _____

1

- _____
- _____
- _____
- _____
- _____

Information sheet-3	Observing enterprise policies and procedures in handling and disposal of waste materials

Enterprise policies and procedures in relation to workplace practices in the handling and dispose materials are observed. Any employee who works in industry which raises poultry or any farmer who raise his own stock and also employee must observe and follow Enterprise policies and procedures in relation to workplace practices in the handling and disposal of materials.

Important points in handling and disposal of waste materials in poultry farm

- treating, reusing, and disposing of wastewater using different methods
- safe and proper disposal of non-hazardous farm waste
- handle, collect, segregate, store, label and dispose of Human waste
- preventing the contingency site from being polluted
- storing, segregating, treating, disposing of farm waste
- store, secure, utilize and dispose of pesticides/equipment
- spill prevention, response, containment, and cleanup

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List down the important points in handling and disposal of waste materials considered in poultry farm (8pts)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date _____

1.

- _____
- _____
- _____
- _____
- _____

Operation sheet-1	Cleaning and disinfection of poultry Shed

- Remove old litter
- Dry cleaning after removal of litter
- Wet cleaning with caustic soda/liquid soap/ bleaching powder and water under pressure
- Blow lamping of non inflammable excess/material
- Spraying of disinfectant (fumigation)
- Repair of cracks and crevices
- White washing of house
- Cleaning and disinfection of water system, feeding system and all the equipments in use
- After cleaning the house must be left empty for at least 15 days.
- Preparation of brooders 24hrs before arrival of chicks
- Add at least 5 cm new litter material for the first time, the litter should be clean and dry.

Operation sheet-2	Egg selection

- Collect/ buy/ eggs
- Select hatching eggs by using egg selection criteria (size, shape, smoothness, shell thickness, etc)
- Take sample egg and break it to know whether it is fertile or not.
- Observe the broken egg and if there is spot (sperm) the egg is fertile.
- Finally, Incubate only the selected eggs.

Operation sheet-3	Egg candling

- Prepare necessary materials
- Set up your candling equipment in a dark room within close proximity to the incubator.
- Select an egg from the incubator/nest
- Hold it above the light.

- Place the larger end of the egg (where the air sac is) directly against the light.
- Hold the egg near the top, between your thumb and forefinger.
- Tilt the egg slightly to one side and rotate until you get the best view.
- Look for signs that the egg is a winner
- Mark each egg with a number and take notes on your findings

Operation sheet-4	**Debeaking of chicken**

- Assemble all the required materials such as debeaker.
- Clean and disinfect debeaker.
- Handle the chicken properly (Handling is best achieved by two person)
- Cut the beaks of older birds separately; always cut the upper beak first.
- Cut 1/3 to ½ of the upper beak first.
- Cut the lower beak to the same length or make it (slightly) longer.
- Prevent stress as much as possible.
- Clean and sanitize the materials used during debeaking.

Operation sheet-5	**Dressing of poultry**

- Assemble and clean the required materials for dressing poultry.
- Attain the preliminary precautions.
- Kill or slaughter chicken
- Scald and pluck (remove feathers)
- Eviscerate the carcass (Removal of visceral organs /intestines)
- Chill or cool the carcass
- Pack the carcass properly
- Clean and sanitize the materials used during dressing poultry.

LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 8 hours.

Task 1. Clean and disinfect of poultry Shed

Task 2. Select egg

Task 3: candle egg

Task 4. Debeak chicken

Task5. Dress poultry

References

Rose, S.P. (1997) Principles of Poultry Science. CAB International. Harper Adams Agricultural College. UK. 41-45, 103-115

IPC (N.D) Practical poultry housing. Innovation and practical centre- livestock sector. Barnveld. The Netherlands.

Appleby, M.C., Hughes, B.O and Elson, S.A (1992) Poultry Production Systems. Behaviour, Management and welfare. CAB International, Wallingford, Uk.238

Say, R.R (1987) Manual of poultry production in the tropics. CAB international, Wallingford, UK. 118p, 8-23, 27-36