Poultry Production

Level-II

Learning Guide-32

Unit of Competence: Assist poultry production work

Module Title: Assisting poultry production work

LG Code: AGR PLP2 M10LO1-LG-32

TTLM Code: AGR PLP2 TTLM 1219v1

LO 1: Prepare for work

Instruction Sheet	Learning Guide #32

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

1. Selecting breeds.
2. Identifying and use Appropriate transportation methods

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:

- Select the breeds per the job requirement.
- Identify and use Appropriate transportation methods as per the standard practices

Learning Instructions

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below in page 3.
3. Read the information written in the information “Sheet 1 and Sheet 2.
4. Accomplish the “Self-check 1 and Self-check 2” in page -5 and 14 respectively.
5. If you earned a satisfactory evaluation from the “Self-check” proceedto “Operation Sheet 1” in page -15.
6. Do the “LAP test” in page – 15 (if you are ready).

Information Sheet-1	Selecting breeds

1.1 Introduction Select breeds

Breed refers to a sub specific group of domestic livestock with definable and identifiable external characteristics that enable them to be separated by visual appraisal from other groups of livestock within the same species.

Based on their utility Commercial breeds of chicken can be divided into three groups. These are:-

a. Layer breeds (egg type breed)
b. Broiler breeds (Meat type breed)
c. Dual Purpose breeds (both Meat and Egg type breed)

1.2 Definition of terminologies

Poultry: refers to all birds kept for the production of eggs and meat for human consumption and for their feathers.

Layers: chickens rose to be egg-layers

Broilers: chickens kept for meat production

Chicks: young chicken between 0-8 weeks

Pullets: female chickens in their first year of lay, or prior to their first molt

Hens: female chickens in their second year of lay, or after their first molt

Cockerels: young male chicken before sexually matured

Cock: sexually matured male chicken used for breeding purpose

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.

Egg: a hard shelled oval thing from which a young bird is born.

Candling is a process of examining fertile eggs against a strong beam oflight preferably emerging through a small hole or a narrow slit

.Sterilization- The destruction of all infective and reproductive forms of all microorganisms (bacteria, fungi, virus, etc.).

Disinfection - The destruction of all vegetative forms of microorganisms. Spores are not destroyed.

Sanitation - The reduction of pathogenic organism numbers to a level at which they do not pose a disease threat to their host.

Brooding is the process of caring for young chicks from day-old to eight weeks of age.

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.

Incineration: This involves burning of the carcasses completely until ash is formed

1.3 Role of Poultry production

- Poultry meat and eggs are essential foods. And poultry is appetizing and popular as the meat and eggs are highly digestible and nutritious
- The income from poultry keeping is distributed throughout the year.
- They are useful for religious, recreation and game purposes

Self-Check -1	Written Test

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

1. Write three Commercial breeds of chicken? .(5 points)
2. List out the Role of Poultry production.(5 points)

Note: **Satisfactory rating - 5 and 10 points Unsatisfactory - below 5 and 10 points**

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

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Information Sheet-2	Identifying and use Appropriate transportation methods

2.1 Transportation crates

To prevent chickens from dying during transportation, spacious and airy crates must be used.


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A Hendrix Genetics Company
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Figer-1Transportation crates

2.1.2 Use correct manual handling techniques during loading and UN loading

Loading: refers to putting of the load (anything) on to the ship, truck or pack animal
Unloading : removing cargo from carrier or taking the load off a ship, truck, or pack animal

Loading and unloading facilities are a critical in the process of transport. When loading materials care should take not to break and make damage the items. Appropriate handling of materials, tools and equipment's to minimize damage self, others, load and vehicle. Suitable training will normally need to be given on correct lifting, Loading& techniques of materials & poultry
During loading and unloading of materials, tools, equipment and poultry the following points should be considered:

- Poultry should be healthy and in good condition while transporting
- Separate different classes of poultry (day old, pullet, layer…) during transport.
- Isolate diseased or suspected poultry during transportation.

- Heavier materials should be loaded at the bottom of the vehicle.
- Flammable material should be given a precaution.
- When loading different material the same material should be loaded at the same sides
- Use ramps when loading and unloading of materials, tools and equipment.

A guideline to load and unload equipment's and tools

- Load/unload the material in required order taking care to avoid damage
- Use manual handling techniques of loading /unloading throughout the process to avoid injury or damage
- Install the material in appropriate work or storage area in accordance with direction
- Identify any hazardous items and load /unload these in a manner that minimizes health and safety risks.
- Inspect load prior to transportation to ensure that all items are loaded appropriately and make adjustments as required
- Secure package against shifting within a vehicle during transportation though tying ,blocking and bracing the load
- Load packages with orientation marks (up arrow) so that the marks remain pointed up
- Do not allow any smoking or any source of ignition on or near the vehicle when loading flammable
- Always load materials having high weight at the bottom
- Always load similar materials in one side during loading of different types of items

2.2 Procedures for loading & unloading materials:

- Properly design loading/unloading areas
- Park vehicles and conduct loading/unloading only in designated loading/unloading areas
- Clean loading/unloading areas regularly to remove potential sources of pollutants.
- Reduce exposure of materials to rain.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections.
- Inspect equipment regularly

If possible, conduct loading and unloading in dry weather

Self-Check -2	Written Test

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

1. Write at list five during loading and unloading of materials, tools, equipment and poultry considered. (5 points)

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

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

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- _____
- _____

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Operation sheet-1	loading & unloading transportation materials

Steps

- Properly design loading/unloading areas
- Park vehicles and conduct loading/unloading only in designated loading/unloading areas
- Clean loading/unloading areas regularly to remove potential sources of pollutants.
- Reduce exposure of materials to rain.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections.
- Inspect equipment regularly
- If possible, conduct loading and unloading in dry weather.

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 -------hours.

Task 1: loading & unloading transportation materials

List of Reference Materials

- ✓ CAB International 1987, Manual on poultry production in the tropics Wallingford, Oxon, United Kingdom
- ✓ French, K.M. 1984, Practical Poultry Raising Peace Corps, Trans- Century Corporation, Washington D.C.
- ✓ G.C Banerjee (2000) a text book of Animal Husbandry. 8th ed Oxford & IBH publishing CO. Pvt.ltd, New Delhi / Calcutta, India

- ✓ 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 center- 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

Poultry Production
Level-II

Learning Guide -33

Unit of Competence: Assist poultry production work

Module Title: Assisting poultry production work

LG Code: AGR PLP2 M10 LO-2-LG-33
TTLMCode: AGR PLP2 TTLM 1219v1

LO 2: Raise day old chick (DOC)

Instruction Sheet	Learning Guide # 33

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

1. Selecting Feeding materials.
2. Requiring drinker.
3. Monitoring illness of the chicken.
4. Carrying out Vaccination schedule.
5. Regulating and adjusting temperature.
6. carrying out Debeaking

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:

- Selected and fed feeding materials as per the standard practices.
- Tope the drinker up as and when required as per the job requirement.
- Monitored the feeding and illness of the chick as per the enterprise practices.
- Carry out vaccination as per the schedule.
- Regulate and Adjust heat/light to the required temperature as per the standard practices.
- Carry out debeaking if necessary, as per the job requirement.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below in page 18.
3. Read the information written in the information “Sheet 1-6”.
4. Accomplish the “Self-check 1, Self-check 2, Self-check 3, Self-check 4, Self-check 5 and Self-check 6” in page -26, 31, 33, 36, 39 and 43respectively.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1, Operation Sheet 2 and Operation Sheet 3” in page -44.
6. Do the “LAP test” in page – 45 (if you are ready).

Information Sheet-1	Selecting Feeder materials

1.1 Feeder

Feeder is an equipment help for poultry feeding.The amount of feed requirement of poultry per day & feeder space according to their age

1.2**Characteristics of good feeders.**

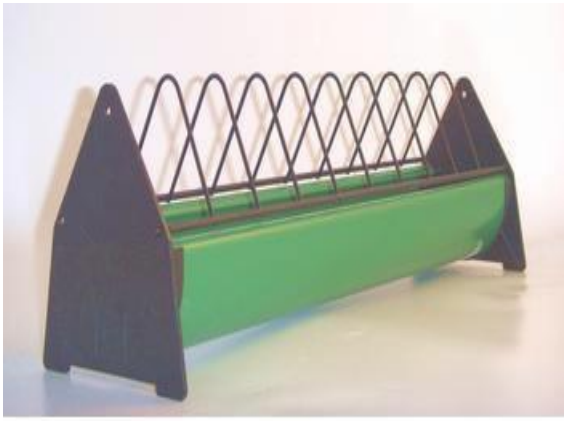
- Avoid wastage of feed, prevent contamination of feed
- Easy to clean, durable &strong and easy to fill and cheap

1**.3Feeding**

When the chicks are day old flat feeders can be used (cutout of chick box or egg Trays
As the birds grew older deeper (V shaped) and longer containers can be used (Wooden trough or troughs made up from bamboo plank)
Height of feeder – lower portion of feeder must be in line with back of bird.
Shallow fountain drinkers for chicks (empty cans, plastic mugs and plates).
Many farmers add some sort of sweetener substance, like sugar to the water (8 % solution) for the first few hours of life.
For feed and water birds should not move more than 10ft

Figer-2 Conveyor and Pan Feeder System

Figer-3 **Linear Tube Feeder**



Figer-4**Hanging type Feeder**

Figer-5 **Automatic feeder**

The objective is rapid growth rate and therefore is important that adequate trough space is provided

- 2.5 m per 100 chicks from hatching to three weeks

- 6 m per 100 chicks from four to eight weeks

Feed presentation

- maximum intake is assured if the birds are fed on pellets rather than mash
- insufficient no of feed troughs causes about 20% of the food wasted

Age (weeks)	**Daily feed consumption (kg)**	**Suggested feeder depth (cm)**	**Feeder space (m)**
1 – 4	1.4 - 5.0	5	2.5
4 – 6	3.2 - 7.3	8	3.8
6 – 9	5.0 - 9.5	9	6.1
10 – 14	7.3 - 15.9	12.5	9.6
15 and above	9.1 - 11.4	15	12.7

Self-Check -1	Written Test

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

1. Write the differences of brooding and rearing.(6 points)
2. List out thetwo general systems of brooding. .(6 points)

Note: **Satisfactory rating - 12 points Unsatisfactory - below 12 points**

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

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Information Sheet-2	Requiring drinker

2.1 Drinker

One meters trough or a 35 cm (diameter) tube drinker is big enough for 40 chickens to drink. An empty tin can placed upside down on a plate forms an excellent drinker. Commercial drinkers may also be bought at the market, either in metal or plastic.

Providing clean water is a priority often neglected. The amount of water, the right type of equipment and where it is situated are important considerations. Table 3 shows water consumption rates for hot dry conditions, and these can be halved for temperate regions

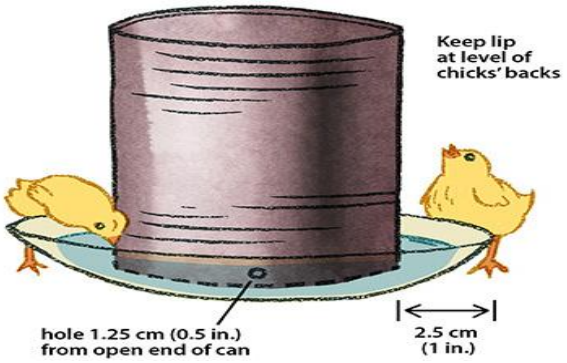

Figure-6 Drinker/Nipple

Minimum water and watering space requirements for 100 birds in hot dry conditions

Age (weeks)	Daily consumption (liters)	Water space (m)
0 – 1	3	0.7
2 – 4	10	1.0
4 – 9	20	1.5
9 or more	25	2.0
Layer	50	2.5

The type and number of drinkers to be prepared should consider the age (chick, grower and layer) and productivity of the chicken.

The drinker should be always cleaned, dried at least twice a day and sprayed with disinfectant chemicals once a week after properly cleaned.

2.2Characteristics of good quality drinkers.

- Can give enough, clean and fresh water
- Strong, durable and stable
- Easy to clean and fill
- No splashes of water and cheap

Self-Check -2	Written Test

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

1. List out the Characteristics of good quality drinkers. (10 points)

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

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

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Information Sheet-3	Monitoring illness of the chicken

It is very important for the Monitored the feeding and illness of the chick as per the enterprise practices to learn how to detect an unhealthy or sick bird. So he can initiate the right action. You will find the main characteristics of healthy and unhealthy birds. Healthy birds may be able to fight against the diseases themselves whereas unhealthy birds will have difficulties in fighting diseases. It is important to isolate unhealthy or sick birds from the healthy flock in order to ensure a minimum of loss. Characteristics of healthy and unhealthy chicken is mentioned as follows.

3.1**Healthy chicken**

- extremely they are clean and alert
- Have normal position head and neck
- Well to move and walk freely
- Have strong leg and normal voice
- Have bright eyes and comb
- Eat and drink normally
- Lay eggs normally and have smooth and neat feathers
- Soft and compact droppings
- Breathe quietly

3.2 Unhealthy chicken

- Heavy head and close their eyes
- Tired and lifeless
- dull eyes and comb
- Sit or lie down
- Eat and drink less

- Lay less or stop laying eggs
- Ruffled and loose feathers
- Wet droppings with blood or worms
- Diarrhea, cough, sneeze and breathe noisily, drooping wings
- Body parts mainly around anus there is waste material
- Unable to move and abnormal voice

Self-Check -3	Written Test

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

1. Mention at list six Bothe of Healthy and unhealthy chicken sings?(12 points)

Note: **Satisfactory rating –12 points** **Unsatisfactory - below 12 points**

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

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Information Sheet-4	Carrying out Vaccination schedule

4.1 Methods of vaccination

Individual bird vaccinations are given by injection

a. Intranasal vaccination- is the placement of the vaccine directly into the nose opening.

b. Intraocular vaccination- is the placement of the vaccine directly into the eye.

C. Wing web vaccination- is the process of injecting the vaccine into the skin on the underside of the wing web at the elbow. A grooved, double needle instrument is used for wing web vaccination.

4.2 Vaccination schedule

Table 8. Vaccination schedule for poultry

No.	Name of the vaccine	Age	Route
1	Marek's disease vaccine (HVT strain)	Day old chicks	Subcutaneously
2	RD"F" strain vaccine or Lasota	5th day	Oculonasaly
3	IBD live vaccine	2 weeks	Oculonasaly or in drinking water
4	RDF Strain (Booster) vaccine or Lasota	4 weeks	Oculonasaly
5	IBD-Live (Booster) vaccine	5 weeks	Oculonasaly or in drinking water
6	Fox Pox vaccine	6 weeks	Wing web or feather follicle
7	RDR2B Strain vaccine	8-10 weeks	Subcutaneously or intramuscularly
8	EDS-76 inactivated vaccine	18-20 weeks	Intramuscularly

4.3Vaccination

Prevention vaccination: it is provision of vaccine for chickens before the occurrence of the disease which helps them to prevent the disease.
Control vaccination: it is provision of vaccine when there is disease outbreak to prevent expansion of the disease. The diseased chicken will be separated from the healthy chickens and the healthy chickens will be given control vaccination which helps to control the disease

vaccination program NCD vaccine vaccination program				
No	**Steps**	**Age**	**Vaccine type**	**Vaccination method**
1	1st vaccination	1-7 days	HB1	Eye/nose drop
2	2nd vaccination	18-21 days	Thermostable	Drinking/eye drop
3	3nd vaccination	2 months	Thermostable	Drinking/eye drop
4	4nd vaccination	5-6 months	Thermostable	Drinking/eye drop
5	Every 3 months	Different	Thermostable	Drinking/eye drop

Vaccination program for layers		
Age (days)	**Disease type**	**Vaccination provision**
9-14	Newcastle	Drinking water/eye drop
14	Gumboro	Drinking water/eye drop
28	Gumboro	Drinking water/eye drop
Age (week)	Disease type	Vaccination provision
4	Newcastle	Drinking water/eye drop
8	Fowl pox	Injection on feather
13-14	Newcastle	Drinking water/eye drop
16	Newcastle	Injection under feather

Self-Check -4	Written Test

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

1. Write Methods of vaccination?(5 points)
2. Define vaccination? ?(5points

Score = _____

Rating: _____

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

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

Answer sheet

Name: _____ Date: _____

Short Answer Questions

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Information Sheet-5	Regulating and adjusting temperature

5.1 Light requirement and management1stday

- Check on the brooding temperature 35Oc
- If the *temperature is correct*, the chicks will be *evenly distributed immediately around* and under the outer edge of the heat source.
- If the temperature is *too low* and the chicks are cold, they will *huddle together under the Centre of the heat source*.
- If the temperature *is too high,* the *chicks will move away from the heat source.*
- *Crowding against the brooder guard* is an indication of *floor draughts.*

- During the first few days, it is important to maintain the chicks under a maximum light regime (22 to 24 hours) to encourage intake of water and feed, and faster feather development.
- To provide adequate light intensity one 60 watt bulb per 4 m^2 of floor space, suspended 2.5 m above the litter floor
- However, in order to control and maximize the growth of the chicks after the first weeks, the light duration should be decreased step by step by about 2 hours per week during the 8 weeks of brooding period as shown on Table

. Light program during brooding and growing period for layer strains

Age in days	Light duration
1 – 3 days	23 hours
4 – 7 days	22 hours
8 – 14 days	20 hours
15 – 28 days	19 hours
22 – 28 days	18 hours
29 – 35 days	17 hours

5.1 Recommended temperature for poultry

- ❖ Rearing + Broilers
  - ➢ First day 32-34°C
  - ➢ 1st week decrease to 30°C
  - ➢ 2nd week decrease to 26°C
  - ➢ 3rd week decrease to 22°C
  - ➢ 4th week decrease to 20°C
  - ➢ Layers + Breeders18-24°C

 These temperatures are recommended temperatures and should be adapted to local situation if necessary

5.3 temperature zone

Temperature (c^{o})	effects
>28	Un comfortable zone
22-28	Tolerable zone
18.3-21.6	Comfort zone
< 11	Un comfortable zone

Self-Check -5	Written Test

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

1. Write the Recommended temperature for poultry rearing + Broilers? (6 points)

2. Write the Recommended temperature for poultry Layers + Breeders? (6 points)

Note: **Satisfactory rating –12 points** **Unsatisfactory - below 12 points**

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

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2.

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Information Sheet-6	carrying out Debeaking

6.1 Debearking (peak trimming)

Debeaking is the cutting of the tips of birds 'beak.1/3 upper and ½ lowerbeak

This operation is normally carried out for two main reasons: to prevent

1. Feather pecking and cannibalism, and
2. To reduce feed wastage

6.2 Age of de-baking

- For layer type of strain beak trimming should be carried out twice: a light tipping at 7-10 days and then a second operation between 8 and 12 weeks of age.
- Broiler chicks are de-beaked once at about 7 days of age.

6.3 Before debeaking

Before de-baking, pay attention to the following points:

- ✓ Do not de-beak birds if the flock is not in good health
- ✓ Do not vaccinate the flock a week before or a week after beak trimming
- ✓ Add vitamin K to the drinking water 48 hours prior to trimming and after to prevent hemorrhages
- ✓ Check the equipment and make sure that the trimming blade has the right temperature to cauterize but not too high to form a blister on the beak later. If temperature is too low, bleeding can occur

6.4 Chick debeaking at about 7-10 days of age

- ✓ Check the temperature of the blade (600-650 ºC)
- ✓ Hold the chick in one hand, with the thumb behind the head, holding the

head firmly in position resting the beak on the forefinger

- ✓ Tilt the chick's beak upwards at an angle of 15° above horizontal
- ✓ Tilt the chick's beak upwards at an angle of 15 º above horizontal and cauterize the reinforced side edges of the beak, to avoid unequal re-growth of the two mandibles.
- ✓ Cauterization contact time should be between 2 and 2.5 seconds.
  The accepted procedure is to remove not more than one third of the upper and lower beaks or not more than one third of the upper beak only

6.5Debeaking at 8-12 weeks of age for layer strains

- ✓ Insert a finger between the lower and upper part of the beak
- ✓ Cut the beak so that about half of the length of the beak between the tip and nostrils is left
- ✓ Cauterize with care, particularly at the sides of the beak,
- ✓ Check regularly the temperature of the blade (Red, 650 ° - 750 °C)

6.6 After debeaking

After debeaking, pay attention to the following points:

- ✓ Increase the water level in the drinkers to make easy for the birds to drink.
- ✓ Make sure that the depth of the feed is adequate and do not leave the feeders empty for a week following debeaking.
- ✓ For 3-5 days after debeaking provide an extra hour of light and supply feed in the late evening or at night.
- ✓ For 2 to 3 days after debeaking provide vitamins and electrolytes via the drinking-water to alleviate stress

6.7How to reduce Cannibalism

6.7.1 CauseCannibalism

- ➢ Insufficient access to resources
- ➢ Strain difference
- ➢ Salt, phosphorous & protein deficiency
- ➢ Bright light

- Keeping different age groups
- Injuries

6.7.2 Prevention Cannibalism

- Provide complete ration
- Avoid overcrowding
- Provide green forages
- Use dark place for egg laying
- Antibiotic wound spray for everted (inside out) cloaca

Self-Check -5	Written Test

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

1. List the Advantages of debeaking?(5 points)

2. Write the causes and prevention of cannibalism?(5 points)

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

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

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Operation Sheet- 1	procedure before debeaking

Steps

1. Be sure that the flock is in good health.
2. Let the birds fast for some hours, an empty crop gives less stress.
3. Do not vaccinate just before debeaking.
4. Separate debeaked and non debeaked pullets.
5. Debeak the birds near the house this causes less stress.
6. Sharpen knife or blade.
7. Supply the birds with vitamin – k for some days, this is likely to reduce bleeding.

Operation Sheet- 2	**procedure during debeaking**

Steps

1. Enough light to see what is done.
2. Use sharp knife or cauterizing blade.
3. Be seated during the work take rest now and then.
4. Do not burn or cut the tongue of the bird.
5. Cut the beaks of older bird separately.
6. Be sure the voltage is right.
7. Make sure that no beak is bleeding after debeaking
8. Handle the birds with care.
9. Regularly clean the knife during the work.
10. Work fast as much as possible but maintain quality.

Operation Sheet- 3	**procedure after debeaking**

Steps

1. Avoid feed restriction.
2. Add some vitamin K – and antibiotics to the feed for one week.
3. Dip bleeding beaks in some feed.

4. Give extra light for some days, to enable them eat more which will help healing process.
5. Check the flock regularly for lice

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 --- hour.

Task 1. Procedure before debeaking

Task 2. Procedure during debeaking

Task 3. Procedure after debeaking

List of Reference Materials

- ✓ CAB International 1987, Manual on poultry production in the tropics Wallingford, Oxon, United Kingdom
- ✓ French, K.M. 1984, Practical Poultry Raising Peace Corps, Trans- Century Corporation, Washington D.C.
- ✓ G.C Banerjee (2000) a text book of Animal Husbandry. 8th ed Oxford & IBH publishing CO. Pvt.ltd, New Delhi / Calcutta, India

- ✓ 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 center- 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.238Say, R.R (1987) Manual of poultry production in the tropics. CAB international, Wallingford, UK. 118p, 8-23, 27-36

Poultry Production

Level-II

Learning Guide -34

Unit of Competence: Assist poultry production work

Module Title: Assisting poultry production work

LG Code: AGR PLP2 M-10 LO-3-LG-34

TTLMCode: AGR PLP2 TTLM 1219v1

LO 3: Raise Grower

Instruction Sheet	Learning Guide # 34

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

1. Selecting Feeding materials.
2. Requiring drinker.
3. Monitoring illness of the chicken.
4. Carrying out Vaccination schedule.
5. Regulating and adjusting temperature.

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:

- Feeding materials are selected and feed as per the standard practices.
- The drinker topped up as and when required as per the job requirement.
- The feeding and illness as are monitored per the enterprise practices.
- Vaccination and de-worming are carried out as per the schedule.
- Light is regulated and adjusted as per the standard practices.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below in page 48.
3. Read the information written in the information “Sheet 1- 5”.
4. Accomplish the “Self-check 1, Self-check 2, Self-check 3 and Self-check 4” in page - 52, 54, 56, 59 and 463 respectively.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1” in page -64.
6. Do the “LAP test” in page – 65(if you are ready).

Information Sheet-1	Selecting Feeding materials

1.1 Types of feeders

1. Automatic feeders
2. Chain feeder

- ✓ Feed is distributed in the troughs by a chain
- ✓ High speeds are used in case of restricted feeding
- ✓ Lower speeds for adlibitum

Advantages of a high chain speed are:

- no selection of feed
- restricted feeding is possible

3. Pan Feeder
   - ✓ Non- automated feeders

4. Long feeders

5. Round feeders

One hanging ‘tube’ feeder with a pan 400 mm in diameter will provide about 1200 mm of feeding space, enough for 15 hens.

If hanging drinkers and feeders are used, they should be adjusted for height so that the base of the pan is level with the birds’ backs. This will minimize water spillage and feed wastage. If young birds are placed in the pen, the height will have to be adjusted as they grow.

Figure, poultry feeding

Self-Check -1	Written Test

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

1. Mention the characteristics of Feeders?(5 points)
2. Write Types of feeders? .(5 points)

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

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

- _____
- _____
- _____

_____

2.

- _____
- _____
- _____

_____

Information Sheet-2	Requiring drinker

2.1Types of drinkers

1. Long drinker
2. Round drinker
3. Nipples drinker

Drinkers are the same, whether being used in free-range, semi intensive systems or intensive systems. They should always be kept clean to prevent spread of diseases, big enough for all birds of the same age to drink at the same time and easily be produced out of local materials Onemeter trough or a 35 cm (diameter) tube drinker is big enough for 40 chickens to drink. An empty tin can placed upside down on a plate forms an excellent drinker. Commercial drinkers may also be bought at the market, either in metal or plats.

- ✓ The type and number of drinkers to be prepared should consider the age (chick, grower and layer) and productivity of the chicken

- ✓ The drinker should be always cleaned, dried at least twice a day and sprayed with disinfectant chemicals once a week after properly cleaned.

2.2Characteristics of good quality drinkers

- ✓ □ Can give enough, clean and fresh water
- ✓ □ Strong,durable and stable
- ✓ □ Easy to clean and fill
- ✓ □ No splashes of water and cheap

Self-Check -2	Written Test

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

1. Mention the characteristics of drinker?(5 points)
2. Write types of drinker? (5 points)

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

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

- _____
- _____
- _____

_____

2.

- _____
- _____
- _____

_____

Information Sheet-3	Monitoring illness of the chicken

It is very important for the Monitored the feeding and illness of the chick as per the enterprise practices to learn how to detect an unhealthy or sick bird. So he can initiate the right action. You will find the main characteristics of healthy and unhealthy birds. Healthy birds may be able to fight against the diseases themselves whereas unhealthy birds will have difficulties in fighting diseases. It is important to isolate unhealthy or sick birds from the healthy flock in order to ensure a minimum of loss. Characteristics of healthy and unhealthy chicken is mentioned as follows.

3.1 Healthy chicken

- extremely they are clean and alert
- Have normal position head and neck
- Well to move and walk freely
- Have strong leg and normal voice
- Have bright eyes and comb
- Eat and drink normally
- Lay eggs normally and have smooth and neat feathers
- Soft and compact droppings
- Breathe quietly

3.2 Unhealthy chicken

- ✓ Heavy head and close their eyes
- ✓ Tired and lifeless
- ✓ dull eyes and comb
- ✓ Sit or lie down
- ✓ Eat and drink less

- ✓ Lay less or stop laying eggs
- ✓ Ruffled and loose feathers
- ✓ Wet droppings with blood or worms
- ✓ Diarrhea, cough, sneeze and breathe noisily, drooping wings
- ✓ Body parts mainly around anus there is waste material
- ✓ Unable to move and abnormal voice.

Self-Check -3	Written Test

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

1. Signs of illness of the chick? (6 points)

Note: **Satisfactory rating –6 points** **Unsatisfactory - below 6 points**

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

- _____
- _____
- _____

_____

Information Sheet-4	Carrying out Vaccination schedule

4.1 Vaccination

Prevention vaccination: it is provision of vaccine for chickens before the occurrence of the disease which helps them to prevent the disease.
Control vaccination: it is provision of vaccine when there is disease outbreak to prevent expansion of the disease. The diseased chicken will be separated from the healthy chickens and the healthy chickens will be given control vaccination which helps to control the disease

Summary of vaccination program

NCD vaccine vaccination program				
No	Steps	Age	Vaccine type	Vaccination method
1	1st vaccination	1-7 days	HB1	Eye/nose drop
2	2nd vaccination	18-21 days	Thermostable	Drinking/eye drop
3	3nd vaccination	2 months	Thermostable	Drinking/eye drop
4	4nd vaccination	5-6 months	Thermostable	Drinking/eye drop
5	Every 3 months	Different	Thermostable	Drinking/eye drop

Self-Check -4	Written Test

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

1. Mention the advantages of vaccinations?(6 points)
2. Write vaccination program?(6 points)

Note: **Satisfactory rating –12 points** **Unsatisfactory - below 12 points**

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

- _____
- _____
- _____

_____

2.

- _____
- _____
- _____

_____

Information Sheet-5	Regulating and adjusting temperature

5.1 Recommended temperature for poultry

- Rearing + Broilers
  - First day 32-34°C
  - 1st week decrease to 30°C
  - 2nd week decrease to 26°C
  - 3rd week decrease to 22°C
  - 4th week decrease to 20°C
  - Layers + Breeders18-24°C

These temperatures are recommended temperatures and should be adapted to local situation if necessary

5.2 Temperature Zone

Temperature (c^{o})	Effects
>28	Un comfortable zone
22-28	Tolerable zone
18.3-21.6	Comfort zone
< 11	Un comfortable zone

Self-Check -5	Written Test

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

1. Write the Temperature Zone for poultry? (6 points)

Note: **Satisfactory rating –6 points** **Unsatisfactory - below 6 points**

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

Answer Sheet

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

- _____
- _____
- _____

_____

Operation Sheet-1	Identifying and using tools and equipment

Procedure/steps

1. put on/wear your protective clothes,

- ❖ Feeders

Automatic feeders
Chain feeder
Pan Feeder
Non- automated feeders
Long feeders
Round feeders

- ❖ DRINKERS

Long
Round
Nipples

2. Collect the necessary materials and equipment s required for the practical such as:-

3. Understand each material depending on it use

4. Clean the equipment thoroughly and store them so that they will be ready for use next time

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 --- hour.

Task 1- Identifying and using tools and equipment?

List of Reference Materials

1. Amhara National Regional State Bureau of Agriculture and Rural Development (ANRS BoARD), 2006. Poultry Development and Marketing Strategy. Bahir Dar, Ethiopia

2. Statistical Authority (CSA), 2014. Agricultural Sample Survey Vol. II. Statistical Bulletin No. 331, Addis Ababa, Ethiopia.

3. EARO (Ethiopian Agricultural Research Organization), 2000. Summary of Livestock Research Strategy, EARO (unpublished).

4. FissehaMoges, AberaMellesse, and Tadelle Dessie, 2010. Assessment of village chicken production system and evaluation of the productive and reproductive performance of local chicken ecotype in Bure district, North West Ethiopia. African Journal of Agricultural Research Vol. 5(13), 4 July, 2010, 1739-1748pp.

5. Fisseha M, Abera M, Tadelle D, (2010). Assessment of village chicken production system and evaluation of the productive and reproductive performance local chicken ecotype in Bure district, North West Ethiopia. African Journal of Agricultural Research Vol. 5: 1739-1748.

Halima H., Nesser F.W.C., Van Marle-Koster E., and De Kock A., 2007. Village-based indigenous chicken production system in north-west Ethiopia. Tropical Animal Health and Production. 39:189-197.

Poultry Production

Level-II

Learning Guide -35

Unit of Competence: Assist poultry production work

Module Title: Assisting poultry production work

LG Code: AGR PLP2 M10 LO-4-LG-35

TTLM Code: AGR PLP2 TTLM 1219v1

LO 4: Raise layer

Instruction Sheet	Learning Guide # 35

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

1. Selecting Feeding materials.
2. Requiring drinker.
3. Monitoring illness of the chicken.
4. Carrying out Vaccination schedule.
5. Regulating and adjusting temperature.
6. Assessing and carry out laying percentage.

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:

- Feeding materials are selected and fed as per the standard practices.
- The drinker is topped up as and when required as per the job requirement.
- The feeding and illness are monitored as per the enterprise practices.
- vaccination and de-worming are carried out as per the schedule
- light is regulated and adjusted as per the standard practices
- Laying percentage is assessed and carried out as per the enterprise practices

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below in page 69.
3. Read the information written in the information “Sheet 1-6”.
4. Accomplish the “Self-check 1, Self-check 2, Self-check 3, Self-check 4, Self-check 5 and Self-check 6” in page -73, 75, 77.79,81 and 86 respectively.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1” in page -87.
6. Do the “LAP test” in page – 87 (if you are ready).

Information Sheet-1	**Selecting Feeding materials**

1.1 Introduction Layer breeds

Layer breeds also termed as light weight laying breeds and these are breed of poultry specifically developed and used for commercial egg production.

Those breeds have the characteristics of:-

- ✓ “Boat-shaped” with a long straight back and a big bottom.
- ✓ The numbers of eggs produced by a hen in a production cycle exceed 280 eggs.
- ✓ Daily hen-housed egg production of 75 to 95 percent.
- ✓ Low mortality rate, and an efficient feed conversion ratio

1.2 Measuring feed ingredients based on ratio & quantity

Measuring is the important thing in poultry ration formulation. Which mean that preparing each ingredient with their recommended amount & scale of ratio.Poultry Layer feeding ingredient

no.	feed ingredient	amount required per kuntal(100KG)			
		Layer	Pullet	day old	Broiler
1	yellow corn	37	42	36	
2	wheat bran	18	16	18	
3	nugsead cake	30	33	35	
4	blood meal	9	5	6	
5	bone meal	4	2	3	
6	lime stone	1	1	1	
7	salt	0.5	0.5	0.5	
8	vitamin premix	0.5	0.5	0.5	
		100	100	100	

chicken age/week	feed requirement per day gm
0-1	**12**

2	25
3	28
4	31
5	35
6	39
7	43
8	47
10	55
12	63
14	71
16	79
18	88
20	98
above 20	110-120

Figure, measuring feed ingredient

1.1. Feeder and waterer space requirements

EATING SPACE in cm/bird

	BROILERS	LAYER GROWERS	LAYERS	BR. BREEDER GROWERS	BROILER-BREEDERS
- long feeder	5	9	12	14	18
- round feeder	2	4	5	6	7

Self-Check -1	Written Test

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

1. Define layer breeds?(5 points)
2. List out the criteria's/requirements characteristicslayer breeds (5 poi

Score = _____

Rating: _____

Note: **Satisfactory rating - 10 points Unsatisfactor**

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

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- _____

2.

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- _____
- _____

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Information Sheet-2	**Requiring drinker**

2.1 **Water**

Chicken can live longer without feed than without water. Lack of a consistent supply of fresh and clean water hinders the growth of young poultry; it leads to low egg production and early molting in the laying flock. The one most essential thing to provide your flock is fresh and clean water for them.

2.2 Drinking **space in cm/bird**

	BROILERS	LAYER GROWERS	LAYERS	BR. BREEDER GROWERS	BROILER-BREEDERS
- long drinker	2	2	2	3	4
- round drinker	1	1	1	1.5	2

Standards for nipples and cups in terms of the number of birds per nipple or cup

Self-Check -2	Written Test

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

1. Write theDrinking space in cm/bird? (5 points)
   A. round Drinking
   B. long Drinking
2. Write the advantages of water for poultry? (5 points)

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

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

- _____
- _____
- _____

_____

2.

- _____
- _____
- _____

_____

Information Sheet-3	**Monitoring illness of the chicken**

It is very important for the Monitored the feeding and illness of the chick as per the enterprise practices to learn how to detect an unhealthy or sick bird. So he can initiate the right action. You will find the main characteristics of healthy and unhealthy birds. Healthy birds may be able to fight against the diseases themselves whereas unhealthy birds will have difficulties in fighting diseases. It is important to isolate unhealthy or sick birds from the healthy flock in order to ensure a minimum of loss. Characteristics of healthy and unhealthy chicken is mentioned as follows.

3.1 Healthy chicken

- extremely they are clean and alert
- Have normal position head and neck
- Well to move and walk freely
- Have strong leg and normal voice
- Have bright eyes and comb
- Eat and drink normally
- Lay eggs normally and have smooth and neat feathers
- Soft and compact droppings
- Breathe quietly

3.2 **Unhealthy chicken**

- Heavy head and close their eyes
- Tired and lifeless
- dull eyes and comb
- Sit or lie down
- Eat and drink less
- Lay less or stop laying eggs
- Ruffled and loose feathers
- Wet droppings with blood or worms
- Diarrhea, cough, sneeze and breathe noisily, drooping wings
- Body parts mainly around anus there is waste material

- Unable to move and abnormal voice

Self-Check -3	Written Test

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

1. Write at list five sings of Healthy chicken? (5 points)

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

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

- _____
- _____
- _____

_____

Information Sheet-4	**Carrying out Vaccination schedule**

4.1 Vaccination schedule for poultry

No.	Name of the vaccine	Age	Route
1	Marek's disease vaccine (HVT strain)	Day old chicks	Subcutaneously
2	RD"F" strain vaccine or Lasota	5th day	Oculonasaly
3	IBD live vaccine	2 weeks	Oculonasaly or in drinking water
4	RDF Strain (Booster) vaccine or Lasota	4 weeks	Oculonasaly
5	IBD-Live (Booster) vaccine	5 weeks	Oculonasaly or in drinking water
6	Fox Pox vaccine	6 weeks	Wing web or feather follicle
7	RDR2B Strain vaccine	8-10 weeks	Subcutaneously or intramuscularly
8	EDS-76 inactivated vaccine	18-20 weeks	Intramuscularly

Summary of vaccination program NCD vaccine vaccination program				
No	Steps	Age	Vaccine type	Vaccination method
1	1st vaccination	1-7 days	HB1	Eye/nose drop
2	2nd vaccination	18-21 days	Thermostable	Drinking/eye drop
3	3nd vaccination	2 months	Thermostable	Drinking/eye drop
4	4nd vaccination	5-6 months	Thermostable	Drinking/eye drop
5	Every 3 months	Different	Thermostable	Drinking/eye drop

Vaccination program for layers		
Age (days)	Disease type	Vaccination provision
9-14	Newcastle	Drinking water/eye drop
14	Gumboro	Drinking water/eye drop
28	Gumboro	Drinking water/eye drop

Age (week)	Disease type	Vaccination provision
4	Newcastle	Drinking water/eye drop
8	Fowl pox	Injection on feather
13-14	Newcastle	Drinking water/eye drop
16	Newcastle	Injection under feather

Treatment

- ❖ Antibiotics:
  - ☞ Ox tetracycline
- ❖ Vitamins:
  - ☞ Amoxivet, Vita chicks, Vitalyte, Egg stimulant, Amino vit
- ❖ Anticoccidials:
  - ☞ Amprolium
  - ☞ Sulfa
- ❖ Acaricids:
  - ☞ chemical used to kill mites
- ❖ Malathion:
  - ☞ insecticide to control pests and house flies and mites
- ❖ Disinfectants (e.g. formalin, bio-safe):
  - ☞ used to destroy microorganisms

Fumigation:

- ✓ It is most effective against shell surface contamination.Fumigation occurs during the *formation of the air cell.*The most frequently used and their dose rates are:
- ✓ Para-formaldehyde powder: *8-10 grams per m3*.
- ✓ 53 ml of formalin (37.5%) and *35 grams of potassium permanganate* per m3.
- ✓ *43 ml of formalin* (37.5%) and *21 grams of potassium permanganate per m3.*

- ✓ Mixture of *40% formalin* and *potassium permanganate*: *45 ml and 30 grams per* m3 respectively.
- ✓ The maximum germicidal effect of formalin is when the ambient temperature is between 24°C and 35°C and humidity is *85-90% for 20 minutes*

Self-Check -4	Written Test

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

1. Write Vaccination schedule for poultry?(6 points)
2. Mention the major important ofFumigation(6 points)

Note: **Satisfactory rating –12 points** **Unsatisfactory - below 12 points**

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

Answer sheet

Score = _____

Name: _____ Date: Rating: _____

Short Answer Questions

1.

- _____
- _____
- _____

_____

Information Sheet-5	Regulating and adjusting temperature

1.1 Recommended temperature for poultry

- ❖ Rearing + Broilers

- First day 32-34°C
- □ 1st week decrease to 30°C
- □ 2nd week decrease to 26°C
- □ 3rd week decrease to22°C
- □ 4th week decrease to 20°C
- □ Layers + Breeders18-24°C

□ These temperatures are recommended temperatures and should be adapted to local situation if necessary

5.2 Temperature Zone

Temperature (c^{o})	Effects
>28	Un comfortable zone
22-28	Tolerable zone
18.3-21.6	Comfort zone
< 11	Un comfortable zone

Self-Check -4	Written Test

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

1. Write Recommended temperature different age for poultry (10 points)

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

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

- _____
- _____
- _____

_____

Information Sheet-6	**Assessing and carry out laying percentage**

6.1 Intensity of lay

- It is capacity of bird to lay in defined period of time. It can also be termed as rate of lay and what breeder is interested is high intensity of lay, which is the ability to lay at rapid rate.
- The better is intensity of lay, the more will be financial returns.
- In this connection the size of clutch is important. The number of eggs laid on consecutive days without gap, is known as clutch.
- The longer is the clutch size, the higher will be the intensity of lay. One way of measuring intensity of lay is to calculate simple percentage of production while other way is the size of clutch.
- It is important genetic trait but management also governs intensity of lay.

Persistency:

- The ability of hen to continue laying for longer period in her first laying cycle.
- In other words it is measure of length of laying year of hen
- The longer is the length of laying cycle, more persistent the hen is.
- Once again it is important genetic trait associated with egg

Production.

- Persistency is highly correlated with annual egg production and hence important contributing factor to hen-housed egg production of bird
- Egg Layers - layers are bred primarily for egg production either table eggs (eggs produced for consumption) or hatching egg (eggs produced for chick production). The laying period lasts 21 to 72 weeks of age. They normally lay economically for a period of 72 weeks after which they are sold as spent layers. Layers are lighter than chicken bred to produce meat because they are smaller; they need less feed to maintain their body weight while lying

6.2 Egg Production Period

6.2.1 Signs of egg laying and oviposition

The act of laying egg is called oviposition. Hens show typical signs (behaviors) during onset of laying. The first sign is the hen starts to cackle (make noise with their throat), during this time the combs and wattles becomes bright red and hot. Then, the hen stands making soft noises, occasionally pecking or feeding. Then, she shows intense restlessness and look for nesting place. After finding nest, the hen settles down and activity stops when she assumes the laying stance. Eggs are normally formed with small end first as they move down the oviduct. The egg will rotate horizontally just prior to oviposition and will be expelled large end first. However, if something disturbs the bird prior to rotation, the egg will be laid quickly and forced through the vent small end first, after laying the egg it is a period of relaxation. When hens show signs of egg laying, they should not be disturbed, and handled roughly

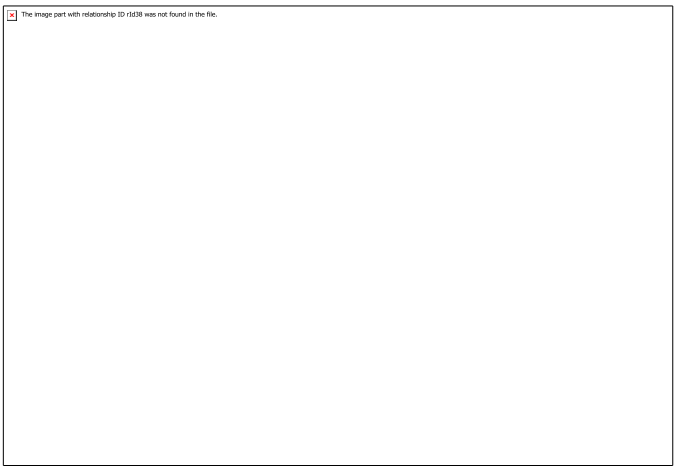
6.2.3 Egg sequence/clutch

The number of eggs laid on successive days is called a sequence or clutch, and each sequence is separated by 1 or more pause days on which no egg is laid, this is because egg formation takes more than 24 hrs. The number of eggs in a sequence or clutch could range 4 to 6 eggs, depending up on productivity of the hen

6.2.4 Egg production phases

Egg production commences at about 21 weeks of age, rise sharply, reaching a peak at about 32-35 weeks of age, and then gradually declines at the rate of half a week the production cycle of layers can be divided in to three stages or phases.

- Phase I - is the period from 21 weeks (age at first laying) of age to 42 weeks of age and during this period the layer is expected to: increase egg production from zero to a peak of approximately 95% production, increase in body weight to attain mature body weight, and produced eggs gradually increase in size from about 36 grams per egg at 21 weeks of age to approximately 58 grams per egg at 42 weeks of age.
- Phase II-is the period from 43 weeks to 62 weeks of age. Egg production declines up to 65%.
- Phase III - is the period from 63 weeks up to 72 weeks of age. The egg production is less than 65%. Note on Fig. 4.6 the changes in egg production and egg weight of typical layer strain hens during production period.



Figure,Egg production and egg weight curve.

Characteristics to be observed for judging of layer birds

Characters	Good layer	Poor layer	Non-layer
Feather color	Initially bright	More bright	Always bright

	followed by dullness		
Shape of head	Deep and broad head	Moderately deep and long	Long, shallow and tapering
Face	Smooth	Some wrinkles	Wrinkled
Comb, ear lobe and Wattles	Large, warm, red, glossy and soft	Small, less warmer, Shrunken	Underdeveloped, Shriveled, cold, and scaly/scabs
Eyes	Big, active, bright	Small and dull	Small, dull, sleepy
Beak	Short, curved, worn-out and less yellow	Long, thin and sharp, and yellow	long, thin and sharp pointed, yellow
Vent	Large, oblong, smooth, moist, and pink	Medium, less oblong, pink	Small, round, dry, shrunken, yellow
Length, width and depth of back	Very large	Large	Medium
Abdomen	Full, soft, pliable and less fat	Contracted, fleshy more fat	Hard and fatty
Pubic bones	Thin and flexible	Thick, and rigid	Blunt and rigid
Skin	Soft and pliable	Thick	Tight and thick
Shape of shank	Flat and wedge shaped	Round and rough	Round and rough
Between pubic bones	3 fingers	2 fingers	1 finger
Between end of breast bone to pubic bones	5 fingers	4 or fingers	Maximum 2 fingers
Between pubic and tail bones	2 finger	1 finger	1 finger

Production and reproduction per hen per year under the different management systems

Production system	N° of eggs per hen/year	N° of year-old chickens	N° of eggs for consumption and sale
Scavenging (free-range)	20-30	2-3	0
Improvedscavenging[1/]	40-60	4-8	10-20
Semi-intensive	100	10-12	30-50
Intensive (deep litter)	160-180	25-30	50-60
Intensive (cages)	180-220	-	180-220

Self-Check -6	Written Test

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

1. MentionEgg production phases (6 points)
2. What is the d/t b/n Intensity Persistency egglay (6 points)

Note: **Satisfactory rating –12 points** **Unsatisfactory - below 12 points**

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

- _____
- _____
- _____

_____

2.

- _____
- _____

Operation Sheet-1	required feed ingredients

Procedure/steps

1. Identifying the required feed ingredients
2. Searching and evaluating for potential suppliers
3. Sending your enquiry form for the supplier
4. Checking and gating your order of ingredient

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 --- hour.

Task 1- required feed ingredients?

List of Reference Materials

1. CAB International 1987, Manual on poultry production in the tropics Wallingford, Oxon, United Kingdom

2. French, K.M. 1984, Practical Poultry Raising Peace Corps, Trans- Century Corporation, Washington D.C.

3. G.C Banerjee (2000) a text book of Animal Husbandry. 8th ed Oxford & IBH publishing CO. Pvt.ltd, New Delhi / Calcutta, India

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

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

6. Appleby, M.C., Hughes, B.O and Elson, S.A (1992) Poultry Production Systems.

Poultry Production

Level-II

Learning Guide -36

Unit of Competence: Assist poultry production work

Module Title: Assisting poultry production work

LG Code: AGR PLP2 M-10 LO-5-LG-36
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LO 5: Raise broiler

Instruction Sheet	Learning Guide # 36

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

1. Selecting Feeding materials.
2. Requiring drinker.
3. Monitoring illness of the chicken.
4. Carrying out health care activities.
5. Maintaining Clean and sanitation.

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:

- Select and fed feeding materials are as per the standard practices.
- Tope the drinker up as and when required as per the job requirement.
- Monitored the feeding and illness of the chick as per the enterprise practices.
- Carry out health care activities
- Maintain cleanliness and sanitation

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below in page 89.
3. Read the information written in the information “Sheet 1 - 5”.
4. Accomplish the “Self-check 1, Self-check 2, Self-check 3, Self-check 4 and Self-check 5” in page -95, 101, 103,105 and 107respectively.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1” in page -109.
6. Do the “LAP test” in page – 109 (if you are ready).

Information Sheet-1	Selecting Feeding materials

1.1Introduction Broiler breeds

- ✓ Meat producers (broilers) are long-legged,
- ✓ Have a more upright position and wings placed in high position on the body.
- ✓ These heavier birds have more muscle.
- ✓ They grow fast and can quickly reach a high slaughter weight.

They requires plenty of high quality feed. It requires special skills to keep this in good supply and balance

Broiler is tender meat producing young chicken of either sex that grows from a hatch weight of 38-40g to a weight over around 2.0kg in about 6-7 weeks' time.

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

Broiler finisher: is fed from 5 weeks until market

□ □ □ 1.2 Broiler breed Selection□

- ➢ □ Fast Growth
- ➢ High Feed Efficiency
- ➢ Fast Feathering
- ➢ Low Mortality

1.3 Feeding

Broiler chickens have been selected for rapid rate gain and efficient utilization of feed. Considerable importance is laid on the lysine and methionine along with provision of high energy feeds.

Trace mineral and vitamins addition must be made in restarters, starter and ration

Class of Poultry	Protein %	Energy k/g	Ca %	P %	Lys %	Met %	Vit %
Chick starters (0-8wks)	20	11	1	0.5			
Growers (9-20wks)	18	10.5	1	0.43			
Broiler starter (0-8wks)	23	12.5	1	0.43			
Broiler finisher (8-12 wks.)	20	13	0.8	0.40			
Pullet (8-22wks)	12	10.5	0.8	0.40			
Layer (>22wks)	16	11.5	3.5	0.50			

Table for Optimum levels of dietary element inclusion in particular poultry ration

Ration formulation for starter, grower and layer **Ingredient**	**Starter (%)**	**Grower (%)**
Maize	45.9	52.9
Wheat bran	7.5	7.5
Dried and grounded trifolium	2	2
Grounded bone and meat	4	4
Knout seed cake	37	30
Limestone	1	1
Grounded bone	2	2
Salt	0.35	0.35
Vitamin & mineral mix	0.25	0.25
Noug seed cake	10	10
Maize	45	60
Wheat bran	10	10
brewery dried grain	3	5
Soya bean meal	12	3
Salt	0.5	0.5
Alfalfa	3	0.5
Limestone	1.5	2
Sesame cake	15	9

1.4 Factors affecting feed intake of chicken

There are many factors which affect feed intake of chickens and hence determine nutrient intake level and efficiency of chicken production.

Flock size: In studies on laying hens, feed consumed per bird was less in large than in small flocks for the overall production cycle. Feed conversion for egg production also improved with size of flock. This was probably due to better management by owners of large flocks, thereby avoiding unnecessary wastage of feed.

Stocking rate: Feed intake and efficiency in broiler chickens were adversely affected by high stocking rate (30-40 kg/m2) compared to moderate stocking (24 kg/m2) even under conditions of sufficient feeder space. The effect of stocking rate and feed utilization could be attributed mainly to the restricted access to the feed, increased heat stress, increased ammonia level, and prevalence of pathologies. Much of these effects could, however, be alleviated with proper ventilation and other management and feeding practices.

Temperature: High temperatures have the most striking effects on feed intake, particularly at the post-brooding stage. This relationship may be described by the following equation: ME=1690-2.1T: where “ME” is the metabolisable energy and “T” is the ambient temperature.

Feed and water factors: From the time the chicks arrive on the farm, they should have immediate access to clean, fresh feed and water which are essential to maximize the genetic potential and take advantage of the modern chick’s voracious appetite.

Physical form of feed: Pelleting feeds usually results in increased density and intake of the ration, and also improves growth and feed efficiency. It has been estimated that 0.01 in feed conversions is lost with each 10% increase in ‘fines’ in pelleted feeds. Although pellet quality may appear adequate immediately after leaving the feed mill, pellet quality at the time the flock is consuming the feed in the house is what counts. Every effort should, therefore, be directed toward improving the quality of pellets that arrive in the feed trough for broiler.

Anti-nutritional factors: Some feed ingredients such as raw soybeans contain a number of unknown factors which inhibit pancreatic trypsin activity and inhibit digestion of the dietary proteins. Therefore, chickens fed raw soybeans often exhibit low intake and reduced feed efficiency.

Water supply: Water intake is correlated with feed intake and thus any decrease in water consumption due to failure in the water supply or lack of watering space would result in decreased consumption of feed to a varying extent, depending on the age of the chickens and the degree of water restriction.

Feather cover: Some hens lose their feathers over large parts of their body due to feather pecking, poor beak trimming, abrasion, and/or molting.

Natural heat insulation and increase in heat loss from the bird. This aspect is more pronounced with poor feather cover on the neck and back, since these parts are more exposed to the environment compared to the breast or the legs. In this case, there is an increase in feed intake to compensate for the amount of feed energy lost as heat, coupled with low egg production and poor feed efficiency, expressed as the amount of feed per dozen of eggs.

Feed intake of layers can be increased through providing feed at the proper time of the day particularly at early in the morning & late afternoon, stirring the feed frequently with your hand 2-3 times per a day, providing cool & fresh water 2-3 times/day, make the feed wet to make the feed less dusty, providing pelleted feed and through feeding high energy diets

Self-Check -1	Written Test

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

1. Define Broiler breed? (5 points)
2. List out the criteria's/requirements Broiler breed Selection? (5 points)

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

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

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- _____
- _____

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2.

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- _____
- _____

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Information Sheet-2	Requiring drinker

2.1 Water

Water has been called “the invisible player”: is an essential nutrient that impacts virtually all physiological functions.

- ✓ It is essential to provide easy access to fresh and clean water
- ✓ Water must be available to broilers 24 hours per day.
- ✓ Inadequate water supply (in volume or in the number of drinking points):
- ✓ □will result reduced feed intake and growth rate
- ✓ □Supplemental drinkers are highly recommended at placement at the rate of 1 per 100 chicks from day old to 7 days.
- ✓ Water consumption measurement can be used to assess performance.
- ✓ □there is a high correlation between feed and water consumption.
- ✓ □At 21oc, the ratio of water volume (liters) to feed weight (kg) remains close to □ 1.8:1
- ✓ Water requirement increases by approximately 6.5% per degree centigrade over 21°C.
- ✓ Water consumption for the first 24 hours should be approximately 24 ml.
- ✓ On average water intake from day old to slaughtering (6 - 7 weeks) is 12L/chicken

2.2 Drinkers

Providing clean water is a priority often neglected. The amount of water, the right type of Equipment and where it is situated are important considerations. Table 3 shows water Consumption rates for hot dry conditions, and these can be halved for temperate regions. Minimum water and watering space requirements for 100 birds in hot dry conditions
Ideal water temperature is between 10-14°C (50-57°F),However birds can tolerate a wide range of water temperature; water temperature should never be allowed to be less than 5°C (41°F) orgreater than 25°C (77°F).If this occurs the drinking system must be flushed

Self-Check -2	Written Test

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

1. Write the advantages of water for poultry? (10 points)
2. List out poultry drinker? (5 points)

Note: **Satisfactory rating - 15 points** **Unsatisfactory - below 15 points**

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

- _____
- _____
- _____

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Information Sheet-3	Monitoring illness of the chicken

It is very important for the Monitored the feeding and illness of the chick as per the enterprise practices to learn how to detect an unhealthy or sick bird. So he can initiate the right action. You will find the main characteristics of healthy and unhealthy birds. Healthy birds may be able to fight against the diseases themselves whereas unhealthy birds will have difficulties in fighting diseases. It is important to isolate unhealthy or sick birds from the healthy flock in order to ensure a minimum of loss. Characteristics of healthy and unhealthy chicken is mentioned as follows.

Healthy birds	Sick birds
Are alert, active, and responsive.	Are slowmovingand/orexhibitunusualbehaviororpostures.
Have bright clear eyes, red comb, dry nostrils, full complement of shiny feathers (except when molting), adequate weight,	May have watery eyes, discolored comb and wattles, feather loss, weight loss, lay decreased egg numbers or deformed or Shell-less eggs, stained area around the vent.
Convert feed into eggs and meat Efficiently.	Grow slowly, stop eating or decrease Expected weight or rate of weight gain.
Do not drink unusual amounts of water.	Drink excessive amounts of water.

Self-Check -3	Written Test

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

1. List out the characteristics of healthy and unhealthy chicken? (10 points)

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

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

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- _____
- _____

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Information Sheet-4	**Carrying out health care activities**

4.1important to health care activities

- ✓ Keep the chickens housed instead of letting them roam around freely.
- ✓ Do not locate the farm near other farms; keep it at least 100 m away.
- ✓ Only allow visitors that have been disinfected thoroughly near the chickens.
- ✓ Clean drinkers and feeders regularly.
- ✓ Clean the housing after getting rid of the old, non-laying hens. Remove all installations from the housing. Soak off all the dirt and clean it well.
- ✓ A chicken house well with lots of water and let it dry completely.
- ✓ Disinfect the empty housing with disinfectant.
- ✓ Control rodents (mice and rats) and flies.
- ✓ Remove dead birds immediately from the chicken house.
- ✓ Renew the litter regularly. Get rid of old litter immediately.

When disease has broken out in your area, it is especially important to carry out these measures well.

If you want to place new, bought stock (for example cocks) with your own home-bred birds, it is a good idea to keep the new birds separate for some time. If a contagious disease appears, the chance of infection will be less than if you immediately place the new birds with the old stock

4.2 Preventive measures are

4.2.1 Hygiene

- – Before the birds are put in their housing, clean it thoroughly, especially the floor.
- – Limit contact between the birds and faces as much as possible.
- – Keep the drinkers and feeders clean.
- – Make sure there are no wet spots in the litter.

4.2.2 Timely Vaccination

4.2.3 Prophylactic use of anti-cocci dial agents

Self-Check -4	Written Test

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

1. Write Preventive measures health care? (6 points)
2. Mention measures of health care activities(6 points)

Note: **Satisfactory rating –12 points** **Unsatisfactory - below 12 points**

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

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- _____
- _____

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2.

- _____
- _____
- _____

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Information Sheet-5	**Maintaining Clean and sanitation**

5.1Cleaning

Cleaning refers to removal of matter from a surface on which it is not acceptable. Soil surface should be contact with a cleaning agent for adequate time and sufficient pressure should be applied, if required, to remove the soil. Cleaning involves two steps: wash step and rinse step. Equipment should be carefully selected and, washed, and maintained before they can be sanitized.

5.2 Sanitizing

Sanitizing is the processes of destruction of micro-organisms on surface after washing and rinsing. The purpose of sanitizing is to reduce the microbial count to a safe level. It is achieved through heat and application of chemical compounds.

Both cleaning and sanitizing from the basis of poultry health treatment program sanitation and their purposes are:

1). Reduce health hazards by avoiding contamination
2). Prevent the spread of diseases, and food & water contamination,
3). Control abnormal odors, and
4). Create conducive environmental conditions
5). Disposing wastes materials

To dispose waste material following waste disposal instruction is the first thing it include

- Enter information as waste is added to container
- Keep waste containers closed
- Keep soil waste separate from liquid waste
- Do not place incompatible wastes in same container
- Place leaking containers in secondary container and call the ORCBS as soon as possible for disposal
- Store animals carcasses in an appropriate freezer walk in cooler/or refrigerator
- Autoclave and /or incinerate infectious wastes
- Place autoclaved biohazard waste bags in an opaque bag prior to disposal

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.

Self-Check -5	Written Test

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

1. Define the following terms? (9 points)
   A. Cleaning
   B. Disinfection
   C. Sanitizing

Note: **Satisfactory rating –9 points** **Unsatisfactory - below 9 points**

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

Score = _____

Rating: _____

Answer sheet

Name: _____ Date: _____

Short Answer Questions

1.

- _____
- _____
- _____

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Operation Sheet-1	Maintaining clean and safe work site

Steps

Step 1. Wear PPE

Step 2. Select work site

Step 3. Select methods or types ofpoultry production work
Step 4. List and select required tools and equipment
Step 5. Clean work sites for selected materials
Step 6. Collect unwanted materials far from work site
Step 7. Disposes material orderly

Operation Sheet-2	Steps of checking all the materials, tools and equipment's

Step 8. Work site will be clean and good for work

Procedures/steps

1. Check materials, tools & equipment whether it can be cleaned or not
2. Inspect the malfunctioned materials in the poultry farm
3. Perform physical count of materials, tools & equipment which helps for poultry raising in the farm
4. Give code for retired materials

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 --- hour.

Task 1- Maintaining clean and safe work site?
Task 1- Steps of checking all the materials, tools and equipment's?

List of Reference Materials

1. CAB International 1987, Manual on poultry production in the tropics Wallingford, Oxon, United Kingdom

2. French, K.M. 1984, Practical Poultry Raising Peace Corps, Trans- Century Corporation, Washington D.C.

3. G.C Banerjee (2000) a text book of Animal Husbandry. 8th ed Oxford & IBH publishing CO. Pvt.ltd, New Delhi / Calcutta, India

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

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

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