



Animal production Level

NTQF Level -II

Learning Guide 38

Unit of Competence: Assist basic husbandry practice of poultry

Module Title: Assisting basic husbandry practice of poultry

LG Code: AGR APR2 M5 L01 LG38

TTLM Code: AGR APR 2 TTLM 0919v1

LO1: Prepare for Sericulture development activities



1

equipment's

1.2. Definition of terminologies

Sericulture: is the practice of rearing silk worms for the production of raw silk.

Silkworms: is the larva of a moth (*Bombyx mori*) that spins a cocoon of fine, strong, lustrous fiber that is the source of commercial silk.

Mulberry: is a plant/tree of genus *Morus* having edible fruit that resembles blackberry and the leaf are the most important feed for mulberry silk worm.

Cocoon: is silky envelope spun by the larvae of silkworm to protect pupas.

Silk: a fabric made from the fine threads produced by silkworm.

Mounting: is transferring mature silkworms from rearing beds to montages to start spinning. Spinning starts 8 days after worms get into fifth (5th) stage.

Incubation: is an important step for rearing. Incubation also: seed warming” by which the developing silkworm eggs (embryos) are provided with proper environmental condition so that the embryos can develop normally and the eggs hatch uniformly.

Sorting: Selecting of normal cocoons from these defectives for more processing.

Reeling: - The removal of silk yarn from the cocoons.

Re-reeling: is making raw silk skeins of standard size and weight and is done to get a firm and strong yarn.

1.2. Identifying required materials, tools and equipment.

Materials May include:

- | | |
|----------------------------------|--------------------------------|
| ✓ White birds feather | ✓ Cleaning supplies/detergents |
| ✓ Local montages | ✓ Log sheet (record book) |
| ✓ Karaka (egg card and egg case) | ✓ Lumber and plywood |
| ✓ Disinfecting materials | ✓ Hard card board |
| ✓ Nylon string | ✓ Bamboo basket |
| ✓ Plastic tube for watering | ✓ Markers |
| ✓ Chopsticks | ✓ Cheese cloth |
| ✓ Pegs | ✓ Black sheet cloth |
| ✓ Empty sacks | ✓ Bamboo tray |



- ✓ Plastic bag for seedlings
- ✓ Paper bags
- ✓ White birds feather
- ✓ Local montages
- ✓ Disinfecting materials
- ✓ Hand washing tray/towel
- ✓ Paraffin paper
- ✓ News paper
- ✓ Karaka (egg card and egg case)

Tools and equipment needed for sericulture

- ✓ Refrigerator
- ✓ Balance
- ✓ Brushes
- ✓ Ruler
- ✓ Stirrer
- ✓ Beaker
- ✓ Petri-dish
- ✓ Dropper
- ✓ Graduating cylinder
- ✓ Test tubes
- ✓ Buckets,
- ✓ Rearing and feeding stand
- ✓ Cleaning net
- ✓ Pruning scissor
- ✓ Measuring tape
- ✓ Thermometer(dry and wet bulb)
- ✓ Humidity recorder with chart
- ✓ Hammer, Saw, Nail
- ✓ Forceps
- ✓ Hand lens
- ✓ Egg counter
- ✓ Chopping knife and Chopping board
- ✓ Hand sprayer
- ✓ Hydrometer
- ✓ Wheelbarrows
- ✓ Shovel, spades, forks, rakes and hoes
- ✓ Tray(rearing/feeding and seed)
- ✓ Leaf chamber
- ✓ Electric heater or charcoal
- ✓ Rearing and feeding stand
- ✓ Ants well
- ✓ Feeding basin
- ✓ Hygrometer
- ✓ Mounting board
- ✓ First aid kit

Modern Montage

- ✓ Refrigerator
- ✓ Ventilator
- ✓ Foot cleaning tray
- ✓ Water bath
- ✓ Centrifuge
- ✓ Incubator
- ✓ Stop watch
- ✓ Basin stand
- ✓ Hygrometer
- ✓ Ants well
- ✓ Feeding basin

Self check 1	Written test
--------------	--------------

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

1. List down ten the necessary materials used in sericulture development activity? (10 points)

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. _____

Information sheet-2	Check all materials, tools and equipments with insufficient or faulty items
----------------------------	--

2.1. Check all materials, tools and equipments

Finding the right materials, tools and equipments among different items is the most critical aspect in sericulture development activity. All the items should be checked before utilization for their

- safety; right material,
- no damage and
- Appropriate amount for a specific activity.

2.2. Report insufficient or faulty items

Damaged, broken, and material which are not fit for sericulture development activity should be identified and reported to the responsible person in time.

Self-Check -2	Written Test
----------------------	---------------------

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

1. What type of materials and equipment should be reported to the responsible body?
(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: _____

Name: _____

Date: _____

1.
 - _____
 - _____
 - _____
 - _____
 - _____

Information sheet-3	Use correct manual handling techniques
--------------------------------	---

1. Use correct manual handling techniques during loading and unloading

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 equipments to minimize damage self, others, load and vehicle. Suitable training will normally need to be given on correct lifting, Loading & techniques of materials & silkworms cocoon.

During loading and unloading of materials, tools, equipment, silkworms cocoon and eggs the following points should be considered:

- they should be healthy and in good condition while transporting
- Separate different developmental stages (eggs, larvae, pupa, and adult) during transport.
- Isolate diseased or suspected larvae during transportation.
- Heavier materials should be loaded at the bottom of the transport materials
- Flammable material should be given a precaution.
- When loading different material the same material should be loaded at the same sides

Procedures for loading & unloading materials:

- Properly design/select loading/unloading areas
- Clean areas regularly to remove potential sources of pollutants.
- Reduce exposure of materials to rain.
- Inspect equipment regularly
- If possible, conduct loading & unloading in dry and cool weather.

Self-Check -3	Written Test
----------------------	---------------------

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

1. What are points to be considered during loading & unloading of materials, tools, equipment and silkworm cocoons, eggs and larvae? (10pts)

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
 - _____
 - _____
 - _____
 - _____
 - _____

Information sheet-4	Selecting and checking suitable personal protective equipment
---------------------	---

Select suitable personal protective equipment.

There are different types of materials, tools and equipments and supplies to perform different activities in sericulture development activity. Therefore, identifying, selecting, using and preparing facilities, supplies according to the working activity are very important aspect in sericulture work.

Personal protective equipment include

- Overalls
- Gloves
- Safety goggles
- plastic boots/shoes
- Sunhats
- Respiratory musk
- Helment
- Aprons,

Protective clothing should be selected to prevent skin contact with virus-contaminated materials or environments. Consideration should be given to the type of work being performed by the worker when selecting personal protective clothing.

Self-Check -4	Written Test
----------------------	---------------------

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

1. List down PPE used in sericulture development activity (6pts)
2. Write the advantages of using suitable PPE(4pts)

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-5	Following OHS requirements
--------------------------------	-----------------------------------

5.1. OHS Hazards in sericulture development activity

Personnel working in the sericulture development activity are permanently exposed to hazards. These have either a physical, chemical or biological nature. Proper management is needed to avoid accidents and to keep the staff motivated..

According to the International Labor Organization (ILO), health hazards in sericulture development activity working environments are categorized as accidental, physical, chemical, and biological. Here are just a few examples for each category mentioned by this organization

5.1.1. Physical

- Exposure to high wind.
- Long-time exposure to heat and cold.
- Injuries resulting from lifting and moving of silk worms, feed plants (bags), egg and larvae collection.

5.1.2. Chemical

- Respiratory problems resulting from exposure to dust, which is composed of feathers, dander, micro-organisms, etc.
- Respiratory, skin, and eye diseases due to exposure to gaseous chemicals.(e.g. NH₃, H₂S, CO₂, CO, and CH₄).
- Exposure to disinfectants, detergents, formaldehyde and pesticides.

5.1.3. Biological

- Zoonotic infections. These diseases are transmitted between birds and humans & they also are transmitted from animals to humans and include bacterial, viral, fungal, and parasitic diseases.

5.2. OHS requirements

Work task is provided according to Occupational Health and Safety (OHS) requirements. This may include:

- Using of relevant protective clothing and equipment,
- Use of tooling and equipment,
- Creating conducive working environment and safety handling of material,
- Using First aid kit to provide aid services
- Hazard control and hazardous materials and substances.etc,
- Following Occupational health and safety procedure designated for the task
- Checking and fulfilling required safety devices before starting operation

Self-Check -5	Written Test
----------------------	---------------------

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

1. List down the three types of hazards (3pts)
2. Write the Occupational Health and Safety (OHS) requirements in work place.(7pts)

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

- _____
- _____
- _____
- _____
- _____

References

Eri silk production in Ethiopia, the work shop oct. 2016, published by ICIPE, JICA & MoLF

Ayuzawa C., I. Sekido, K. Yamakawa, U. Sakurai, W. Kurata, Y. Yaginuma and Y. Tokoro
1972. Handbook of Silkworm Rearing. Agricultural Technique Manual 1. Fuji Publishing Co., LTD, Tokyo, Japan.