

# **ANIMAL PRODUCTION**

## **NTQF Level -II**

### **Learning Guide -37**

**Unit of Competence: - Assist Beekeeping  
Operations**

**Module Title: - Assisting Beekeeping  
Operations**

**LG Code: AGR APR 2 M11 LO2- LG-37**

**TTLM Code: AGR APR 2 TTLM 0919v1**

**LO 3. Handle and clean material and equipment**



<b>Instruction Sheet</b>	<b>Learning Guide #3</b>
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This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Handling of waste material
- Handling and transporting of materials, tools and equipment
- Returning or dispose materials
- Cleaning , maintaining and storing tools and equipment
- Reporting work outcomes and difficulties in completing

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 –

- Handle waste material produced during work
- Handle and transport materials, tools and equipment
- Returning to Store or dispose materials
- Clean, maintain and store tools and equipment
- Report work outcomes and difficulties in completing

**Learning Instructions:**

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 7
3. Read the information written in the “Information Sheets 1, 2, 3, 4” in pages 1, 3, 5 and 7. Respectively. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks1,2 and 3” in page 2,4,5 and 8 respectively
5. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-checks).



6. If you earned a satisfactory evaluation proceed to “Information Sheets”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #3.
7. Submit your accomplished Self-check. This will form part of your training portfolio.

A waste is a material that is no longer needed, wanted or used. There are different waste materials or product which will be produced in work place but the main waste material which will produced at the apiary site are the following:

- ❖ Broken components
- ❖ Plant debris
- ❖ Plastic
- ❖ News papers
- ❖ Metal and paper-based
- ❖ Comb attacked by wax moth
- ❖ Dead broad

Waste minimization is a process that involves reducing the amount of waste produced in the farm.

- . There are different ways of avoiding those waste materials from our apiary site.
  - The first way is recycling that waste material in a usable form. For example that of dead bees, plant debris and newspapers used as production of organic fertilizer.
  - The second way is returning waste material such as old iron, thin, metal and plastic to manufacturers.
  - The third way is re using waste material. E.g. broken combs and impure waxes as input for wax production and foundation sheet production.



<b>Self check -1</b>	<b>Written</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List the waste materials produced in an apiary. (3pts)
2. What are the ways you can eliminate waste material disposals?

**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: \_\_\_\_\_

### Short Answer Questions

1. -----  
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2. -----  
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<b>Information Sheet-2</b>	<b>Handling and transporting Materials, tools and equipment</b>
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Whenever we are going to our work area, we have to handle and transport our materials, tools and equipment safely. And also after completing our task we have to take them back to their place (store) safely without any damage on the equipment and ourselves by cleaning and maintaining if necessary.

When you transport equipments, tools and materials sort apart those can be easily broken and place them safely. Lift all equipments by use safe manual handling techniques during loading to any transport means and unloading it carefully. One of the biggest challenges in the beekeeping process is heavy lifting. Hives are lifted for a variety of reasons including transporting to pollination sites, colony inspections, honey extraction, and medication. Before further detailing the reasons for lifting, it is important to understand hives and their individual components.

Before transport bee colony, bee hives and other required materials

- Prepare all protective equipments
- Ask for team work
- Arrange means of transport
- Sort all necessary equipments and arrange it apart
- Handle them in a correct position/ approach the hive properly

The heavy equipments should not load over light and fragile equipments. Do not wave during transportation; it should wrap firmly on the cart or the wall of truck.



<b>Self check-2</b>	<b>Written</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What the care taken during transportation of materials and equipments (3pts)

**Note: Satisfactory rating - 3 points**

**Unsatisfactory - below 3 points**

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

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

1. -----  
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<b>Information Sheet-3</b>	<b>Returning or disposing Materials</b>
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After completion of every activity in beekeeping all equipments should returned and placed at appropriate place. It should not be placed on the ground because of rust if it is metal like chisel, uncapping fork and knife, metal sheet queen excluder, etc., the extracted frames must be returned back to the hive after harvesting and the supers should be placed in a ventilated area if it is at the end of flowering period. The old combs should replace by news and extracted to pure wax to make new foundation sheet.

The area should be free from combustible materials, broken items, plastics, news paper and disposed according to waste disposal system.





<b>Self check-2</b>	<b>Written</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Mention the use of old combs after removing from the hive. (3pts)

**Note: Satisfactory rating - 3 points**

**Unsatisfactory - below 3 points**

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

**Answer Sheet**

Score = _____
Rating: _____

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1.

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## Information Sheet-4

## Cleaning, maintaining and storing tools and equipment

After completion of the work all materials, tools and equipment they has to be cleaned, sanitized, disinfected, maintained, and stored properly.

Cleaning refers to removal of dirt, filth or unwanted substances from the materials, tools and equipment. The two steps of cleaning involves: wash step and rinse step. Equipment should be carefully selected and washed and maintained before they are sanitized.

Sanitizing is the processes of destroying of micro-organisms on surface after washing and rinsing. The purpose of sanitizing and cleaning includes:-

- 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.

Water is important in the cleaning process

Disinfection: is a process of killing micro organisms.

Disinfectants are chemical substances that kill the majority of bacteria present on a surface but don't kill spores. All harmful or resistant bacteria may not be destroyed, but are reduced to a safe level.

Method of disinfection:

- ✓ Physical
- ✓ Chemical methods

Physical method:

1. Moist heat:
2. Hot water:
3. Steam:

Chemical Methods:

This method involves by using chemicals like savlon, alcohol, formalin, iodine solution, potassium permanganate etc



<b>Self check-2</b>	<b>Written test</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List the methods of cleaning (2pts)
2. What are the purpose of cleaning and sanitization (3pts)?

**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

▪ \_\_\_\_\_

▪ \_\_\_\_\_

2

▪ \_\_\_\_\_

▪ \_\_\_\_\_



## References