



RQF LEVEL 3



FOPHP303

FOOD PROCESSING

Honey Processing

TRAINER'S MANUAL

October, 2024



HONEY PROCESSING

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Original published version: October 2024

ACKNOWLEDGEMENTS

The publisher would like to thank the following for their assistance in the elaboration of this training manual:

Rwanda TVET Board (RTB) extends its appreciation to all parties who contributed to the development of the trainer's and trainee's manuals for the TVET Certificate III in Food Processing, specifically for the module "**FOPHP303: Honey Processing.**"

We extend our gratitude to KOICA Rwanda for its contribution to the development of these training manuals and for its ongoing support of the TVET system in Rwanda

We extend our gratitude to the TQUM Project for its financial and technical support in the development of these training manuals.

We would also like to acknowledge the valuable contributions of all TVET trainers and industry practitioners in the development of this training manual.

The management of Rwanda TVET Board extends its appreciation to both its staff and the staff of the TQUM Project for their efforts in coordinating these activities.

This training manual was developed:

Under Rwanda TVET Board (RTB) guiding policies and directives



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ACRONYMS

%: Percentage

° C: Degree Celsius

°F: Degree Fahrenheit

AGR: Agriculture

ATP: Adenosine triphosphate

CCP: Critical Control Point

CIP: Cleaning in Place

COP: Cleaning Out of Place

e.g.: For example

FOP: Food Processing

IC: Indicative content

MINAGRI: Ministry of Agriculture and Animal Resources of Rwanda

PPE: Personal Protective Equipment

PSF: Private Sector Federation

QAC: Quaternary ammonium compound

RP: Rwanda Polytechnic

RQF: Rwanda Qualification Framework

RTB: Rwanda TVET Board

SOP: Standard Operating Procedure

TQUM Project: TVET Quality Management Project

TSS: Technical Secondary School

TVET: Technical and Vocational Education and Training

INTRODUCTION

This trainer's manual includes all the methodologies required to effectively deliver the module titled " **Honey Processing.**" Trainees enrolled in this module will engage in practical activities designed to develop and enhance their competencies.

The development of this training manual followed the Competency-Based Training and Assessment (CBT/A) approach, offering ample practical opportunities that mirror real-life situations.

The trainer's manual is organized into Learning Outcomes, which is broken down into indicative content that includes both theoretical and practical activities. It provides detailed information on the key competencies required for each learning outcome, along with the objectives to be achieved.

As a trainer, you will begin by asking questions related to the activities to encourage critical thinking and guide trainees toward real-world applications in the labour market. The manual also outlines essential information such as learning hours, didactic materials, and suggested methodologies.

This manual outlines the procedures and methodologies for guiding trainees through various activities as detailed in their respective trainee manuals. The activities included in this training manual are designed to offer students opportunities for both individual and group work. Upon completing all activities, you will assist trainees in conducting a formative assessment known as the end learning outcome assessment. Ensure that students review the key reading and the points to remember section.

MODULE CODE AND TITLE: FOPHP303 HONEY PROCESSING

Learning Outcome 1: Prepare workplace.

Learning Outcome 2: Extract honey.

Learning Outcome 3: Store honey.

Learning Outcome 1: Prepare the Workplace



Indicative contents

1.1 Selection of tools and equipment

1.2 Cleaning of the workplace

1.3 Selection of honeycombs

Key Competencies for Learning Outcome 1 : Prepare the workplace

Knowledge	Skills	Attitudes
<ul style="list-style-type: none">• Identification of materials, tools and equipment used in honey processing• Description of cleaning methods and techniques	<ul style="list-style-type: none">• Selecting materials, tools and equipment• Adjusting tools and equipment• Measuring cleaning products• Mixing cleaning products• Cleaning the workplace• Checking the effectiveness of cleanliness• Arranging the workplace	<ul style="list-style-type: none">• Being effective communicator while processing honey• Paying attention to sharp tools• Being careful while filtrating honey• Being responsible when handling tools and equipment



Duration: 15 hrs



Learning outcome 1 objectives:

By the end of the learning outcome, the trainees will be able to:

1. Identify appropriately materials, tools and equipment according to their use
2. Select correctly tools and equipment according to the selection criteria
3. Describe correctly cleaning products as used in honey processing workplace cleaning
4. Clean effectively the honey processing workplace according to cleaning methods and procedures
5. Check correctly the cleanliness of the workplace, tools and equipment according cleanliness tests.
6. Organize properly the workplace for optimal honey processing
7. Select properly honeycombs based on honey production requirements



Resources

Equipment	Tools	Materials
<ul style="list-style-type: none"> • Cooking stove • Honey extractor • Wax press • Honey filtering machine • Labelling machine • Pressure cleaner • Filling machine • Sealing machine • PPE • Balance 	<ul style="list-style-type: none"> • Buckets • Bowls • Sieves • Straining cloths • Refractometer • Uncapping knives • Stirrers • Sauce pan • Spoons • Mop • Squeegee • Sweepers 	<ul style="list-style-type: none"> • Honey combs • Packaging materials • Labels • Scotch, • Glue • Water • Soaps, • Gloves • Gas

- | | | |
|--|--|--|
| | <ul style="list-style-type: none">• Towels• pH meter• Thermometer• Honey strainer | |
|--|--|--|



Advance Preparation:

Before delivering this learning outcome, you are recommended to:

- Avail an organized workshop.
- Avail labelled and not expired cleaning products, manuals/guide, pictures, videos related to preparation of the workplace for honey processing as didactic materials as required.
- Avail honeycombs
- Ensure that tools and equipment for honey processing are available and are in good working conditions.



Indicative content 1.1: Selection of tools and equipment



Duration: 5 hrs



Theoretical Activity 1.1.1: Identification of tools and equipment used for cleaning honey processing workplace



Notes to the trainer:

- Trainer may use small groups to describe tools and equipment used for cleaning the honey processing workplace.
- Avail some drawings, pictures related to tools identification, to be used as didactic materials



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the session, engage trainees in groupings and ask them to answer the following questions:

- I. Basing on your experience, what could be the tools and equipment used for cleaning honey processing workplace?
- II. What can be the use of each tool and equipment used for cleaning honey processing workplace?

Step 2: Ask trainees to write the findings on papers, flip chart, blackboard or white boards

Step 3: Ask trainees to present their findings

Step 4: Provide expert view and clarify ideas using didactic materials

Step 5: Address any questions or concerns

Step 6: Ask trainees to read the key reading 1.1.1 in trainee manual



Points to Remember

- Common tools used in cleaning honey processing workplace are sponges, cloths, broom, dustpan, bucket, mop, scrubber and squeegee
- Common equipment used in cleaning honey processing workplace are pressure washer, floor scrubber and industrial vacuum cleaner.



Theoretical Activity 1.1.2: Identification of tools and equipment used for honey extraction



Notes to the trainer:

- Trainer may use small groups to identify tools and equipment used for honey extraction
- Avail some drawings, pictures related to tools and equipment for honey extraction to be used as didactic materials



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the session, engage trainees in groupings and ask them to answer the following question:

- What do you think could be the tools and equipment used for honey extraction?
- Based on list of tools and equipment provided, what can be the use of each tool and equipment?

Step2: Monitor the discussion and ask trainees to write the findings on papers, flip chart, blackboard or white board.

Step 3: Ask trainees to present their findings

Step 4: Provide expert view and clarify ideas using didactic materials

Step 5: Allow trainees to address any questions or concerns

Step 6: Ask trainees to read the key reading 1.1.2 in trainee manual



Points to Remember

- Common tools and equipment used in honey extraction are: honey extractor, uncapping knife, uncapping fork, honey gate, buckets, honey dipper.



Theoretical Activity 1.1.3: Identification of tools and equipment used for honey storage



Notes to the trainer:

- Trainer may use small groups to identify tools and equipment used for honey storage
- Avail some drawings, pictures related to tools and equipment for honey storage to be used as didactic materials



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the session, engage trainees in groupings and ask them to answer the following questions:

- What do you think could be the tools and equipment used for honey storage?
- Based on list of tools and equipment provided above, what can be the use of each tool and equipment used for honey storage.

Step 2: Monitor the discussion and ask trainees to write the findings on papers, flip chart, blackboard or white board.

Step 3: Ask trainees to present their findings

Step 4: Provide expert view and clarify ideas using didactic materials

Step 5: Allow trainees to address any questions or concerns

Step 6: Ask trainees to read the key reading 1.1.3 in trainee manual



Points to Remember

- Common tools and equipment used for honey storage are; food grade bucket, honey dipper, honey drum, honey capper, honey labeller and honey filler.



Practical Activity 1.1.4: Selection of tools and equipment used in honey processing



Notes to the trainer

- Trainer may facilitate every trainee in selecting tools and equipment used in honey processing.
- Avail tools and equipment required for honey processing



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the activity and ask trainees to go in the honey processing workshop to select the right tools and equipment to be used while processing honey.

Step 2: Explain the task and provide clear work instructions (Task, PPE, Time allocated)

Step 3: Demonstrate how to select tools and equipment for honey processing. While demonstrating, explain clearly the procedures for selecting tools and equipment used in honey processing.

Step 4: Ask trainees to do the task individually and monitor trainees' activities.

Step 5: Verify whether tools and equipment to be used in honey processing are correctly selected and provide feedback on each trainee's work

Step 6: Ask trainees to read key reading 1.1.4 in trainee manual

Step 7: Ask trainees to perform the task provided in application of learning 1.1



Points to Remember

- For safety issue, always wear PPE before selecting tools and equipment for honey processing
- When you are selecting materials, tools and equipment, it is recommended to consider the selection criteria such as production capacity, safety, efficiency, ease of maintenance, cost, energy efficiency.



Practical Activity 1.1.5: Adjustment of tools and equipment used in honey processing

Notes to the trainer

Trainer may:

- Facilitate every trainee in adjusting tools and equipment used in honey processing.
- Avail all tools and equipment that can be adjusted.
- Avail some videos related to tools and equipment adjustment to be used as didactic materials.



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the activity and ask trainees to go in honey processing workshop to adjust tools and equipment to be used in honey processing.

Step 2: Explain the task and provide clear work instructions (Task, PPE, Time allocated)

Step 3: Demonstrate how to adjust tools and equipment for honey processing. While demonstrating, explain clearly the procedures for adjusting tools and equipment used in honey processing.

Step 4: Ask trainees to do the task individually and monitor trainees' activities.

Step 5: Verify if tools and equipment to be used in honey processing are well adjusted and provide feedback on each trainee's work

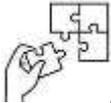
Step 6: Ask trainees to read key reading 1.1.5 in trainee manual

Step 7: Ask trainees to perform the task provided in application of learning 1.1



Points to Remember

- While adjusting tools and equipment for honey processing, it is strictly recommended to follow manufacturer’s instructions
- Always wear appropriate Personal Protective Equipment (PPE) like gloves, eye protection, and boots while adjusting tools and equipment.



Application of learning 1.1.

In the school’s honey processing workshop, request each trainee to select and adjust tools and equipment for honey processing.

Checklist:

S N	Criteria	Indicators	Yes	No
1	Tools and equipment are appropriately selected	1.1 Cleaning tools and equipment are selected		
		1.2 Honey extraction tools and equipment are selected		
		1.3 Honey storage tools and equipment are selected		
2	Tools and equipment are adequately adjusted	2.1 pH meter is adjusted		
		2.2 Balance is adjusted		
		2.3 Filling machine is adjusted		
3	Activity report is well done	3.1 Activity report is available		
		3.2 Key competencies gained are described		
		3.3 Recommendations are mentioned		



Indicative content 1.2: Cleaning of the workplace



Duration: 5 hrs



Theoretical Activity 1.2.1: Description of cleaning products for honey processing workplace.



Notes to the trainer:

- Trainer may use small group to describe cleaning products used in honey processing
- Avail pictures related to cleaning products to be used as didactic materials



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the session, engage trainees in groupings and ask them to answer the following questions:

- i. According to your experience, what do you think could be the cleaning products to use in honey processing workplace?
- ii. What could be the requirements for a cleaning product to be used in honey processing workplace cleaning?

Step 2: Monitor the discussion and ask trainees to write the findings on papers, flip chart, blackboard or white board.

Step 3: Ask trainees to present their findings

Step 4: Provide expert view and clarify ideas using didactic materials

Step 5: Allow trainees to address any questions or concerns

Step 6: Ask trainees to read the key reading 1.2.1 in trainee manual



Points to Remember

- Cleaning product is effective according to the type of soil to be removed.



Practical Activity 1.2.2: Cleaning the workplace, tools and equipment for honey processing



Notes to the trainer

Trainer may:

- Facilitate each trainee in cleaning workplace, tools and equipment used in honey processing.
- Avail cleaning products that are required to clean honey processing workplace, tools and equipment
- Avail the cleaning protocols



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the activity and ask trainees to go in honey processing workshop to clean the workplace, tools and equipment.

Step 2: Explain the task and provide clear work instructions (Task, PPE, Time allocated)

Step 3: Demonstrate how to clean workplace, tools and equipment for honey processing. While demonstrating, explain clearly methods for cleaning workplace, tools and equipment for honey processing

Step 4: Ask trainees to do the task individually and monitor trainees' activities.

Step 5: Verify whether workplace, tools and equipment are properly cleaned and provide feedback on each trainee's work.

Step 6: Ask trainees to read key reading 1.2.2 in trainee manual

Step 7: Ask trainees to perform the task provided in application of learning 1.2



Points to Remember

- For safety issue, before cleaning workplace tools and equipment wear full PPE
- While preparing cleaning products, never mix bleach and ammonia as this can produce highly toxic chloramine gas, which can cause serious health problems.
- When diluting cleaning products, it is highly recommended to respect the dosages.



Practical Activity 1.2.3: Arrangement of workplace for honey processing



Notes to the trainer

Trainer may:

- Avail a disorganized honey processing workshop.
- Request each trainee to arrange the honey processing workplace.
- Avail the process flow chart of a honey processing workplace.



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the activity and ask trainees to go in honey processing workshop and arrange the workplace for honey processing.

Step 2: Explain the task and provide clear work instructions (Task, PPE, Time allocated)

Step 3: Demonstrate how to arrange the workplace. While demonstrating, explain clearly the process flow chart of honey processing.

Step 4: Ask trainees to do the task individually and monitor trainees' activities.

Step 5: Verify whether the workplace is well arranged, and provide feedback on each trainee 'work.

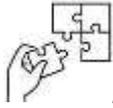
Step 6: Ask trainees to read key reading 1.2.3 in trainee manual

Step 7: Ask trainees to perform the task provided in application of learning 1.2



Points to Remember

- Before arranging the workplace for honey processing, bear in mind the honey processing flow chart to avoid cross contamination



Application of learning 1.2.

Request each trainee to go to the honey processing workshop to clean and arrange the workplace, tools and equipment.

Checklist:

S/N	Criteria	Indicators	Yes	No
1	Workplace, tools and equipment are properly cleaned	1.1 Cleaning products are selected		
		1.2 Cleaning tools and equipment are selected		
		1.3 Cleaning methods were applied		
		1.4 Tools and equipment are cleaned		
		1.5 Workplace is cleaned		
		1.6 Cleanliness is checked		
2	Workshop is well arranged	2.1 Process flow chart is respected		
3	Activity report is well done	3.1 Activity report is availed		
		3.2 Key competencies gained are described		
		3.3 Recommendations are mentioned		



Indicative content 1.3: Selection of honeycombs



Duration: 5 hrs



Theoretical Activity 1.3.1: Description of honey categories



Notes to the trainer:

- Trainer may use small groups of trainees to describe honey categories.
- Avail some packaged honey, drawings, pictures relating to honey categories to be used as didactic materials



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the session, engage trainees in groupings and ask them to answer the following questions:

- I. Basing on your experience, what could be the honey categories?
- II. What could be the criteria to classify categories of honey?

Step 2: Monitor the discussion and ask trainees to write the findings on papers, flip chart, blackboard or white board.

Step 3: Ask trainees to present their findings

Step 4: Provide expert view and clarify ideas using didactic materials

Step 5: Allow trainees to address any questions or concerns

Step 6: Ask trainees to read the key reading 1.3.1 in trainee manual



Points to Remember

- Honey is the sweet, viscous liquid produced by honey bees from the nectar of flowers.
- Honey is classified according to floral source, processing method, colour, flavour, and texture.

-



Theoretical Activity 1.3.2: Description of honeycombs and their handling conditions



Notes to the trainer:

- Trainer may use small groups of trainees to describe honeycombs and their handling conditions.
- The use of some honeycombs, videos related to honeycombs handling as didactic materials is required.



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the session, engage trainees in groupings and ask them to answer the following questions:

- I. What do you know about a honeycomb?
- II. How can honeycombs be handled?

Step 2: Monitor the discussion and ask trainees to write the findings on papers, flip chart, blackboard or white board.

Step 3: Ask trainees to present their findings

Step 4: Provide expert view and clarify ideas using didactic materials

Step 5: Allow trainees to address any questions or concerns

Step 6: Ask trainees to read the key reading 1.3.2 in trainee manual for more details



Points to Remember

- Always handle honeycomb carefully to avoid damages.
- Avoid using harsh chemicals or abrasive cleaners to clean the container, as these can damage the honeycombs and leave behind residues that can contaminate the honey.



Practical Activity 1.3.3: Selection of honeycombs for honey extraction



Notes to the trainer

- Trainer may facilitate each trainee to select honeycombs for honey extraction.
- The use of some honeycombs, videos related to honeycombs selection as didactic materials is required.
- Avail tools needed in honeycombs selection.



Key steps:

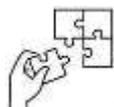
While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go in honey processing workshop to select honeycombs for honey extraction.
- Step 2:** Explain the task and provide clear working instructions (Task, PPE, Time allocated)
- Step 3:** Demonstrate how to select honeycombs. While demonstrating, explain clearly the selection criteria for honeycomb selection.
- Step 4:** Ask trainees to do the task individually and monitor trainees' activities.
- Step 5:** Verify whether honeycombs are well selected and provide feedback on each trainee's product
- Step 6:** Ask trainees to read key reading 1.3.3 in trainee manual.
- Step 7:** Ask trainees to perform the task provided in application of learning 1.3



Points to Remember

- Select honeycombs carefully bearing in mind selection criteria
- Honeycombs selection greatly affects the quality of honey.



Application of learning 1.3.

In the school's honey processing workshop, request each trainee to select honeycombs for honey extraction.

Checklist:

SN	Criteria	Indicators	Yes	No
1	Honeycombs are well selected	1.1 Honeycomb container is clean		
		1.2 Selection criteria are respected		
		1.3 Handling conditions are respected		
2	Activity report is well done	2.1 Activity report is availed		
		2.2 Key competencies gained are described		



Learning outcome 1 end assessment

Theoretical assessment

1. From the table below, match the following tools and equipment with their uses by writing the letter with the corresponding digit in the provided space.

Answer	Use	Tool/equipment
1-D	1. It is used to sweep floors and other surfaces to remove loose dirt and debris.	A. Honey dipper
2-A	2. It is to collect viscous liquid (generally honey or syrup) from a container, which is then dispensed at another location.	B. Uncapping fork
3-E	3. This is a machine that uses centrifugal force to extract honey from the honeycomb.	C. Refractometer
4-B	4. This is used to remove wax particles and other impurities from honey	D. Broom
5-C	5. It is used to measure the sugar content of honey.	E. Honey extractor
		F. Honey drum

2. The following are steps of selecting tools and equipment for honey processing. Logically rearrange them.

- I. Review the selection criteria for tools and equipment.
- II. Identify the tasks that need to be completed.
- III. Select tools and equipment that meet the selection criteria and are appropriate for the tasks that need to be completed.
- IV. Consider the specific needs of the workplace.

Answer: Procedure of selecting tools and equipment for honey processing is as follows:

- I. **Identify the tasks that need to be completed.**
- II. **Consider the specific needs of the workplace.**
- III. **Review the selection criteria for tools and equipment.**
- IV. **Select tools and equipment that meet the selection criteria and are appropriate for the tasks that need to be completed.**

3. Fill in the blank space with the right methods related to cleaning in a honey processing workshop. (**Manual cleaning, Automated cleaning, Cleaning In Place, Ultrasonic and Steam cleaning**)

- I. **Automated cleaning** uses a combination of water, cleaning solution, and mechanical action to clean equipment and surfaces. These systems are often used to clean large pieces of equipment, such as honey extractors and filters
- II. **Manual cleaning** involves using a brush or sponge to clean equipment and surfaces with a cleaning solution. This method is often used to clean small pieces of equipment and hard-to-reach areas.
- III. **Cleaning In Place** is used to clean equipment and surfaces without having to disassemble them. These systems circulate a cleaning solution through the equipment and surfaces to remove dirt, grease, and other contaminants.
- IV. **Ultrasonic** uses high-frequency sound waves to create cavitation bubbles in a cleaning solution. These cavitation bubbles burst and release energy that removes dirt, grease, and other contaminants from equipment and surfaces.
- V. **Steam cleaning** uses high-temperature steam to clean equipment and surfaces. This method is often used to clean equipment that is difficult to clean with other methods, such as honeycombs and frames.

4. Circle the letter corresponding to the right answer.

- I. The following are the purposes of arranging the workplace for honey processing except:
 - a) Prevent contamination of the honey
 - b) Improve efficiency
 - c) Increase the sugar content of honey
 - d) Maintain the quality of the honey

Answer: C

- II. Among the following definitions of honey, circle the letter corresponding to the right answer.
 - a) **Honey** is a sour, viscous liquid produced by bees from the nectar of flowers. It is a complex substance that contains over 180 different compounds, including alcohols, water, enzymes, vitamins, minerals, and antioxidants.
 - b) **Honey** is a sweet, viscous liquid produced by butterfly from the nectar of flowers. It is a complex substance that contains over 180 different compounds, including fat, proteins, enzymes, vitamins, minerals, and antioxidants.
 - c) **Honey** is a sweet, viscous liquid produced by bees from the nectar of flowers. It is a complex substance that contains over 180 different compounds, including sugars, water, enzymes, vitamins, minerals, and antioxidants.

Answer: C

6. Read the following statements and answer by **True** for the correct statements and **False** to the wrong statements.

- a) Categories of honey by colour includes; monofloral and polyfloral. **True**
- b) When loading and unloading the honeycombs, drop them or bump them together.
False
- c) Uncapped honeycombs contain honey that is not ripe and will have a higher moisture content, making it more likely to ferment. **True**
- d) When selecting honeycombs, avoid ones that are too dark. **True**
- e) Selection of honeycombs for extraction does not affects the quality of the honey produced. **False**

Practical assessment

INGANZO Honey Ltd located in Gicumbi district wants to process honey for exportation purpose. Recently, the company received tools and equipment for honey processing but the company's workers do not have knowledge and skills of preparing workplace and selecting honeycombs for honey processing.

You as a qualified honey processing technician, you are requested by the production manager to:

1. Select tools and equipment used in workplace of honey processing,
2. Clean the work place, tools and equipment for honey production,
3. Select honeycombs to use in honey processing

The task should be completed in 3hours.

Checklist

SN	Criteria	Indicators	Yes	No
1	Tools and equipment are appropriately selected	1.1 Cleaning tools are selected		
		1.2 Cleaning equipment are selected		
		1.3 Cleaning products are selected		
		1.4 Honey extraction tools are selected		
		1.5 Honey Extraction Equipment are selected		
		1.6 Honey storage tools are selected		
		1.7 Honey storage equipment are selected		
2	Tools and equipment are well cleaned	2.1 Honey extraction equipment are cleaned		
		2.2 Honey extraction tools are cleaned		
		2.3 Cleaning products are used		
3	Workplace are well cleaned	3.1 Workplace is cleaned		
		3.2 Cleanliness of workplace is checked		
4	Tools and equipment are	4.1 Tools are adjusted		

	well adjusted	4.2 Equipment are adjusted		
5	Workplace is well arranged	5.1 Flowchart of honey processing is respected		
6	Honey combs are well selected	6.1 Honeycombs containers are cleaned		
		6.2 Handling conditions are respected		
		6.3 Honeycombs free of bees are selected		
		6.4 Honeycombs with ripe honey are selected		

END



Further information to the trainer

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Learning Outcome 2: Extract honey



Indicative contents

2.1 Uncapping the honeycombs

2.2 Straining and filtration of honey

2.3 Checking the quality of honey

Key Competencies for Learning Outcome 2 : Extract honey

Knowledge	Skills	Attitudes
<ul style="list-style-type: none">• Description of honey straining methods• Identification of organoleptic properties of honey• Identification of honey quality specifications	<ul style="list-style-type: none">• Uncapping honeycombs• Extracting honey• Filtrating of honey• Straining honey• Draining honey• Checking the quality of honey	<ul style="list-style-type: none">• Paying attention when extracting honey• Being a good time manager in processing honey• Being responsible when using tools and equipment• Being effective communicator in the workplace• Being careful when draining honey• Being patient when draining honey



Duration: 30 hrs



Learning outcome 2 objectives:

By the end of the learning outcome, the trainees will be able to:

1. Uncap properly the honeycombs referring to honey uncapping methods and procedures.
2. Extract effectively honey in accordance with honey extraction methods and procedures.
3. Describe adequately honey straining methods as used in honey processing
4. Strain appropriately honey referring to honey straining methods and procedures.
5. Filtrate properly honey according to honey filtration methods and procedures.
6. Identify correctly the organoleptic properties of honey according to honey quality specifications.
7. Check effectively the quality of honey as per honey quality specifications.



Resources

Equipment	Tools	Materials
<ul style="list-style-type: none"> • Bee blower • Honey containers • Heating jacket • Honeycomb uncapping knife • Uncapping tank • Honey extractor • Wax press • Honey filtering machine • Honey tank • Cooking stove 	<ul style="list-style-type: none"> • Plastic buckets • Bowls, • Sieves • Straining cloths • Refractometer • Uncapping knives • Stirrers • Sauce pan • Spoons • pH meter • Thermometer 	<ul style="list-style-type: none"> • Honey combs • Soaps • Gas • Gloves



Advance Preparation:

Before delivering this learning outcome, you are recommended to:

- ✓ Ensure that the workshop is available and organized
- ✓ Avail videos related to honey extraction as didactic materials
- ✓ Ensure honey extractor is available and in good work conditions.
- ✓ Avail honeycombs for honey extraction



Indicative content 2.1: Uncapping the honeycombs



Duration: 10 hrs



Practical Activity 2.1.1: Uncapping honeycombs



Notes to the trainer

- Trainer may ask each trainee to uncap honeycombs.
- Avail tools and equipment needed for honeycombs uncapping
- Avail honeycombs.



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the activity and ask trainees to go in honey processing workshop to uncap honeycombs for honey extraction.

Step 2: Explain the task and provide clear working instructions (Task, PPE, Time allocated)

Step 3: Demonstrate how to uncap honeycombs. While demonstrating, explain clearly the procedures for honeycomb uncapping.

Step 4: Ask trainees to do the task individually and monitor trainees' activities.

Step 5: Verify whether honeycombs are well uncapped and provide feedback on each trainee's product

Step 6: Ask trainees to read key reading 2.1.1 in trainee manual.

Step 7: Ask trainees to perform the task provided in application of learning 2.1



Points to Remember

- Wash your hands thoroughly with soap and water before and after handling honeycombs.
- Disinfect all uncapping tools (knives, forks) with a food-grade sanitizer before and after use.
- Maintain a clean workspace to prevent contamination of honey and equipment.

- Use a sharp, well-maintained uncapping knife or fork to ensure clean cuts and minimize damage to combs.
- If using a hot knife, maintain proper temperature to avoid overheating the honey and affecting its quality.
- Avoid uncapping on windy days to prevent bees from dispersing and increasing sting risk.



Practical Activity 2.1.2: Honey extraction



Notes to the trainer

- Trainer may request every trainee to extract honey using different methods.
- Avail tools and equipment for honey extraction.
- Avail honeycombs



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the activity and ask trainees to go in honey processing workshop to extract honey from the honeycombs.

Step 2: Explain the task and provide clear working instructions (Task, PPE, Time allocated)

Step 3: Demonstrate how to extract honey from honeycombs. While demonstrating, explain clearly the procedures for honey extraction.

Step 4: Ask each trainee to do the task and monitor trainees' activities.

Step 5: Verify if honey is well extracted and provide feedback on each trainee's product

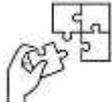
Step 6: Ask trainees to read key reading 2.1.2 in trainee manual.

Step 7: Ask trainees to perform the task provided in application of learning 2.1



Points to Remember

- Avoid overheating the honey, especially with centrifugal extraction. Aim for moderate temperatures (70-80°F).
- Prioritize techniques like gravity draining or slow spinning when preserving delicate flavours and enzymes is important.
- Choose a method suitable for your volume and desired extraction speed.



Application of learning 2.1.

In the school's honey processing workshop, ask each trainee to uncap and extract honey from the honeycombs.

Checklist

SN	Criteria	Indicators	Yes	No
1	Honeycombs are well uncapped	1.1 Honey uncapping tools are selected		
		1.2 Honey containers are selected		
		1.3 uncapping methods are applied		
2	Honey is effectively extracted	2.1 Honey extractors are selected		
		2.2 Extraction methods are applied		
3	Activity report is well done	3.1 Activity report is availed		
		3.2 Key competencies gained are described		
		3.3 Recommendations are mentioned		



Indicative content 2.2: Straining and filtrating honey



Duration: 10 hrs



Theoretical Activity 2.2.1: Description of straining and filtration methods for honey



Notes to the trainer:

- Trainer may use small groups of trainees to describe methods of honey straining and filtration.
- Avail videos related to honey straining and filtration as didactic materials.



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the session, engage trainees in groupings and ask them to answer the following questions:

- I. According to your experience, how do you think honey could be the strained?
- II. How do you think honey could be filtered?

Step 2: Monitor the discussion and ask trainees to write the findings on papers, flip chart, blackboard or white board.

Step 3: Ask trainees to present their findings

Step 4: Provide expert view and clarify ideas using didactic materials

Step 5: Allow trainees to address any questions or concerns

Step 6: Ask trainees to read the key reading 2.2.1 in trainee manual



Points to Remember

- Common straining methods of honey include; Manual straining (press cloth) and Mechanical straining (jacketed tank)
- Common filtration methods used in honey processing include; micro filtration, hot filtration and ultrafiltration



Practical Activity 2.2.2: Straining and filtrating honey



Notes to the trainer

Trainer may:

- Facilitate each trainee in straining and filtrating honey.
- Avail honey strainers and filters.



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the activity and ask trainees to go in honey processing workshop to strain and filtrate honey.

Step 2: Explain the task and provide clear working instructions (Task, PPE, Time allocated)

Step 3: Demonstrate how to strain and filtrate honey. While demonstrating, explain clearly the procedures for honey straining and filtration.

Step 4: Ask trainee to do the task individually and monitor trainees' activities.

Step 5: Verify whether honey is well strained and filtered then, provide feedback on each trainee's product

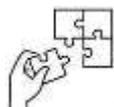
Step 6: Ask trainees to read key reading 2.2.2 in trainee manual.

Step 7: Ask trainees to perform the task provided in application of learning 2.2



Points to Remember

- For safety and hygiene issues, wear PPE before straining and filtering honey.
- Honey is a sticky and viscous substance; it is important to take precautions to avoid spills and accidents.
- Be careful not to splash honey in your eyes. If you do get honey in your eyes, rinse them immediately with water.
- When straining or filtering the honey, be careful not to overfill the bucket. If the bucket overflows, honey could spill on the floor and create a slip hazard.
- Clean up any spills immediately to avoid accidents.



Application of learning 2.2.

In the school's honey processing workshop ask each trainee to strain and filtrate honey.

Checklist

SN	Criteria	Indicators	Yes	No
1	Honey is well strained	1.1 Honey straining tools and equipment are selected		
		1.2 Honey containers are selected		
		1.3 Straining methods are applied		
2	Honey is properly filtered	2.1 Honey filtering tools and equipment are selected		
		2.2 Filtration methods are applied		
3	Activity report is well done	3.1 Activity report is available		
		3.2 Key competencies gained are described		
		3.3 Recommendations are mentioned		



Indicative content 2.3: Checking the quality of honey



Duration: 10 hrs



Practical Activity 2.3.1: Checking the quality of honey



Notes to the trainer

Trainer may:

- Facilitate each trainee in checking the quality of honey.
- Avail tools required in honey quality checking.



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the activity and ask trainees to go in honey processing workshop to check the quality of honey.

Step 2: Explain the task and provide clear working instructions (Task, PPE, Time allocated)

Step 3: Demonstrate how to check the quality of honey. While demonstrating, explain clearly each test used to check the quality of honey.

Step 4: Ask each trainee to check the quality of individually and monitor trainees' activities.

Step 5: Verify whether honey quality is well checked and provide feedback on each trainee's product

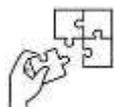
Step 6: Ask trainees to read key reading 2.3.1 in trainee manual.

Step 7: Ask trainees to perform the task provided in application of learning 2.3



Points to Remember

- For checking the quality of honey use the following test; water content test, crystallization test, pH test, sugar test and flame test
- Process and store honey carefully as these steps greatly can affect its quality.
- Beware that, the quality requirements of honey vary depending on the region or country where it is produced or sold.



Application of learning 2.3.

In the school's honey processing workshop, request each trainee to check the quality of honey.

Checklist:

S N	Criteria	Indicators	Yes	No
1	Honey quality is accurately checked	1.1 Organoleptic test is performed		
		1.2 pH test is performed		
		1.3 Water content is performed		
		1.4 Sugar test is performed		
		1.5 Crystallization test is performed		
		1.6 Flame test performed		
2	Activity report is well done	2.1 Activity report is availed		
		2.2 Key competencies gained are described		
		2.3 Recommendations are mentioned		



Learning outcome 2 end assessment

Theoretical assessment

1. In the table below, match the advantages with the uncapping methods by writing a letter in the corresponding uncapping method column.

Advantages	Manual uncapping	Machine uncapping
a) Less likely to damage the honeycombs.	A
b) Faster and more efficient	B
c) Can uncap a large number of honeycomb frames quickly and easily.	C
d) Inexpensive	D
e) Versatile	E

2. The following are steps for extracting honey using a centrifugal honey extractor. Logically rearrange them.

- I. Start the centrifuge and spin the honeycomb frames at high speed.
- II. Secure the centrifuge basket in place.
- III. Uncap the honeycomb frames.
- IV. Place the uncapped honeycomb frames in the centrifuge basket.
- V. Once the honey has stopped flowing, stop the centrifuge and remove the honeycomb frames.
- VI. Allow the centrifuge to run for a few minutes, or until the honey has stopped flowing out of the honeycomb frames.

Answer: Procedure of using a centrifugal honey extractor:

1. **Uncap the honeycomb frames.**
2. **Place the uncapped frames in the centrifuge basket.**
3. **Secure the centrifuge basket in place.**
4. **Start the centrifuge and spin the frames at a low speed.**
5. **Allow the centrifuge to run until all of the honey has been extracted.**
6. **Stop the centrifuge and remove the frames.**

3. Write an essay of not more than 200 words on honey straining.

Answer:

- **Purpose of straining honey**

To remove suspended solids (including large wax particles)

- **Straining methods of honey**

- 1. Manual straining (press cloth):**

Manual straining (press cloth) is a traditional method of honey extraction that is still used by some beekeepers today. This method is relatively simple and inexpensive, but it can be time-consuming and labour-intensive.

To manually strain honey using a press cloth, follow these steps:

1. Uncap the honeycomb frames. This can be done with an uncapping knife, uncapping fork, or uncapping roller.
2. Place the uncapped frames on a rack over a container.
3. Place a press cloth over the honeycomb frames. A press cloth is a thick, durable cloth that is used to strain honey.
4. Place a heavy object, such as a plate or weight, on top of the press cloth. This will help to press the honey out of the honeycomb and through the press cloth.
5. Allow the honey to drip through the press cloth and into the container. This can take several hours or even overnight to complete.
6. Once all of the honey has dripped through the press cloth, remove the press cloth and the honeycomb frames.
7. Strain the honey through a cheesecloth or other fine mesh strainer to remove any wax or other impurities.
8. Store the honey in clean, airtight containers. Honey can be stored at room temperature or in the refrigerator.

- ✓ **Advantages of manual straining (press cloth):**

- ✚ Relatively simple and inexpensive
- ✚ Less likely to damage the honeycomb than other methods, such as centrifugal extraction
- ✚ Produces a high-quality honey with less wax and other impurities

- ✓ **Disadvantages of manual straining (press cloth):**

- ✚ Time-consuming and labour-intensive
- ✚ Can be difficult to extract all of the honey from the honeycomb

4. The following table indicates the description of filtration types and the honey product from that filtration. Fill in the blank within the table using these types of honey filtration (**Ultrafiltration, Microfiltration and hot filtration**)

Product from filtration type	Description of filtration type	Filtration type
a) This type of filtration is commonly used to produce commercial honey, which is honey that has been heated and pasteurized.	1. Honey is heated to a temperature of 140-160 degrees Fahrenheit and then passed through a filter to remove impurities.	Hot filtration
b) This type of filtration is commonly used to produce sterile honey, which is honey that has been filtered to remove all microorganisms, including yeast and bacteria.	2. Honey is passed through a semipermeable membrane that allows even smaller molecules to pass through.	Microfiltration
c) This type of filtration is commonly used to produce clarified honey, which is honey that has been filtered to remove pollen and other impurities	3. Honey is passed through a semipermeable membrane that allows smaller molecules to pass through while trapping larger molecules, such as pollen and yeast.	Ultrafiltration

5. Read the following statements and answer by **True** if the statement is correct and **False** if the statement is wrong.

- a) The moisture content of honey should be between 17% and 21%. **True**
- b) The pH of honey should be between 3.5 and 5.5. Honey with a pH outside of this range may be of lower quality or adulterated. **True**
- c) The water content of honey exceeds 18%. This is to prevent fermentation and to ensure that the honey has a thick, syrupy texture. **False**
- d) Honey from different flowers can have different flavours, ranging from mild and sweet to strong and complex. **True**
- e) Pure honey typically has a refractive index between 14.48 and 14.85. **False**

Practical assessment

DUKUNDINZUKI cooperative located in Rutsiro district, Mukura sector received an order of supplying 20 Kg of honey to Great Kivu hotel located in Karongi district. Previously, another cooperative supplied honey to that hotel but it contained physical contaminants mainly bees and insects, it smelled strange and fermented earlier than indicated on the label. As a qualified food processing worker the production manager of DUKUNDINZUKI cooperative requests you to process honey sample for Great Kivu hotel.

Task:

1. To extract 2 Kg of honey from honeycombs.
2. Filtrate 2 kg of extracted honey.
3. To test the quality of honey prior delivering.

The task should be completed in 2 hours.

Checklist

SN	Criteria	Indicators	Yes	No
1	Honey is well extracted	1.1. Uncapping is applied		
		1.2 Draining is done		
2	Honey is carefully filtered	2.1. Straining is done		
		2.2. Filtration conditions are respected		
3	Honey quality is well tested	3.1. Organoleptic test is performed		
		3.2. Moisture content is measured		
		3.3. pH is measured		
		3.4. Sugar content is measured		
		3.5. Crystallization test is performed		

END



Further information to the trainer

Chepkemoi, M. (2021). Development of an extractor to improve the processing of quality honey harvested from Indigenous hives and natural colonies (Doctoral dissertation, University of Eldoret).

CODEX STANDARD FOR HONEY CODEX STAN 12-1981, Adopted in 1981, Revisions 1987 and 2001.

Setiawan, M. D., Herdiman, L., & Rochman, T. (2022). Selection of Non-Thermal Technology for Honey Pasteurization Machine Using Multi-Criteria Decision Making. *Jurnal Ilmiah Teknik Industri*, 21(2), 196-204.

Learning Outcome 3: Store Honey



Indicative contents

3.1 Packaging of honey

3.2 Labelling the packaged honey

3.3 Monitoring of storage conditions of packaged honey

Key Competencies for Learning Outcome 3 : Store honey

Knowledge	Skills	Attitudes
<ul style="list-style-type: none">• Description of types of honey packaging material• Identification of labelling types• Identification of label information• Description of storage techniques for honey• Explanation of storage conditions for honey	<ul style="list-style-type: none">• Packaging honey• Labelling honey• Storing honey	<ul style="list-style-type: none">• Paying attention while filling honey• Being a good time manager when filling honey• Being effective communicator in the workshop• Being careful in sealing honey packages• Being precise in filling honey into packages



Duration: 15 hrs



Learning outcome 3 objectives:

By the end of the learning outcome, the trainees will be able to:

1. Describe adequately the types of honey packaging materials.
2. Package properly the honey according to honey packaging techniques
3. Identify correctly the types of labelling used in honey processing.
4. Identify adequately labelling information for honey.
5. Label clearly the honey as per labelling techniques
6. Store adequately honey in accordance with honey storage conditions.



Resources

Equipment	Tools	Materials
<ul style="list-style-type: none"> • Packaging machine • Labelling machine • Balance 	<ul style="list-style-type: none"> • Funnel • Cup • Bucket • Pallet • Shelves • Thermometer • Paper cutter 	<ul style="list-style-type: none"> • Packaging materials • Labels • Scotch • Glue • Papers • Pens • Gloves • Recording books



Advance Preparation:

Before delivering this learning outcome, you are recommended to:

- Ensure that the workshop is available and organized
- Avail manuals/guide, task sheets, audio visuals, pictures, videos, related to honey

storing as didactic materials as required

- Ensure that tools and equipment required in packaging honey are available and are in good working conditions



Indicative content 3.1: Packaging of honey



Duration: 5 hrs



Theoretical Activity 3.1.1: Description of honey packaging materials



Notes to the trainer:

- Trainer may use small groups to describe the types of honey packaging materials
- Avail pictures, drawings showing different types of honey packages as didactic materials.



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the session, engage trainees in groupings and ask them to answer the following questions:

- I. According to you, what do you think can be the honey packaging materials?
- II. Based on list of honey packaging materials provided, what are the characteristics of those packaging materials?
- III. What could be the factors to consider when choosing a suitable honey packaging material?

Step 2: Monitor the discussion and ask trainees to write the findings on papers, flip chart, blackboard or white board.

Step 3: Ask trainees to present their findings

Step 4: Provide expert view and clarify ideas using didactic materials

Step 5: Allow trainees to address any questions or concerns

Step 6: Ask trainees to read the key reading 3.1.1 in trainee manual



Points to Remember

- The best type of packaging material for honey will depend on a number of factors, including the type of honey, the target market, and the budget.



Practical Activity 3.1.2: Packaging the honey



Notes to the trainer

The trainer may:

- Facilitate each trainee in packaging the honey.
- Avail honey packaging machine
- Avail extracted honey ready to be packaged
- Avail honey packaging materials



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the activity and ask trainees to go in honey processing workshop to package honey.

Step 2: Explain the task and provide clear working instructions (Task, PPE, Time allocated)

Step 3: Demonstrate how to package honey. While demonstrating, explain clearly the procedures for packaging honey.

Step 4: Ask each trainee to do the task and monitor trainees' activities.

Step 5: Verify if honey is properly packaged and provide feedback on each trainee's product

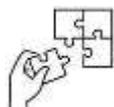
Step 6: Ask trainees to read key reading 3.1.2 in trainee manual.

Step 7: Ask trainees to perform the task provided in application of learning 3.1



Points to Remember

- It is strictly recommended to wear gloves and eye protection when packaging honey.
- Always choose the suitable packaging material considering the following criteria; food safety, airtightness, durability, attractiveness and sustainability.
- Be careful not to overfill the containers. Leave about 1/2 inch of space at the top of the container to allow for expansion.
- Tightly seal the lids on the containers to prevent leakage.



Application of learning 3.1.

In the school's workshop of food processing, request each trainee to package honey.

SN	Criteria	Indicators	Yes	No
1	Honey is well packaged	1.1 Honey packaging material is selected		
		1.2 Filling is done		
		1.3 Sealing is done		
2	Activity report is well done	2.1 Activity report is availed		
		2.2 Key competencies gained are described		
		2.3 Recommendations are mentioned		



Indicative content 3.2: Labelling the packaged honey.



Duration: 5 hrs



Practical Activity 3.2.: Labelling the packaged honey



Notes to the trainer

Trainer may:

- Ask each trainee to label packaged honey.
- Avail materials and tools used in labelling.



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the activity and ask trainees to go in honey processing workshop to label packaged honey.

Step 2: Explain the task and provide clear working instructions (Task, PPE, Time allocated)

Step 3: Demonstrate how to label packaged honey. While demonstrating, explain clearly techniques of honey labelling.

Step 4: Ask each trainee to do the task and monitor trainees' activities.

Step 5: Verify whether packaged honey is properly labelled and provide feedback on each trainee's product

Step 6: Ask trainees to read key reading 3.2.2 in trainee manual.

Step 7: Ask trainees to perform the task provided in application of learning 3.2



Points to Remember

- Avoid using any jargon or technical terms that consumers may not understand.
- Make sure that the information on the label is accurate and up-to-date.
- Highlight the key features of your honey, such as its type, floral source, and nutritional value.
- Use attractive and eye-catching designs to make your honey stand out on the shelf



Application of learning 3.2.

In the school's honey processing workshop, request each trainee to label packaged honey.

SN	Criteria	Indicators	Yes	No
1	Honey is well labelled	1.1 Honey labelling materials are selected		
		1.2 Honey labelling tools are selected		
		1.3 Honey labelling methods are applied		
2	Activity report is well done	2.1 Activity report is availed		
		2.2 Key competencies gained are described		
		2.3 Recommendations are mentioned		



Indicative content 3.3: Storing packaged honey



Duration: 5 hrs



Practical Activity 3.3.: Store packaged honey



Notes to the trainer

Trainer may:

- Facilitate each trainee to store honey.
- Avail tools and equipment to store honey.



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the activity and ask trainees to go in honey processing workshop to store honey.

Step 2: Explain the task and provide clear working instructions (Task, PPE, Time allocated)

Step 3: Demonstrate how to store honey. While demonstrating, explain clearly honey storing conditions.

Step 4: Ask each trainee to store honey and monitor trainees' activities.

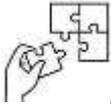
Step 5: Verify if honey is appropriately stored and provide feedback on each trainee's product

Step 6: Ask trainees to read key reading 3.3. 1 in trainee manual.



Points to Remember

- Store honey in a cool and dark place
- The ideal storage temperature for honey is between 55 and 70°F (13°C and 21°C).
- Honey stored at higher temperatures will crystallize more quickly. Honey stored at lower temperatures will thicken and become more difficult to pour.



Application of learning 3.3.

In the school's honey processing workshop, ask each trainee to store honey.

S N	Criteria	Indicators	Yes	No
1	Packaged honey is properly stored	1.1 Storage temperature is respected		
		1.2 Relative humidity of the store is respected		
		1.3 Light is controlled		
		1.4 Recording book is filled		
2	Activity report is well done	2.1 Activity report is availed		
		2.2 Key competencies gained are described		
		2.3 Recommendations are mentioned		



Learning Outcome 3 end Assessment

Written assessment

1. From the table below, match the description of the honey packaging material with the type package by simply matching the corresponding letter with the digit in the provided space.

Answer	Description	Type of packaging material
Plastic	A. It is a lighter and more durable. It is also less expensive to ship. However, it is a porous material, so it can absorb some of the flavour and aroma of the honey over time. Additionally, some types can release harmful chemicals into the honey, so it is important to choose food-grade jars.	1. Glass
Glass	B. They are a popular choice for honey packaging because they are transparent, allowing consumers to see the honey inside. It is also a non-porous material, which means it will not absorb any flavours or aromas from the honey. However, they can be fragile and heavy, making them more expensive to ship and more likely to break	2. Squeeze bottle
Squeeze bottle	C. They are a convenient option for consumers who want to be able to dispense honey easily and are typically made of plastic, but glass is also available. However, they can be more difficult to clean and sanitize than jars.	3. Plastic

2. Read the following statements and answer by **True** for the correct statement and **False** for the wrong statement.

- The purpose of filling and sealing honey is to preserve its quality and freshness. **True**
- Honey is naturally acidic reason why it cannot ferment and spoil even if it is not properly sealed. **False**
- The ideal storage temperature for honey is between 55 and 70 degrees Celsius. **False**
- The honey label should be designed to be clear, concise, and informative. **True**

- e. Organic labelling provides information about the honey's nutritional content, such as its calories, sugar content, vitamin and mineral content. **False**

Practical assessment

BMC honey processing company located in Burera district made 50 Kg of honey packaged in different packing materials and stored in their storeroom. However, after two (2) weeks Rwanda FDA inspection team found that stored honey deteriorated before the expected date and does not meet minimum honey quality requirements.

As a qualified food processing worker, the BMC quality manager requests you to demonstrate how to package and store honey in the following manner:

1. 5Kg of honey should be packaged in glass jars of 500 ml
2. 5 Kg of honey should be packaged in plastic jars of 250 ml
3. Honey should be stored in favourable conditions

The task should be completed in 2 hours.

Checklist

SN	Criteria	Indicators	Yes	No
1	Honey is appropriately packaged	1.1.Packaging equipment are used		
		1.2.Filling is well done		
		1.3. Sealing is well done		
2	Honey packaged is well labelled	2.1. Labelling equipment and tools are well used		
		2.2. Labelling information are clearly mentioned		
3	Honey is well kept	3.1. Storing tools and equipment are used		
		3.2. Storage conditions are respected		



Further information to the trainer

CODEX STANDARD FOR HONEY CODEX STAN 12-1981, Adopted in 1981, Revisions 1987 and 2001.

Mouhoubi-Tafinine, *et al* Effect of storage on hydroxymethylfurfural (HMF) and color of some Algerian honey. *International Food Research Journal* 2018; 25(3): 1044-1050

Turhan, k. Effects of thermal treatment and storage on hydroxymethylfurfural (HMF) content and diastase activity of honey collected from middle Anatolia in Turkey. In *Innovations in chemical biology.*; Sener, b., eds.; springer: New York city 2009; pp. 233-239



October 2024