



Republic of Rwanda
Ministry of Education



RTB | RWANDA
TVET BOARD

HONEY PROCESSING

FOPHP303

PROCESS HONEY

Competence

RQF Level: 3

Learning Hours



40

Credits: 4

Sector: Agriculture and Food Processing

Trade: Food Processing

Module Type: Specific

Curriculum: AGRFOP3003- TVET Certificate 3 Food Processing

Copyright: © Rwanda TVET Board, 2022

Issue Date: September 2022

Purpose statement	This module describes the skills, knowledge and attitude required to perform honey preparation. Upon completion of this module, the learners will be able to prepare workplace, extract honey and store packaged honey. In addition, a trainee will be skillful to accomplish honey processing under regular and direct supervision.					
Learning assumed to be in place	N.A					
Delivery modality	Training delivery		100%	Assessment		Total 100%
	Theoretical content		30%	Formative assessment	30%	50%
	Practical work:		70%		70%	
	• Group project and presentation	20%				
	• Individual project /Work	50%				
			Integrated Assessment		50%	

Elements of Competency and Performance Criteria

Elements of competency	Performance criteria
1. Prepare workplace	1.1. Tools and equipment are appropriately selected according to their use
	1.2. Work area is effectively cleaned according to the protocol
	1.3. Honey combs are well selected according to production process
2. Extract honey	2.1. Honey combs are well uncapped according to extraction method selected.
	2.2. Honey is carefully filtered according to extraction methods
	2.3. Honey quality is well tested according to honey specification
3. Store honey	3.1. Honey is appropriately packaged according to the product specification
	3.2. Honey is well labelled according to the labelling requirements
	3.3. Honey is well kept according to the storage condition

Learning outcomes	At the end of the module the learner will be able to: 1. Prepare workplace 2. Extract honey 3. Store honey
Learning outcome 1: Prepare workplace	Learning hours: 10
Indicative content	
• Selection of tools and equipment ✓ Identification of tools and equipment ✚ Tools and equipment for workplace cleaning ✚ Tools and equipment for honey extraction ✚ Tools and equipment for honey storage ✓ Adjustment and functionality of tools and equipment • Cleaning of the workplace ✓ The purpose of work area arrangement ✓ Cleaning products used in honey processing ✓ Performing the cleaning of workplace ✚ Cleaning method for tools and equipment ✚ Cleaning method for work area ✓ Checking of cleanliness of workplace ✚ Visual inspection ✚ SWAB testing ✓ Working area setting (preparation flow chart) • Selection of honey comb ✓ Honey and honey categories ✓ Honey comb handling conditions ✚ Cleanliness of honey comb container ✚ Status of honey combs ✚ Transport conditions	
Resources required for the learning outcome	
Equipment	Honey Supers, bee blower, containers, heating jacket, gas cooker, honey comb uncapping machine, uncapping tank, honey extractor, wax press, honey filtering

	machine, honey tank, labelling machine, sealing machine, pressure cleaner, filling machine, black board, projector, PPEs ,
Materials	Honey combs, packaging materials, labels, scotch, glue, water, soaps, chalks, papers, pens, flip charts, gas , gloves
Tools	Plastic buckets, bowls, sieves, straining cloths, refractometer, uncapping knives, stirrers, sauce pan, spoons, cooking stove, mopeds, squeegee, sweepers, towels. pH meter, thermometer
Facilitation techniques	• Demonstration and simulation • Individual and group work • Practical exercise • Trainer guided • Group discussion
Formative assessment methods	• Written assessment • Oral presentation • Performance assessment • Product based assessment

Learning outcome 2: Extract honey	Learning hours: 20
Indicative content	
• Uncapping the honey combs ✓ Purpose of uncapping the honey combs ✓ Apply uncapping methods of honey combs ✓ Draining techniques of honey ✚ Crushing ✚ Centrifugal separation • Straining and filtrating honey ✓ Purpose of straining honey ✓ Straining methods of honey ✚ Manual straining (press cloth) ✚ Mechanical straining (jacketed tank) ✓ Filtrating the honey ✚ Filtrating method (filter press, sparkle filters) ✚ Filtration condition • Checking the quality of honey	

- ✓ Organoleptic properties of honey
 - ✚ Colour of honey
 - ✚ Consistency of honey
 - ✚ Flavour of honey
 - ✚ Foreign matter
- ✓ Specific requirements of honey
 - ✚ Moisture content of honey
 - ✚ pH of honey
 - ✚ sugar content

Resources required for the indicative content

Equipment	Honey Supers, bee blower, containers, heating jacket, gas cooker, honey comb uncapping machine, uncapping tank, honey extractor, wax press, honey filtering machine, honey tank, pressure cleaner, black board, projector, PPEs
Materials	Honey combs, soaps, chalks, papers, pens, flip charts, gas, gloves
Tools	Plastic buckets, bowls, sieves, straining cloths, refractometer, uncapping knives, stirrers, sauce pan, spoons, cooking stove, pH meter, thermometer
Facilitation techniques	• Demonstration and simulation • Individual and group work • Practical exercise • Trainer guided • Group discussion • Field visit
Formative assessment methods	• Written assessment • Oral presentation • Performance assessment • Product based assessment

Learning outcome 3: Store honey	Learning hours: 10
--	---------------------------

Indicative content

- | |
|---|
| <ul style="list-style-type: none"> • Packaging of honey <ul style="list-style-type: none"> ✓ Types of packaging materials ✓ characteristics of honey packaging material <ul style="list-style-type: none"> ✓ filling and sealing of honey • Labelling the packaged honey <ul style="list-style-type: none"> ✓ Purpose of labelling ✓ Types of labelling ✓ Labelling information • Monitoring of storage conditions of packaged honey <ul style="list-style-type: none"> ✓ Storage techniques of honey ✓ Storage conditions of honey |
|---|

Resources required for the indicative content
--

Equipment	Packaging machine, labelling machine, sealing machine, filling machine, black board, projector, PPEs
Materials	packaging materials, labels, scotch, glue, chalks, papers, pens, flip charts, gloves
Tools	Knives, Base, Filter, Cloth
Facilitation techniques	• Demonstration and simulation • Individual and group work • Practical exercise • Individualized • Trainer guided • Group discussion
Formative assessment methods	• Written assessment • Oral presentation • Performance assessment

Integrated assessment

Integrated situation

Rwanda FDA is Authority that regulates processed honey to ensure their quality and safety so as to protect the population of Rwanda from defective, falsified and substandard of honey products. During the audit, it was found that there is a problem of foreign matter; high moisture content and fermented, processed honey in the market from ABAZUBUKI cooperative located in Nyamagabe district.

For that reason, ABAZUBUKI cooperative manager hire you as assistant technician to produce safe honey. You are requested to process 5 glass bottles of 250ml for sample that can be checked by FDA within 5 hours.

Task:

1. To process 5 bottles of 250 ml of honey

Resources

Tools	Plastic buckets, bowls, sieves, straining cloths, refractometer, uncapping knives, stirrers, sauce pan, spoons, cooking stove, mopes, squeegee, sweepers, towels, pH meter, thermometer
Equipment	Honey Supers, bee blower, containers, heating jacket, gas cooker, honey comb, uncapping machine, uncapping tank, honey extractor, wax press, honey filtering machine, honey tank, labelling machine, sealing machine, pressure cleaner, filling machine, PPEs
Materials/ Consumables	Honey combs, packaging materials, labels, scotch, glue, water, soaps, gloves

Assessable outcomes	Assessment criteria (Based on performance criteria)	Indicator	Observation		Marks allocation
			Yes	No	
Learning outcome 1: Prepare workplace (30%)	1.1. Tools and equipment are appropriately selected according to their use	Ind.1 Tools are selected			3
		Ind.2 Equipment are selected			3
	1.2. Work area is effectively cleaned according to the protocol	Ind.1 cleaning products are selected			3
		Ind.2 cleaning products are well used			3
		Ind.3 workplace is well cleaned			2
		Ind.3 cleanliness is checked			4
		Ind.4 Workplace is arranged			3
	1.3. Honey combs are well	Ind.1 honey comb			2

	selected according to production process	container is cleaned			
		Ind.2 transport condition is respected			3
		Ind.3 honey comb is selected			4
Learning outcome 2: Extract honey (40%)	2.1. Honey combs are well uncapped according to extraction method selected.	Ind.1 uncapping is applied			5
		Ind.2 Draining is done			3
	2.2. Honey is carefully filtered according to extraction methods	Ind.1 staining is applied			4
		Ind.2 Filtration is controlled			4
		Ind.3 conditions of filtration are respected			3
	2.3. Honey quality is well tested according to honey specification	Ind.1 organoleptic test is performed			6
		Ind.2 moisture content is measured			5
		Ind.3 pH is measured			5
		Ind.4 sugar content is measured			5
	Learning outcome 3: Store honey (30%)	3.1. Honey is appropriately packaged according product specification	Ind.1packaging equipment are used		
Ind.2 filling is well done					3
Ind.3 sealing is well done					5
3.2. Honey is well labelled according to the labelling requirements		Ind.1 Labelling equipment and tools are well used			3
		Ind.2 labelling information are well done			7
3.4. Honey is well kept according to the storage condition		Ind.1 storage equipment and tools are used			3
		Ind.2 storage techniques are applied			3
		Ind.3 storage conditions are respected			3
Total marks		100			
Percentage Weightage		100%			
Minimum Passing line % (Aggregate): 70%					

References:

1. B. Malichi and R. Howard, Improving quality of Rwandan honey from the Nyungwe forest area for the local and export market. /ADAR Project, November 2005
2. RWANDA STANDARD 164: 2016,: Honey — Specification ,Second edition 2016-06-30
3. Baglio, Ettore. "Honey: processing techniques and treatments." Chemistry and technology of honey production. Springer, Cham, 2018. 15-2
4. Zeng, Zhihui, Youfang Zhang, Xiu Yun Daphne Ma, Seyed Ismail Seyed Shahabadi, Boyang Che, Peiyu Wang, and Xuehong Lu. "Biomass-based honeycomb-like architectures for preparation of robust carbon foams with high electromagnetic interference shielding performance." Carbon 140 (2018): 227-236.