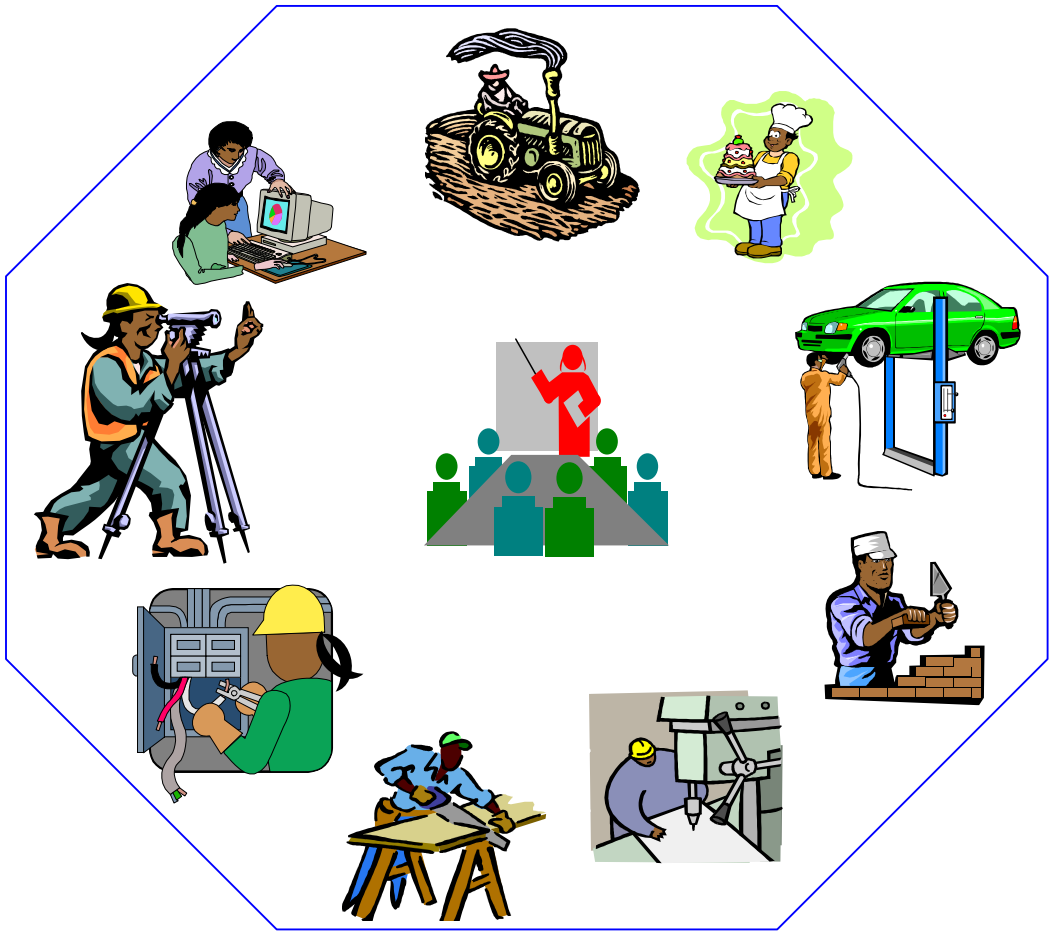
Federal Democratic Republic of Ethiopia

OCCUPATIONAL STANDARD

BEE PRODUCT PROCESSING

NTQF Level III



Ministry of Education
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Introduction

Ethiopia has embarked on a process of reforming its TVET-System. Within the policies and strategies of the Ethiopian Government, technology transformation – by using international standards and international best practices as the basis, and, adopting, adapting and verifying them in the Ethiopian context – is a pivotal element. TVET is given an important role with regard to technology transfer. The new paradigm in the outcome-based TVET system is the orientation at the current and anticipated future demand of the economy and the labor market.

The Ethiopian Occupational Standards (EOS) are - a core element of the Ethiopian National TVET-Strategy and an important factor within the context of the National TVET-Qualification Framework (NTQF).They are national Ethiopian standards, which define the occupational requirements and expected outcome related to a specific occupation without taking TVET delivery into account.

This document details the mandatory format, sequencing, wording and layout for the Ethiopian Occupational Standard comprised of Units of Competence.

A Unit of Competence describes a distinct work activity. It is documented in a standard format that comprises:

- Occupational title, NTQF level
- Unit code
- Unit title
- Unit descriptor
- Elements and Performance criteria
- Variables and Range statement
- Evidence guide

Together all the parts of a Unit of Competence guide the assessor in determining whether the candidate is competent.

The ensuing sections of this EOS document comprise a description of the respective occupation with all the key components of a Unit of Competence:

- the chart with an overview of all Units of Competence for the respective occupation (Unit of Competence Chart) including the Unit Codes and the Unit of Competence titles
- the contents of each Unit of Competence – this includes further directions on the contents and format of the unit of competence
- occupational map providing the Technical and Vocational Education and Training (TVET) providers with information and important requirements to consider when designing training programs for this standards, and for the individual, a career path

UNIT OF COMPETENCE CHART

Occupational Standard: Bee Product Processing

Occupational Code: IND BPP

NTQF Level III

IND BPP3 01 0613 Operate Manufacturing Process of Value Added Bee Products	**IND BPP3 02 0613** Characterize Bee Products and Their Recipes	**IND BPP3 03 0613** Identify Products and Determine Ingredient Type and Quantity
IND BPP3 04 0613 Operate an Extraction and Clarification Process	**IND BPP3 05 0613** Monitor Implementation of Quality and Food Safety Procedures	**IND BPP3 06 0613** Perform Value Added Bee Products Production Operations
IND BPP3 07 0513 Operate Manual Bottling and Packaging Processes	**IND BPP3 08 0513** Use Computer Technology for Laboratory Applications	**IND BPP3 09 0613** Evaluate Value Added Products Standard (Advanced)
IND BPP3 10 0613 Implement Good Manufacturing Practice Procedures	**IND BPP3 11 0513** Apply Quality Systems and Procedures	**IND BPP3 12 0613** Apply Sampling Procedures
IND BPP3 13 0613 Participate in a HACCP Team	**IND BPP3 14 0613** Perform Basic Tests	**IND BPP3 15 0613** Comply with Industry Quality Assurance Requirement
IND BPP3 16 0613 Monitor Implementation of Work Plan/Activities	**IND BPP3 17 0613** Apply Quality Control	**IND BPP3 18 0613** Lead Workplace Communication
IND BPP3 19 0613 Lead Small Teams	**IND BPP3 20 0613** Improve Business Practice	**IND BPP3 21 0613** Prevent and Eliminate MUDA

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Operate Manufacturing Process Of Value Added Bee Products**
Unit Code	**IND BPP3 01 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to set up and operate multiple manufacturing processes and/or conduct multiple process changeovers for operation by others.

Elements	Performance Criteria
1. Prepare for line setup	1.1 Materials are confirmed and made available to meet different value added bee products production requirements. 1.2 Equipment and related accessories are confirmed, available and fit for use to meet different value added bee products production requirements. 1.3 Tools and equipment required for line setup are made available, operational and fit for use. 1.4 Processing parameters and settings are identified to meet production or packaging requirements.
2. Set up the line for operation	2.1 ***Cleaning and maintenance requirements and status*** are identified and confirmed. 2.2 Equipment is inspected to confirm condition. 2.3 Machine settings are selected or adjusted as required to meet safety and production ***requirements.*** 2.4 Processing or packaging parameters are entered as required meeting production requirements. 2.5 ***Equipment*** performance is checked and adjusted as required. 2.6 Pre-start checks are carried out as required by workplace requirements. 2.7 Line setup is completed to match production or packaging schedule and operating requirements. 2.8 The line is made ready and safe to operate and any maintenance requirements are reported according to ***workplace reporting*** requirements. 2.9 Work is conducted in accordance with workplace environmental guidelines. 2.10 Relevant personnel are notified of setup completion.

Variable	Range
Confirming cleaning requirements and status	May involve: • accessing cleaning records

Legislative requirements	are typically reflected in procedures and specifications. Legislation relevant to this industry includes: • the Food, apitherapy, pharmacy and cosmetics Standards Code, including labelling, weights and measures legislations • legislation covering food safety, environmental management, OHS, anti-discrimination and equal opportunity
Equipment adjustment	limited use of hand tools, such as Allen keys and screwdrivers, within level of responsibility
Workplace information	May include: • Standard Operating Procedures (SOPs) • specifications • production schedules and instructions • standard forms and reports
Policies and procedures	May include but not limited to: • Work is carried out according to company procedures, regulatory and licensing requirements, legislative requirements, and industrial awards and agreements

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills competence to: • conduct pre-start checks on machines used for production to determine cleaning, maintenance and operation readiness • determine production parameters and requirements • set up line according to production requirements • take corrective action in response to typical faults and inconsistencies • complete workplace records and communicate line status with other personnel as required • apply safe work practices and identify OHS hazards and controls • safely shut down equipment & apply food safety procedures.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • basic operating principles of equipment and related accessories, including equipment adjustment points, range and location/alignment requirements of sensors and related feedback instruments, and status and purpose of guards • operating capacities of equipment used in the work area, such as different types of equipment and/or components as required by processing operations • nature of setup/changeover requirements, such as product compatibility and related cleaning requirements, impact of variation in materials or product on setup requirements, equipment and/or attachment changeovers related to given products

	• typical equipment faults and related causes, including signs and symptoms of faulty equipment and early warning signs of potential problems • pre-start checks required by setup/changeover • related processes and personnel dependent on line setup, and communication responsibilities • isolation, lock out and tag out procedures and responsibilities • Occupational Health and Safety (OHS) hazards and controls • procedures and responsibility for reporting equipment performance information • basic operating principles of process control, where relevant, including the relationship between control panels and systems and the physical equipment • routine maintenance requirements and procedures where relevant
Underpinning Skills	Demonstrate skills to: • access production/packing schedule and related information to identify line setup/changeover requirements, such as checking product sequencing and compatibility, confirming that the required cleaning and/or sanitation has occurred and required packaging components and consumables are available as appropriate • select, fit and use personal protective clothing and/or equipment • confirm supply of necessary equipment and related attachments, materials and services for production • confirm supply of necessary equipment and services to carry out setup operations • set and/or adjust equipment to meet production/packaging requirements, including selecting the required parameters or equipment settings, and changing processing set points as required • position safety guards and cancel isolation/lockouts ready for operation • confirm that sensors and related feedback instruments are correctly positioned and operational • operate equipment to confirm equipment setup and make final adjustments as required • time setup activities to meet production requirements • advise affected work areas/personnel of completion of setup • maintain work area to meet housekeeping standards • load and/or position materials/ingredients/product and/or packaging consumables according to enterprise procedures • use the control panel/system to set and adjust equipment components according to enterprise procedures

	• conduct routine maintenance according to enterprise procedures • use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • work cooperatively within a culturally diverse workforce
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Characterize Bee Products and Their Recipes**
Unit Code	**IND BPP3 02 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to identify unique physical and chemical characteristics of bee products which are exploited in a multitude of applications in the course of processing value added bee products.

Elements	Performance Criteria
1. Prepare the characterization process for operation	1.1 Products and materials are confirmed and available to meet the characterization requirements. 1.2 ***Products and materials*** are prepared to meet characterization requirements. 1.3 ***Services*** are confirmed as available and ready for operation. 1.4 Equipment is checked to ***confirming readiness*** for use. 1.5 The ***process is set*** to meet identification requirements.
2. Operate and the characterization and identification process	2.1 The characterization of physical and chemical properties of bee products and their recipes process is started up according to workplace procedures. 2.2 ***Control points*** are monitored to confirm performance is maintained within specification. 2.3 Bee products and their recipes physical and chemical properties are made to meet specification. 2.4 Equipment is ***monitored*** to confirm operating condition 2.5 Out-of-specification properties, process and equipment performance are identified, rectified and/or reported.
3. Shut down the characterization process	3.1 The process is shut down according to workplace procedures. 3.2 Equipment is dismantled and prepared for cleaning 3.3 ***Work*** is conducted in accordance with workplace environmental guidelines.
4. Record information	4.1 Workplace ***information*** (result) is recorded in the appropriate format.

Variable	Range
Products and materials	May include: • various physical and chemical properties from honey • various physical and chemical properties from beeswax • various physical and chemical properties from pollen

	• various physical and chemical properties from propolis • various physical and chemical properties from royal jelly • various physical and chemical properties from different • recipes used as ingredients for the preparations of various value added bee products
Services	May include: • power • water (hot and cold) • steam • fuel
Confirming equipment status	May include: • checking that hygiene and sanitation standards, safety standards and pre-start requirements are met and that equipment is operational • checking the operation and calibration of measuring instrumentation
Process set up, operation and monitoring functions	May include: • manual or involve the use of a process control system
Control points	May include: • food safety (critical) • quality and regulatory control points • inspection points
Monitoring the process	May include: • the use of identification data • sampling • analytical tests
Workplace information	May include: • Standard Operating Procedures (SOPs) • specifications • schedules and instructions • work notes • Material Safety Data Sheets (MSDS) • characterization and identification instructions • verbal direction from manager, supervisor or senior operator
Work hazards	May involve exposure to: • chemical, dangerous or hazardous substances
Information systems	May be: • print or screen based
Policies and procedures	May include: • Work is carried out in accordance with workplace procedures, licensing requirements and legislative requirements

Identification of equipment	May include: • pot still • pumps • lines and fittings • valves • heat exchangers • condensers • brandy ball • receival vessels • refrigerator • water jacketed mixer • mortar and pestle • sieve • temperature controls • test equipment (e.g. hydrometers and thermometers, litmus paper)

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills competence to: • use personal protective equipment and follow other specified OHS procedures • prepare different bee products for characterization and identification, including checks for physical and chemical properties (moisture content, HMF, crystallization, diastase activities, viscosity, melting points, density, Hygroscopicity, Surface tension, thermal properties, color, composition, Organoleptic characteristics etc). • prepare and confirm status of equipment before commencing bee products for characterization • monitor characterization process control points and equipment, including taking of samples and conducting of tests • take corrective action in response to out-of-specification results or non-compliance • perform routine and emergency shutdowns • demonstrate knowledge of OHS hazards, controls and emergency procedures • adhere to Customs and Excise regulations • record information appropriately
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • purpose and principles of bee products characterization operations, including definition of the following terms: ➢ value added bee products ➢ Physical and chemical properties ➢ Recipes

	➢ Cosmetics ➢ Pharmaceuticals ➢ Composition of value added bee products ➢ brandy spirit (Customs definition) • Ingredients of value added bee products and legislative requirements • range of products produced by added bee products process, including fortifying spirit, commercial and premium brandy • Link to related processes. This will include the preparation of the product to be produced from different bee product combination and any further processing requirements of the elements • Stages and changes which occur during processing value added bee products. This will include critical temperatures, , density, hygroscopicity, surface tension and any other specific components affected • effect of process stages on the constituents and value added bee products • quality characteristics and uses of a range of value added bee products including fortifying spirit, commercial and premium brandy • product and materials preparation requirements and effect of variation on the process • Process specifications, procedures and operating parameters. This may include: ➢ individual still capacities ➢ boiler pressure ➢ temperatures ➢ Value added specifications • equipment and instrumentation components, purpose and operation • basic operating principles of process control systems where relevant • sampling and testing procedures • services used • significance and method of monitoring control points within the process • common causes of variation and corrective action required • Occupational Health and Safety (OHS) hazards and controls. This will include: ➢ the dangerous properties of input chemicals ➢ emergency flooding procedures ➢ emergency evacuation procedures ➢ handling procedures of spirits • lock-out and tag-out procedures

	• procedures and responsibility for reporting problems • environmental issues and controls • shutdown and cleaning requirements associated with changeovers and types of shutdowns • recording requirements and procedures • operational knowledge of customs and excise regulations • waste handling requirements and procedures where relevant • routine maintenance procedures where relevant • transfer procedures where relevant
Underpinning Skills	Demonstrate skills to: • access workplace information to identify different value added bee products requirements • select, fit and use personal protective clothing and/or equipment • Confirm supply of necessary product, materials and services. This may include checking temperature and other services • liaise with other work areas • Prepare product and materials as required. This may include: ➢ heating the incoming products ➢ surveying vessel to be heated and extracted ➢ taking dips of different ingredients ➢ testing different value added bee products • Confirm equipment status and condition. This may include checking: ➢ water flow ➢ receiver vessels for different stages ➢ pot is empty ➢ discharge valve is shut ➢ pump operation ➢ integrity of lines and fittings • Set up and start up the process. This will include any tests or procedures required to meet customs and excise regulations • Monitor the characterization and identification processes and equipment operation to identify out-of-specification results or non-compliance. This may involve monitoring: ➢ valves ➢ cooling water flow rates to different stages of condensers ➢ volume of charge ➢ temperature of the constitutes ➢ heat source ➢ receivers for value added bee products ➢ pressure of still ➢ condensate rate or flow (speed) ➢ condenser and/or brandy ball temperature ➢ safety and vacuum valves

	• monitor supply and flow of products, materials and services to and from the process • take corrective action in response to out-of-specification results or non-compliance • report and/or record corrective action as required • conduct product or batch changeovers • take samples and conduct tests • shut down equipment in response to an emergency situation • Shut down equipment in response to routine shutdown requirements. This may include: ➢ shutting off steam ➢ shutting off water to condenser and brandy ball ➢ checking for presence of vapor in pot ➢ discharging waste to effluent system • Prepare equipment for cleaning. This may involve draining and/or dismantling equipment, removing waste either manually or by rinsing in preparation for cleaning and sanitation. • Record workplace information. This will include meeting the requirements of customs and excise regulations • maintain work area to meet housekeeping standards • ensure that all customs and excise regulations are adhered to • sort, collect, treat, recycle or dispose of waste according to enterprise procedures • carry out routine maintenance according to enterprise procedures • perform transfer operations according to enterprise procedures • identify, rectify and/or report environmental non-compliance according to enterprise procedures • use oral communication skills/language to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • work cooperatively within a culturally diverse workforce
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Identify Products and Determine Ingredient Type and Quantity**
Unit Code	**IND BPP3 03 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to identify appropriate bee products and recipes and determine the critical quantity to produce various types of value added products.

Elements	Performance Criteria
1. Prepare product identification and ingredient type and quantity determining process for operation	1.1 Products and materials are confirmed and available to meet the identification requirements. 1.2 ***Products*** and ***materials*** are prepared to meet identification and ingredient type and quantity determining requirements. 1.3 ***Services*** are confirmed as available and ready for operation 1.4 Equipment is checked to ***confirm*** readiness for use. 1.5 The ***process is set*** to meet identification and ingredient type and quantity determining requirements.
2. Operate and monitor the identification and ingredient type and quantity determining process	2.1 Value added products identification with ingredient type and quantity determining process is started up according to workplace ***procedures.*** 2.2 ***Control points*** are ***monitored*** to confirm performance is maintained within specification. 2.3 The identified value added products and the determined ingredients are made to meet specification. 2.4 Equipment is monitored to confirm operating condition. 2.5 Out-of-specification properties, process and equipment performance are identified, rectified and/or reported.
3. Shut down the identification and ingredient determining process	3.1 The process is shut down according to workplace procedures. 3.2 Equipment is dismantled and prepared for cleaning 3.3 Work is conducted in accordance with workplace environmental guidelines
4. Record information	4.1 ***Workplace information*** (result) is recorded in the appropriate format.

Variable	Range
Products and materials	May include: • Various value added products identified with determining their appropriate bee products and recipes types and qualities
Services	May include: • power • water (hot and cold) • steam • fuel
Confirming equipment status	May involves: • checking that hygiene and sanitation standards, safety standards and pre-start requirements are met and that equipment is operational • checking the operation and calibration of measuring instrumentation
Process set up, operation and monitoring functions	May be: • manual or involve the use of a process control system
Policies and procedures	May include: • Work is carried out in accordance with workplace procedures, licensing requirements and legislative requirements
Control points	This includes: • food safety (critical) • quality and regulatory control points • inspection points
Monitoring the process	May involve: • the use of identification data • sampling • analytical tests
Workplace information	May include: • Standard Operating Procedures (SOPs) • specifications • schedules and instructions • work notes • Material Safety Data Sheets (MSDS) • characterization and identification instructions • verbal direction from manager, supervisor or senior operator
Information systems	May be: • print or screen based
Work hazards	May involve exposure to: • chemical, dangerous or hazardous substances

Identification of equipment	May include: • pot still • pumps • lines and fittings • valves • brandy ball • receival vessels • temperature controls

Evidence Guide	
Critical aspects of Competence	Must demonstrate knowledge and skills competence to: • use personal protective equipment and follow other specified OHS procedures • identify and prepare different bee products with their appropriate recipe types and quantity. • prepare and confirm status of equipment before commencing bee products for characterization • monitor the process control points and equipment, including taking of samples and conducting of tests • take corrective action in response to out-of-specification results or non-compliance • perform routine and emergency shutdowns • demonstrate knowledge of OHS hazards, controls and emergency procedures • adhere to Customs and Excise regulations • record information appropriately
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • purpose and principles of value added bee products identification with type and amount determining operations, including definition of the following terms: ➢ value added bee products ➢ food, health, cosmetics value ➢ Recipe types and quantity ➢ Composition of value added bee products ➢ brandy spirit (Customs definition) • Ingredients of value added bee products and legislative requirements • range of products produced by added bee products process, including fortifying spirit, commercial and premium brandy • link to related processes. This will include the identification of the products to be produced from different bee product combination and any further processing requirements of the elements

	• stages and changes which occur during identifying value added bee products and determining their ingredient types and quantity. This will include critical temperatures, density, hygroscopicity, surface tension and any other specific components affected • effect of process stages on the constituents and value added bee products • quality characteristics and uses of a range of value added bee products including fortifying spirit, commercial and premium brandy • product and materials preparation requirements and effect of variation on the process • process specifications, procedures and operating parameters. This may include: ➢ individual still capacities ➢ boiler pressure ➢ temperatures ➢ Value added specifications • equipment and instrumentation components, purpose and operation • basic operating principles of process • sampling and testing procedures • services used • significance and method of monitoring control points within the process • common causes of variation and corrective action required • Occupational Health and Safety (OHS) hazards and controls. This will include: ➢ the dangerous properties of input chemicals ➢ emergency flooding procedures ➢ emergency evacuation procedures ➢ handling procedures of spirits • lock-out and tag-out procedures • procedures and responsibility for reporting problems • environmental issues and controls • shutdown and cleaning requirements associated with changeovers and types of shutdowns • recording requirements and procedures • operational knowledge of customs and excise regulations • waste handling requirements and procedures where relevant • routine maintenance procedures where relevant • transfer procedures where relevant
Underpinning Skills	Demonstrate skills to: • access workplace information to identify and determine different value added bee products requirements

	• select, fit and use personal protective clothing and/or equipment • confirm supply of necessary product, materials and services • liaise with other work areas • prepare products and materials as required. This may include: ➢ heating the incoming products ➢ surveying vessel to be heated and extracted ➢ taking dips of different ingredients ➢ testing different value added bee products • confirm equipment status and condition. This may include checking: ➢ water flow ➢ receiver vessels for different stages ➢ pot is empty ➢ discharge valve is shut ➢ pump operation ➢ integrity of lines and fittings • Set up and start up the process. This will include any tests or procedures required to meet customs and excise regulations • Monitor the characterization and identification processes and equipment operation to identify out-of-specification results or non-compliance. This may involve monitoring: ➢ valves ➢ cooling water flow rates to different stages of condensers ➢ volume of charge ➢ temperature of the constitutes ➢ heat source ➢ receivers for value added bee products ➢ pressure of still ➢ condensate rate or flow (speed) ➢ condenser and/or brandy ball temperature ➢ safety and vacuum valves • monitor supply and flow of products, materials and services to and from the process • take corrective action in response to out-of-specification results or non-compliance • report and/or record corrective action as required • conduct product or batch changeovers • take samples and conduct tests • shut down equipment in response to an emergency situation • Shut down equipment in response to routine shutdown requirements. This may include: ➢ shutting off steam ➢ shutting off water to condenser and brandy ball ➢ checking for presence of vapor in pot

	➢ discharging waste to effluent system • Prepare equipment for cleaning. This may involve draining and/or dismantling equipment, removing waste either manually or by rinsing in preparation for cleaning and sanitation. • Record workplace information. This will include meeting the requirements of customs and excise regulations • maintain work area to meet housekeeping standards • ensure that all customs and excise regulations are adhered to • sort, collect, treat, recycle or dispose of waste according to enterprise procedures • carry out routine maintenance according to enterprise procedures • perform transfer operations according to enterprise procedures • identify, rectify and/or report environmental non-compliance according to enterprise procedures • use oral communication skills/language to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • work cooperatively within a culturally diverse workforce
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Operate an Extraction and Clarification Process**
Unit Code	**IND BPP3 04 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to operate extraction process of different bee products and recipes to constitute various value added bee products. It covers the skills and knowledge required to extract and operate the continuous clarification by separation (flotation) process.

Elements	Performance Criteria
1. Prepare the extraction and continuous clarification process for operation	1.1 Product and ***materials*** are confirmed and available to meet extraction and clarification requirements. 1.2 ***Product*** and materials are prepared to meet extraction and clarification requirements. 1.3 ***Services*** are confirmed as available and ready for operation. 1.4 ***Equipment*** is checked to confirm readiness for use. 1.5 The ***process is set*** to meet extraction and clarification requirements.
2. Operate and monitor the continuous clarification by separation (flotation) process	2.1 The continuous extraction and clarification by separation (flotation) process are started up according to workplace ***procedures***. 2.2 ***Control points*** are ***monitored*** to confirm performance is maintained within specification. 2.3 Clarified product is made to meet specification. 2.4 Equipment is monitored to ***confirm*** operating condition. 2.5 Out-of-specification product, process and equipment performance are identified, rectified and/or reported.
3. Shut down the continuous clarification by separation (flotation) process	3.1 The process is shut down according to workplace procedures. 3.2 Equipment is dismantled and prepared for cleaning. 3.3 Waste generated by both the process and cleaning procedures is collected, treated and disposed of, or recycled according to workplace procedures. 3.4 ***Work hazard*** is conducted in accordance with workplace environmental guidelines.

4. Record information	4.1 ***Workplace information*** is recorded in the appropriate format.

Variable	Range
Materials	May include: • basic extraction methods, fining agents, such as water, propylene glycol and ethanol, acetone, turpentine, xalic acid, hydrogen peroxide, orthophosphoric acid, citric acid, sodium dichromat, sodium permanganate, potassium permanganate, ammonium persulfate, benzoyl peroxide and others and enzymes
Product	May include: • a range of juice products
Services	May include: • power • gas • compressed and instrumentation air • steam and water
Equipment	May include: • purpose designed flotation equipment that incorporates in-line dosing, pressure vessel, flotation tub and solids extraction for continuous operation
Process set up, operation and monitoring functions	May be: • manual or involve the use of a process control system
Policies and procedures	May include: • Work is carried out in accordance with workplace procedures, licensing requirements and legislative requirements
Control points	This includes: • food safety (critical) • quality and regulatory control points • inspection points
Monitoring the process	May involve: • the use of production data
Confirming equipment status	May involves: • checking that hygiene and sanitation standards, safety standards and pre-start requirements are met and that equipment is operational • checking the operation and calibration status of measuring instrumentation
Work hazards	May involve exposure to: • chemical, dangerous or hazardous substances

Workplace information	May include: • Standard Operating Procedures (SOPs) • specifications • production schedules and instructions • routine maintenance schedules • work notes • Material Safety Data Sheets (MSDS) • manufacturer instructions • verbal direction from manager, supervisor or senior operator
Information systems	May be: • print or screen based

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills competence to: • use personal protective equipment and follow other specified OHS procedures • prepare and confirm status of equipment before commencing extraction and clarification • monitor extraction and clarification process control points and equipment • take corrective action in response to out-of-specification results or non-compliance • perform routine and emergency shutdowns • demonstrate knowledge of OHS hazards, controls and emergency procedures • Record information appropriately.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • purpose and principles of extraction and clarification • link to related processes • stages and changes which occur during continuous extraction and clarification • effect of process stages on end product • quality characteristics and uses of extraction and clarification product • product preparation requirements and effect of variation on the process • main methods used in extraction and clarification • process specifications, procedures and operating parameters • equipment and instrumentation components, purpose and operation • basic operating principles of process control systems where relevant • services used

	• significance and method of monitoring control points within the process • common causes of variation and corrective action required • Occupational Health and Safety (OHS) hazards and controls • lock-out and tag-out procedures • procedures and responsibility for reporting problems • environmental issues and controls • shutdown and cleaning requirements associated with changeovers and types of shutdowns • waste handling requirements and procedures • recording requirements and procedures • testing procedures where relevant • routine maintenance procedures where relevant
Underpinning Skills	Demonstrate skills to: • access workplace information to identify all required inputs extraction and clarification requirements • select, fit and use personal protective clothing and/or equipment • confirm supply of necessary product and services • liaise with other work areas • Prepare product as required and ensure the extraction and clarification materials are as per the required process. • Confirm equipment status and condition. This may include: ➢ loading extraction and clarification agents ➢ positioning valves correctly • set up and start up the process • Monitor the process and equipment operation to identify out-of-specification results or non-compliance. This may involve monitoring: ➢ flow rates ➢ flotation effectiveness ➢ test flotation results ➢ dosage rates ➢ dosage ratios ➢ gas rates ➢ pressure ➢ weir level ➢ product loss ➢ dilution ➢ oxidation ➢ relevant product characteristics (e.g. variety, turbidity and solids content) • monitor supply and flow of product to and from the process • take corrective action in response to out-of-specification results or non-compliance

	• report and/or record corrective action as required • conduct product and batch changeovers • sort, collect, treat, recycle or dispose of waste • shut down equipment in response to an emergency situation • shut down equipment in response to routine shutdown requirements • record workplace information • maintain work area to meet housekeeping standards • Prepare equipment for cleaning. This may involve draining and/or dismantling equipment, and removing waste either manually or by rinsing, in preparation for cleaning and sanitation • identify, rectify and/or report environmental non-compliance • carry out routine maintenance according to enterprise procedures • conduct routine tests according to enterprise procedures • use oral communication skills/language to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • work cooperatively within a culturally diverse workforce
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Monitor Implementation of Quality and Food Safety Procedures**
Unit Code	**IND BPP3 05 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to provide a leadership role in supporting day-to-day implementation of the food safety/quality programs in a work area. It also involves supporting others to implement the requirements of the food safety/quality procedures.

Elements	Performance Criteria
1. Ensure others in the work area are able to meet quality and food safety requirements	1.1 Hazard control and clothing and equipment appropriate to work requirements are made available, functional and correctly fitted. 1.2 Information on food safety/quality ***work responsibilities*** and procedures is made current, accessible and communicated to others in the work area. 1.3 Information about identified hazards and the outcomes of risk assessment and risk control procedures is made accessible and communicated to others in the work area. 1.4 ***Food safety***/quality hazards and control measures used in the work area can be identified by those in the work area 1.5 ***Monitoring*** and coaching support is made available to support individuals/groups to implement quality and safe food handling procedures. 1.6 Training needs are identified and addressed within level of responsibility.
2. Monitor observance of quality standards and food safety programs in the work area	2.1 Procedures in the work area are clearly defined, documented and followed. 2.2 Deviation from identified ***procedures*** is identified, reported and addressed within level of responsibility. 2.3 Personal behavior is made consistent with ***workplace*** policies and procedures that support food safety and quality. 2.4 Food safety and/or quality hazards are identified and reported according to workplace procedures. 2.5 Food safety and quality information is recorded to meet workplace reporting requirements.

	2.6 The work area is maintained according to housekeeping standards. 2.7 Work is conducted in accordance with workplace environmental guidelines.
3. Take corrective action in response to quality and food safety non-compliance	3.1 Workplace procedures for responding to quality and food safety non-compliance are promptly implemented. 3.2 Hazardous events are investigated to identify cause. 3.3 Control measures are implemented to prevent recurrence and minimize risks of hazardous events.
4. Maintain and improve quality and food safety in the work area	4.1 Processes or conditions which could result in a breach of food safety procedures or quality specifications are identified, assessed, removed or/and reported within level of responsibility and according to workplace procedure. 4.2 Risk assessments are conducted and appropriate control measures are identified and implemented in the work area. 4.3 Recommendations arising from risk assessments are implemented within level of responsibility. 4.4 Inadequacies in control measures are identified and reported according to company reporting requirements. 4.5 Matters raised relating to quality/food safety are promptly resolved and/or referred to appropriate personnel. 4.6 The work group is consulted and advised of quality/food safety matters relevant to work role. 4.7 Opportunities are identified and raised for improving food safety and quality with relevant personnel. 4.8 Procedures are developed or revised to support effective control of quality and food safety hazards. 4.9 Quality/food safety records are reviewed to ensure they are complete and meet the ***quality system***, food safety program and legal requirements.

Variable	**Range**
Work responsibilities	May include: • Work responsibilities may include formal or informal responsibility for modelling appropriate quality/food safety policies and procedures and providing a support role to others in the work area

Food safety program	May include: • Reasonably expected to occur in all food handling operations of the food business. The food safety program and related procedures must comply with legal requirements of the food safety standards and must be communicated to all food handlers. Where no food safety program is in place, food safety requirements may be specified in general operating procedures
Monitoring	May include: • taking temperatures • collecting samples • conducting visual inspections • additional testing as required
Responsibility for identifying breaches of food safety procedures	May include: • taking corrective action occurs in the context of the food safety program and within scope of responsibility
Workplace information	May include: • food safety and quality policies and programs • Standard Operating Procedures (SOPs) • specifications • log sheets • written or verbal instruction incorporating food safety and • quality requirements
Quality systems	May include: • externally accredited, such as an ISO system, or internally designed and managed
Incidents	May include: • a situation where the safe limits or parameters identified by the food safety program are not met • a situation where the quality limits or parameters identified in specifications or processing instructions are not met
Responsibility for identifying non-compliance against quality standards	May include: • occurs within the context of defined standards or specifications and relates to work area
Personal hygiene requirements	May include: • The food safety program. At a minimum this must meet legal requirements as set out in the Food Safety Standard 3.2.2, Division 4:14 and/or state or territory legislation/regulations
Reporting of health conditions and illnesses	May include: • The food safety program. At a minimum this must meet legal requirements as set out in Food Safety Standard 3.2.2, Division 4:13 and/or state or territory legislation/regulations

Operator responsibilities	• The operator at this level may not have direct responsibility for overseeing the training/development of team members. At a minimum they must be able to identify development needs of others in the work area and refer this information to the relevant personnel. • The operator at this level may not have responsibility for independently assessing risks and determining the effectiveness of control measures. However, they would be expected to observe day-to-day effectiveness and participate in assessment and review processes. Responsibilities at this level may include facilitating consultation processes within level of responsibility
Record keeping	• Record keeping complies with customer, legal and food safety program requirements

Evidence Guide	
Critical Aspects of Competence	Must confirm appropriate knowledge and skills to: • describe quality and food safety program, risks and control measures of the work area • confirm that control measures are in place and that personnel in the work area are equipped and informed to implement programs • identify, address and follow up on non-compliances • identify causes of non compliances • conduct risk assessments and recommend responsive action • provide support to others to implement the programs • Complete and maintain documentation.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • sources of information and expertise on procedures and responsibilities for food safety relevant to the workplace • principles of a HACCP-based approach to managing food safety, including identifying hazards that are likely to occur, establishing appropriate methods of control and confirming that controls are met • basic concepts of quality assurance including hazards, risk assessment and control methods • company programs and systems in place to manage and support quality and food safety in the workplace, which may involve separate or integrated programs, including systems for maintaining and updating documents, such as operating procedures and specifications • clothing and footwear requirements for working in and/or moving between food handling areas, including personal clothing maintenance, laundering and storage requirements

	• appropriate bandages and dressings to be used when undertaking food handling • housekeeping requirements and responsibilities relating to own work, where relevant this includes use and storage of housekeeping/cleaning equipment • procedures to follow in the event of pest sighting or discovery of infestation • purpose and importance of cleaning and sanitation procedures • legal obligations for food safety and quality, including an awareness of government legislation and customer requirements • food safety and quality responsibilities and requirements relating to the work area • awareness of common micro biological, physical and chemical hazards related to the foods handled in the work area, including the types of hazards likely to occur, the conditions under which they occur, possible consequences and control methods to prevent occurrence • suitable standard for materials, measuring devices, equipment and utensils used in the work area • properties of food and ingredients used that affect food safety, including an understanding of related storage, processing and handling requirements • current technical and process knowledge required to participate in investigations of food safety/quality hazards, risks and incidents within level of responsibility, including an understanding of common micro biological, physical and chemical hazards, related control methods and the way changes in equipment and/or processing methods can affect food safety and quality outcomes • procedures for identifying unsafe and/or non-conforming product, including control points and evidence of out-of-specification product or materials • sampling procedures, test methods and inspections • options for responding to non-compliance, including legal responsibility, risk management and cost/implications of different responses and level of responsibility for decision making • methods used in the workplace to isolate or quarantine food which may be unsafe • waste collection, recycling, handling and disposal, including handling/disposal requirements for different types of waste, such as hazardous waste where relevant

	• traceability and recall procedures within level of responsibility • documentation system and procedures, including record keeping to meet both company and legal requirements, procedures for developing and/or reviewing workplace procedures, and document control systems used in the workplace • auditing arrangements, roles and responsibilities as they relate to own work responsibilities, such as internal and external audit processes • appropriate communication skills and techniques to convey information on quality and food safety requirements to others in the workplace • cleaning and sanitation procedures where relevant • impact of rework handling/addition on food safety where relevant • sampling and test methods where relevant • facilitation and consultation techniques where relevant
Underpinning Skills	Demonstrate skills to: • access, interpret and communicate information about the food safety program, quality requirements and related procedures to others in the work area • demonstrate two-way communication, including active listening and responding constructively to feedback • provide access to and maintain current food safety/quality documentation • model safe food handling and quality practices and procedures to achieve required outcomes, including demonstrating: • work procedures that meet the requirements of quality and food safety • cleaning and sanitizing equipment • sampling and testing as appropriate according to quality and food safety requirements • maintaining personal hygiene • wearing appropriate clothing and footwear as required by the work task • following procedures when moving within and between work areas • reporting health conditions and illnesses according to workplace procedures in: ➢ handling, cleaning and storing equipment, utensils and packaging materials as appropriate ➢ identify control points in the work area and demonstrate monitoring techniques used (control points include critical, quality and regulatory control points)

	➢ support others to meet quality standards and follow food safety procedures by ensuring that all personnel in the work area receive the information required and have the necessary skills and equipment to carry out their responsibilities ➢ identify, report and/or address food safety/quality non-compliance in an appropriate and timely manner within level of responsibility ➢ determine when and how to make adjustments to maintain output within level of responsibility ➢ identify, report and/or address food safety/quality training and development needs of others in the work area • ensure that appropriate and timely action is taken in response to non-compliance • handle and dispose of out-of-specification or contaminated food, waste and recyclable material according to food safety program as this requirement relates to own work responsibility • participate in investigations of non-compliance and risk assessment processes • participate in consultation processes to improve quality and food safety outcomes in the workplace • review practice and procedures to implement recommendations arising from risk assessments and/or improvement proposals within level of responsibility, such as collecting and analysing food safety/quality records, reviewing operating procedures and communicating changes to others in the work area • ensure that housekeeping standards are maintained and that equipment is in operational order, such as participating in the management of equipment calibration • monitor the recording of quality and food safety information to confirm that records accurately reflect performance and meet the requirements of the food safety and quality programs • participate in food recall procedures as required, within level of responsibility • facilitate consultation processes according to enterprise procedures • lead investigations of quality and food safety incidents according to enterprise procedures • work cooperatively within a culturally diverse workforce

Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Perform Value Added Bee Products Production Operations**
Unit Code	**IND BPP3 06 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to operate different value added bee products production process. It covers the skills and knowledge required to start up, operate and shut down machines for the production of value added bee products operations.

Elements	Performance Criteria
1. Prepare the production of value added bee products process for operation	1.1 Product and materials are confirmed and available to meet production requirements. 1.2 ***Product*** and ***materials*** are prepared to meet production requirements. 1.3 ***Services*** are confirmed as available and ready for operation. 1.4 ***Equipment*** is checked to ***confirm readiness*** for use. 1.5 The ***process is set*** to meet production requirements.
2. Operate and monitor the production of value added bee products process	2.1 The production of value added bee products process is started up according to workplace procedures. 2.2 ***Control points*** are ***monitored*** to confirm performance is maintained ***within specification***. 2.3 Ingredients are made to meet specification. 2.4 ***Equipment*** is monitored to ***confirm operating condition***. 2.5 Out-of-specification ingredients, process and equipment performance are identified, rectified and/or reported.
3. Shut down the production of value added bee products process	3.1 The process is shut down according to workplace procedures. 3.2 Equipment is dismantled and prepared for cleaning. 3.3 Work is conducted in accordance with workplace environmental guidelines.
4. Record information	4.1 ***Workplace information*** is recorded in the appropriate format.

Variable	Range
Product and materials	May include: • Honey with pollen and propolis • Nuts in honey • Fruits in honey • Honey paste for dressing wounds

	• Honey jelly • Honey caramels • Butter honey caramels • Honey biscuits • Honey gums • Honev with pollen • Pollen pills and capsules • Wax for candle making, cosmetic preparations • Polishes and varnishes • Cravons • Leather preserves • Waterproofing textiles and paper • Paint, Wood preservative, ointment for burns • Veterinary wound cream, adhesive, anti-inflammatory and cell growth inhibitor propolis, propolis • Deodorant • Propolis Ointments • Propolis tablets • Propolis shampoo • Propolis lotion • Propolis toothpaste • Anaesthetic propolis paste • Yoghurt with royal lelly etc. particular products and materials which are determine by the needs and preferences of the market, together with the distribution, taste, customs, habits, needs
Services	May include: • power • water (hot and cold) • steam • fuel
Production equipment	May include: • Jacketed tank • pumps • Strainer • Filler • Storage tank • lines and fittings • valves • heat exchangers • Bottling machine • condensers • brandy ball • receive vessels

	• temperature controls • test equipment (e.g. hydrometers and thermometers)
Confirming equipment status	May involves: • checking that hygiene and sanitation standards, safety standards and pre-start requirements are met and that equipment is operational • checking the operation and calibration of measuring instrumentation
Control points	This includes: • food safety (critical) • quality and regulatory control points • inspection points
Monitoring the process	May involve: • the use of production data, such as speed control sheets • sampling • analytical tests
Process set up, operation and monitoring functions	May be: • manual or involve the use of a process control system
Workplace information	May include: • Standard Operating Procedures (SOPs) • specifications • production schedules and instructions • work notes • Material Safety Data Sheets (MSDS) • manufacturer instructions • verbal direction from manager, supervisor or senior operator
Information systems	May be: • print or screen based
Policies and procedures	May include: • Work is carried out in accordance with workplace procedures, licensing requirements and legislative requirements
Work hazards	May involve exposure to: • chemical, dangerous or hazardous substances

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills competence to: • use personal protective equipment and follow other specified OHS procedures • prepare different value added bee products, including checks for temperature undertaking any required heating of each product • prepare and confirm status of equipment before commencing value added bee products production

	• monitor value added bee products production process control points and equipment, including taking of samples and conducting of tests • take corrective action in response to out-of-specification results or non-compliance • perform routine and emergency shutdowns • demonstrate knowledge of OHS hazards, controls and emergency procedures • adhere to Customs and Excise regulations • record information appropriately.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • purpose and principles of value added bee products production operations, including definition of the following terms: ➢ value added bee products production ➢ brandy spirit (Customs definition) • final contents of different value added bee products and legislative requirements • range of products produced by value added bee products production process • link to related processes. This will include the preparation of the product to be produced and any further processing requirements of the ingredients • stages and changes which occur during value added bee products production. This will include critical temperatures, strength and specific components affected • effect of process stages on ingredients and value added bee products • quality characteristics and uses of a range of value added bee products production including fortifying spirit, commercial and premium brandy • product and materials preparation requirements and effect of variation on the process • process specifications, procedures and operating parameters. This may include: ➢ individual still capacities ➢ boiler pressure ➢ Products strength ➢ temperatures ➢ value added bee products specifications • equipment and instrumentation components, purpose and operation • basic operating principles of process control systems where relevant • sampling and testing procedures

	• services used • significance and method of monitoring control points within the process • common causes of variation and corrective action required • OHS hazards and controls. This will include: ➢ the dangerous properties of ethyl alcohol ➢ emergency flooding procedures ➢ emergency evacuation procedures ➢ handling procedures of spirits • lock-out and tag-out procedures • procedures and responsibility for reporting problems • environmental issues and controls • shutdown and cleaning requirements associated with changeovers and types of shutdowns • recording requirements and procedures • operational knowledge of Customs and Excise regulations • waste handling requirements and procedures where relevant • routine maintenance procedures where relevant • transfer procedures where relevant
Underpinning Skills	Demonstrate skills to: • access workplace information to identify distillation requirements • select, fit and use personal protective clothing and/or equipment • Confirm supply of necessary product, materials and services. This may include checking temperature and products character • liaise with other work areas • Prepare product and materials as required. This may include: ➢ heating the incoming product ➢ surveying vessel to be distilled ➢ taking dips of value added bee products ➢ testing low value added bee products product • confirm equipment status and condition. This may include checking: ➢ water flow to condensers ➢ receiver vessels for heads, heart and tails ➢ pot is empty ➢ discharge valve is shut ➢ pump operation ➢ integrity of lines and fittings • Set up and start up the process. This will include any tests or procedures required to meet Customs and Excise regulations

	• Monitor the process and equipment operation to identify out-of-specification results or non-compliance. This may involve monitoring: ➢ valves ➢ cooling water flow rates to condensers ➢ volume of charge ➢ temperature of distillate ➢ characteristics of the ingredients ➢ heat source ➢ receivers for value added bee products ➢ pressure of still ➢ condensate rate or flow (speed) ➢ condenser and/or brandy ball temperature ➢ safety and vacuum valves • monitor supply and flow of product, materials and services to and from the process • take corrective action in response to out-of-specification results or non-compliance • report and/or record corrective action as required • conduct product or batch changeovers • take samples and conduct tests • shut down equipment in response to an emergency situation • shut down equipment in response to routine shutdown requirements. This may include: ➢ shutting off steam ➢ shutting off water to condenser and brandy ball ➢ checking for presence of vapour in pot ➢ discharging waste to effluent system • Prepare equipment for cleaning. This may involve draining and/or dismantling equipment, removing waste either manually or by rinsing in preparation for cleaning and sanitation. • record workplace information. This will include meeting the requirements of Customs and Excise regulations • maintain work area to meet housekeeping standards • ensure that all Customs and Excise regulations are adhered to • sort, collect, treat, recycle or dispose of waste according to enterprise procedures • carry out routine maintenance according to enterprise procedures • perform transfer operations according to enterprise procedures • identify, rectify and/or report environmental non-compliance according to enterprise procedures

	• use oral communication skills/language to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • work cooperatively within a culturally diverse workforce
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Operate Manual Bottling and Packaging Processes	
Unit Title	**Operate Manual Bottling and Packaging Processes**
Unit Code	**IND BPP3 07 0513**
Unit Descriptor	This specialist unit has been developed for the bottling and packaging of the bee product processing. It covers the skills and knowledge required to set up, operate and shut down a range of manual and basic bottling and packaging equipment and to perform associated manual operations

Elements	Performance Criteria
1. Prepare to operate manual or basic bottling and packaging equipment	1.1 ***Product and materials*** are confirmed and available to meet production requirements. 1.2 Product and materials are prepared to meet production requirements. 1.3 ***Services*** are confirmed as available and ready for operation. 1.4 Equipment is prepared and checked to confirm readiness for use. 1.5 ***Equipment*** is set to meet production requirement.
2. Operate and monitor manual or basic bottling and packaging processes	2.1 The equipment is started up according to workplace procedures. 2.2 ***Control points*** are monitored to confirm performance is maintained within specification. 2.3 ***Bottling and packaging*** output is made to meet specification 2.4 Equipment is monitored to confirm operating condition. 2.5 Out-of-specification product, process and equipment performance are identified, rectified and/or reported. 2.6 The cleaning cycle is undertaken according to company ***policies and procedures***.
3. Shut down manual or basic bottling and packaging processes	3.1 Equipment is shut down according to workplace procedures. 3.2 Equipment is prepared for cleaning. 3.3 Waste generated by both the process and the cleaning is collected, treated, and disposed of, or recycled according to workplace procedures.
4. Record information	4.1 ***Workplace information*** is recorded in the appropriate format.

Variable	Range
Products and materials	may include: • capsules • cartons • corks • glue • hot melt • bottles (full or empty) • labels • hot wax • ink • nails
Services	may include: • power • compressed air • water • steam • inert gas • lubrication • vacuum
Equipment status	involves: • checking that hygiene and sanitation standards, safety standards and pre-start requirements are met and that equipment is operational • checking operation or calibration of measuring instrumentation
Control points	These include: • food safety (critical) • quality and regulatory control points • inspection points
Manual or basic bottling and packaging equipment	May include: • Equipment will vary according to the bottling and packaging scope of the enterprise and includes equipment that requires full manual operation, including manual loading and unloading and all or some manual operations bottling and packaging operations. The unit can also apply to basic bottling and packaging equipment that includes some automatic operations. Examples include equipment that: • needs manual loading and unloading • can process a limited number of bottles, cartons or pallets at a time • can perform some but not all of the bottling function (e.g. bottles but does not affix labels) The range of equipment can include equipment associated with: • decanting

	• loading capsule, cork and carton magazines • depalletising • binning and de-binning • sealing • capsuling • labelling • inserting cork stoppers • tissue wrapping • gift boxing • nail gun operation • wax dipping bottles • stencilling • carton coding • carton erection • operating conveyors • carton turners and bottle counters • carton packing and pallet stacking
Policies and procedures	May include: • Work is carried out in accordance with workplace procedures, licensing requirements and legislative requirements
Workplace information	can include: • Standard Operating Procedures (SOPs) • specifications • production schedules or instructions • work notes • Material Safety Data Sheets (MSDS) • manufacturer instructions • verbal direction from manager, supervisor or senior operator
Information systems	may be: • print or screen based

Evidence Guide	
Critical aspects of Competence	Must confirm appropriate knowledge and skills to: • conduct pre-start checks on machinery used for manual bottling and packaging • start, operate, monitor and adjust equipment to achieve required quality outcomes • take corrective action in response to faults and inconsistencies • complete workplace records as required • apply safe work practices and identify OHS hazards and controls • Safely shut down equipment.

Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • Links to related equipment • Stages and changes which occur during the equipment operation • Effect of equipment operation stages on end product and output • Quality characteristics and uses of end product and output • Materials preparation requirements and effect of variation on the equipment operation • Emergency and troubleshooting procedures, including failure of services • Process specification, procedures and operating parameters • Equipment and instrumentation components, purpose and operation • Services required • Significance and method of monitoring control points within the equipment operation • Common causes of variation and corrective action required • Occupational Health and Safety (OHS) hazards and controls, including manual handling • Lock-out and tag-out procedures • Procedures and responsibility for reporting problems • Shutdown sequence • Shutdown and cleaning requirements associated with changeovers and types of shutdown • Routine maintenance requirements • Waste handling requirements and procedures • Recording requirements and procedures
Underpinning Skills	Demonstrate skills to: • Access workplace information to identify bottling and packaging requirements • Select, fit and use appropriate personal protective clothing and/or equipment • Confirm supply of necessary materials and services • Liaise with other work areas, which may include: • maintenance • materials supply • bottling and packaging personnel • Prepare materials as required. This may include loading materials and confirming that: • capsules meet specifications (e.g. colour, type and size) • glue, hot melt or wax meets specifications (e.g. type and batch number) • hot melt or wax is heated to required temperature • bottles meet specifications (e.g. type, colour and size)

	• bottles to be de-crowned meet specifications • bottles to be decanted meet specifications • cartons to be packed and sealed meet specifications • cartons to be stencilled meet specifications • bottles to be waxed meet specifications • materials to be loaded into magazines meet specifications • bottles to be binned or de-binned meet specifications • bottles to be labelled meet specifications • bottles to be tissue wrapped meet specifications • boxes to be nailed meet specifications • pallets to be stacked meet specifications • Confirm equipment status and condition. This may include: • confirming hygiene and sanitation standards have been met • adjusting air pressure • checking conveyor speed • adjusting height and width to accommodate specific product and material specifications • completing a test run • confirming flow of line lube and water • realigning diverters and turners to ensure flow is as instructed • Set up and start up the equipment • Monitor the equipment operation to identify out-of-specification results or non-compliance. This can involve monitoring: • conveyor speed • movement, spacing and direction of bottles or cartons on conveyor • bottle cleanliness and draining effectiveness • dryness of bottles • glue length • strength of carton seals • shrinkage or fit of capsules • stacking and stacking patterns meet specifications • bottle counters are re-set at the start of each product • bottles are waxed to correct level • stencils applied are clear and legible • wine levels meet specification • ongoing quality of materials used • ongoing appearance of applications • Monitor supply and flow of materials to and from the equipment • Take corrective action in response to out-of-specification results or non-compliance

	• Report and/or record corrective action as instructed • Sort, collect, treat, recycle or dispose of waste • Shut down equipment in response to an emergency situation • Shut down equipment in response to routine shutdown requirements. This may include removing product or consumables from the line • Prepare equipment for cleaning. This may involve draining and/or dismantling equipment, and removing waste either manually or by rinsing. In preparation for cleaning and sanitation. • Maintain work area to meet housekeeping standards • Identify, rectify and/or report environmental non-compliance according to enterprise procedures • Use oral communication skills/language to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • Work cooperatively within a culturally diverse workforce
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Use Computer Technology for Laboratory Applications**
Unit Code	**IND BPP3 08 0513**
Unit Descriptor	This unit covers the skills and knowledge required for information and data storage, retrieval, analysis and reporting.

Elements	Performance Criteria
1. Access equipment	1.1 Appropriate equipment required for ***information*** management is identified. 1.2 ***Software*** is accessed from a personal computer or network terminal.
2. Use application software	2.1 ***Laboratory*** information is entered into the computing system according to specified procedure. 2.2 Searches are conducted for information output. 2.3 Application features are used for calculations. 2.4 Data sets and databases are constructed for numerical and graphical analysis. 2.5 ***Data*** is obtained from diverse applications and integrated.
3. Analyze data and document reports	3.1 Data is analyzed using software package applications. 3.2 Correct options are selected for constructing data reports. 3.3 Results of data analysis are documented using appropriate document format and design. 3.4 Data sources are referenced according to the style requirements of the workplace. 3.5 ***Report*** is printed using software package ***functions***.
4. Complete software applications	4.1 Data is backed up and/or archived according to workplace procedures. 4.2 Hard copies are filed and/or distributed according to workplace procedures. 4.3 Anti-virus software is used as required.

Variable	Range
Information and reference sources	May include: • standards • specifications • analytical tolerances • supply details

	• stock control records • production statistics • automatic data transfer, including barcode systems • internet, intranet and email
Software packages	May include: • word processing • spreadsheets • databases • graphical and statistical analysis • Laboratory Information Management Systems (LIMS)
Laboratory software	May be applied to: • sample login, tracking and scheduling • results entry • quality assurance or quality control data reporting • export and invoicing • tracking labels • worksheets • status and backlog reports • control limit charting and bar coding
Data	May include: • the results of inspections, tests, quality or safety audits and trials • product or process non-compliance • quarantine procedures • materials compliance validation • calibration or maintenance schedules • stock takes • instrument performance characteristics • Different value added bee products shows
Reports	May include: • Reports will involve the use of computer hardware and software tools to analyse laboratory data and interpret the information to produce reports for use by the laboratory and its internal or external customers. These may include: ➢ Different value added bee products makers ➢ production team members ➢ external clients • Reports may be distributed in: ➢ hard copy or electronic format
Functions	May include: • Formatting • Integrating • importing graphics • charts and tables

Workplace information	May include: • laboratory data • Standard Operating Procedures (SOPs) • specifications • standards • certificates of compliance • quality assurance records • scientific articles and publications • reference texts • product information and purchase details (e.g. supplier catalogues and handbooks) • calibration records • maintenance and service records • production schedules • instructions • work notes • Material Safety Data Sheets (MSDS) • manufacturer instructions (hardware and software documentation) • verbal direction from laboratory manager, supervisor, or senior operator

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills competence to: • prepare equipment and software for operation • use software for laboratory applications • obtain, analyse and record data • maintain laboratory data according to workplace system requirements.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • how the software package can be applied to different value added bee products laboratory information management • functions and commands associated with the software package • relationship between the package instructions and the data processing performed • types of database models available • relationship between procedures for data input and file storage • file and record maintenance • basic statistical concepts where relevant • methods of comparing quantitative data where relevant.
Underpinning Skills	Demonstrate skills to: • select the appropriate software package for the data processing operation

	• use routine commands and instruction of the software package to complete the required operation • use software package to analyse data. This may involve simple statistical and/or graphical analysis of quality assurance data • present accurate results in the required format. This may include: ➢ graphs ➢ tables ➢ graphics ➢ spreadsheets • identify deviations in performance and take appropriate action • back up electronic files • follow procedures to troubleshoot basic software problems • use virus scanning software • maintain the confidentiality of data according to workplace procedures • generate reports in a timely manner in the required format • secure records as required • analyse simple statistical and/or graphical data according to enterprise procedures • interpret hardware and/or software technical manuals according to enterprise procedures • use oral communication skills/language to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • work cooperatively within a culturally diverse workforce.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Evaluate Value Added Products Standard (Advanced)**
Unit Code	**IND BPP3 09 0613**
Unit Descriptor	This specialist unit has been developed for the value added bee products sales confirmatory stream of the apiculture sector. It covers the skills and knowledge required to reach an advanced standard of value added bee products evaluation.

Elements	Performance Criteria
1. Identify specific value added bee products characteristics using sensory evaluation techniques	1.1 Correct tasting ***procedures*** using sight, smell and taste are followed. 1.2 Ethiopian produced value added bee products are identified by local honeybee and botanical origins as well as varieties of added local recipes. 1.3 Specific and varieties of value added bee products ***making techniques*** are identified and discussed. 1.4 Quality evaluation is completed.
2. Identify specialised value added bee products faults	2.1 Various ***value added bee products*** are inspected. 2.2 Products faults are identified correctly and reported.
3. Compare local styles with key world products	3.1 Well known world various value added bee products are identified in terms of style and quality. 3.2 Appropriate enterprise for various value added bee products are recommended as alternatives.
4. Enhance consumer enjoyment of value added bee products	4.1 Appropriate enterprise various value added bee products are selected to match food, cosmetic, pharmaceutical etc choices. 4.2 Optimum ageing and serving requirements are specified.

Variable	Range
Policies and procedures	May include: • Work is carried out in accordance with workplace procedures, licensing requirements and legislative requirements
Value added bee products making and techniques of ingredients production	May include: • bee colony management • Bee products harvesting management • Extraction • cold fermentation

	• barrel fermentation • oak treatment • ageing • sparkling • value added products production methods (e.g. tank, transfer and method)
Value added products faults	May include: • evidence of excessive sulphur dioxide • cork taint and other faults • volatile acidity • tart rate crystals • oxidation • haze • brettanomyces
Value added products factors	May include: • clarity • colour type and intensity • rims versus core differentiation • alcohol (degrees or %) intensity and character of aroma and flavour • oak characteristics • complexity • residuals • acidity, including malolactic treatment • body • weight • mouth feel • astringency • tannin • balance • length
Workplace information	May include: • Standard Operating Procedures (SOPs) • workplace policy and procedures in regard to evaluating value added bee products • specifications • work notes • instructions or verbal direction from manager, supervisor or senior staff
Staff	May include: • be full time, part time or casual • work in other areas of the enterprise
Information systems	May be: • print or screen based

Equipment	May include: • spittoons • glasses • corkscrews
Materials	May include: • product information sheets • tasting notes
World value added Bee products	May include: • Italy (Unipectina Spa in Bergamo, wall paintings in Pompeii,)torrone from Italy, turon from Spain, nougat from France and halvah from Turkey • Forapin and Apicosan in Germany, Apivene in France and Immenin in Ethiopian
Food, cosmetics, pharmaceutical factors	May include: • Acidity • oil or cream content • 'weight' • free proteins • hot spices • sweetness • alcohol content • Lotions • Soap • Capsules

Evidence Guide	
Critical aspects of Competence	Must demonstrate knowledge and skills competence to: • consistently establish appropriate conditions for tasting value added bee products**,** including optimum conditions for sight, smell and taste • correctly explain specific value added bee products making techniques and their effect on value added bee products characteristics • identify value added bee products for style, varieties recipes, vintage, quality, and evaluate and explain characteristics • identify specialised value added bee products faults • explain optimum ageing, fermentation and serving conditions for value added bee products styles
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • features and purpose of value added bee products sensory evaluation techniques • value added bee products faults (features, causes and prevention or corrective action required) • value added bee products tasting policy, procedures and techniques

	• optimum conditions for tasting value added bee products, including:
	  ➢ environment
	  ➢ self and other people
	  ➢ equipment and glasses
	  ➢ value added bee products preparation
	• factors influencing the order in which value added bee products should be tasted
	• label terminology and meanings
	• 'trigger' characteristics of value added bee products that can be assessed to identify key features, including:
	  ➢ Honeybee type
	  ➢ Botanical origin
	  ➢ country of origin
	  ➢ vintage
	  ➢ value added bee products making and grape growing techniques
	  ➢ quality
	  ➢ value for money
	• how value added bee products are made
	• common value added bee products making, ingredients production techniques and how they can be utilised to manipulate value added bee products style and characteristics
	• key Ethiopian and world value added bee products and enterprise products, including their:
	  ➢ Style and taste characteristics
	  ➢ price
	  ➢ quality
	• key food and other bee products factors that will react together and which combinations create harmony and discord
	• serving and extraction requirements of key world and Ethiopian value added bee products and all enterprise products
	• value added bee products factors that will determine extraction and serving requirements, including balance of tannin, acidity and flavours
	• factors that will detrimentally affect the quality of value added bee products during extraction, including:
	  ➢ temperature
	  ➢ humidity
	  ➢ ultraviolet (UV) light
	  ➢ vibrations
	• Occupational Health and Safety (OHS) hazards and controls
	• procedures and responsibility for reporting problems

	• housekeeping requirements and procedures • Recording requirements and procedures.
Underpinning Skills	Demonstrate skills to: • access workplace information to determine advanced value added bee products sensory evaluation requirements • confirm supply of necessary products, materials and equipment • Follow correct tasting procedures. This may include: ➢ preparation of environment and self ➢ preparation and service of value added bee products ➢ order of tasting ➢ sensory evaluation techniques ➢ recording and documentation techniques • effectively carry out value added bee products sensory evaluation to determine: ➢ value added bee product styles ➢ Botanical origin ➢ Bee species ➢ country of origin ➢ region of production ➢ vintage ➢ value added bee products making techniques ➢ quality ➢ value for money ➢ value added bee products faults • Identify and describe evidence of specific value added bee products making techniques and explain their effect on value added bee products characteristics. These may include their effect on: ➢ balance of acidity on the palate, shining, ➢ complexity ➢ weight and mouth feel ➢ alcohol ➢ aromas and flavors ➢ color ➢ tannin ➢ fault eradication ➢ length • Recommend appropriate enterprise alternatives to key Ethiopian and world value added bee products. These may consider: ➢ price ➢ style ➢ quality ➢ occasion

	• Select appropriate enterprise products to complement food, cosmetics and pharmaceutical types. This should include consideration of: ➢ value added bee products factors (primarily acidity, sweetness, intensity of flavor, alcohol, tannin and weight) ➢ food cosmetics and pharmaceutical factors ➢ occasion ➢ price • Advice on optimum serving and extraction requirements of key enterprise, Ethiopian and world value added bee products. This will include consideration of specific consumer tastes and recommending: ➢ Fermentation time and conditions ➢ decanting techniques ➢ serving temperature ➢ breathing and opening time • use oral communication skills/language to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • Work cooperatively within a culturally diverse workforce.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Implement Good Manufacturing Practice Procedures**
Unit Code	**IND BPP3 10 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to comply with relevant Good Manufacturing Practice (GMP) codes through the implementation of workplace GMP and quality procedures.

Elements	Performance Criteria
1. Identify requirements of GMP related to own work	1.1 Sources of information on GMP ***requirements*** are located 1.2 GMP requirements and responsibilities related to own work are identified.
2. Ensure that personal hygiene and conduct meets GMP requirements	2.1 Personal hygiene is made to meet GMP requirements. 2.2 Clothing is prepared, used, stored and disposed of according to GMP and workplace procedures. 2.3 Personal movement around the workplace is complied with area entry and exit procedures.
3. Implement GMP requirements when carrying out work activities	3.1 Work area, materials, equipment and product are routinely monitored to ensure compliance with GMP requirements. 3.2 Raw materials, packaging components and product are handled/ stored according to GMP and workplace procedures. 3.3 Workplace ***procedures*** are followed to control resource allocation to meet GMP requirements. 3.4 Common forms of contamination are identified and appropriate control measures are followed according to GMP requirements. 3.5 The workplace is maintained in a clean and tidy order to meet GMP housekeeping standards. 3.6 Work is conducted in accordance with workplace environmental guidelines. 3.7 Out-of-specification or contaminated materials, packaging components/consumables and product, waste and recyclable materials are handled and disposed of according to GMP requirements and workplace procedures. 3.8 Signs of unacceptable plant or ***equipment*** condition are identified and reported.

4. Participate in improving GMP	4.1 Processes, practices or conditions which could result in non-compliance with GMP are identified and reported according to workplace reporting requirements. 4.2 Corrective action is implemented within level of responsibility. 4.3 GMP issues are raised with designated personnel.
5. Complete workplace documentation to support GMP	5.1 Documentation and recording requirements are identified. 5.2 Information is recorded according to workplace reporting procedures to meet GMP requirements.

Variable	**Range**
Legislative requirements	May includes: • relevant GMP codes • the Therapeutic Goods Act • other legislation and codes relevant to product and market • legislation relating to environmental management, • occupational health and safety (OHS), anti-discrimination and equal opportunity
Policies and procedures	May include: • Work activities are carried out according to company policies and procedures, regulatory and licensing requirements, legislative requirements and industrial awards and agreements
Unacceptable plant or equipment condition	Can include: • damage to plant or equipment • failure of cleaning regime • signs of pest infestation

Evidence Guide	
Critical Aspects of Competence	Must confirm appropriate knowledge and skills to: • GMP is an ongoing and routine aspect of work responsibilities. Assessors should collect sufficient evidence to ensure that the skills and knowledge of this unit are routinely applied to the work environment. • Assessment must require the candidate to identify and demonstrate responsibilities for implementation of GMP in the workplace.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • the role of GMP in preventing contamination, its relationship to legal requirements of pharmaceutical manufacturers and potential implications of non-compliance • GMP arrangements in the workplace, including relevant GMP codes of practice and related workplace policies and procedures to implement these responsibilities

	• the relationship between GMP and the quality system, personnel responsible for designing and managing GMP, personal role to maintain GMP, and the role of internal and external auditors as appropriate • procedures followed to investigate contamination events and performance improvement processes • personal clothing and footwear requirements for working in and/or moving between work areas • personal clothing use, storage and disposal requirements • awareness of common micro-biological, physical and chemical contaminants relevant to the work process, including the types of contamination likely to occur, such as cross-contamination, the conditions under which they occur, possible consequences and control methods to prevent occurrence • basic concepts of quality assurance, including quality specifications, operating parameters, validation procedures and control methods, and related documentation, including Standard Operating Procedures (SOPs) and/or batch instructions • control methods and procedures used in the work area to maintain GMP, including an understanding of the purpose of control, the consequence if not controlled and the method of control where relevant, as well as an understanding of the methods used to monitor process control • basic understanding of the properties, handling and storage requirements of raw materials, packaging components and final product handled and used • standards for materials, equipment and utensils used in the work area • procedures for responding to out-of-specification or unacceptable performance/outcomes • purpose of keeping records and the recording requirements of GMP, including product and materials traceability procedures • housekeeping requirements and responsibilities relating to own work, and use and storage of housekeeping/cleaning equipment where relevant • waste collection, recycling and handling procedures relevant to own work responsibilities • responsibilities for reporting and recording quality information
Underpinning Skills	Demonstrate skills to: • locate and follow workplace information relating to GMP responsibilities

	• identify and report situations that do or could compromise GMP • participate in procedures to support GMP within level of responsibility • identify and respond to out-of-specification or unacceptable raw materials, packaging components, final or part processed product within level of responsibility • use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • work cooperatively within a culturally diverse workforce
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Apply Quality Systems and Procedures**
Unit Code	**IND BPP3 11 0513**
Unit Descriptor	This unit of competency covers the skills and knowledge required to apply quality principles and system requirements when carrying out work responsibilities where work involves the operation of packaging and/or processing equipment. This unit has application in a food processing environment. It typically targets the production worker responsible for applying quality standards to work operations.

Elements	Performance Criteria
1. Monitor quality of work outcome	1.1 Quality requirements are identified. 1.2 Inputs are inspected to confirm capability to meet quality requirements. 1.3 Work is conducted to produce required outcomes. 1.4 Work processes are ***monitored to confirm quality*** of output and/or service. 1.5 Processes are adjusted to maintain outputs within specification. 1.6 Quality is monitored by identifying ***control points*** or inspection points for own work and related methods.
2. Participate in maintaining and improving quality at work	2.1 Work area, materials, processes and product are routinely monitored to ensure compliance with quality requirements. 2.2 Work is conducted in accordance with workplace environmental guidelines, ***policies and procedures***. 2.3 Non-conformance in inputs, process, product and/or service is identified and reported according to workplace reporting requirements. 2.4 Corrective action is taken within level of responsibility to maintain quality standards and also ***participating in improvement*** process. 2.5 ***Quality issues*** are raised with designated personnel ***recording and reporting system***.

Variable	Range
Monitoring quality	Observation and other checks, tests or inspections to confirm that the work output meets defined specifications or quality standards. This can include the use of data collection and analysis tools, such as control charts. Tests or inspections may be carried out by the operator, a third party or be automated

Control points	May include: • A work process which must be monitored and controlled. This includes food safety (critical) as well as quality and regulatory control points
Policies and procedures	May include: • Work is carried out in accordance with company policies and procedures, licensing and regulatory requirements, legislative requirements and industrial awards and agreements
Participating in improvement	May involve: • participation in structured improvement programs • one-off projects • day-to-day problem solving
Quality Issue	May include: • Standard Operating Procedures (SOPs) • quality specifications • food safety plans • log sheets • standard forms and reports
Reporting and recording systems	May be: • verbal and written • electronic and screen-based

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge in: • identify quality requirements and key elements of the quality system • conduct work according to quality standards • monitor quality and identify and act on non-compliances • Participate in identifying quality system improvements.
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • quality policy, procedures and responsibilities • quality system used in the workplace, including the relationship between the quality system and food safety program, sources of information on quality requirements, the role of internal and external auditors, as appropriate, and performance improvement processes • basic concepts of quality assurance including hazards, risk assessment and control methods • requirements of internal and external customers • control points for own work, including the purpose of the control point, the risk if not controlled and the method of control used • monitoring, testing and inspection procedures relating to process control requirements • scope to correct/control variation within equipment and process capacity parameters

	• evidence of out-of-specification or unacceptable performance • procedures for responding to out-of-specification or unacceptable performance/outcomes, including procedures for identifying or isolating materials or product of unacceptable quality • systems used to trace product ingredients as relevant to own work • requirements to report and record quality information • sampling and test methods and procedures where relevant
Underpinning Skills	Demonstrates skills to: • access and apply workplace information on quality requirements for own work • identify control points or inspection points for own work and related methods used to monitor quality • maintain quality of own work, including relevant checks and inspections where required in order to monitor control points and check and inspect equipment, materials, product, packaging consumables, processing conditions and service standards relevant to own work • identify and correct variation within boundaries of work role, and use quality data where required • determine when and how to make adjustments to maintain output within specified parameters • identify and respond to out-of-specification or unacceptable inputs and/or outputs • record quality data in required format • conduct tests related to work responsibilities according to enterprise procedures • collect samples as required by sampling regime according to enterprise procedures • use oral communication skills/language competence to fulfill the job role as specified by the organization, including questioning, active listening, asking for clarification and seeking advice from supervisor • work cooperatively within a culturally diverse workforce
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Apply Sampling Procedures**
Unit Code	**IND BPP3 12 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to understand the requirements of sampling plans, and to collect and transfer samples to retain sample integrity.

Elements	Performance Criteria
1. Prepare for sampling	1.1 ***Sampling requirements*** are identified in accordance with the sampling plan. 1.2 Sampling equipment, containers and labels are prepared.
2. Collect samples	2.1 Samples are collected according to ***sampling*** procedures and the requirements of the sampling plan and ***sampling techniques***. 2.2 Samples are handled and prepared to preserve sample and source ***integrity***. 2.3 Defects or abnormalities in source material and/or sample are identified and reported. 2.4 ***Sample information*** is recorded according to workplace sample recording requirements. 2.5 The work area is maintained according to housekeeping standards. 2.6 Work is conducted in accordance with workplace environmental guidelines, ***policies and procedures***.
3. Prepare for sampling	3.1 Sampling requirements are identified in accordance with the sampling plan. 3.2 Sampling equipment, containers and labels are prepared.

Variable	Range
Sampling requirements	May include: • sampling under standard conditions • sampling after processes are adjusted in response to variation or non-conformance
Sampling	May include: • Sampling typically occurs at a number of points and using a range of techniques
Sampling techniques	May include: • sub-sampling

Maintenance of sample integrity	May include: • use of appropriate personal protective clothing • use of clean sampling tools and containers (sterilised tools/containers for aseptic sampling) • temperature control • addition of preservatives as required
Sample information	May include: • Standard Operating Procedures (SOPs) • specifications • production schedules and instructions • manufacturers' advice and sampling plans
Policies and procedures	Work is carried out according to company policies and procedures, regulatory and licensing requirements, legislative requirements and industrial awards and agreements

Evidence Guide	
Critical Aspects of Competence	Must confirm appropriate knowledge and skills to: • conduct pre-start checks on equipment used for collecting and handling samples • collect, handle and store samples according to sampling requirements and standards • take corrective action in response to typical defects and inconsistencies • complete workplace records as required • apply safe work practices and identify OHS hazards and controls • apply food safety procedures.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • basic sampling principles, including the importance of following the sampling plan to obtain representative sampling reflecting characteristics of source material, the sample characteristics and related preservation, handling and storage requirements, and the labelling system purpose and requirements • tests to be conducted on samples and related handling and preparation requirements and responsibilities • characteristics of materials sampled and common contaminants and related conditions under which contamination is likely to occur • sampling techniques relevant to samples collected, such as sterilisation methods and procedures • the relationship between sampling, testing and production processes, including different sampling regimes that may apply in response to non-standard conditions or after corrective action is taken to adjust production outputs

	• procedures and responsibility for reporting and recording sampling information, such as legislative requirements • procedures for preparing samples where relevant
Underpinning Skills	Demonstrate skills to: • access and interpret sampling plan to identify sampling requirements • select, fit and use personal protective clothing and/or equipment • prepare for sampling to ensure required tools, containers and labels are available • follow sampling procedures and the sampling plan to collect samples from the points, in the quantities and at the times specified • identify atypical source materials and/or samples and take corrective action, such as reporting abnormalities, repeating sample collection and/or following intensive sampling schedules as required • complete sample records according to workplace requirements, such as labelling samples as required • transfer samples for testing • maintain work area to meet housekeeping standards • prepare samples according to enterprise procedures • use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • work cooperatively within a culturally diverse workforce
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Participate in a HACCP Team**
Unit Code	**IND BPP3 13 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to participate in the development and/or review of a HACCP-based food safety program under direction.

Elements	Performance Criteria
1. Prepare to develop and/or review a food safety program	1.1 Roles and responsibilities for participating in, developing or reviewing a food safety program are identified. 1.2 The scope of the ***food safety program*** is identified.
2. Identify and/or review food safety hazards	2.1 Processes to be covered by the food safety program are ***verification*** and steps within each process are described. 2.2 ***Food safety hazards*** that are reasonably expected to occur are identified for each process. *2.3* ***Scope of the HACCP based plans*** is identified. 2.4 Handling methods, processing techniques and existing support programs used in the workplace are identified.
3. Establish and/or review methods to monitor and control food safety hazards	3.1 Acceptable ***methods of control*** are established for each food safety hazard that is reasonably expected to occur. 3.2 Control methods are ***validated***. 3.3 Procedures are established for taking preventative action. 3.4 Appropriate methods are established for monitoring that processes remain within control. 3.5 Required corrective action is established to respond to situations where hazards are not effectively controlled. 3.6 Work is conducted in accordance with workplace environmental guidelines.

Variable	Range
Food safety programs	May include: • A food safety program is a written document that specifies how a business will control all food safety hazards that are reasonably expected to occur in the food business. The food safety program must provide for the systematic monitoring of the controls as well as appropriate corrective action if a hazard is found not to be under control. Records must be kept to demonstrate action in relation to, or in compliance with, the food safety program. A food safety program may be developed as a stand-alone program or may be integrated with the quality program in a workplace

Verification	May refers to: • reviewing all aspects of the food safety program and related records to determine compliance with and adequacy of the food safety program • At a minimum, food safety programs must be verified annually
Food safety hazards	May include: • microbiological • chemical • physical hazards
Scope of the HACCP based plans	May include: • The scope of the HACCP-based plan depends on workplace requirements and may extend outside the direct area of responsibility of the team participants
Methods used to control hazards	May include: • both support programs and specific hazard control limits or requirements: • product recall • cleaning schedules • pest control programs • personal hygiene practices • calibration procedures and related operating procedures
Validation	the use of objective evidence in order to prove that materials, processes, procedures or equipment used are capable of delivering the intended result

Evidence Guide	
Critical Aspects of Competence	Must confirm appropriate knowledge and skills to: • identify components and parameters of a food safety program • identify food safety hazards in production processes • establish and validate control standards and methods for each hazard • establish procedures for unpredicted hazards • communicate and document hazards and control procedures • complete workplace records • apply safe work practices and identify OHS hazards and controls • Apply food safety procedures.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • the purpose and intent of food safety legislation • purpose and responsibilities for maintaining records as required by legislation and workplace procedures • roles and responsibilities for development and maintenance of the food safety program, including roles of internal and external auditors and of authorised officers

	• techniques for applying HACCP-based principles, including techniques for identifying hazards, assessing the likelihood of occurrence, determining acceptable methods of control, monitoring and recording requirements for each control point, identifying corrective action if controls are not met, and developing system review procedures • techniques used to map operations and analyse food safety requirements, such as preparation of flow charts, hazard analysis charts and tables, and data analysis reports • raw materials, ingredient and finished product composition and characteristics, and related handling and storage requirements • food processing methods used in the workplace or work area and their effect on food safety • sources of technical expertise on food safety requirements • the role of consultation in the development, implementation and ongoing maintenance of the food safety program • documentation and recording requirements to support communication and monitoring of the food safety program, including procedures for maintaining and updating relevant documents, such as operating procedures • main types of food safety hazards/contamination likely to occur given the type of product and processing methods used • conditions required for bacterial food poisoning to occur, such as water activity, pH, composition, time and temperature as relevant to food handled • acceptable control methods for the hazards identified and required corrective action when control requirements are not met • typical support programs, such as cleaning schedules, pest control, stock rotation, product traceability and personal hygiene, and how they can be used as part of a food safety program • acceptable control methods for the hazards identified and required corrective action when control requirements are not met • validation and verification processes and techniques and responsibilities
Underpinning Skills	Demonstrate skills to: • identify personal roles and responsibilities for participating in the development or review of a food safety program • identify processes and steps to be covered • identify hazards that are reasonably expected to occur and establish appropriate methods of control, such as participating in validating existing control methods and where there is no adequate control method in place, establishing method

	• establish or review procedures for implementing preventative action, such as revision of materials, processes and/or food handling procedures, and where required, the revision of workplace practices and documentation, such as specifications, operating procedures and approved supplier programs • describe the appropriate monitoring requirements for each food safety hazard, including the method or procedure to be followed, the frequency and timing, the person responsible, and the information to be recorded (procedures to be followed would typically be specified in the form of a standard operating procedure or work instruction) • describe corrective action requirements in the event that acceptable limits or requirements of support programs are not met • develop or review documentation relating to the design and maintenance of the food safety program, such as flow diagrams, hazard analysis charts and tables, support program requirements, data analysis reports, corrective action reports and verification reports • develop or review documentation to communicate food safety responsibilities, such as Standard Operating Procedures (SOPs), processing parameters and recording devices (e.g. log sheets) • communicate food safety responsibilities within level of responsibility using techniques and presentation styles appropriate to the audience • use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • work cooperatively within a culturally diverse workforce
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Perform Basic Tests**
Unit Code	**IND BPP3 14 0613**
Unit Descriptor	This unit of competency covers the ability to perform tests and measurements using standard methods with access to readily available advice from supervisors.

Elements	Performance Criteria
1. Interpret test requirements	1.1 Test request is reviewed to identify samples to be tested, test method and equipment involved. 1.2 Hazards and ***enterprise controls*** associated with the sample, preparation methods, reagents and/or equipment are identified.
2. Prepare sample	2.1 Sample description is recorded, and compared with specification, and discrepancies are recorded and reported. 2.2 ***Sample is prepared*** in accordance with appropriate standard methods.
3. Check equipment before use	3.1 Test equipment is set up in accordance with test method. 3.2 Pre-use and ***safety*** checks are performed in accordance with enterprise procedures and manufacturer's instructions. 3.3 Faulty or unsafe equipment is identified and reported to appropriate personnel. 3.4 Calibration status of ***equipment*** is checked and any out of calibration items are reported to appropriate personnel.
4. Perform tests on samples	4.1 Sample and standards to be tested are identified, prepared and weighed or measured. 4.2 Tests are conducted in accordance with ***enterprise procedures***. 4.3 Data is recorded in accordance with enterprise procedures. 4.4 Calculations on data are performed as required. 4.5 Out of specification or atypical results are identified and reported promptly to appropriate personnel. 4.6 Equipment is shut down in accordance with operating procedures.
5. Maintain a safe work environment	5.1 Established safe work ***practices*** and personal protective equipment are used to ensure personal safety and that of other laboratory personnel.

	5.2 The generation of wastes and ***environmental*** impacts are ***minimized***. 5.3 Safe disposal of laboratory and ***hazardous*** wastes are ensured. 5.4 Equipment and reagents are cleaned, cared for and stored as required.

Variable	**Range**
Enterprise controls to address hazards	May include: • use of MSDS • use of signage, barriers and service isolation tags • use of personal protective equipment, such as hard hats, hearing protection, sunscreen lotion, gloves, safety glasses, goggles, face guards, coveralls, gowns, body suits, respirators and safety boots • use of appropriate equipment, such as biohazard containers and cabinets and laminar flow cabinets • recognising and observing hazard warnings and safety signs • labelling of samples, reagents, aliquoted samples and hazardous materials • handling and storage of all hazardous materials and equipment in accordance with labelling, MSDS and manufacturer's instructions, and enterprise procedures and regulations • cleaning and decontaminating equipment and work areas regularly using recommended procedures • following established manual handling procedures for tasks involving manual handling
Preparation of samples	May include: • sub-sampling or splitting using procedures, such as riffling, coning and quartering, manual and mechanical splitters • diluting samples • physical treatments, such as ashing, dissolving, filtration, sieving, centrifugation and comminution • moulding, casting or cutting specimens
Occupational Health and Safety (OHS) and environmental management requirements	May include: • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied

	• where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Institutes (NHMRI) and State and Territory Departments of Health
Common measuring equipment	May include: • dimension apparatus • DO and EC • analogue and digital meters and charts/recorders • basic chemical and biological test kits • dipsticks and site test kits (e.g. HACK) • timing devices • temperature measuring devices, such as thermometers and thermocouples
Standards, codes, procedures and/or enterprise requirements	May include: • Ethiopia and international standards, such as: ➢ AS ISO 1000-1998 The international system of units (SI) and its application ➢ AS ISO 17025-2005 General requirements for the competence of testing and calibration laboratories ➢ AS/NZS 2243 Set:2006 Safety in laboratories set • Ethiopian code of good manufacturing practice for medicinal products (GMP) • calibration and maintenance schedules • enterprise recording and reporting procedures • equipment manuals • equipment start-up, operation and shutdown procedures • MSDS and safety procedures • material, production and product specifications • national measurement regulations and guidelines • principles of Good Laboratory Practice (GLP) • production and laboratory schedules • quality manuals • Standard Operating Procedures (SOPs)
Codes of practice	May include: • Where reference is made to industry codes of practice, and/or Ethiopian/international standards, it is expected the latest version will be used
Minimising environmental impacts	May involve: • recycling of non-hazardous waste, such as chemicals, batteries, plastic, metals and glass • appropriate disposal of hazardous waste • correct disposal of excess sample/test material • correct storage and handling of hazardous chemicals

Hazards	May include: • electric shock • biohazards, such as microbiological organisms and agents associated with soil, air, water, blood and blood products, and human or animal tissue and fluids • solar radiation, dust and noise • chemicals, such as sulphuric acid, fluorides and hydrocarbons • aerosols • sharps, broken glassware and hand tools • flammable liquids • dry ice and liquid nitrogen • fluids under pressure • sources of ignition • occupational overuse syndrome, slips, trips and falls • manual handling, working at heights and working in confined spaces • crushing, entanglement and cuts associated with moving machinery or falling objects
Concepts of metrology	May include: • that all measurements are estimates • measurements belong to a population of measurements of the measured parameters • repeatability • precision • accuracy • significant figures • sources of error • uncertainty • traceability
Typical tests carried out by laboratory**/**field assistants	May include: • visual/optical tests of appearance, colour, texture, identity, turbidity, refractive index (alcohol content and Baume/Brix) • physical tests: ➢ density, specific gravity and compacted density ➢ moisture content and water activity ➢ particle size, particle shape and size distribution • chemical tests: ➢ gravimetric ➢ colorimetric ➢ Electrical Conductivity (EC) and pH ➢ specific ions using dipsticks and kits ➢ nutrients (e.g. nitrates and orthophosphates) using basic kits ➢ ashes, including sulphated ashes

	• biological/environmental tests:
	  ➢ pH, Oxygen Reduction Potential (ORP), Dissolved Oxygen (DO) and (EC)
	  ➢ E coli using test kits
	  ➢ surface hygiene/presence of microbes
	• packaging tests:
	  ➢ tearing resistance, bursting strength and impact resistance
	  ➢ permeability and/or leakage
	• mechanical tests:
	  ➢ Emerson class
	  ➢ concrete slump

Measurements	May include: • simple ground surveys • meteorological parameters, such as wind direction/strength, rainfall, maximum/minimum temperature, humidity and solar radiation • simple background radiation survey • production/process parameters, such as temperature, flow and pressure • gas levels in a confined space

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills competence to: • accurately interpret enterprise procedures or standard methods • complete all tests within the required timeline without sacrificing safety, accuracy or quality • demonstrate close attention to the accuracy and precision of measurements and the data obtained • maintain the security, integrity and traceability of all samples, data/results and documentation.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • concepts of metrology • the international system of units (SI) • purpose of test • principles of the standard method • pre-use equipment checks • relevant standards/specifications and their interpretation • sources of uncertainty in measurement and methods for control • enterprise and/or legal traceability requirements • interpretation and recording of test result, including simple calculations

	• procedures for recognition/reporting of unexpected or unusual results • relevant health, safety and environment requirements
Underpinning Skills	Demonstrate skills to: • interpreting enterprise procedure or standard methods accurately • using safety information, such as material safety data sheets (MSDS) and performing procedures safely • checking test equipment before use • completing all tests within required timeline without sacrificing safety, accuracy or quality • calculating, recording and presenting results accurately and legibly • maintaining security, integrity and traceability of all samples, data/results and documentation • cleaning and maintaining equipment
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Comply with Industry Quality Assurance Requirement**
Unit Code	**IND BPP3 15 0613**
Unit Descriptor	This unit covers the process of complying with industry quality assurance requirements in the production of food and fibre products and defines the standard required to: follow quality assurance practices on food safety and quality, bio-security and animal welfare; identify and report issues that impact on product quality; contribute to review of work output against quality standards; and keep records that are required under enterprise quality assurance procedures.

Elements	Performance Criteria
1. Follow quality assurance practices on food safety and quality, bio-security and animal welfare	1.1 Elements of the industry quality assurance requirements are determined. 1.2 Hazards to food safety and quality are identified for work area according to enterprise guidelines and standard operating procedures. 1.3 Critical control points for work area are determined according to workplace procedures. 1.4 ***Workplace record*** keeping is completed according to industry quality assurance requirements.
2. Implement standard operating procedures	2.1 Standard operating procedures are implemented according to enterprise requirements. 2.2 Non-conforming or defective product is reported to supervisor according to enterprise/industry requirements. 2.3 Corrective action is taken according to enterprise policy and procedures.
3. Report problems that affect quality	3.1 Potential or existing quality problems are recognized. 3.2 Instances of variation in quality from specifications or work instructions are identified. 3.3 Variations and potential problems are reported to supervisor/manager according to enterprise guidelines.

Variables	Range
Workplace records	May include but is not limited to: • staff records • regular quality assurance performance reports

Evidence Guide	
Critical Aspects of Competence	Must demonstrate skills and knowledge of: • implement quality assurance practices on food safety and quality, bio-security and animal welfare • implement standard operating procedures • report problems that affect quality • use literacy skills to read, interpret and follow organisational policies and procedures, follow sequenced written instructions, record information collected accurately and legibly, and select and apply procedures for a range of tasks • use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning techniques, active listening, clarifying information and consulting with supervisors as required • use numeracy skills to estimate, calculate and record routine workplace measures • Use interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities. • industry quality assurance requirements, such as the Ethiopian Pig Industry Quality Program (APIQ) • animal production processes • Hazard Analysis and Critical Control Point (HACCP) approach to quality assurance • enterprise policies, guidelines and standard operating procedures relating to food safety and quality, bio-security and animal welfare • Enterprise Occupational Health and Safety (OHS) requirements and environmental procedures.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • industry quality assurance requirements • Bee products production processes • Hazard Analysis and Critical Control Point (HACCP) approach to bee products and their value added quality assurance • enterprise policies, guidelines and standard operating procedures relating to food safety and quality, bio-security and animal welfare • Enterprise OHS requirements and environmental procedures.
Underpinning Skills	demonstrate skills of: • implement quality assurance practices on food safety and quality, bio-security • implement standard operating procedures • report problems that affect quality

	• use literacy skills to read, interpret and follow organisational policies and procedures, follow sequenced written instructions, record information collected accurately and legibly, and select and apply procedures for a range of tasks • use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning techniques, active listening, clarifying information and consulting with supervisors as required • use numeracy skills to estimate, calculate and record routine workplace measures • use interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Monitor Implementation of Work Plan/Activities**
Unit Code	**IND BPP3 16 0613**
Unit Descriptor	This unit covers competence required to oversee and monitor the quality of work operations within an enterprise. This unit may be carried out by team leaders or supervisors.

Elements	Performance Criteria
1. Monitor and improve workplace operations	1.1 Efficiency and service levels are monitored on an ongoing basis. 1.2 Operations in the workplace support overall enterprise goals and quality assurance initiatives. 1.3 Quality ***problems*** and issues are promptly identified and adjustments are made accordingly. 1.4 Procedures and systems are changed in consultation with colleagues to improve efficiency and effectiveness. 1.5 Colleagues are consulted about ways to improve efficiency and service levels.
2. Plan and organise workflow	2.1 Current workload of colleagues is accurately assessed. 2.2 Work is scheduled in a manner which enhances efficiency and customer service quality. 2.3 Work is delegated to appropriate people in accordance with principles of delegation. 2.4 Workflow is assessed against agreed objectives and timelines and colleagues are assisted in prioritisation of workload. 2.5 Input is provided to appropriate management regarding staffing needs.
3. Maintain workplace records	3.1 ***Workplace records*** are accurately completed and submitted within required timeframes. 3.2 Where appropriate completion of records is delegated and monitored prior to submission.
4. Solve problems and make decisions	4.1 Workplace problems are promptly identified and considered from an operational and customer service perspective. 4.2 Short term action is initiated to resolve the immediate problem where appropriate. 4.3 Problems are analysed for any long term impact and potential solutions are assessed and actioned in consultation with relevant colleagues.

	4.4 Where problem is raised by a team member, they are encouraged to participate in solving the problem. 4.5 Follow up action is taken to monitor the effectiveness of solutions in the workplace.

Variables	**Range**
Problems	May include but not limited to: • difficult customer service situations • equipment breakdown/technical failure • delays and time difficulties • competence
Workplace records	May include but is not limited to: • staff records and regular performance reports

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge in: • ability to effectively monitor and respond to a range of common operational and service issues in the workplace • understanding of the role of staff involved in workplace monitoring • knowledge of quality assurance, principles of workflow planning, delegation and problem solving
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • roles and responsibilities in monitoring work operations • overview of leadership and management responsibilities • principles of work planning and principles of delegation • typical work organization methods appropriate to the sector • quality assurance principles and time management • problem solving and decision making processes • industrial and/or legislative issues which affect short term work organization as appropriate to industry sector
Underpinning Skills	Demonstrate skills to: • monitor and improve workplace operations • plan and organize workflow • maintain workplace records
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Apply Quality Control**
Unit Code	**IND BPP3 17 0613**
Unit Descriptor	This unit covers the knowledge, attitudes and skills required in applying quality control in the workplace.

Elements	Performance Criteria
1. Implement quality standards	1.1 Agreed quality standard and procedures are acquired and confirmed. 1.2 Standard procedures are introduced to organizational staff/personnel. 1.3 Quality standard and procedures documents are provided to employees in accordance with the organization policy. 1.4 Standard procedures are revised / updated when necessary.
2. Assess quality of service delivered	2.1 Services delivered are ***quality checked*** against organization ***quality standards*** and specifications. 2.2 Service delivered are evaluated using the appropriate evaluation ***quality parameters*** and in accordance with organization standards. 2.3 Causes of any identified faults are identified and corrective actions are taken in accordance with organization policies and procedures.
3. Record information	3.1 Basic information on the quality performance is recorded in accordance with organization procedures. 3.2 Records of work quality are maintained according to the requirements of the organization.
4. Study causes of quality deviations	4.1 Causes of deviations from final outputs or services are investigated and reported in accordance with organization procedures. 4.2 Suitable preventive action is recommended based on organization quality standards and identified causes of deviation from specified quality standards of final service or output.
5. Complete documentation	5.1 Information on quality and other indicators of service performance is recorded. 5.2 All service processes and outcomes are recorded.

Variable	Range
Quality check	May include but not limited to: • Check against design / specifications • Visual inspection and Physical inspection

Quality standards	May include but not limited to: • Materials • Components • Process • Procedures
Quality parameters	May include but not limited to: • Standard Design / Specifications • Material Specification

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge to: • Check completed work continuously against organization standard • Identify and isolate faulty or poor service • Check service delivered against organization standards • Identify and apply corrective actions on the causes of identified faults or error • Record basic information regarding quality performance • Investigate causes of deviations of services against standard • Recommend suitable preventive actions
Underpinning Knowledge	Demonstrates knowledge of: • Relevant quality standards, policies and procedures • Characteristics of services • Safety environment aspects of service processes • Evaluation techniques and quality checking procedures • Workplace procedures and reporting procedures
Underpinning Skills	Demonstrates skills to: • interpret work instructions, specifications and standards appropriate to the required work or service • carry out relevant performance evaluation • maintain accurate work records • meet work specifications and requirements • communicate effectively within defined workplace procedures
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Lead Workplace Communication**
Unit Code	**IND BPP3 18 0613**
Unit Descriptor	This unit covers the knowledge, attitudes and skills needed to lead in the dissemination and discussion of information and issues in the workplace.

Elements	Performance Criteria
1. Communicate information about workplace processes	1.1 Appropriate ***communication method*** is selected. 1.2 Multiple operations involving several topics areas are communicated accordingly. 1.3 Questions are used to gain extra information. 1.4 Correct sources of information are identified. 1.5 Information is selected and organized correctly. 1.6 Verbal and written reporting is undertaken when required. 1.7 Communication skills are maintained in all situations.
2. Lead workplace discussion	2.1 Response to workplace issues is sought. 2.2 Response to workplace issues are provided immediately. 2.3 Constructive contributions are made to workplace discussions on such issues as production, quality and safety. 2.4 Goals/objectives and action plan undertaken in the workplace are communicated.
3. Identify and communicate issues arising in the workplace	3.1 Issues and problems are identified as they arise. 3.2 Information regarding problems and issues are organized coherently to ensure clear and effective communication. 3.3 Dialogue is initiated with appropriate staff/personnel. 3.4 Communication problems and issues are raised as they arise.

Variable	Range
Methods of communication	May include but not limited to: • Non-verbal gestures • Verbal • Face to face • Two-way radio • Speaking to groups • Using telephone • Written • Using Internet and Cell phone

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge to: • Deal with a range of communication/information at one time • Make constructive contributions in workplace issues • Seek workplace issues effectively • Respond to workplace issues promptly • Present information clearly and effectively written form • Use appropriate sources of information • Ask appropriate questions • Provide accurate information
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Organization requirements for written and electronic communication methods • Effective verbal communication methods
Underpinning Skills	Demonstrates skills to: • Organize information • Understand and convey intended meaning • Participate in variety of workplace discussions • Comply with organization requirements for the use of written and electronic communication methods
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Lead Small Teams**
Unit Code	**IND BPP3 19 0613**
Unit Descriptor	This unit covers the skills, knowledge and attitudes required to determine individual and team development needs and facilitate the development of the work group.

Elements	Performance Criteria
1. Provide team leadership	1.1 ***Learning and development needs*** are systematically identified and implemented in line with ***organizational requirements***. 1.2 Learning plan to meet individual and group training and developmental needs is collaboratively developed and implemented. 1.3 Individuals are encouraged to self-evaluate performance and identify areas for improvement. 1.4 ***Feedback on performance*** of team members is collected from relevant sources and compared with established team learning process.
2. Foster individual and organizational growth	2.1 Learning and development program goals and objectives are identified to match the specific knowledge and skills requirements of Competence standards. 2.2 ***Learning delivery methods*** are appropriate to the learning goals, the learning style of participants and availability of equipment and resources. 2.3 Workplace learning opportunities and coaching/ mentoring assistance are provided to facilitate individual and team achievement of competencies. 2.4 Resources and timelines required for learning activities are identified and approved in accordance with organizational requirements.
3. Monitor and evaluate workplace learning	3.1 Feedback from individuals or teams is used to identify and implement improvements in future learning arrangements. 3.2 Outcomes and performance of individuals/teams are assessed and recorded to determine the effectiveness of development programs and the extent of additional support. 3.3 Modifications to learning plans are negotiated to improve the efficiency and effectiveness of learning. 3.4 Records and reports of competence are maintained within organizational requirement.

4. Develop team commitment and cooperation	4.1 Open communication processes to obtain and share information is used by team. 4.2 Decisions are reached by the team in accordance with its agreed roles and responsibilities. 4.3 Mutual concern and camaraderie are developed in the team.
5. Facilitate accomplishment of organizational goals	5.1 Team members actively participated in team activities and communication processes. 5.2 Team's members developed individual and joint responsibility for their actions. 5.3 Collaborative efforts are sustained to attain organizational goals.

Variable	**Range**
Learning and development needs	May include but not limited to: • Coaching, mentoring and/or supervision • Formal/informal learning program • Internal/external training provision • Work experience/exchange/opportunities • Personal study and career planning/development • Performance appraisals • Workplace skills assessment and recognition of prior learning
Organizational requirements	May include but not limited to: • Quality assurance and/or procedures manuals • Goals, objectives, plans, systems and processes • Legal and organizational policy/guidelines and requirements • Safety policies, procedures and programs • Confidentiality and security requirements • Business and performance plans • Ethical standards • Quality and continuous improvement processes and standards
Feedback on performance	May include but not limited to: • Formal/informal performance appraisals • Obtaining feedback from supervisors and colleagues • Obtaining feedback from clients • Personal and reflective behavior strategies • Routine and organizational methods for monitoring service delivery
Learning delivery methods	May include but not limited to: • On the job coaching or mentoring • Problem solving • Presentation/demonstration • Formal course participation • Work experience and Involvement in professional networks

	• Conference/seminar attendance and induction

Evidence Guide	
Critical Aspects of Competence	Assessment requires evidence that the candidate to: • Identify and implement learning opportunities for others • give and receive feedback constructively • facilitate participation of individuals in the work of the team • negotiate learning plans to improve the effectiveness of learning • prepare learning plans to match skill needs • access and designate learning opportunities
Underpinning Knowledge and Attitude	Demonstrates knowledge of: • coaching and mentoring principles • how to work effectively with team members who have diverse work styles, aspirations, cultures and perspective • how to facilitate team development and improvement • methods and techniques for eliciting and interpreting feedback • methods for identifying and prioritizing personal development opportunities and options • career paths and competence standards in the industry
Underpinning Skills	Demonstrates skills to: • ability to read and understand a variety of texts, prepare general information and documents according to target audience; spell with accuracy; use grammar and punctuation effective relationships and conflict management • communication skills including receiving feedback and reporting, maintaining effective relationships and conflict management • planning skills to organize required resources and equipment to meet learning needs • coaching and mentoring skills to provide support to colleagues • reporting skills to organize information; assess information for relevance and accuracy; identify and elaborate on learning outcomes • facilitation skills to conduct small group training sessions • ability to relate to people from a range of social, cultural, physical and mental backgrounds
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Improve Business Practice**
Unit Code	**IND BPP3 20 0613**
Unit Descriptor	This unit covers the skills, knowledge and attitudes required in promoting, improving and growing business operations.

Elements	Performance Criteria
1. Diagnose the business	1.1 ***Data required*** for diagnosis is determined and acquired. 1.2 ***Competitive advantage*** of the business is determined from the data. 1.3 ***SWOT analysis*** of the data is undertaken.
2. Benchmark the business	2.1 Sources of relevant benchmarking data are identified. 2.2 ***Key indicators*** for benchmarking are selected in consultation with key stakeholders. 2.3 Like indicators of own practice are compared with benchmark indicators. 2.4 Areas for improvement are identified.
3. Develop plans to improve business performance	3.1 A consolidated list of required improvements is developed. 3.2 Cost-benefit ratios for required improvements are determined. 3.3 Work flow changes resulting from proposed improvements are determined. 3.4 Proposed improvements are ranked according to agreed criteria. 3.5 An action plan is developed and agreed to implement the top ranked improvements. 3.6 ***Organizational structures*** are checked to ensure they are suitable.
4. Develop marketing and promotional plans	4.1 The practice vision statement is reviewed. 4.2 Practice ***objectives*** are developed/ reviewed. 4.3 Target markets are identified/ refined. 4.4 ***Market research data*** is obtained. 4.5 ***Competitor analysis*** is obtained. 4.6 ***Market position*** is developed/ reviewed. 4.7 ***Practice brand*** is developed. 4.8 ***Benefits*** of practice/practice products/services are identified. 4.9 ***Promotion tools*** are selected/ developed.

5. Develop business growth plans	5.1 Plans are developed to increase ***yield per existing client***. 5.2 Plans are developed to add new clients. 5.3 Proposed plans are ranked according to agreed criteria. 5.4 An action plan is developed and agreed to implement the top ranked plans. 5.5 Practice work practices are reviewed to ensure they support growth plans.
6. Implement and monitor plans	6.1 Implementation plan is developed in consultation with all relevant stakeholders. 6.2 Indicators of success of the plan are agreed. 6.3 Implementation is monitored against agreed indicators. 6.4 Implementation is adjusted as required.

Variable	Range
Data required	May include but not limited to: • organization capability • appropriate business structure • level of client service which can be provided • internal policies, procedures and practices • staff levels, capabilities and structure • market, market definition • market changes/market segmentation • market consolidation/fragmentation • revenue • level of commercial activity • expected revenue levels, short and long term • revenue growth rate • break even data • pricing policy • revenue assumptions • business environment • economic conditions • social factors • demographic factors • technological impacts • political/legislative/regulative impacts • competitors, competitor pricing and response to pricing • competitor marketing/branding • competitor products
Competitive advantage	May include but not limited to: • services/products

	• fees • location • timeframe
SWOT analysis	May include but not limited to: • internal strengths such as staff capability, recognized • quality • internal weaknesses such as poor morale, • under-capitalization, poor technology • external opportunities such as changing market and • economic conditions • external threats such as industry fee structures, strategic • alliances, competitor marketing
Key indicators	May include but not limited to: • salary cost and staffing • personnel productivity (particularly of principals) • profitability • fee structure • client base • size staff/principal • overhead/overhead control
Organizational structures	May include but not limited to: • Legal structure (partnership, Limited Liability Company, etc.) • organizational structure/hierarchy • reward schemes
Objectives should be 'SMART'	May include but not limited to: • S: Specific • M: Measurable • A: Achievable • R: Realistic • T: Time defined
Market research data	May include but not limited to: • data about existing clients • data about possible new clients • data from internal sources • data from external sources such as: ➢ trade associations/journals ➢ Yellow Pages small business surveys ➢ libraries ➢ Internet ➢ Chamber of Commerce ➢ client surveys ➢ industry reports ➢ secondary market research • primary market research such as:

	➢ telephone surveys ➢ personal interviews ➢ mail surveys
Competitor analysis	May include but not limited to: • competitor offerings • competitor promotion strategies and activities • competitor profile in the market place
Market position	May include but not limited to: • product • the good or service provided • product mix • the core product - what is bought • the tangible product - what is perceived • the augmented product - total package of consumer • features/benefits • product differentiation from competitive products • new/changed products • Price and pricing strategies (cost plus, supply/demand, ability to pay, etc.) • Pricing objectives (profit, market penetration, etc.) • cost components • market position • distribution strategies • marketing channels • promotion • promotional strategies • target audience • communication • promotion budget
Practice brand	May include but not limited to: • practice image • practice logo/letter head/signage • phone answering protocol • facility decor • slogans • templates for communication/invoicing • style guide • writing style • AIDA (Attention, Interest, Desire and Action)
Benefits	May include but not limited to: • features as perceived by the client • benefits as perceived by the client
Promotion tools	May include but not limited to: • networking and referrals

	• seminars • advertising • press releases • publicity and sponsorship • brochures • newsletters (print and/or electronic) • websites • direct mail and telemarketing/cold calling
Yield per existing client	May include but not limited to: • raising charge out rates/fees • packaging fees • reduce discounts and sell more services to existing clients

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge in: • ability to identify the key indicators of business performance • ability to identify the key market data for the business • knowledge of a wide range of available information sources • ability to acquire information not readily available within a business • ability to analyze data and determine areas of improvement • ability to negotiate required improvements to ensure implementation • ability to evaluate systems against practice requirements • and form recommendations and/or make recommendations • ability to assess the accuracy and relevance of information
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • data analysis • communication skills • computer skills to manipulate data and present information • negotiation skills • problem solving • planning skills • marketing principles • ability to acquire and interpret relevant data • current product and marketing mix • use of market intelligence • development and implementation strategies of promotion and growth plans
Underpinning Skills	Demonstrates skill in: • data analysis and manipulation • ability to acquire and interpret required data, current practice systems and structures and sources of relevant benchmarking data

	• applying methods of selecting relevant key benchmarking indicators • communication skills • working and consulting with others when developing plans for the business • planning skills, negotiation skills and problem solving • using computers to manipulate, present and distribute information
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Bee Product Processing Level III	
Unit Title	**Prevent and Eliminate MUDA**
Unit Code	**IND BPP3 21 0613**
Unit Descriptor	This unit of competence covers the knowledge, skills and attitude required by a worker to prevent and eliminate MUDA/wastes in his/her their workplace. It covers responsibility for the day-to-day operation of the work and ensures Kaizen elements are continuously improved and institutionalized.

Elements	Performance Criteria
1. Prepare for work.	1.1 Work instructions are used to determine job requirements, including method, material and equipment. 1.2 Job specifications are read and interpreted following working manual. 1.3 ***OHS requirements***, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work. 1.4 Appropriate material is selected for work. 1.5 ***Safety equipment and tools*** are identified and checked for safe and effective operation.
2. Identify MUDA.	2.1 Plan of MUDA identification is prepared and implemented. 2.2 Causes and effects of MUDA are discussed. 2.3 ***Tools and techniques*** are used to draw and analyze current situation of the work place. 2.4 Wastes/MUDA are identified and measured based on ***relevant procedures***. 2.5 Identified and measured wastes are reported to relevant personnel.
3. Eliminate wastes/MUDA.	3. 1. Plan of MUDA elimination is prepared and implemented. 3. 2. Necessary attitude and ***the ten basic principles for improvement*** are adopted to eliminate waste/MUDA. 3. 3. Tools and techniques are used to eliminate wastes/MUDA based on the procedures and OHS. 3. 4. Wastes/MUDA are reduced and eliminated in accordance with OHS and organizational requirements. 3. 5. Improvements gained by elimination of waste/MUDA are reported to relevant bodies.

4. Prevent occurrence of wastes/MUDA.	4.1 Plan of MUDA prevention is prepared and implemented. 4.2 Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement are discussed and prepared. 4.3 Occurrences of wastes/MUDA are prevented by using ***visual and auditory control methods***. 4.4 Waste-free workplace is created using ***5W and 1H***sheet. 4.5 The completion of required operation is done in accordance with standard procedures and practices. 4.6 The updating of standard procedures and practices is facilitated. 4.7 The capability of the work team that aligns with the requirements of the procedure is ensured.

Variable	**Range**
OHS requirements	May include but not limited to: • Are to be in accordance with legislation/ regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances. • Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices. • Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization. • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation.
Safety equipment and tools	May include but not limited to: • dust masks / goggles • glove • working cloth • first aid • safety shoes
Tools and techniques	May include but not limited to: • Plant Layout • Process flow • Other Analysis tools

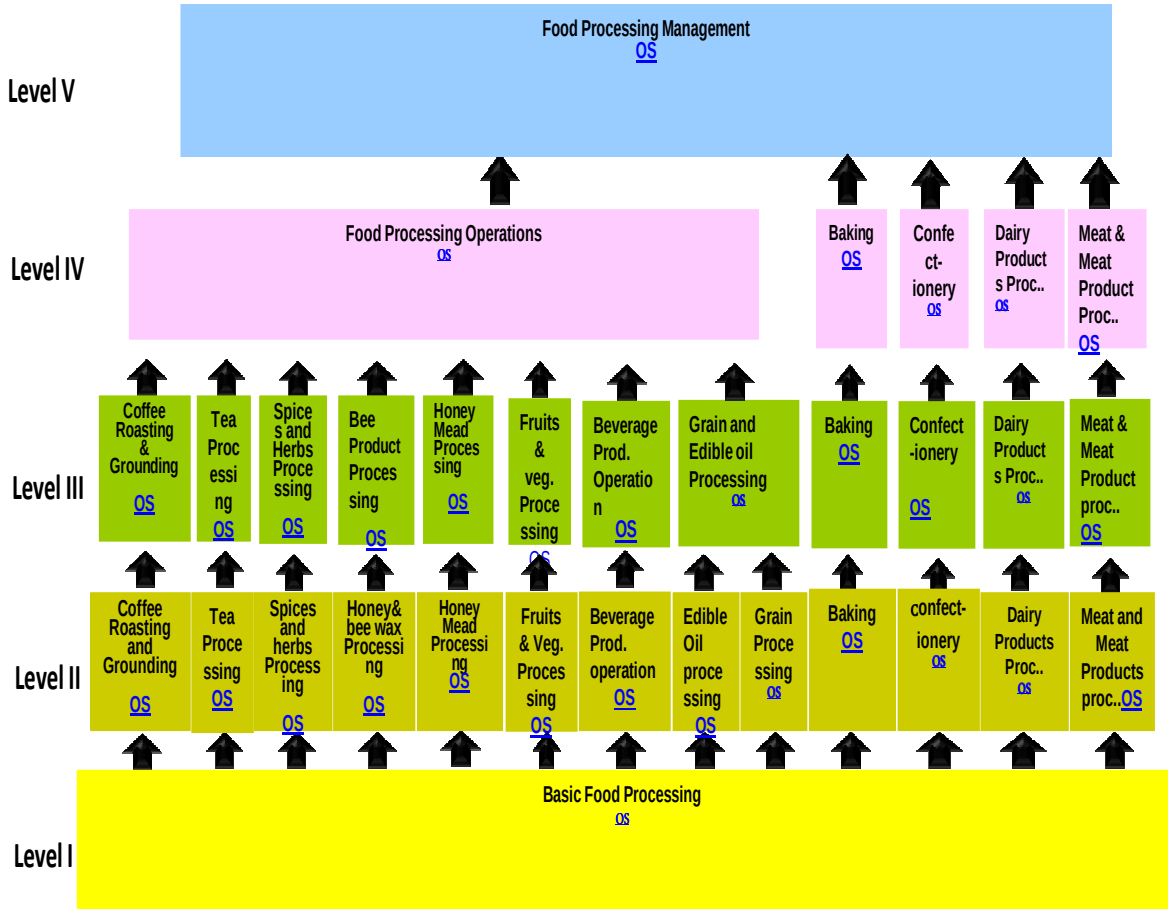
	• Do time study by work element • Measure Travel distance • Take a photo of workplace • Measure Total steps • Make list of items/products, who produces them and who uses them & those in warehouses, storages etc. • Focal points to Check and find out existing problems • 5S • Layout improvement • Brainstorming • Andon • U-line • In-lining • Unification • Multi-process handling & Multi-skilled operators • A.B. control (Two point control) • Cell production line • TPM (Total Productive Maintenance)
Relevant procedures	May include but not limited to: • Make waste visible • Be conscious of the waste • Be accountable for the waste. • Measure the waste.
The ten basic principles for improvement	May include but not limited to: • Throw out all of your fixed ideas about how to do things. • Think of how the new method will work- not how it won. • Don't accept excuses. Totally deny the status quo. • Don't seek perfection. A 5o percent implementation rate is fine as long as it's done on the spot. • Correct mistakes the moment they are found. • Don't spend a lot of money on improvements. • Problems give you a chance to use your brain. • Ask "why?" At least five times until you find the ultimate cause. • Ten people's ideas are better than one person's. • Improvement knows no limits.
Visual and auditory control methods	May include but not limited to: • Red Tagging • Sign boards • Outlining • Andons • Kanban, etc.
5W and 1H	May include but not limited to: • Who

	• What • Where • When • Why • How

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge to: • discuss why wastes occur in the workplace • discuss causes and effects of wastes/MUDA in the workplace • analyze the current situation of the workplace by using appropriate tools and techniques • identify, measure, eliminate and prevent occurrence of wastes by using appropriate tools and techniques • use 5W and 1H sheet to prevent
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Targets of customers and manufacturer/service provider • Traditional and kaizen thinking of price setting • Kaizen thinking in relation to targets of manufacturer/service provider and customer • value • The three categories of operations • the 3“MU” • waste/MUDA • wastes occur in the workplace • The 7 types of MUDA • The Benefits of identifying and eliminating waste • Causes and effects of 7 MUDA • Procedures to identify MUDA • Necessary attitude and the ten basic principles for improvement • Procedures to eliminate MUDA • Prevention of wastes • Methods of waste prevention • Definition and purpose of standardization • Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement • Methods of visual and auditory control • TPM concept and its pillars. • Relevant OHS and environment requirements • Plan and report • Method of communication

Underpinning Skills	Demonstrates skills to: • draw & analyze current situation of the work place • use measurement apparatus (stop watch, tape, etc.) • calculate volume and area • use and follow checklists to identify, measure and eliminate wastes/MUDA • identify and measure wastes/MUDA in accordance with OHS and procedures • use tools and techniques to eliminate wastes/MUDA in accordance with OHS procedure • apply 5W and 1H sheet • update and use standard procedures for completion of required operation • work with others • read and interpret documents • observe situations • solve problems • communicate • gather evidence by using different means • report activities and results using report formats
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Sector: Industry
Sub- sector: Agro Food Processing



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This occupational standard was developed on the date of June 25, 2013 at Debre Zeyit Ethiopian Management Institute.

COMMENT TEMPLATE

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