Federal Democratic Republic of Ethiopia

OCCUPATIONAL STANDARD

FRUIT AND VEGETABLE PROCESSING

NTQF Level II & 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 elements the Ethiopian National TVET-Strategy and an important factor within the context of the National TVET-Qualification Framework (NTQF).They are national Ethiopia 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 Title describes a distinct work activity. It is documented in a standard format that comprises:

- Reference to Industry Sector, Occupational title, NTQF level
- Unit code
- Unit title
- Unit descriptor
- Unit of Competence
- Elements and performance criteria
- Variables and Range statement
- Evidence guide

Together all the parts of a Unit Title 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:

- chart with an overview of all Units of Competence for the respective level including the Unit Codes and Unit of Titles
- contents of each Unit Title(competence standard)
- 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: Fruit and Vegetable Processing

Occupational Code: IND FVP

NTQF Level II

IND FVP2 01 0613 Pre-process Raw Materials	IND FVP2 02 0613 Inspect and Sort Raw Materials	IND FVP2 03 0613 Perform Juice Extraction Process
IND FVP2 04 0613 Perform Heat Treatment Process	IND FVP2 05 0613 Perform Cooling, Slicing and Wrapping Process	IND FVP2 06 0613 Preserve Food in Cans or Sealed Containers
IND FVP2 07 0613 Perform Filling Process	IND FVP2 08 0613 Implement the Food Safety Program and Procedures	IND FVP2 09 0613 Participate in OHS Processes
IND FVP2 10 0613 Handle By- product Manufacturing Processes	IND FVP2 11 0613 Participate in Workplace Communication	IND FVP2 12 0613 Work in Team Environment
IND FVP2 13 0613 Develop Business practice	IND FVP2 14 0613 Standardize and Sustain 3S	

NTQF Level III

IND FVP3 01 0613 Conduct Chemical Wash for Fresh Produce	IND FVP3 02 0613 Perform Fresh Produce Grading Equipment	IND FVP3 03 0613 Monitoring Concentration Process
IND FVP3 04 0613 Perform Basic Product Test	IND FVP3 05 0613 Apply Drying Processing	IND FVP3 06 0613 Apply Raw Materials, Ingredient and Process Knowledge to Production Problems
IND FVP3 07 0613 Participate in Product Development	IND FVP3 08 0613 Monitoring Aroma Recovery Process	IND FVP3 09 0613 Set Up a Production or Packaging Line for Operation
IND FVP3 10 0613 Operate Interrelated Processes in a Production System	IND FVP3 11 0613 Monitor the Implementation of Quality and Food Safety Programs	IND FVP3 12 0613 Identify Equipment Faults
IND FVP3 13 0613 Monitor Implementation of Work Plan/Activities	IND FVP3 14 0613 Apply Quality Control	IND FVP3 15 0613 Lead Workplace Communication
IND FVP3 16 0613 Lead Small Teams	IND FVP3 17 0613 Improve Business Practice	IND FVP3 18 0613 Prevent and Eliminate MUDA

NTQF Level II

Occupational Standard: Fruit and Vegetable Processing Level II	
Unit Title	**Pre-process Raw Materials**
Unit Code	**IND FVP2 01 0613**
Unit Descriptor	This is a specialist unit that has been developed for the fruit and Vegetable sector. It covers preparation and pre-processing treatment of raw materials.

Elements	Performance Criteria
1 Prepare pre processing equipment for operation	1.1. Type and quality of materials for pre-processing are confirmed to meet production requirements. 1.2. Materials are transferred and loaded into ***pre-processing*** equipment as required. 1.3. ***Services*** are confirmed as available and ready for operation. 1.4. Equipment is checked to confirm readiness for use The process is set to meet production requirements.
2 Operate and pre-processing	2.1 The process is started up according to company procedures. 2.2 ***Control points (monitoring functions)*** are monitored to confirm performance within specification. 2.3 Pre-processed materials meet specification equipment is monitored to confirm operating condition Out-of-specification. 2.4 Product, process and equipment performance are identified, rectified and/or reported.
3 Shut down the preprocessing Equipment	3.1 The process is shut down according to company procedures. 3.2 Waste is collected, treated and disposed or recycled according to company procedures.
4. Cold Store	4.1 The pre-processed raw material is stored in a freezing storage area.
5 Record information	5.1 ***Workplace information*** is recorded in the appropriate format.

Variable	Range
Pre-processing	May Include: • Raw material collection, receiving, inspection and delivery. • semi-automated peeling • Confirming equipment status involves checking that hygiene and sanitation standards are met, all safety guards are in place and equipment is operational
Services	All accessory inputs and utilities like • power,

	• steam, • water, • vacuum and • compressed and instrumentation air
Control points (monitoring functions)	May Include: • manual or involve the use of a process control • food safety (critical), quality and regulatory control points as well as inspection points • the use of production data such as performance control charts
Workplace information	May Include: • Standard Operating Procedures (SOPs), specifications and production

Evidence Guide	
Critical Aspects of Competence	must confirm appropriate knowledge and skills to: • purpose of pre-processing • link to related processes • stages and changes which occur during preprocessing • quality characteristics of pre-processed materials • effect of quality characteristics of raw materials on the process • Deliver raw materials to pre-processing equipment • confirm equipment status and condition • conduct batch/product changeover • set up and start up pre-processing equipment • monitor the process and equipment operation
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • pre-processing equipment purpose and principles of operation • purpose of pre-processing • quality characteristics of pre-processed materials • effect of quality characteristics of raw materials on the process • methods used to calculate yield • process specifications, procedures, operating parameters and required services • significance and method of monitoring control points within the processes • link to related processes • stages and changes which occur during preprocessing • OHS hazards and controls • Follow company procedures like: ➢ cleaning and sanitation ➢ sampling and testing ➢ routine maintenance • responsibility for reporting problems

	• environmental issues and controls • shut down and cleaning requirements • associated with changeovers and types of shut downs • waste handling and recording requirements
Underpinning Skills	Demonstrate skills to: • access workplace information to identify production requirements • select, fit and use personal protective clothing and/or equipment • confirm supply of materials match production schedule • confirm equipment status and condition • conduct batch/product changeover • set up and start up pre-processing equipment • monitor the process and equipment operation to identify out-of-specification results • take corrective action in response to out-of specification results or non-compliance– record and or report corrective action as required • monitor supply and flow of materials to and from the process • sort, collect, treat, recycle or dispose of waste • shut down equipment in response to an emergency situation • shut down equipment in response to routine shut down requirements • prepare equipment for cleaning • maintain work area to meet housekeeping standards • record workplace information • clean and sanitize of equipment • take samples and conduct tests • carry out routine maintenance
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: Fruit and Vegetable Processing Level II	
Unit Title	**Inspect and Sort Raw Materials**
Unit Code	**IND FVP2 02 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to inspect and sort product and incoming materials ready for processing.

Elements	Performance Criteria
1. Inspect materials to confirm fitness for use	1.1 Type and quality requirements of materials are confirmed. 1.2 Materials are conveyed or transferred to required locations by ***materials transfer equipment***.
2. Sort materials	2.1 ***Material inspection and sorting*** to confirm quality requirements are met. 2.2 Unacceptable quality is identified and reported according to workplace information reporting requirements. 2.3 The work area is maintained according to ***housekeeping standards***. 2.4 Work is conducted in accordance with workplace environmental guidelines.

Variable	Range
Materials transfer equipment	mechanical or pneumatic, and may include: • conveyors • flumes pumped systems
Material inspection and sorting	may include: • sizing • quality inspection • sorting/grading • Aspects of these processes may be: ➢ automated or ➢ done using equipment, such as sieves • Related processes may include: ➢ trimming or removal of unacceptable product
Housekeeping standard	May include: • Cleaning and sanitation procedures • Equipment and facility inspection and related processes

Evidence Guide	
Critical Aspects of Competence	Evidence of ability to: • recognize and act on materials or product that does not comply with quality standards

	• apply safe work practices and identify OHS hazards and controls • Apply food safety procedures.
Underpinning Knowledge and Attitudes	Demonstrate Knowledge of: • purpose and standards to be met by the inspection and sorting process, including criteria and specifications as they apply to inspection and sorting requirements • the relationship between visual inspection and sorting and other inspection procedures, such as those that may be conducted by a laboratory or at subsequent processing stages • typical causes of unacceptable or out-of-specification product, including causes of product damage that can occur prior to arrival at the plant and as part of the handling process • the stages that occur in the inspection and sorting process and their effect on product, such as in-line cleaning or conditioning and product or materials transfer stages • typical equipment faults and related causes, including signs and symptoms of faulty equipment and early warning signs of potential problems • contamination/food safety risks associated with the sorting process and related control measures • Occupational Health and Safety (OHS) hazards and controls, including the limitations of protective clothing and equipment relevant to the work process • procedures and responsibility for reporting production and performance information • environmental issues and controls relevant to equipment operation, including waste collection and handling procedures related to the process • basic operating principles of equipment used, where relevant, including main equipment components, status and purpose of guards, emergency stop, isolation and lockout controls, equipment operating capacities and applications • services required and action to take if services are not available • recording procedures and responsibilities where relevant • washing/cleaning requirements and standards where relevant
Underpinning Skills	• access workplace information on materials specification/quality requirements • select, fit and use personal protective clothing and/or equipment • inspect quality of materials to confirm compliance with quality specifications, such as: • product type and quantity • product condition, such as identifying any bruising, discoloration or other damage, confirming product is clean, and checking size and weight

	• identify out-of-specification or non-conforming product and follow procedures to separate unacceptable product • respond to and/or report equipment failure within level of responsibility • maintain work area to meet housekeeping standards • complete workplace records as required according to enterprise procedures • demonstrate procedures for operating materials transfer equipment as required according to enterprise procedures • wash/clean raw materials or product 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: Fruit and Vegetable Processing Level II	
Unit Title	**Perform Juice Extraction Process**
Unit Code	**IND FVP2 03 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to set up, operate, adjust and shut down processes used to extract photochemical from plant material using solvents.

Elements	Performance Criteria
1. Prepare the extraction equipment and process for operation	1.1 Materials are confirmed, blended and prepared to meet production requirements. 1.2 ***Workplace documentation*** relevant to work area activities is identified and followed. 1.3 The required facilities, storage, ***equipment*** and personnel are available. 1.4 Line clearance procedures have been carried out. 1.5 Procedures to eliminate or control the risk of cross-contamination are followed. 1.6 Material is loaded into percolator and solvents are added to specification.
2. Blanching	2.1 Blanching is maintained according to the company procedures.
3. Operate and monitor the extraction process	3.1 The ***extraction process*** is monitored to confirm that specifications are met. 3.2 Out-of-specification product/process is identified, rectified and/or reported to maintain the process within specification. 3.3 The work area is maintained according to housekeeping standards. 3.4 Work is conducted according to environmental standards. 3.5 Workplace documentation is maintained according to workplace reporting requirements.
4 Pre-heating	4.1 The pre- heater is operated according to the company procedures.
5. Refining	5.1 The refining process is conducted according to the company procedures.
6. Shut down the extraction process	6.1 The process is shut down according to workplace procedures and work practices. 6.2 Maintenance requirements are identified and reported according to workplace reporting requirements.

Variable	Range
Workplace documentation	may include: • specifications • manufacturing formulae • processing instructions • batch production records • Standard Operating Procedures (SOPs) • OHS information, including Material Safety Data Sheets (MSDS)
Equipment	Equipment may include: • blenders/mixers • percolators • filler • collection vessels or tanks
Extraction process	may include taking out of pulp, juice or puree from the sound fruit or vegetable.

Evidence Guide	
Critical Aspects of Competence	Evidence of ability to: • prepare the extraction process for operation, including following line clearance procedures • load materials to maximize extract collection • monitor the extraction process • Maintain all necessary records.
Underpinning Knowledge and Attitudes	Demonstrate Knowledge of: • purpose and principles of each stage of the extraction process, • basic operating principles of equipment, including main equipment components and equipment operating capacities and applications • quality requirements of materials and the effect of variation on the extraction process • process specifications, procedures and operating parameters for different products/materials • operating requirements and parameters and corrective action required where operation is outside specified operating parameters • typical equipment faults and related causes, including signs and symptoms of faulty equipment and early warning signs of potential problems • methods used to monitor the extraction process, such as inspecting, measuring and testing as required by the process, and the ability to calculate yields

	• contamination/food safety risks associated with the extraction process • common causes of variation and corrective action required • Occupational Health and Safety (OHS) hazards and controls, including the risks involved with the use of solvents, such as ethanol, and the limitations of protective clothing and equipment used • extraction process shutdown and changeover procedures and responsibilities • environmental issues and controls relevant to the extraction process, including waste collection and handling procedures related to the process • cleaning and sanitation procedures • workplace documentation and authorization procedures
Underpinning Skills	• select, fit and use personal protective clothing and/or equipment • conduct pre-start checks, such as: ➢ inspecting equipment condition to identify any signs of wear, ➢ confirming that equipment is clean and correctly configured for processing requirements, ➢ positioning sensors and controls correctly, ➢ ensuring any scheduled maintenance has been carried out, ➢ and placing sand filters/scourers in base of percolators where required • start, operate, monitor and adjust process to achieve required outcomes, including: ➢ monitoring control points and ➢ conducting inspections as required to confirm process remains within specification, such as: ✓ rate/amount of solvent addition ✓ extract collection and yield • take corrective action in response to out-of-specification results • respond to and/or report equipment failure within level of responsibility • demonstrate batch/product changeovers including line clearance procedures • sort, collect, treat, recycle or dispose of waste • clean and sanitize equipment as required as required • complete workplace records as required • maintain work area to meet housekeeping standards • 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: Fruit and Vegetable Processing Level II	
Unit Title	**Perform a Heat Treatment Process**
Unit Code	**IND FVP2 04 0613**
Unit Descriptor	This is a specialist unit that applies to the fruit and vegetable, aerated waters and dairy sectors. It covers the preparation and operation of a heat treatment process.

Elements	Performance Criteria
1. Prepare the heat treatment process for operation	1.1 Materials are confirmed and available to meet production/recipe requirements. 1.2 Services are confirmed as available and ready for operation. 1.3 ***Equipment*** is checked to confirm readiness for use. 1.4 The ***methods of heat treatment*** are set to meet production requirements.
2. Operate and monitor the aseptic sterilizer	2.1 The aseptic sterilizer is started up according to company procedures. 2.2 ***Control points*** are monitored to confirm performance is maintained within specification. 2.3 Heat product that meets specification is treated. 2.4 Equipment is operated by ***monitoring the process*** to confirm operating condition. 2.5 Out-of-specification product, process and equipment performance are identified, rectified and/or reported.
3. Perform pasteurization process	3.1 The pasteurization process is performed according to the company procedure.
4. Shut down the heat treatment process	4.1 Equipment is shut down according to company procedures. 4.2 Waste is collected, treated and disposed or recycled according to company procedures.
5. Record information	5.1 ***Workplace information*** is recorded in the appropriate format.

Variable	Range
Equipment	May include but not limited to: • pumps, • heat exchangers, • holding and cooling stages, • filters and clarifiers • direct steam injection equipment

Methods of heat treatment	May include but not limited to: • canning and bottling, • hot fill, • aseptic processing, • pasteurization, • Ultra-High Temperature (UHT) and • High Temperature Short Time (HTST) processing
Control points	May include but not limited to: • food safety (critical), • quality and regulatory control points as well as inspection points • Information systems may be print or screen based
Monitoring the process	May include but not limited to: • use of production data such as performance control charts
Workplace information	May include but not limited to: • Standard Operating Procedures (SOPs), specifications, production

Evidence Guide	
Critical Aspects of Competence	must confirm appropriate knowledge and skills to: • purpose and basic principles of heat treatment • heat treatment requirements for low and/or high acid foods • quality requirements of heat treated products • relationship between time and temperature in the heat treatment process • process specifications, procedures and operating parameters -set up and start up the process monitor supply and flow of materials to and from the process
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • Purpose and basic principles of heat treatment. • heat treatment requirements for low and/or high acid foods • link to related processes • stages and changes which occur during heat treatment • the effect of heat treatment on the end product • Effect of raw materials on the process. • quality requirements of heat treated products • relationship between time and temperature in the heat treatment process • 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 • OHS hazards and controls • lock out and tag out procedures • procedures and responsibility for reporting • problems • cleaning requirements associated with environmental issues and controls • changeovers and types of shut downs • shut down sequence • waste handling requirements and procedures • recording requirements and procedures • cleaning and sanitation procedures • sampling and testing procedures • routine maintenance procedures
Underpinning Skills	Demonstrate skills to: • access workplace information to identify production requirements • select, fit and use personal protective clothing and/or equipment • confirm supply of necessary materials and services • liaise with other work areas • prepare materials and packaging consumables as required • confirm equipment status and condition • set up and start up the process– monitor supply and flow of materials to and from the process • monitor the process and equipment operation to identify out-of specification results or noncompliance.This involves monitoring: ➢ time and temperature ➢ fill weight ➢ flow rates ➢ Headspace and flow diversion • take corrective action in response to out-of specification results or non-compliance • conduct product/line changeovers • report and/or record corrective action as required • sort, collect, treat, recycle or dispose of waste • shut down equipment in response to an emergency situation • shut down equipment in response to routine shut down requirements • prepare equipment for cleaning • record workplace information • maintain work area to meet housekeeping standards may include the ability to:

	➢ clean and sanitize equipment ➢ take samples and conduct test ➢ carry out routine maintenance
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: Fruit and Vegetable Processing Level II	
Unit Title	**Perform Cooling, Slicing and Wrapping Process**
Unit Code	**IND FVP2 05 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to set up, operate, adjust and shut down a cooling, slicing and wrapping process.

Elements	Performance Criteria
1. Prepare the cooling, slicing and wrapping equipment and process for operation	1.1. Product and packaging consumables are confirmed and available to meet operating requirements. 1.2. Cleaning and maintenance requirements and status are identified and confirmed. 1.3. Machine components and related attachments are fitted and adjusted to meet operating requirements. 1.4. Processing/operating parameters are entered as required to meet safety and production requirements. 1.5. Equipment performance is checked and adjusted as required. 1.6. Pre-start checks are carried out as required by workplace requirements.
2. Operate and monitor the cooling, slicing and wrapping process	2.1 The cooling, slicing and wrapping process is started and operated according to workplace procedures. 2.2 ***Equipment*** is monitored to identify variation in operating conditions. 2.3 Variation in equipment operation is identified on the control panel board and maintenance requirements are reported according to workplace reporting requirements. 2.4 The process is monitored to confirm that product is cooled and packaged to meet specifications. 2.5 Out-of-specification product/process outcomes are identified, rectified and/or reported to maintain the process within specification. 2.6 The work area is maintained according to housekeeping standards. 2.7 Work is conducted in accordance with workplace environmental guidelines. 2.8 Workplace records are maintained according to workplace recording requirements.

2. Monitor and inspect closure and seams	3.1 The closing stage is monitored to confirm that closures and seams meet specifications. 3.2 Seams are inspected to identify out-of-specification seams. 3.3. Out-of-specification process and equipment performance are identified, rectified and/or reported.
4. Shut down the cooling, slicing and wrapping process	4.1. The appropriate shutdown procedure is identified. 4.2. The process is shut down and cleaned according to workplace procedures. 4.3. Maintenance requirements are identified and reported according to workplace reporting requirements.

Variable	**Range**
Equipment may include:	• materials transfer equipment, such as conveyors and trolleys • cooler • slicer • bagging and bag closing equipment • metal detector and scales

Evidence Guide	
Critical Aspects of Competence	Evidence of ability to: • conduct pre-start checks on machinery used for cooling, slicing and wrapping • start, operate, monitor and adjust process equipment to achieve required quality outcomes • take corrective action in response to typical faults and inconsistencies • complete workplace records as required • apply safe work practices and identify OHS hazards and controls • safely shut down equipment • Apply food safety procedures to work practices.
Underpinning Knowledge and Attitudes	• purpose and basic principles of the cooling, slicing and wrapping process • basic operating principles of equipment, such as main equipment components, status and purpose of guards, equipment operating capacities and applications, and the purpose and location of sensors and related feedback instrumentation • services required and action to take if services are not available • the flow of the cooling, slicing and wrapping process and the effect of outputs on downstream processes and final product

	• quality characteristics to be achieved by the process • quality requirements of packaging materials and effect of variation on process performance and product shelf-life • operating requirements and parameters and corrective action required where operation is outside specified operating parameters • typical equipment faults and related causes, including signs and symptoms of faulty equipment and early warning signs of potential problems • methods used to monitor the cooling, slicing and bagging process, such as inspecting and measuring as required by the process • inspection or test points (control points) in the process and the related procedures and recording requirements • contamination/food safety risks associated with the process and related control measures • common causes of variation and corrective action required • Occupational Health and Safety (OHS) hazards and controls, including the limitations of protective clothing and equipment relevant to the work process • requirements of different shutdowns as appropriate to the process and workplace production requirements • product/process changeover procedures and responsibilities • isolation, lock out and tag out procedures and responsibilities • procedures and responsibility for reporting production and performance information • environmental issues and controls relevant to the process, including waste/rework collection and handling procedures related to the process • basic operating principles of process control, where relevant, including the relationship between control panels and systems and the physical equipment • routine maintenance procedures where relevant • cleaning and sanitation procedures where relevant
Underpinning Skills	Demonstrate skill in: • access workplace information to identify processing requirements • select, fit and use personal protective clothing and/or equipment • confirm supply of necessary product, packaging consumables and services • conduct pre-start checks, such as inspecting equipment condition to identify any signs of wear, selecting appropriate settings and/or related parameters, cancelling isolation or lock

	outs as required, confirming that equipment is clean and correctly configured for processing requirements, positioning sensors and controls correctly, ensuring any scheduled maintenance has been carried out, and confirming that all safety guards are in place and operational • confirm settings in the cooler, such as: ➢ conveyor speed/track position ➢ humidity ➢ air flow/fan settings ➢ product layout/spacing ➢ settings in the slicing/bagging equipment like: ✓ knife condition ✓ machine speed ✓ height/width settings ✓ air pressure ✓ bag/tag type and coding • start, operate, monitor and adjust process equipment to achieve required outcomes, including monitoring control points and conducting inspections as required to confirm process remains within specification • monitor supply and flow of product and packaging consumables to and from the process • take corrective action in response to out-of-specification results • respond to and/or report equipment failure within level of responsibility • locate emergency stop functions on equipment • follow isolation and lock out/tag out procedures as required to take process and related equipment off-line in preparation for cleaning and/or maintenance within level of responsibility • demonstrate batch/product changeovers • complete workplace records as required • maintain work area to meet housekeeping standards • use process control systems according to enterprise procedures • conduct routine maintenance according to enterprise procedures • clean and sanitize equipment 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: Fruit and Vegetable Processing Level II	
Unit Title	**Preserve Food in Cans or Sealed Containers**
Unit Code	**IND FVP2 06 0613**
Unit Descriptor	This unit covers the skills and knowledge required to process low acid foods and preserve food in hermitically sealed containers or hermetically sealed packaging.

Elements	Performance Criteria
1. Oversight the preparation of the packaging materials for thermal processing.	1.1 Suitable ***sealed containers*** are identified for canning, aseptic filling and wrapping. 1.2 Container's properties function, and integrity are assessed. 1.3 The parts of a ***cans and aseptic bags*** are identified. 1.4 A can closing machine (seamier) and aseptic filler machines are set up and trial operation undertaken. 1.5 The characteristics of the seamed cans are measured and calculated.
2. Oversight food preparation and filling of cans	2.1 The quality requirements of raw materials for processing are identified. 2.2 The correct procedures are performed for dicing and slicing. 2.3 The blanching process is correctly implemented by using either steam, water, microwaves or hot gas. 2.4 The correct filling procedures for syrups and brines are applied to produce the specified head space. 2.5 Cans are weighed with headspaces, drained and net weights recorded. 2.6 Exhausting is carried out to remove all gases from the headspace and oxygen from the can. 2.7 Closing of the can is monitored.
3. Ensure hermetic sealing of processed food product	3.1 The quality requirements of raw materials for processing are accessed and applied. 3.2 Raw materials are cooked and prepared in an aseptic environment. 3.3 Materials are placed into containers and hermetically sealed.
4. Eliminate harmful micro-organisms in the hermetic sealing or canning of low acid foods	4.2 Micro-organisms relevant to the canning of low acid foods are identified. 4.3 The D Value of micro-organisms is interpreted.

	4.4 The types of microbial spoilage important in food canning are assessed. 4.5 The process is documented for eliminating the risk of microbial spoilage in a food product.
5. Assess the impact of acidification in relation to hermetic sealing or canning of low acid foods	5.1 The acidity of a range of foods is measured. 5.2 The relationship between acidity and growth of micro-organisms is identified. 5.3 Critical Control Points (CCPs) are established for acidified foods.
6. Monitor retort operation	6.1 Containers are loaded onto baskets. 6.2 The retort is sealed. 6.3 Air trapped inside the retort is removed prior to processing. 6.4 Pressure is built up in the retort and sterilization temperature is maintained. 6.5 The can is cooled using chlorinated water.
7. Review a canning operation	7.1 Critical Control Points (CCPs) are reviewed for a canning operation. 7.2 Data is reviewed to ensure adherence within critical limits for each CCP. 7.3 Operating procedures are reviewed to ensure a quality and safe canned product.

Variable	**Range**
Sealed containers	May include: • Sealed containers are vacuum-sealed and may include aseptic bags, bottling or any other airtight container for food products
Cans and aseptic bags	May include: • Two or three piece and steel or aluminium. Closures may be ring pull or require an opener. • Metalized polyethylene bags used for aseptic filling

Evidence Guide	
Critical Aspects of Competence	Must confirm appropriate knowledge and skills to: • types of thermal processing systems • the principles and purposes for blanching • the function and use of each system • the parts of a retort/cooker • relevant legislation and regulations that apply to the canning process of low acid food

Underpinning Knowledge and Attitudes	Demonstrate Knowledge of: • types of thermal processing systems • the principles and purposes for blanching • the function and use of each system • the parts of a retort/cooker • relevant legislation and regulations that apply to the canning process of low acid foods • roles and responsibilities of authorities responsible for administering legislation • the chemical properties and application of chlorine in canning • principles of thermal processing, including use of a retort • aseptic techniques for packaging food under aseptic conditions • characteristics of two piece and three piece (seamed) cans • dicing, slicing, blanching and brining processes • the types micro-organisms relevant to the canning of low acid foods, including their basic structure and growth patterns • d value of micro-organisms • low acid foods, acidification and their relationship to the growth of organisms • critical control points • chemical properties of chlorine, and how it effects micro-organisms • methodology for the measurement of Chlorine in cooling water • Thermal Death Rate, Lethality Value and Sterilization Value • Confidence intervals and tests of significance Approximation • Principles of variability • Principles of variance
Underpinning Skills	Demonstrate skills in: • define commercial sterility; • identify who can establish a thermal process; • identify the components in establishing a thermal process; • establish heat treatment procedures • assess the factors affecting heat treatment • identify the role of chlorination in canning low acid foods • acidify food as part of processing • establish and assess the requirements for canning low acid food • established and assess the requirements for canning high acid foods are • set up and operate a retort to specification for a scheduled process • calculate the lethality value for a product • calculate the Fo Value from available date by using the: ➢ graphical integration method ➢ Gillespie method

	➢ calculate the Sterilizing Value of process by using the: ➢ trapezoidal method ➢ micro-organism population method • calculate the Fh value for different container sizes • calculate the time it would take to reach a given temperature at the slowest heating point in a can • identify factors that impact the thermal process • construct confidence intervals for mean and standard deviation
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: Fruit and Vegetable Processing Level II	
Unit Title	**Perform Filling Process**
Unit Code	**IND FVP2 07 0613**
Unit Descriptor	This unit is a specialist unit that has been customized for the fruit And vegetable sector. It covers the filling of product into containers, hermetically sealing containers using a closer or seamier and inspecting can seams.

Elements	Performance Criteria
1. Prepare the filling process for operation	1.1 Materials are confirmed and available to meet production, recipe and packaging requirements ***services*** are confirmed as available and ready for operation. 1.2 ***Conforming equipment*** is checked to approve readiness for use. 1.3 The process is set to meet production requirements. 1.4 The filling process is started up according to company procedures. 1.5 ***Control points*** are ***monitored the process*** to confirm performance is maintained within specification. 1.6 Containers that meet specification are filled and closed. 1.7 Equipment is monitored to confirm operating condition. 1.8 Out-of-specification product, process and equipment performance is identified, rectified and/or reported. 1.9 Waste is monitored and cleared according to company procedures.
2. Monitor and inspect closure and can seams	2.1 The closing stage is monitored to confirm that closures and seams meet specifications. 2.2 Seams are inspected to identify out-of-specification. 2.3 Out-of-specification process and equipment performance are identified, rectified and/or reported. 2.4 ***Can Seam components*** are identified and measured. 2.5 Non-compliance is identified and reported. 2.6 The ***precision measuring instruments*** are checked and conformed according to the organizational standards.
3 Perform aseptic filling	3.1 Aseptic filling process is performed according to the company process.

4 Perform canning	4.1 Canning is performed according to the company procedure.
5 Perform bottling process	5.1 The canning process is performed according to the company procedure.
6 Perform jar filling	6.1 Jar filling system is performed according to company` procedures.
7 Shut down filling and closing equipment	7.1 The process is shut down. 7.2 Equipment is prepared for cleaning. 7.3 Waste is collected, treated and disposed or recycled according to company procedures.
8 Record information	8.1 Workplace information is recorded in the appropriate format.

Variable	**Range**
Services	May include: • power, • steam, • water, • vacuum and • compressed and instrumentation air
Confirming equipment	May include: • checking that hygiene and sanitation standards are met, all • Safety guards are in place and equipment is operational. It may also involve checking operation/calibration of measuring instrumentation
Control points	May include: • food safety (critical), • quality and regulatory control points as well as • inspection points
Monitored the process	May include performance control charts
Can seam components	May include: • body hook, • end hook, • countersink, • seam thickness and juncture
Precision measuring instruments	• micrometers and countersink gauges

Evidence Guide	
Critical Aspects of Competence	must confirm appropriate knowledge and skills to: • purpose and basic principles of filling and closing equipment and instrumentation components,

	• purpose and operation methods used to prepare product for filling • basic operating principles of process control system
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • purpose and basic principles of filling and closing link to related processes stages in the filling and closing process methods used to prepare product for filling • Purpose of hermetic sealing and types of containers suitable for use. This includes an understanding of materials and costing used in packaging • effect of process variables such as headspace and fill temperature on the process • 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 • OHS hazards and controls • lock out and tag out procedures • procedures and responsibility for reporting problems – tinplate can seam components and parameters • measuring instrumentation and application to seam measurement • equipment shut down and cleaning procedures • waste handling requirements and procedures • recording requirements and procedures
Underpinning Skills	Demonstrate skills to: • access workplace information to identify production requirements • select, fit and use personal protective clothing and/or equipment • confirm supply of necessary materials and services • liaise with other work areas • prepare materials as required • confirm equipment status and condition • set up and start up the filling process • Monitor the filling process and equipment operation to identify out-of-specification results or non-compliance. This may involve monitoring: ➢ temperatures, ➢ headspace and ➢ line speed

	• monitor supply and flow of materials to and from the process set up and operate the closer • monitor the closer to confirm alignment and formation of the seam • check coding is correct • take corrective action in response to out-of specification results or non-compliance report and/or record corrective action as required • conduct product/batch changeovers • shut down equipment in response to an emergency situation • shut down equipment in response to routine shut down requirements • prepare equipment for cleaning maintain work area to meet housekeeping standards • identify and measure parts of a double seam • report and record workplace information • sort, collect, treat, recycle or dispose of waste • maintain work area to meet housekeeping standards
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: Fruit and Vegetable Processing Level II	
Unit Title	**Implement the Food Safety Program and Procedures**
Unit Code	**IND FVP2 08 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required maintaining personal hygiene and conduct food handling, housekeeping and waste disposal related to work tasks and responsibilities where work involves operation of production and/or packaging equipment and processes.

Elements	Performance Criteria
1. Implement the food safety program	1.1 ***Food handling*** requirements are identified. 1.2 Food handling is carried out according to the ***a food safety program***. 1.3 ***Food safety hazards*** are controlled as required by the a food safety program. 1.4 Where food safety control requirements are not met, the incident is promptly reported and corrective action is taken. 1.5 Food safety information is recorded to meet requirements of the food safety program. 1.6 The workplace is maintained in a clean and tidy order to meet workplace standards. 1.7 Work is conducted in accordance with workplace environmental guidelines.
2. Participate in maintaining and improving food safety	2.1 Work area, materials, equipment and product are routinely ***monitored*** to ensure compliance with food safety requirements. 2.2 Processes, practices or conditions which could result in a ***food safety breach*** are identified and reported according to workplace reporting requirements. 2.3 Corrective action is taken in accordance with the food safety program. 2.4 Food safety issues are raised with designated personnel.
3. Comply with personal hygiene standards	3.1 Personal ***hygiene requirements*** of the food safety program are met the standard. 3.2 Health conditions and/or illness are reported as required by the food safety program. 3.3 Clothing and footwear that appropriate for the food handling task and meets the requirements of the food safety program are worn.

	3.4 Movement around the workplace that comply with the food safety program is done.

Variable	Range
Food handling	May include: • food receipt and storage • food preparation • cooking, holding, cooling, chilling and reheating • packaging, disposal
A food safety program	May include: • A written document that specifies how a business will control all food safety hazards that may be reasonably expected to occur in all food handling operations of the food business. • 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
Food safety hazard	May include: • A food safety hazard is a biological, chemical or physical agent in, or condition of, food that has the potential to cause an adverse health effect
Monitoring	May include: • taking temperatures • collecting samples • conducting visual inspections • conducting other tests as required
food safety breach	may include: • failure to check delivery temperatures of potentially hazardous chilled food • failure to place temperature-sensitive food in temperature controlled storage conditions promptly • failure to wash hands when required • use of cloths for unsuitable purposes
Hygiene requirements	May include: • The food safety program. At a minimum this must meet legal requirements as set out in the Food Safety Standard and legislations

Evidence Guide	
Critical Aspects of Competence	Evidence of ability to: • identify own responsibilities with regard to food safety • identify food safety risks in the workplace and the control measures used to manage them • apply control measures in own work

	• monitor compliance with food safety standards • identify and act on non-compliances and participate in improving safety • maintain required standards of personal hygiene • 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: • sources of information and expertise on procedures and responsibilities for food safety relating to own work • basic concepts of HACCP-based food safety, including identification of hazards that are likely to occur, establishing appropriate methods of control and confirming that controls are met • food safety management arrangements in the workplace, including awareness of food safety legislation, workplace policies and procedures to implement responsibilities, understanding the relationship between the quality system and food safety program, personnel responsible for developing and implementing the food safety program, the role of internal and external auditors as appropriate, procedures followed to investigate contamination events, and performance improvement processes • awareness of common microbiological, 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 • the properties, handling and storage requirements of ingredients, materials and products handled and used • suitable standard for materials, measuring devices, equipment and utensils used in the work area • food safety requirements related to work responsibilities, including personal hygiene, requirements and procedures to report illness and safe food handling practices for own work • methods used to monitor that food safety is under control, including the purpose of sampling and taking measurements, such as temperature and pH, and conducting inspections and tests • action required in the event of non-compliance (corrective action is typically described in the food safety program and/or related workplace information) • purpose of keeping records and the recording requirements of the food safety program • methods used in the workplace to isolate or quarantine food which may be unsafe

	• product and ingredient traceability procedures, such as product recall where required by work responsibilities • clothing and footwear requirements for working in and/or moving between food handling areas • 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, and use and storage of housekeeping/cleaning equipment where relevant • procedures to follow in the event of pest sighting or discovery of infestation • purpose and importance of cleaning and sanitation procedures • waste collection, recycling and handling procedures relevant to own work responsibilities • cleaning and sanitation procedures where relevant • impact of rework handling/addition on food safety where relevant • sampling and test methods where relevant
Underpinning Skills	Demonstrate skill in: • cleaning and sanitation procedures where relevant • housekeeping requirements and responsibilities relating to own work, and use and storage of housekeeping/cleaning equipment where relevant • action required in the event of non-compliance (corrective action is typically described in the food safety program and/or related workplace information) • product and ingredient traceability procedures, such as product recall where required by work responsibilities
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: Fruit and Vegetable Processing Level II	
Unit Title	**Participate in OHS Processes**
Unit Code	**IND FVP2 09 0613**
Unit Descriptor	This unit of competency specifies the workplace performance required for an entry level employee to participate in Occupational Health and Safety (OHS) processes in the workplace, in order to ensure their own health and safety at work, as well as that of those in the workplace who may be affected by their actions.

Elements	Performance Criteria
1. Plan and prepare to work safely	1.1. ***Hazards*** in the work area are identified and action taken to control risks for those hazards the employee can correct. 1.2. ***Workplace hazards*** and inadequacies in control measures the employee cannot correct are reported in accordance with organization procedures. 1.3. Pre-start checks are carried out as required according to work procedures.
2. Conduct work safely	2.1. ***Personal protective equipment*** is used correctly and maintained when required. 2.2. Work procedures and workplace instructions are followed for ensuring safety when planning and conducting work. 2.3. ***Incidents*** and injuries are reported to ***designated personnel.*** 2.4. ***OHS housekeeping*** is undertaken in work area.
3. Participate in OHS consultative activities	3.1. Knowledge of roles and responsibilities of OHS representatives and OHS committees is applied. 3.2. Constructive contribution to workplace meetings, workplace inspections or other OHS consultative activities is made. 3.3. OHS issues are raised with designated personnel according to organization procedures. 3.4. Input to improve workplace OHS systems and processes is provided to eliminate hazards or reduce ***risk*** according to organization procedures.
4. Follow emergency response procedures	4.1. ***Emergency situations*** are identified and reported. 4.2. Organization procedures for responding to emergencies are followed.

Variable	Range
Hazards	May include: • a source or situation with the potential for harm in terms of human injury or ill-health, damage to property, the environment, or a combination of these
Workplace hazards	may include: • occupational violence • stress • fatigue • bullying
Personal protective equipment	Equipment worn by a person to provide protection from hazards, by providing a physical barrier between the person and the hazard and may include: • head protection • face and eye protection • respiratory protection • hearing protection • hand protection • clothing and footwear
Incidents	may include: • any event that has caused, or has the potential for, injury, ill-health or damage
Designated personnel	may include: • team leaders • supervisors • OHS representatives • OHS committee members • managers • organization OHS personnel • other persons designated by the organization • employers in office based practice
OHS housekeeping	may include: • workplace and personal routines designed to improve health and safety, for example, cleaning up spills, keeping walkways, exits and traffic areas clear
Risks	May include: • the probability and consequences of injury, illness or damage resulting from exposure to a hazard
Emergency situations	Any abnormal or sudden event that requires immediate action, such as: • serious injury events • events requiring evacuation • fires and explosions • hazardous substance and chemical spills

	• explosion and bomb alerts • security emergencies, such as armed robberies, intruders and disturbed persons • internal emergencies, such as loss of power or water supply and structural collapse • external emergencies and natural disasters, such as flood, storm and traffic accident impacting on the organization

Evidence Guide	
Critical Aspects of Competence	Evidence of ability to: • To demonstrate competence in this unit, a candidate must be able to provide evidence of the application of their knowledge of OHS: • in an actual or simulated workplace context involving relevant work processes • to their own health and safety within their work area • to that of others who may be affected by their actions • A candidate must also be able to provide evidence of participating in workplace OHS processes • Evidence gathered by an assessor to determine competence will include practical demonstration of competence, including: • workplace demonstration, simulation exercise, scenario or role play • indirect evidence from workplace supervisor reports and workplace documentation
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • applicable commonwealth, state or territory OHS legislation, regulations, standards, codes of practice and industry standards/guidance notes relevant to own work, role and responsibilities • safety signs and their meanings, including signs for: ➢ personal protective equipment ➢ emergency equipment ➢ dangerous goods class signs ➢ specific hazards, such as sharps and radiation • legal rights and responsibilities of the workplace parties • the difference between hazard and risk • nature of common workplace hazards, such as chemicals, bodily fluids, sharps, noise, manual handling, work postures, underfoot hazards and moving parts of machinery • standard emergency signals, alarms and required responses • the elements within the hierarchy of control • safety measures related to common workplace hazards • sources of OHS information in the workplace

	• the roles and responsibilities of employees, supervisors and managers in the workplace • roles and responsibilities of OHS representatives, OHS committees and employers • workplace specific information, including: ➢ hazards of the particular work environment ➢ potential emergencies relevant to the workplace ➢ designated person for raising OHS issues • organization and work procedures particularly those related to performance of own work, specific hazards and risk control, reporting of hazards, incidents and injuries, consultation, use of personal protective equipment and emergency response • potential emergency situations, alarms and signals, and required response
Underpinning Skills	Demonstrate skills to: • follow clear, logical verbal or clear, logical Plain English written instructions • interpret selected pictorial/graphical and written signs/instructions • clarify meaning with peers and supervisors • give accurate verbal or written descriptions of incidents or hazards • participate in OHS activities, including inspections, meetings and risk assessments
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: Fruit and Vegetable Processing Level III	
Unit Title	**Handle By-product Manufacturing Processes**
Unit Code	**IND FVP2 10 0613**
Unit Descriptor	This unit of competency covers the collection of by-product and manufacture of stockfeed and other products.

Elements	Performance Criteria
1. Identify finish by-product requirement	1.1 Product to be manufactured from production schedule, customer order or Standard Operating Procedure (SOP) is identified. 1.2 Micronutrient or additive requirements is/are identified from screen, recipe, standard operating procedure or supervisor from ***hazards and risks***.
2. Obtain correct micronutrient or other additive	2.1 Storage location is identified for ***micronutrient or additive*** 2.2 Micronutrient or additive is obtained according to SOP. 2.3 Micronutrient or additive label is read to determine any special mixing, handling or Occupational Health and Safety (OHS) requirements.
3. Add micronutrient or additive to product	3.1 Micronutrient or additive is matched to product. 3.2 Appropriate volume, measurement or proportion of micronutrient or additive is determined. 3.3 Pre-mixing or other micronutrient or additive preparation procedures are undertaken. 3.4 Micronutrient or additive to product is added to stock feed at appropriate location and stage of production process. 3.5 Appropriate contamination, quality and sequencing procedures are followed. 3.6 ***Stock feed*** samples are taken according to procedures. 3.7 Work is conducted in accordance with workplace environmental guidelines.
4. Record use of micronutrient or additive	4.1 Type and amount of micronutrient or additive used are recorded according to enterprise and statutory requirements if applicable. 4.2 ***Target species*** correct product labels are generated and added to product.

Variable	Range
Hazards and risks	The range of hazards and risks associated with micronutrients and additives use includes:

	• Cross-contamination of micronutrients and additives for different feeds and recipes • wrong formula and other errors especially failure to read formula correctly • incorrect volume/measurement/proportion
Micronutrients or additives	Micronutrients and additives may range from common proprietary products to specific micronutrients and additives prescribed by veterinarians or covered by legislative requirements
Stockfeed	• Stockfeed includes feed commercially produced and branded by enterprises as well as customer provided formulations. • The range of stockfeed can include: ➢ pellets ➢ liquids ➢ mashes ➢ blocks
Target species	may include land and marine animals raised commercially for meat, skin products and milk

Evidence Guide	
Critical Aspects of Competence	Must confirm appropriate knowledge and skills to: • Storage location for micronutrient or additive is identified • Micronutrient or additive is obtained according to SOP • risk factors for cross transference and read labels
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • contamination avoidance, quality and sequencing procedures • risk factors for cross transference • withholding periods • OHS procedures for micronutrients and additives
Underpinning Skills	Demonstrate skills in: • identify scheduled additives (S4) store and handle micronutrients and additives follow mixing and addition procedures for micronutrients and additives • read labels to identify: ➢ target and non-target species ➢ dose /addition level ➢ withholding period ➢ expiry dates ➢ storage and handling requirements ➢ manufacturer's name ➢ product and active ingredient name • 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: Fruit and Vegetable Processing Level II	
Unit Title	**Participate in Workplace Communication**
Unit Code	**IND FVP2 11 0613**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements.

Elements	Performance Criteria
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from ***appropriate sources***. 1.2 Effective questioning, active listening and speaking skills are used to gather and convey information. 1.3 Appropriate ***medium*** is used to transfer information and ideas. 1.4 Appropriate non- verbal communication is used. 1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed. 1.6 Defined workplace procedures for the location and ***storage*** of information are used. 1.7 Personal interaction is carried out clearly and concisely.
2. Participate in workplace meetings and discussions	2.1 Team meetings are attended on time. 2.2 Own opinions are clearly expressed and those of others are listened to without interruption. 2.3 Meeting inputs are consistent with the meeting purpose and established ***protocols***. 2.4 ***Workplace interactions*** are conducted in a courteous manner. 2.5 Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded to. 2.6 Meetings outcomes are interpreted and implemented.
3. Complete relevant work related documents	3.1 Range of ***forms*** relating to conditions of employment is completed accurately and legibly. 3.2 Workplace data is recorded on standard workplace forms and documents. 3.3 Basic mathematical processes are used for routine calculations. 3.4 Errors in recording information on forms/ documents are identified and properly acted upon. 3.5 Reporting requirements to supervisor are completed according to organizational guidelines.

Variable	Range
Appropriate sources	May include: • Team members • Suppliers • Trade personnel • Local government • Industry bodies
Medium	May include: • Memorandum • Circular • Notice • Information discussion • Follow-up or verbal instructions • Face to face communication
Storage	May include: • Manual filing system • Computer-based filing system
Protocols	May include: • Observing meeting • Compliance with meeting decisions • Obeying meeting instructions
Workplace interactions	May include • Face to face • Telephone • Electronic and two way radio • Written including electronic, memos, instruction and forms, non-verbal including gestures, signals, signs and diagrams
Forms	May include: • Personnel forms, telephone message forms, safety reports

Evidence Guide	
Critical Aspects of Competency	Assessment requires evidence that the candidate to: • Prepare written communication following standard format of the organization • Access information using communication equipment • Make use of relevant terms as an aid to transfer information effectively • Convey information effectively adopting the formal or informal communication
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • Effective communication • Different modes of communication

	• Written communication • Organizational policies • Communication procedures and systems • Technology relevant to the enterprise and the individual's work responsibilities
Underpinning Skills	Demonstrate skills to: • Follow simple spoken language • Perform routine workplace duties following simple written notices • Participate in workplace meetings and discussions • Complete work related documents • Estimate, calculate and record routine workplace measures • Basic mathematical processes of addition, subtraction, division and multiplication • Ability to relate to people of social range in the workplace • Gather and provide information in response to workplace Requirements
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: Fruit and Vegetable Processing Level II	
Unit Title	**Work in Team Environment**
Unit Code	**IND FVP2 12 0613**
Unit Descriptor	This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team.

Elements	Performance Criteria
1. Describe team role and scope	1.1 The ***role and objective of the team*** are identified from available ***sources of information***. 1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources.
2. Identify own role and responsibility within team	2.1 Individual role and responsibilities within the team environment are identified. 2.2 Roles and responsibility of other team members are identified and recognized. 2.3 Reporting relationships within team and external to team are identified.
3. Work as a team member	3.1 Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives. 3.2 Effective and appropriate contributions are made to complement team activities and objectives, based on individual skills and competencies and ***workplace context***. 3.3 Protocols are observed in reporting using standard operating procedures. 3.4 Contribute to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members.

Variable	Range
Role and objective of team	May include: • Work activities in a team environment with enterprise or specific sector • Limited discretion, initiative and judgment maybe demonstrated on the job, either individually or in a team environment
Sources of information	• Standard operating and/or other workplace procedures • Job procedures • Machine/equipment manufacturer's specifications and instructions • Organizational or external personnel

	• Client/supplier instructions • Quality standards • OHS and environmental standards
Workplace context	May include: • Work procedures and practices • Conditions of work environments • Legislation and industrial agreements • Standard work practice including the storage, safe handling and disposal of chemicals • Safety, environmental, housekeeping and quality guidelines

Evidence Guide	
Critical Aspects of competence	Assessment requires evidence that the candidate to: • Operate in a team to complete workplace activity • Work effectively with others • Convey information in written or oral form • Select and use appropriate workplace language • Follow designated work plan for the job • Report outcomes
Underpinning Knowledge and Attitude	Demonstrate knowledge of: • Communication process • Team structure • Team roles • Group planning and decision making
Underpinning Skills	Demonstrate skills to: • Communicate appropriately, consistent with the culture of the workplace
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: Fruit and Vegetable Processing Level II	
Unit Title	**Develop Business Practice**
Unit Code	**IND FVP2 13 0613**
Unit Descriptor	This unit specifies the outcomes required to establish a business operation from a planned concept. It includes researching the feasibility of establishing a business operation, planning the setting up of the business, implementing the plan and reviewing operations once commenced.

Elements	Performance Criteria
1. Identify business opportunity	1.1 ***Business opportunities*** are investigated and identified. 1.2 Feasibility study is undertaken to determine likely ***business viability***. 1.3 Market research on product or service is undertaken. 1.4 Assistance with feasibility study of ***specialist and relevant parties*** is sought as required. 1.5 Impact of emerging or changing technology including e-commerce, on business operations is evaluated. 1.6 Practicability of business opportunity is assessed in line with perceived risks, returns sought and resources available. 1.7 Business plan is completed for operation.
2. Identify personal business skills	2.1 Financial and business skills available are identified and taken into account when business opportunities are researched. 2.2 ***Personal skills/attributes*** are assessed and matched against those perceived as necessary for a particular business opportunity. 2.3 ***Business risks*** are identified and assessed according to resources available and personal preferences.
3. Plan for establishment of business operation	3.1 Business structure and operations are determined and documented. 3.2 Procedures are developed and documented to guide operations. 3.3 Financial backing is secured for business operation. 3.4 Business legal and regulatory requirements are identified and complied. 3.5 ***Human and physical resources*** required to commence business operation are determined. 3.6 Recruitment strategies are developed and implemented.

4. Implement establishment plan	4.1 Marketing of business operation is undertaken. 4.2 Physical and human resources are obtained to implement business operation. 4.3 ***Operational unit*** is established to support and coordinate business operation. 4.4 Monitoring process is developed and implemented for managing operation. 4.5 ***Legal documents*** are carefully maintained and relevant records are kept and updated to ensure validity and accessibility. 4.6 Contractual procurement rights for goods and services including ***contracts with relevant people****,* negotiated and secured as required in accordance with the business plan. 4.7 Options for leasing/ownership of business premises identified and contractual arrangements are completed in accordance with the business plan.
5. Review implementation process	5.1 Review process for implementation of business operation is developed and implemented. 5.2 Improvements in business operation and associated management process are identified. 5.3 Identified improvements are implemented and monitored for effectiveness.

Variable	Range
Business opportunities	May include: • expected financial viability • skills of operator • amount and types of finance available • returns expected or required by owners • likely return on investment • finance required and lifestyle issues
Business viability	may include: • opportunities available • market competition • timing/ cyclical considerations • skills available • resources available • location and/ or premises available • risk related to a particular business opportunity, especially • in regard to Occupational Health and Safety and • environmental considerations

Specialist and relevant parties	may include: • Chamber of commerce • Financial planners and financial institution representatives, business planning specialists and marketing specialists • accountants • lawyers and providers of legal advice • government agencies • industry/trade associations • online gateways • business brokers/business consultants
Personal skills/attributes	may include: • technical and/ or specialist skills • business knowledge and skills • entrepreneurship • willingness to take risks
Business risks	May include: • occupational health and safety and environmental • considerations • relevant legislative requirements • security of investment • market competition • security of premises/ location • supply and demand • resources available
Human and physical resources	may include: • software and hardware • office premises • communications equipment • specialist services through outsourcing, contracting and • consultancy • staff • vehicles
Operational unit refers to:	May include: • office location staffed with required personnel and equipped to service and support business • home-based site or other location such as leased or owned property
Legal documents	may include: • partnership agreements, constitution documents, statutory books for companies (Register of Members, Register of Directors and Minute Books), Certificate of Incorporation, Franchise Agreements and financial documentation, appropriate software for financial records • recordkeeping including personnel, financial, taxation, OHS and environmental

Contracts with relevant people	may include: • owners, suppliers, employees, landlords, agents, distributors, customers or any person with whom the business has, or seeks to have, a performance-based relationship

Evidence Guide	
Critical Aspects of Competence	A person must be able to provide evidence: • that a business operation has been planned and implemented from initial research into feasibility of the business and completion of the plan, through to implementing the plan and commencing operations • the ability to evaluate the results of research and assess the likely viability and practicability of a business opportunity, taking into account the current business/market climate and resources available
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • Federal and regional government legislative requirements affecting business operations, especially in regard to Occupational Health and Safety (OHS), Equal Employment Opportunity (EEO), industrial relations and anti-discrimination • Technical or specialist skills relevant to the business operation • Financing options • Business systems and operations • Relevant marketing, management, sales and financial concepts • Methods for researching business opportunities • Principles of risk management relevant to the business • Methods of identifying relevant specialist services to complement the business • Forms and administrative systems • Services available and charges • Planning and control systems (sales, • Advertising and promotion, distribution and logistics • Financial recording systems • Legal rights and responsibilities • Record keeping duties • Operational factors relating to the business (provision of professional services, products)
Underpinning Skills	Demonstrate skills of: • Literacy skills to interpret legal requirements, company policies and procedures and immediate, day-to-day demands • Marketing skills • Business planning skills • Entrepreneurial skills • Problem-solving skills • OHS skills

	• Time management skills • Belief in services and products offered by the business • Communication skills including questioning, clarifying, reporting, and giving and receiving constructive feedback • Technical and analytical skills to interpret business documents, reports and financial statements and projections • Ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities • Problem solving skills to develop contingency plans • Using computers and software packages to record and manage data and to produce reports • Literacy skills to enable interpretation of business information, numeracy skills for data analysis to aid research • Research skills to identify a business opportunity and to conduct a feasibility study • Analytical skills to assess personal attributes and to identify business risks • Observation skills for identifying appropriate people, resources and to monitor work
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: Fruit and Vegetable Processing Level II	
Unit Title	**Standardize and Sustain 3S**
Unit Code	**IND FVP2 14 0613**
Unit Descriptor	This unit of competence covers the knowledge, skills and attitudes required by worker to standardize and sustain 3S to his/her workplace. It covers responsibility for the day- to-day operations of the workplace and ensuring that continuous improvements of Kaizen elements are initiated 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 ***Safety equipment and tools*** are identified and checked for safe and effective operation. 1.5 ***Tools and equipment*** are prepared and used to implement 3S.
2. Standardize 3S.	2.1 Plan is prepared and used to standardize 3S activities. 2.2 ***Tools and techniques*** to standardize 3S are prepared and implemented based on ***relevant procedures***. 2.3 Checklists are followed for standardize activities and ***reported*** to ***relevant personnel***. 2.4 The workplace is kept to the specified standard. 2.5 Problems are avoided by standardizing activities.
3. Sustain 3S.	3.1 Plan is prepared and followed to standardize 3S activities. 3.2 ***Tools and techniques*** to sustain 3S are discussed, prepared and implemented based on relevant procedures. 3.3 Workplace is inspected regularly for compliance to specified standard and sustainability of 3S techniques. 3.4 Workplace is cleaned up after completion of job and before commencing next job or end of shift. 3.5 Situations are identified where compliance to standards is unlikely and actions specified in procedures are taken. 3.6 Improvements are recommended to lift the level of compliance in the workplace.

	3.7 Checklists are followed to sustain activities and reported to relevant personnel. 3.8 Problems are avoided by sustaining activities.

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 equipment	May include but not limited to: • paint • hook • sticker • signboard • nails • shelves • chip wood • sponge • broom • pencil • shadow board/ tools board
Tools and techniques	May include but not limited to: • 5S Job Cycle Charts • Visual 5S

	• The Five Minute 5S • Standardization level checklist • 5S checklist • The five Whys and one How approach(5W1H) • Suspension • Incorporation • Use Elimination
Relevant procedures	May include but not limited to: • Assign 3S responsibilities • Integrate 3S duties into regular work duties • Check on 3S maintenance level • OHS measures such as signage, symbols / coding and labeling of workplace and equipment • Creating conditions to sustain your plans • Roles in implementation
Reporting	May include but not limited to: • verbal responses • data entry into enterprise database • brief written reports using enterprise report formats
Relevant personnel	May include but not limited to: • supervisors, managers and quality managers • administrative, laboratory and production personnel • internal/external contractors, customers and suppliers
Tools and techniques	May include but not limited to: • 5S slogans • 5S posters • 5S photo exhibits and storyboards • 5S newsletter • 5S maps • 5S pocket manuals • 5S department/benchmarking tours • 5S months • 5S audit • Awarding system • Big cleaning day • Patrolling system may include: ➢ Top management Patrol ➢ 5S Committee members and Promotion office Patrol ➢ Mutual patrol ➢ Self-patrol ➢ Checklist patrol ➢ Camera patrol

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge to: • Discuss the relationship between Kaizen elements. • Standardize and sustain 3S activities by applying appropriate tools and techniques.
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Elements of Kaizen • Ways to improve Kaizen elements • Benefits of improving kaizen elements • Relationship between Kaizen elements • The fourth pillar of 5S • Benefits of standardizing and sustaining 3S • Procedures for standardizing and sustaining 3S activities • Tools and techniques to sustain 3S • Relevant Occupational Health and Safety (OHS) and environment requirements • Plan and report • Method of communication
Underpinning Skills	Demonstrates skills of: • improving Kaizen elements by applying 5S • standardizing and sustaining procedures and techniques to avoid problems • technical drawing • procedures to standardizing 3S activities • analyzing and preparing shop layout of the workplace • standardizing and sustaining checklists • preparing and implementing tools and techniques to sustain 3S • working with others • reading and interpreting documents • observing situations • solving problems by applying 5S • communication skills • preparing labels, slogans, etc. • gathering evidence by using different means • using Kaizen board properly in accordance the procedure • reporting 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.

NTQF Level III

Occupational Standard: Fruit and Vegetable Processing Level III	
Unit Title	**Conduct Chemical Wash for Fresh Produce**
Unit Code	**IND FVP3 01 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to implement a wash process for fresh produce, where chemicals, such as chlorine, are used to achieve quality standards.

Elements	Performance Criteria
1. Confirm required use of chemicals	1.1 Chemicals used for the washing of fresh produce are identified and required levels confirmed. 1.2 Risks associated with using chemicals are identified and control measures implemented throughout operations according to company`s ***policy and procedures***. 1.3 Implications of incorrect chemical levels on fresh produce are identified. 1.4 Storage and handling requirements for chemicals are identified.
2. Prepare for washing operation	2.1. Raw materials are confirmed and prepared for washing. 2.2. ***Washing equipment*** is confirmed for operational readiness and components and related attachments fitted and adjusted as required. 2.3. Pre-start checks are carried out as required by work place requirements. 2.4. Chemicals are measured and dose added according to specifications. 2.5. Performance of chemical dosing equipment is checked to confirm accuracy. 2.6. Water quality is checked and confirmed for use.
3. Operate and monitor the washing process	3.1. The washing process is started and operated according to ***workplace information*** procedures. 3.2 Raw materials are inspected and washed to meet workplace specifications. 3.3 Water is checked to confirm correct levels of chemicals. 3.4 Washed materials are transferred for further processing or packaging. 3.5 Variation in equipment operation is identified and maintenance requirements are reported according to workplace reporting requirements.

	3.6Out-of-specification product/process outcomes are identified, rectified and/or reported to maintain the process within specification. 3.7The work area is maintained according to housekeeping standards. 3.8Work is conducted in accordance with workplace environmental guidelines. 3.9Workplace records are maintained according to workplace recording requirements.
4. Shut down the washing process	4.1The appropriate ***shutdown procedure*** is implemented. 4.2Chemicals are handled, stored and disposed of according to workplace environmental standards. 4.3Maintenance requirements are identified and reported according to workplace reporting requirements.

Variable	**Range**
Policies and procedures	may include: • Work is carried out according to company policies and procedures, regulatory and licensing requirements, legislative requirements, and industrial awards and agreements
Washing equipment	may include: • wash baths • tanks • flumes • pumps • hoses
Workplace information	may include: • Standard Operating Procedures (SOPs)specifications • production schedules and instructions • manufacturers' advice • standard forms and reports
Shutdown procedures	may include: • cleaning (in some cases cleaning may be carried out by a dedicated cleaning crew)

Evidence Guide	
Critical Aspects of Competence	Evidence of ability to: • conduct pre-start checks on machinery used for washing handle and apply chemicals according to specifications • start, operate, monitor and adjust process equipment to achieve required quality outcomes • conduct water and chemical checks

	• take corrective action in response to typical faults and inconsistencies • complete workplace records 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*:* • purpose and basic principles of the washing process: including the importance of water quality and the role of chemicals in the washing process • basic operating principles of equipment, such as main equipment components, status and purpose of guards, equipment operating capacities and applications, and the purpose and location of sensors and related feedback instrumentation • services (principally water) required and action to take if services are not available • the flow of this process and the effect of outputs on downstream processes • quality characteristics to be achieved by the washing, including the consequences of out-of-specification moisture levels on further processing and final product • quality requirements of raw materials and effect of variation on process performance, including how variation in microbial load can affect the washing process • operating requirements, parameters and corrective action required where operation is outside specified operating parameters • typical equipment faults and related causes, including signs and symptoms of faulty equipment and early warning signs of potential problems • methods used to monitor the washing process, such as inspecting, measuring and testing as required by the process • inspection or test points (control points) in the process and the related procedures and recording requirements • contamination/food safety risks associated with the process and related control measures • common causes of variation and corrective action required • Occupational Health and Safety (OHS) hazards and controls • requirements of different shutdowns as appropriate to the process and workplace production requirements, including emergency and routine shutdowns and procedures to follow in the event of a power outage • isolation, lock out and tag out procedures and responsibilities • product/process changeover procedures and responsibilities

	• procedures and responsibility for reporting production and performance information • environmental issues and controls relevant to the process, including waste/rework collection and handling procedures related to the process • basic operating principles of process control, where relevant, including the relationship between control panels and systems and the physical equipment • sampling and testing associated with process monitoring and control where relevant • routine maintenance procedures where relevant • cleaning and sanitation procedures where relevant
Underpinning Skills	Demonstrate skills to: • basic operating principles of process control, where relevant, including the relationship between control panels and systems and the physical equipment • sampling and testing associated with process monitoring and control where relevant • routine maintenance procedures where relevant • cleaning and sanitation procedures where relevant
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: Fruit and Vegetable Processing Level III	
Unit Title	**Perform Fresh Produce Grading Equipment**
Unit Code	**IND FVP3 02 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to program grading equipment to identify key characteristics of fresh produce and sort accordingly.

Elements	Performance Criteria
1. Confirm produce grading specifications	1.1 Features of the grading ***equipment*** and process are described. 1.2 Characteristics of produce are examined and purpose for grading confirmed. 1.3 Customer and packaging requirements are confirmed. 1.4 Specifications are determined for grading.
2. Program grading equipment	2.1 Specifications are entered into computer to set ***grading*** parameters. 2.2 Computer program or equipment components are used effectively to enable a variety of grading outcomes to be achieved. 2.3 Program or equipment operation is tested or monitored to ensure standards are achieved. 2.4 Problems or inconsistencies in grading outcomes are investigated to determine cause and corrective action implemented. 2.5 Documentation is completed and records of grading specifications for customer are recorded.

Variable	Range
Equipment may include:	• cameras • infra-red lights • lasers • temperature gaugesand conveyor belts
Grading may include:	• simulation • rotation • sorting and quality control

Evidence Guide	
Critical Aspects of Competence	Evidence of ability to: • analyze grading requirements and confirm specifications for grading equipment • determine grading specifications for a variety of outcomes

	• use computing or mechanical technology to achieve grading specifications • verify program specifications for required outcomes • Analyze non-conformances and grading problems and determine probable cause.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • grading equipment processes and technologies • characteristics of produce used for grading and the process of identification • factors that influence grading outcomes • typical problems that occur in the grading process, and likely causes and appropriate response options
Underpinning Skills	Demonstrate skills in: • identify characteristics of produce used to determine grading requirements • use computer software or mechanical equipment to establish and set grading specifications • identify and apply the quality assurance systems in place to ensure that grading meets customer requirements • identify problems that occur in the grading process and investigate likely causes • determine appropriate corrective action to prevent grading non-conformance • describe the purpose of grading and processes implemented by grading equipment to achieve specific grading outcomes • identify typical problems that occur in the grading process, and outline likely causes and appropriate response options within level of responsibility • 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
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: Fruit and Vegetable Processing Level II	
Unit Title	**Monitoring Concentration Process**
Unit Code	**IND FVP3 03 0613**
Unit Descriptor	This is a specialist unit that applies to the fruit and vegetable sector. It covers the concentration of juices from different fruits and vegetables through evaporation and freezing concentration methods.

Elements	Performance Criteria
1. Confirm evaporation operation	1.1 Materials are checked and available to meet production/recipe requirements. 1.2 Cleaning, sanitation and standards are met. 1.3 ***Services*** and accessory inputs that available are checked. 1.4 The inspected operational parameters are set. 1.5 The evaporation process is set to meet production requirements.
2. Monitor the evaporation process	2.1 The evaporation process is started up according to company procedures. 2.2 ***Control points*** and parameters are monitored to confirm performance is kept within specification. 2.3 The refract meter reading of the concentrate that meet product specifications is monitored. 2.4 Out-of-specification product, process and equipment performance are identified, rectified and/or reported.
3. Confirm freezing operation	3.1 Materials are checked and available to meet production/recipe requirements. 3.2 Hygiene and sanitation standards are established. 3.3 Services that are available are checked. 3.4 The inspected operational parameters are set. 3.5 The freezing process is set to meet production requirements.
4. Monitor the freezing concentration process	4.1 The freezing process is preceded according to the company procedures. 4.2 Make sure that all parameters are within specification and all control points are set. 4.3 Check that the concentrate is produced within the specification. 4.4 The non-conformance is recorded accordingly. 4.5 The process is shut down according to company procedures.
5 Record information	5.1 ***Workplace information*** is recorded in the appropriate format.

Variable	Range
Services	may include: • power, • saturated steam, • water, • vacuum • compressed air • chilling medium
Control Points	May include: • Level and temperature sensors • Vacuum level • Refract meter
Workplace information	may include: • Standard Operating Procedures (SOPs), specifications, production schedules and batch/recipe instructions

Evidence Guide	
Critical Aspects of Competence	must confirm appropriate knowledge and skills to: • purpose and basic principles of evaporation • stages and changes which occur during evaporation • relationship between boiling point and pressure in the evaporation process • microbiological considerations in evaporation • monitor supply and flow of materials to and from the process
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • purpose and basic principles of evaporation link to related processes stages and changes which occur during evaporation • effect of raw materials on process outcomes • quality characteristics and uses of evaporated product • relationship between boiling point and pressure in the evaporation process • microbiological considerations in evaporation 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 • method/s used to calculate yield • OHS hazards and controls

	• lock out and tag out procedures • procedures and responsibility for reporting problems • environmental issues and controls • shut down and cleaning requirements associated with changeovers and types of shut downs • waste handling requirements and procedures • recording requirements and procedures may include: ➢ cleaning and sanitation procedures ➢ sampling and testing procedures ➢ routine maintenance procedures
Underpinning Skills	Demonstrate skills to: • access workplace information to identify production requirements • select, fit and use personal protective clothing and/or equipment • confirm supply of necessary materials and services • liaise with other work areas • prepare materials as required • confirm equipment status and condition • set up and start up the process • Monitor the process and equipment operation to identify out-of-specification results or noncompliance. This can involve monitoring: ➢ temperatures ➢ vacuum ➢ motor amperage ➢ condensate flow ➢ steam flow and pressure ➢ throughput ➢ time/speed and evaporated product characteristics • monitor supply and flow of materials to and from the process • take corrective action in response to out-of specification results or non-compliance • conduct product/batch changeovers • report and/or record corrective action as required • sort, collect, treat, recycle or dispose of waste • shut down equipment in response to an emergency situation • shut down equipment in response to routine shut down requirements • prepare equipment for cleaning • record workplace information • maintain work area to meet housekeeping standards may include the ability to: ➢ clean and sanitise equipment ➢ take samples and conduct test ➢ carry out routine maintenance

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: Fruit and Vegetable Processing Level III	
Unit Title	**Perform Basic Product Test**
Unit Code	**IND FVP3 04 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, 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 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 promptly and reported 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 is minimized. 5.3 Safe disposal of laboratory and hazardous wastes is ensured.

	5.4 Equipment and reagents are cleaned, cared for and stored as required.

Variable	Range
Hazards	May include: • Biological, chemical or physical risks that may cause harm to the final consumer.
Standards	may include: • local and international standards, such as: ➢ ISO series. ➢ The international system of units (SI) and its application ➢ AS ISO 17025-2005 General requirements for the competence of testing and calibration laboratories • AIJN code of good manufacturing practice • calibration and maintenance schedules • enterprise recording and reporting procedures • equipment manuals • equipment startup, 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)

Evidence Guide	
Critical Aspects of Competence	Assessors should ensure that candidates can: • 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	Required knowledge includes: • 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	Required skills include: • 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: Fruit and Vegetable Processing Level II	
Unit Title	**Apply Drying Process**
Unit Code	**IND FVP3 05 0613**
Unit Descriptor	This is a specialist unit that applies to both the fruit and vegetable sector. It covers the preparation and operation of a drying process.

Elements	Performance Criteria
1. Prepare the drying process for operation	1.1 ***Materials*** are confirmed and available to meet production/recipe requirements. 1.2 Services are confirmed as available and ready for operation. 1.3 Equipment is checked to confirm readiness for use. 1.4 The ***drying methods for fruit and vegetables*** are set to meet production requirements.
2. Operate and monitor the drying process	2.1 The drying process is started up according to company procedures. 2.2 Control points are monitored to confirm. 2.3 Performance is maintained within specification. 2.4 Product that meets specification is dried. 2.5 ***Drying equipment*** is monitored to confirm operating condition. 2.6 Out-of-specification product, process and equipment performance are identified, rectified and/or reported. 2.7 Waste is monitored and cleared according to company procedures.
3. Shut down the drying process	3.1 The drying process is shut-down according to company procedures. 3.2 Waste is collected, treated and disposed or recycled according to company procedures.
4. Record information	4.1 ***Workplace information*** is recorded in the appropriate format.

Variable	Range
Materials	May include but not limited to: • product to be dried and additives or drying agents as required, consistent with the provisions of the Food Safety Code of practices
Drying methods for fruit and vegetables	May include but not limited to: • hot air drying, • plate drying,

	• atomization drying and • freeze drying
Drying equipment	May include but not limited to: • drying chambers, • atomizers, • heaters, and • coolers, • air filters, • fans, • recovery cyclones and • conveyors
Workplace information	May include but not limited to: • Standard Operating Procedures (SOPs), specifications, production schedules and batch/recipe instructions

Evidence Guide	
Critical Aspects of Competence	must confirm appropriate knowledge and skills to: • link to related processes • stages and changes which occur during drying • effect of process stages on end product • quality characteristics and uses of dried product • materials preparation requirements and effect of • variation on the process
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • purpose and basic principles of drying • link to related processes • stages and changes which occur during drying • effect of process stages on end product • quality characteristics and uses of dried product • materials preparation requirements and effect of • variation on the process • main methods used to dry materials • key variables in drying including temperature, air • velocity, humidity, pressure – microbiological considerations in drying • 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 • method/s used to calculate yield • OHS hazards and controls • lock out and tag out procedures • procedures and responsibility for reporting problems • environmental issues and controls • shut down and cleaning requirements associated • with changeovers and types of shut downs • waste handling requirements and procedures • recording requirements and procedures • cleaning and sanitation procedures • sampling and testing procedures • routine maintenance procedures • environmental management procedures
Underpinning Skills	Demonstrate skills to: • access workplace information to identify production requirements • select, fit and use personal protective clothing and/or equipment • confirm supply of necessary materials and services • liaise with other work areas prepare materials as required • confirm equipment status and condition.checking belts, chains, screens • seals and valves, and filters for damage • Set up and start up the process. • monitor the process and equipment • operation to identify out of specification • Results or non-compliance. This can involve monitoring: ➢ temperatures ➢ moisture content ➢ air flow ➢ throughput ➢ time/speed ➢ pressure/vacuum ➢ relevant product characteristics • monitor supply and flow of materials to and from the process • take corrective action in response to out-of specification results or non-compliance • conduct product/batch changeovers

	• report and/or record corrective action as required • sort, collect, treat, recycle or dispose of waste • shut down equipment in response to an emergency situation • shut down equipment in response to routine shut down requirements • prepare equipment for cleaning • record workplace information • maintain work area to meet housekeeping standards • clean and sanitise equipment • take samples and conduct test • carry out routine maintenance • identify, rectify and/or report environmental non-compliance
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: Fruit and Vegetable Processing Level III	
Unit Title	**Apply Raw Materials, Ingredient and Process Knowledge to Production**
Unit Code	**IND FVP3 06 0613**
Unit Descriptor	This unit of competency covers skills and knowledge required to apply knowledge of ingredients and processes to troubleshoot typical problems that occur in preparing, processing and/or packaging product.

Elements	Performance Criteria
1. Identify and respond to non-conforming ingredients/raw materials	1.1 ***Non-conformance*** in ***raw materials/ingredients*** is identified and reported according to workplace reporting requirements. 1.2 Causes of non-conformance are investigated and reported according to company ***policies and procedures***. 1.3 Corrective action is determined and implemented within level of responsibility according to ***legislative requirements***. 1.4 Action is taken to prevent recurrence of non-conformance. 1.5 Action is reported according to workplace reporting requirements.
2. Identify and respond to non-conforming product and processes	2.1 Processing parameters, stages and changes which occur during processing are monitored. 2.2 Non-conformance in processing, handling and/or storage is identified and corrective action taken according to workplace requirements. 2.3 Causes of non-conformance relating to processing, handling and/or storage are investigated and reported according to workplace reporting requirements. 2.4 Corrective action is determined and implemented within level of responsibility and workplace procedures. 2.5 Action is taken to prevent recurrence of non-conformance. 2.6 Action is reported according to workplace reporting requirements. 2.7 Work is conducted in accordance with workplace environmental guidelines.

Variable	Range
Non-conformance may include:	• Non- compliances between the agreed standard or required element and the part under investigation. • failure in quality or defect in nature

Raw materials/ Ingredients	May include: • materials are those used to manufacture product
Policies and procedures	Carrying out work according to: • Company procedures, • regulatory and licensing requirements, • legislative requirements, and • Industrial awards and agreements.
Legislative requirements	may include: • the Food Standards Code, including labeling, weights and measures legislation • legislation covering food safety, environmental management, OHS, anti-discrimination and equal opportunity • When applied to the fruit and vegetable processing industry, relevant Good Manufacturing Practice (GMP) codes and apply the Food Standards Code

Evidence Guide	
Critical Aspects of Competence	Evidence of ability to: • describe required quality characteristics for raw materials and ingredients • describe required processes to achieve production specifications • identify common non-conforming materials and ingredients and causes • identify common non-conforming processes and causes • determine and undertake corrective action for non-conformances • complete workplace documentation and report non-conformances • Apply food safety procedures.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • basic composition and function of each main raw material/ingredient used, such as awareness of ingredient grades or types • common causes of contamination/unacceptable quality of raw materials/ ingredients • methods used to confirm quality standard, such as accessing information (e.g. certificates of analysis and/or laboratory clearance information) • the effect of variation in raw materials/ingredients on processing stages and final product outcome, including factors likely to cause variation, and scope to adjust or correct for variation at each processing stage • appropriate handling and storage requirements for raw materials/ingredients and final product, and the effect of failing to meet required storage conditions

	• the changes and reactions that occur through processing stages, including the signs and symptoms of poor/unacceptable processing or equipment operation • factors that affect the shelf-life of product • the inter-relationships between processing stages and the effect of variation in processing parameters on process outcome and on final product, including factors likely to cause variation, and scope to adjust or correct for variation at subsequent process stages • procedures for identifying and isolating non-conforming product • troubleshooting information and techniques • procedures and related documentation required to amend or introduce a new method or procedure, such as short term procedures for amending or updating specifications and processing parameters • reporting requirements and responsibilities • test methods to confirm raw material/ingredient and/or final product quality characteristics where relevant
Underpinning Skills	Demonstrate skills to: • identify requirements of ingredient/raw material characteristics within level of responsibility • follow procedures to identify, remove/isolate and report non-conforming ingredients/materials and/or product according to workplace reporting requirements • determine likely causes of non-conformance of ingredients/raw materials • recognize indicators of unacceptable or non-conforming processing, handling and/or storage outcomes • act promptly to identify, remove/isolate and report non-conforming product and/or processes • access and apply workplace information relating to process troubleshooting • investigate non-conformance to determine likely causes and report findings to appropriate personnel • identify action required to correct non-conformance and implement within level of responsibility • identify action required to prevent or minimize and control recurrence of non-conformance and implement within level of responsibility • complete workplace records, including reporting non-conformance and documenting corrective actions according to workplace recording procedures

	• conduct tests to confirm raw material/ingredient and/or final product quality characteristics according to enterprise procedures • use oral communication skills/language competence to fulfil 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
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: Fruit and Vegetable Processing Level III	
Unit Title	**Participate in Product Development**
Unit Code	**IND FVP3 07 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to evaluate retail and/or in-store fruit and vegetable products and modify existing recipes to produce new products.

Elements	Performance Criteria
1. Research opportunities for new product	1.1 Market characteristics are identified. 1.2 Opportunities for ***new product*** development are matched to market.
2. Develop a product proposal to meet market opportunity	2.1 ***Evaluation of competing products*** is performed. 2.2 Existing formulas are adapted to produce new product. 2.3 Method of assembly and presentation is determined. 2.4 Cost of production is estimated. 2.5 Product concept is presented.

Variable	Range
New products	May include: • New products are based on known formulas/recipes
Evaluation of competing products	May include: • Evaluation of competing products relies primarily on observation and taste

Evidence Guide	
Critical Aspects of Competence	Evidence of ability to: • compare and evaluate product features • identify market opportunities • prepare product development proposal including: ➢ production processes, ➢ castings and rationale ➢ Present product ideas.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • sources of information on local market, product range and performance of similar products • expected quality and taste of products to meet business and customer expectations • basic composition and methods used to produce retail bakery products relevant to the business

	• availability of ingredients and processing equipment required by new product • food safety issues related to production, preparation, presentation and storage of product • methods of gaining customer feedback, such as conducting tastings • methods of estimating fixed and variable costs, and profit margin to determine sale price range • basic awareness of trade practice issues when pricing products • communication skills required to research and present information
Underpinning Skills	Demonstrate skills in: • identify competitors • identify local demography relevant to retail bakery products • determine product development opportunities • identify the main ingredients and method used to produce competing products • modify existing formulas/recipes to produce required product • determine product assembly and presentation • cost product • present product proposal • 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
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: Fruit and Vegetable Processing Level III	
Unit Title	**Monitoring Aroma Recovery Process**
Unit Code	**IND FVP3 08 0613**
Unit Descriptor	This is a specialist unit that applies to the fruit and vegetable sector. It covers the collection of aromas from different fruits and vegetables concentrates or juices through boiling, condensation and freezing methods.

Elements	Performance Criteria
1. Confirm aroma recovery operation	1.1 Materials are checked and available to meet production/recipe requirements. 1.2 Hygiene and sanitation standards are established. 1.3 ***Services*** are checked to be available. 1.4 The inspected operation parameters are set. 1.5 The aroma recovery process is set to meet production requirements.
2. Monitor the aroma recovery process	2.1 The aroma recovery process is started up according to company procedures. 2.2 Control points are monitored to confirm performance is kept within specification. 2.3 ***Aroma*** that meet product specifications is monitored and the evaporate level and unit interception are checked. 2.4 Out-of-specification product, process and equipment performance are identified, rectified and/or reported.
3. Shut down the process	3.1 The process is shut down according to company procedures.
4. Record information	4.1 ***Workplace information*** is recorded in the appropriate format.

Variable	Range
Services	may include: • power, • saturated steam, • water, • vacuum • compressed air • chilling medium
Aroma	May include the essence from the main fruit/ vegetable that could be extracted and collected using the state of the art of modern recovery or extraction process.

Workplace information	may include: • Standard Operating Procedures (SOPs), specifications, production schedules and batch/recipe instructions

Evidence Guide	
Critical Aspects of Competence	Must confirm appropriate knowledge and skills to: • purpose and basic principles of evaporation • stages and changes which occur during evaporation • relationship between boiling point and pressure in the evaporation process • microbiological considerations in evaporation • monitor supply and flow of materials to and from the process
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • purpose and basic principles of evaporation link to related processes stages and changes which occur during evaporation • effect of raw materials on process outcomes • quality characteristics and uses of evaporated product • relationship between boiling point and pressure in the evaporation process • microbiological considerations in evaporation 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 • method/s used to calculate yield • OHS hazards and controls • lock out and tag out procedures • procedures and responsibility for reporting problems • environmental issues and controls • shut down and cleaning requirements associated with changeovers and types of shut downs • waste handling requirements and procedures • recording requirements and procedures may include: ➢ cleaning and sanitation procedures ➢ sampling and testing procedures ➢ routine maintenance procedures
Underpinning Skills	Demonstrate skills to: • access workplace information to identify production requirements • select, fit and use personal protective clothing and/or equipment • confirm supply of necessary materials and services

	• liaise with other work areas • prepare materials as required • confirm equipment status and condition • set up and start up the process • Monitor the process and equipment operation to identify out-of-specification results or noncompliance. This can involve monitoring: ➢ temperatures ➢ vacuum ➢ motor amperage ➢ condensate flow ➢ steam flow and pressure ➢ throughput ➢ time/speed ➢ evaporated product characteristics • monitor supply and flow of materials to and from the process • take corrective action in response to out-of specification results or non-compliance • conduct product/batch changeovers • report and/or record corrective action as required • sort, collect, treat, recycle or dispose of waste • shut down equipment in response to an emergency situation • shut down equipment in response to routine shut down requirements • prepare equipment for cleaning • record workplace information • maintain work area to meet housekeeping standards may include the ability to: ➢ clean and sanitise equipment ➢ take samples and conduct test ➢ carry out routine maintenance
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 : Fruit and Vegetable Processing Level III	
Unit Title	**Set up a Production or Packaging Line for Operation**
Unit Code	**IND FVP3 09 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to set up multiple production or packaging 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 available to meet production requirements. 1.2. Equipment and related accessories are confirmed, available and fit for use to meet 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 according to ***legislative requirements***.
2. Set up the line for operation	2.1 ***Cleaning 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 is/are entered as required to meet production requirements. 2.5 ***Adjusted equipment*** performance is checked 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 ready and safe to operate and any maintenance requirements are reported according to ***workplace information***. 2.9 Work is conducted in accordance with workplace environmental guidelines. 2.10 Relevant personnel are notified of setup completion.

Variables	Range
Legislative requirements	• the Food Standards Code, including labeling, weights and measures legislation

	• legislation covering food safety, environmental management, OHS, anti-discrimination and equal opportunity • When applied to the pharmaceutical industry, relevant Good Manufacturing Practice (GMP) codes apply in place of the Food Standards Code and reference to food safety is replaced by GMP
Cleaning requirements and status	May include: • accessing cleaning records
Equipment adjustment	May include: • 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

Evidence Guide	
Critical Aspects of competence	Demonstrate skills and knowledge to: • conduct pre-start checks on machinery 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	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 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
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: Fruit and Vegetable Processing Level III	
Unit Title	**Operate Interrelated Processes in a Production System**
Unit Code	**IND FVP3 10 0613**
Unit Descriptor	This unit of competency covers the skills and knowledge required to set up, operate and adjust interrelated processes in a production system.

Elements	Performance Criteria
1. Prepare the production system for operation	1.1. Equipment, materials and services are confirmed and available to meet production requirements. 1.2. ***Cleaning requirements*** and equipment status are identified and confirmed. 1.3. Machine settings are selected or adjusted as required to meet safety and production requirements. 1.4. Processing/operating parameters are entered as required to meet production requirements. 1.5. Materials, ingredients and/or product are loaded or positioned as required to meet production requirements. 1.6. Pre-start checks are carried out as required by workplace requirements. 1.7. Equipment performance is checked and adjusted as required. 1.8. Equipment is made ready and safe to operate.
2. Operate and monitor the production system	2.1. The system is started up and operated according to company procedures. 2.2. ***System*** equipment components are monitored to identify variation in operating conditions. 2.3. Variation in equipment operation is identified and maintenance requirements are reported according to workplace reporting requirements. 2.4. ***The system is monitored*** to confirm that production met specification. 2.5. Out-of-specification product/process outcomes are identified, rectified and/or reported to maintain the process within specification. 2.6. The work area is maintained according to housekeeping standards. 2.7. Work is conducted in accordance with workplace environmental guidelines.

3. Hand over production system operation	3.1. Workplace records are maintained according to workplace recording requirements. 3.2. ***Handover*** is carried out according to workplace procedures. 3.3. Process operators are aware of system and related equipment status at completion of handover.
4. Shut down the production system	4.1. The appropriate ***shutdown procedure*** is identified. 4.2. The system is shut down according to workplace procedures. 4.3. Maintenance requirements are identified and reported.
5. Contribute to continuous improvement of the production system	5.1. System performance is reviewed against output plan/targets. 5.2. Opportunities are identified and investigated for system improvement. 5.3. Proposals are developed and implemented for improvement within company planning arrangements, authority levels and according to company procedures.

Variable	**Range**
Cleaning requirements	May include but not limited to: • accessing cleaning records
Systems	May include: • a series of interrelated processes that must be coordinated and concurrently operated to produce the required outcome
Monitor the system	May include but not limited to: • the use of control panels and systems
Handovers	May include but not limited to: • in person or via recording/communication systems according to workplace arrangements
Shutdown procedures	May include: • cleaning (in some cases cleaning may be carried out by a dedicated cleaning crew)

Evidence Guide	
Critical Aspects of Competence	Demonstrate skills and knowledge of: • conduct pre-start checks on production system components • confirm machine setup is ready to achieve production requirements • correctly use required personal protective equipment • start, operate, monitor and adjust process equipment throughout the system to achieve required quality outcomes • identify system problems and take corrective action • conduct operational handovers • shut down system

	• identify and investigate opportunities for operational improvements within areas of responsibility • complete workplace records 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: • purpose and basic principles of the production system, including the system process flow, the interrelationships of each process to identify the impact of variation on related processes, and optimization options • basic operating principles of equipment and related accessories used by the system, including equipment adjustment points, status and purpose of guards, and range and location/alignment requirements of sensors and related feedback instruments • operating capacities of equipment used in the system, such as different types of equipment and/or components as required by processing/packaging operations • related systems and responsibilities for interaction, such as related production systems, services supply, packaging/warehousing, maintenance, laboratory/quality assurance and planning and scheduling • product characteristics and common types of variation in materials and/or ingredients used, including the effect of variation on each stage of the system and scope to adjust or correct • typical production related problems, including equipment faults, common causes and warning signs, incorrect or poor supply of materials, incorrect settings and poor operator control • relevant procedures, specifications and operating parameters for the system and the individual processes • isolation, lock out and tag out procedures and responsibilities • hazards, risks, controls and methods for monitoring processes within the system, including Occupational Health and Safety (OHS), food safety, quality and environmental hazards and risks • workplace system and approach to equipment maintenance • process improvement procedures and related consultative arrangements • troubleshooting procedures and problem solving techniques • communication responsibilities to inform related work areas/support functions and other shifts of operational status and production issues • procedures and responsibility for reporting production and performance information

Underpinning Skills	Demonstrate skills to: • access production schedule and related information to identify system output and operating requirements, such as planning daily production schedules and/or modifying plans to respond to operating conditions and customer requirements • liaise with relevant work areas to confirm and/or secure necessary materials, services, equipment and labor to meet production requirements • confirm supply of necessary equipment and related attachments, materials and services • select, fit and use personal protective clothing and/or equipment • set and/or adjust equipment to meet process output requirements, including inspecting equipment condition to identify any signs of wear, confirming selection of appropriate settings and/or related parameters, ensuring that isolation or lock outs are cancelled as required, confirming that equipment is clean and correctly configured for processing requirements, positioning sensors and controls correctly, ensuring any scheduled maintenance has been carried out, and confirming that all safety guards are in place and operational (checks may be done by the system operator or involve observing/supporting others setting and adjusting equipment and conducting pre-start checks) • load and/or position materials, ingredients and/or product as required • operate and monitor the production system, such as use of a process control system and/or observing/supporting others to follow correct operating procedures • monitor materials flow and work-in-progress through the system • confirm that the system operates within specified parameters and inspection/ control points are monitored • determine responses to out-of-specification results or non-conformance within level of responsibility • monitor operating efficiencies of the system, including recognition of signs and symptoms of faulty equipment and early warning signs of other potential problems • investigate, resolve and/or report problems and faults • plan scheduled events to minimize disruption to production • conduct/coordinate product or batch changeovers • conduct/coordinate shift handovers • review and maintain procedures to support system improvements • maintain work area to meet housekeeping standards • use oral communication skills/language competence to fulfil 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
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 : Fruit and Vegetable Processing Level III	
Unit Title	**Monitor the Implementation of Quality and Food Safety Programs**
Unit Code	**IND FVP3 11 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 that 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. ***Workplace information*** about identified hazards and the outcomes of risk assessment and risk control procedures is 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. Mentoring ***personal hygiene*** and coaching support are 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. Work procedures in the work area are clearly defined, documented and followed ***food safety program***. 2.2. Deviation from identified procedures is identified, reported and addressed within level of responsibility. 2.3. Personal behavior is consistent with workplace policies and procedures that support food safety and ***quality system***. 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. Work area is ***monitored*** according to food safety and quality 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 are promptly implemented for responding to quality ***incident*** and food safety ***non-compliance***. 3.2. Hazardous events are investigated to identify causes. 3.3. The ***responsibilities*** **of** ***operator*** are implemented to control measures that 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 for improving food safety and quality are identified and raised 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
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
Personal hygiene	May include but not limited to: • Minimum personal hygiene requirements are specified by 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
Food safety program	May include: • A food safety program is a written document that specifies how a business will control all food safety hazards that may be 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
Quality systems	May include : • Quality systems may be externally accredited, such as an ISO system, or internally designed and managed
Monitoring	May include: • taking temperatures • collecting samples • conducting visual inspections • additional testing as required
Incidents	May include : • A situation where the safe limits or parameters identified by the food safety program are not met • A quality incident is a situation where the quality limits or parameters identified in specifications or processing instructions are not met
Non-compliance	May include but not limited to: • Responsibility for identifying non-compliance against quality standards occurs within the context of defined standards or specifications and relates to work area
Operator responsibilities	May include but not limited to: • 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
Breaches of food safety procedures	May include but not limited to: • Responsibility for identifying breaches of food safety procedures and taking corrective action occurs in the context of the food safety program and within scope of responsibility

Evidence Guide	
Critical Aspects of competence	Demonstrate skills and knowledge 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	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 required by the work task • following procedures when moving within and between work areas • reporting health conditions and illnesses according to workplace procedures • 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 analyzing 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
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: Fruit and Vegetable Processing Level III	
Unit Title	**Identify Equipment Faults**
Unit Code	**IND FVP3 12 0613**
Unit Descriptor	This unit requires the application of planning, technical knowledge and skills to check and isolate routine and non-routine equipment faults used in production and report on the status of equipment. It applies to all sectors of the industry. This competency is typically performed by operators demonstrating some relevant theoretical knowledge and using a range of well-developed skills requiring some discretion and judgment.

Elements	Performance Criteria
1. Identify scope of operational check.	1.1 ***Tools and equipment*** components and operating systems are identified and classified. 1.2 Appropriate tests and procedures are matched to the equipment operating systems. 1.3 Special test procedures and parameters are identified in manufacturer's specifications and procedures. 1.4 The operating principles of hydraulic, pneumatic, mechanical and electrical/electronic systems are explained as related to workplace equipment. 1.5 Measures are implemented to control identified ***hazards*** in line with procedures and duty of care. 1.6 Checks on the physical condition of equipment are observed and undertaken as per ***procedures***. 1.7 Preliminary observations are recorded. 1.8 Test procedures are discussed with appropriate personnel and necessary permission obtained where required.
2. Plan operational checks.	2.1 Specifications and notes are checked from preliminary observations and areas to be clarified identified. 2.2 Testing sequence/s noting areas where results and observations should be recorded is/are planned. 2.3 Safe area is identified for testing. 2.4 Arrangements are made for any additional resources (including other employees).
3. Check unit through full operational range.	3.1 Testing, observing relevant safety and operational requirements are undertaken. 3.2 Results and findings are confirmed.

4. Identify fault and/or formulate recommendations.	4.1 Impact of ***fault or problem*** on work schedule is identified. 4.2 ***Records*** proposals for equipment repair based on faults found, cost/time implications and workplace approval systems. 4.3 Report is explained to relevant workplace personnel including any options and recommendations. 4.4 Repairs are undertaken where appropriate in accordance with procedures.

Variable	**Range**
Tools and equipment	May include: • vibration meter, tachometer, current tester, thermal hand tools specific for the task • product testing equipment (flow meter, scales, tape measure, micrometer, caliper, ultrasonic thickness) • machinery measuring equipment imaging, temperature gauge) • Measuring and aligning equipment.
Hazards	May include: • rotating and moving machinery • process materials, solids, fluids and gases under pressure or flowing • temporary connections or by-passes • electrical, hydraulic or pneumatic energy sources • Out-of-specification operation.
Procedures	May include: • Procedures mean all relevant workplace procedures, work instructions, temporary instructions, standard operating procedures, plant description manuals, manufacturer's instructions, specifications, service manuals, machine circuit diagrams for hydraulic/pneumatic and electrical/electronic circuits and relevant industry and government codes and standards
Fault or Problems	May include: • out-of-specification product or variations • response of equipment to materials variations • new or changed materials • changed equipment settings (e.g. higher speed or throughput) • equipment in need of maintenance • Procedures requiring update or modification.
Records	May include but not limited to: • plant data • log sheets • operational and performance reports • physical aspects such as noise, smell, feel and pressure condition monitoring information

	• planned maintenance schedules • Procedures.

Evidence Guide	
Critical Aspects of Competence	It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to: • understand the procedures and know the importance of critical operational systems • Recognize potential situations requiring action and then implement appropriate action. • Consistent performance should be demonstrated. For example, look to see that: • early warning signs of equipment in need of attention/with potential problems are recognized • appropriate tests are undertaken and tests are analyzed appropriately • proposals for equipment repair are based upon the most appropriate and cost effective method to return equipment to full performance in a timely manner • items initiated are followed through until final resolution has occurred
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • principles of the operation of the equipment to be maintained • functions and troubleshooting of internal components and their problems • routine and non-routine causes of equipment failures and the service conditions which may increase maintenance • maintenance techniques, (e.g. reactive maintenance, predictive and preventative operational maintenance) • appropriate testing procedures and use of equipment for a range of equipment faults • operating principles for mechanical, hydraulic, pneumatic, electrical/electronic systems • urgency and timeliness factors in planning maintenance activities in relation to production requirements • Collection, analysis and reporting of data.
Underpinning Skills	Demonstrate skills to: • conduct inspections, checks and tests on equipment as appropriate • read and interpret circuit diagrams for mechanical, hydraulic, pneumatic and electrical/electronic operating systems • use technical information and manufacturer information to locate relevant data • interpret technical specifications and manufacturer instructions

	• ensure workplace is safe for testing and maintenance of equipment • identify hazards of the materials and process • implement appropriate procedures for hazard control • use PPE, safely handle products and materials, read relevant safety information • Apply safety precautions appropriate to the task.
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: Fruit and Vegetable Processing Level III	
Unit Title	**Monitor Implementation of Work Plan/Activities**
Unit Code	**IND FVP3 13 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: Fruit and Vegetable Processing Level III	
Unit Title	**Apply Quality Control**
Unit Code	**IND FVP3 14 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 isolated 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: Fruit and Vegetable Processing Level III	
Unit Title	**Lead Workplace Communication**
Unit Code	**IND FVP3 15 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: Fruit and Vegetable Processing Level III	
Unit Title	**Lead Small Teams**
Unit Code	**IND FVP3 16 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 Teams' 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 • Career planning/development • Performance appraisals • Workplace skills assessment • 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	Demonstrates skills and knowledge 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: • 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 • receive feedback and report, maintain effective relationships and conflict management • organize required resources and equipment to meet learning needs • provide support to colleagues • organize information; assess information for relevance and accuracy; identify and elaborate on learning outcomes • facilitation skills to conduct small group training sessions • 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: Fruit and Vegetable Processing Level III	
Unit Title	**Improve Business Practice**
Unit Code	**IND FVP3 17 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 and products
Competitive advantage	May include but not limited to: • services/products, fees, location and 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 and overhead/overhead control
Organizational structures	May include but not limited to: • Legal structure (partnership, Limited Liability Company, etc.) • organizational structure/hierarchy and 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 and secondary market research • primary market research such as: ➢ telephone surveys, personal interviews and mail surveys
Competitor analysis	competitor offerings, promotion strategies, activities and 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 and 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 and 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	• 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: Fruit and Vegetable Processing Level III	
Unit Title	**Prevent and Eliminate MUDA**
Unit Code	**IND FVP3 18 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

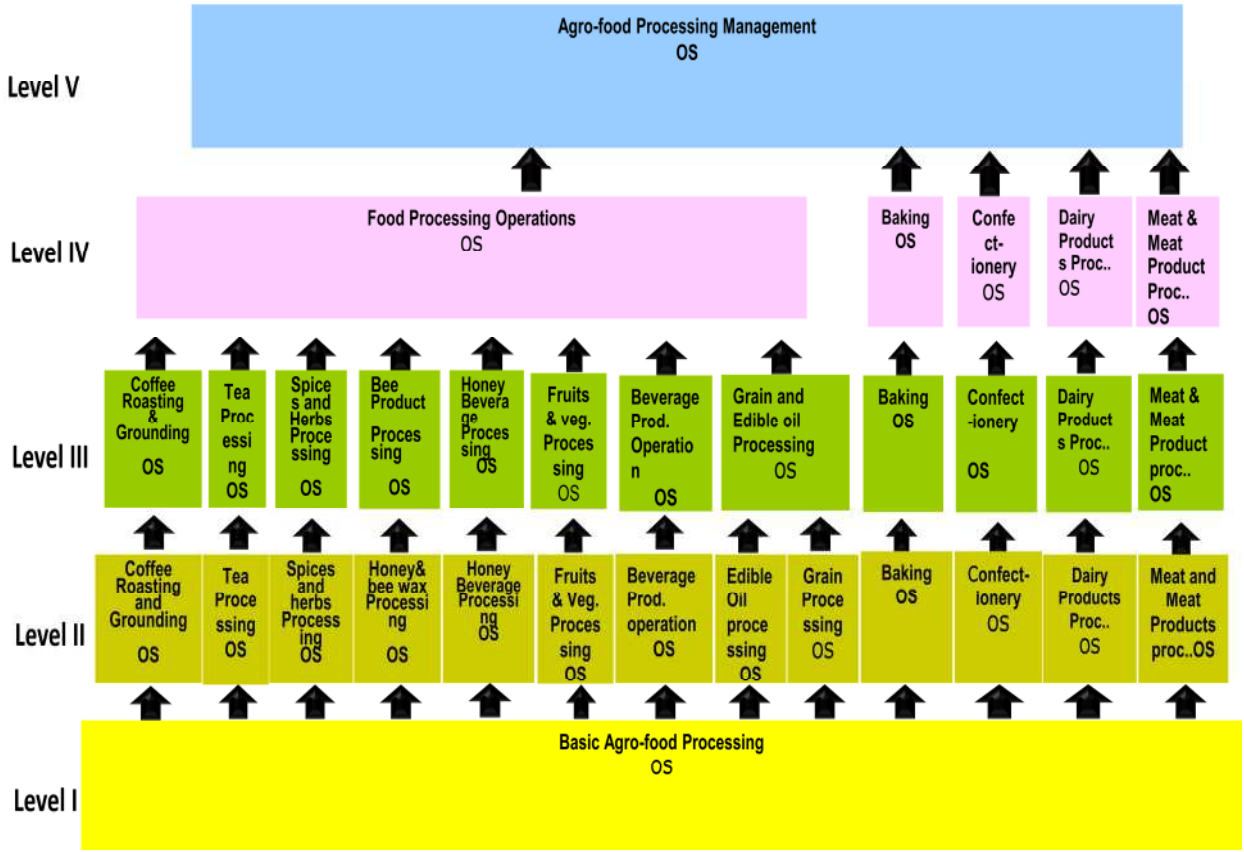
	• Measure Travel distance • Take a photo of workplace • Measure Total steps • Make list of items/products, who produces them and who uses them & those in warehouses, storages etc. • Focal points to Check and find out existing problems • 5S • Layout improvement • Brainstorming • Andon • U-line • In-lining • 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 Occupational Health and Safety (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

The Federal TVET Agency values your feedback of the document.
If you would like someone to personally contact you, please provide the following information:
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