



Technical and Vocational Education and Training (TVET) Council



**Occupational Standards
of Competence**

Agro-Food Processing

Level 2

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Qualification Overview

NVQB

in

Agro-Food Processing

Level 2

NVQB in Agro-Food Processing - Level

Qualification Overview

- This qualification is designed to provide training, assessment and recognized certification for persons involved in all types of Agro-Food processing. Candidates should be familiar with Good Manufacturing Practices (GMP) and health and hygiene standards within the food industry. They should be certified at Agro Processing Level 1 or an equivalent programme in order to qualify for this certification.

- **Who is the qualification for?**

- This qualification is aimed at persons who have experience in agro-food processing and can work without supervision. The competencies are for persons who are likely to be in roles where for example their duties include:
 - Processing food
 - Operating food processing machinery
 - Implementing a food safety programme

Jobs within the occupational area

Relevant occupations include:

- Food technicians
- Production officer
- Production lead
- Processing operator

This list is not exhaustive and only serves to illustrate the breadth of the qualification.

A05702 - APPROVED NATIONAL VOCATIONAL QUALIFICATION STRUCTURE

AGRO-FOOD PROCESSING - LEVEL 2

To achieve the full qualification, candidates must complete eleven (11) units in total made up of nine (9) mandatory units and two (2) elective units.

<u>MANDATORY UNITS (ALL MUST BE COMPLETED)</u>	<u>CODE</u>
1. Follow health, safety, security and environmental practices	U87902
1.1 Follow workplace procedures on health, safety, security and the environment	
1.2 Handle emergency situations	
2. Follow hygiene and food safety procedures	U88002
2.1 Maintain cleanliness of work area and equipment	
2.2 Identify and eliminate sources of contamination, cross contamination and spoilage	
2.3 Maintain hygiene and sanitation standards	
3. Follow receiving, handling and storage procedures	U88102
3.1 Receive goods	
3.2 Handle goods	
3.3 Store goods	
4. Perform processing procedures	U88202
4.1 Prepare for processing	
4.2 Process foods	
4.3 Shut down processing operations	
5. Perform packaging procedures	U88302
5.1. Prepare for packaging	
5.2. Perform packaging	
5.3. Conduct labelling procedures	
5.4. Close out packaging process	
5.5. Maintain records	
6. Monitor a quality management system	U88402
6.1. Prepare the quality control equipment	
6.2. Operate and monitor system	
6.3. Close quality control process	
6.4. Maintain records	

NVQ in Agro processing Level 2 cont'd

Mandatory Units (All must be completed)	<u>CODE</u>
7. Perform first line maintenance	U88502
7.1. Carry out first- line maintenance	
7.2. Use and communicate data and information on first line maintenance	
7.3. Resolve problems which arise from first line maintenance	
8. Contribute to team relationships	U88602
8.1. Contribute to team activities	
8.2. Give and receive support to/from team members	
8.3. Handle conflict situations	
9. Describe and analyze data using mathematical principles	U88702
9.1. Identify common units of measurement and dimensions	
9.2. Apply linear algebra to analyse workplace information	
9.3. Use graphs to analyse workplace information	
Optional Units (Choose 2)	
10. Perform drying and dehydration procedures	U88802
10.1. Prepare for drying and dehydration	
10.2. Carry out drying and dehydration	
10.3. Finish drying and dehydration operations	
10.4. Post production cleaning and regular maintenance of equipment	
10.5. Document and maintain records on the finished products	
11. Perform fish processing	U88902
11.1. Prepare to process fish	
11.2. Receive and handle raw fish	
11.3. Process fish	
11.4. Pack processed fish	
11.5. Post production cleaning and regular maintenance of equipment	
11.6. Document and maintain records on the finished products	
12. Perform concentrate and juice processing	U89002
12.1. Prepare for processing	
12.2. Extract juice	
12.3. Pasteurize juice	
12.4. Prepare concentrate	
12.5. Finish concentrate and juice operations	
12.6. Post production cleaning and regular maintenance of equipment	
12.7. Document and maintain records on the finished products	

NVQ in Agro processing Level 2 cont'd

Mandatory Units (All must be completed)	<u>CODE</u>
13. Perform mixing and blending operations	U89102
13.1. Prepare for mixing and blending	
13.2. Operate and monitor the mixing and blending processes	
13.3. Finish mixing and blending processes	
13.4. Post production cleaning and regular maintenance of equipment	
13.5. Document and maintain records on the finished products	
14. Perform fermentation operations	U89202
14.1. Prepare for the fermentation equipment and process for operation	
14.2. Carry out the fermentation process	
14.3. Finish fermentation operations	
14.4. Post production cleaning and regular maintenance of equipment	
14.5. Document and maintain records on the finished products	
15. Perform smoking procedures	U89302
15.1. Prepare for smoking products	
15.2. Smoke products	
15.3. Finish smoking operations	
15.4. Post production cleaning and regular maintenance of equipment	
15.5. Document and maintain records on the finished products	
16. Perform cooking operations	U89402
16.1. Calculate batch size	
16.2. Prepare for cooking	
16.3. Operate and monitor the cooking process	
16.4. Finish cooking operations	
16.5. Post production cleaning and regular maintenance of equipment	
16.6. Document and maintain records on the finished products	
17. Perform pickling/brining operations	U89502
17.1. Prepare for pickling/ brining	
17.2. Prepare brine solution and cure vegetables	
17.3. Prepare pickle	
17.4. Pack pickle	
17.5. Finish drying and dehydration operations	
17.6. Post production cleaning and regular maintenance of equipment	
17.7. Document and maintain records on the finished products	

Mandatory Units (All must be completed)

CODE

18. Perform freezing operations

U89602

- 18.1. Calculate batch size
- 18.2. Prepare for freezing
- 18.3. Operate and monitor the freezing process
- 18.4. Finish freezing operations
- 18.5. Post production cleaning and regular maintenance of equipment
- 18.6. Document and maintain records on the finished products

19. Perform pasteurization

U89702

- 19.1. Calculate batch size
- 19.2. Prepare for pasteurization
- 19.3. Operate and monitor the pasteurization process
- 19.4. Finish pasteurization operations
- 19.5. Post production cleaning and regular maintenance of equipment
- 19.6. Document and maintain records on the finished products

U87902

Follow health, safety, security and environmental practices

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to follow health, safety, security and environmental procedures. It includes identifying and reporting health and safety breaches; dealing with emergency situations, administering basic first aid and handling emergency situations as they arise.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | | | |
|----|--|-----|---|
| 1. | Follow workplace procedures on health, safety, security and the environment. | 1.1 | Follow health, safety, security and environmental procedures correctly in accordance with organizational requirements and relevant regulations and insurance requirements. |
| | | 1.2 | Dispose of waste in accordance with organizational requirements, food safety and environmental standards. |
| | | 1.3 | Identify and report promptly breaches to health, safety, security and environmental procedures to the supervisor. |
| | | 1.4 | Report suspicious behavior, packages or occurrences to the supervisor immediately. |
| | | 1.5 | Select and wear the appropriate personal protective equipment correctly in accordance with organizational requirements. |
| 2. | Handle emergency situations | 2.1 | Identify emergency and potential emergency situations promptly and take required action in accordance with organizational procedures. |
| | | 2.2 | Follow emergency procedures in accordance with organizational procedures. |
| | | 2.3 | Perform basic first aid in accordance with standard first aid procedures. |

- 2.4 Seek assistance from colleagues and/or other authorities in a timely manner where appropriate
- 2.5 **Report** details of **emergency situations** accurately in accordance with organizational and **regulatory** requirements.

RANGE STATEMENT

All range statements must be assessed:

1. Regulations:

- Legislation relevant to the organization
- Operational procedures and performance standards
- Organizational personnel practices
- Policies and procedures
- Organizational quality standards
- Organizational health and safety practices
- Organizational approach to environmental management and sustainability

2. Report:

- Verbal
- Written
- Electronic

3. Personal protective equipment:

- Goggles
- Face masks/Respirators
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

4. Emergency and potential emergency situations:

- Personal injury
- Radical equipment failure/Damage
- Fire
- Flooding
- Explosion
- Bomb threat
- Earthquake

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are the organization's health, safety, security and environmental procedures and insurance requirements.
2. What are the organizational policies and food and safety and environmental standards relating to waste disposal.
3. How to identify breaches of health, safety, security and environmental procedures.
4. What are the organizational requirements for reporting health, safety, security and environmental breaches as well as emergency situations and issues.
5. How to identify suspicious behavior, packages or occurrences and why it is important to report them.
6. How to select and wear personal protective equipment and what are the organizational requirements regarding their use.
7. How to identify emergency and potential emergency situations and what are the organization's requirements for responding to them.
8. Where to find emergency equipment and how to use it.
9. What are the organization's emergency procedures.
10. What is basic first aid and how to perform it.
11. Why it is important to seek the assistance of colleagues and authorities in emergency situations.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U88002

Follow hygiene and food safety procedures

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to follow the key hygiene and sanitation procedures required in an agro-processing plant. It covers cleaning equipment and work areas during operating processes and identifying and taking action against risks.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | | |
|--|-----|---|
| 1. Maintain cleanliness of work area and equipment | 1.1 | Select and wear the appropriate personal protective equipment correctly in accordance with occupational health and safety requirements. |
| | 1.2 | Clean and sanitize equipment and work area before and after operations in accordance with regulatory requirements, Good Manufacturing Practices (GMPs) and organizational standards. |
| 2. Identify and eliminate sources of contamination, cross-contamination and spoilage | 2.1 | Identify the risk of contamination, cross-contamination and spoilage through GMPs and food safety requirements. |
| | 2.2 | Immediately take corrective action to minimize and prevent risks of contamination, cross-contamination or spoilage in accordance with GMPs and organizational requirements. |
| | 2.3 | Take corrective action when contamination is identified according to organizational and industry requirements. |
| | 2.4 | Accurately record and report incidents of contamination in accordance with organizational and industry requirements. |
| 3. Maintain hygiene and sanitation standards | 3.1 | Follow organizational standards for personal hygiene. |
| | 3.2 | Handle and store products and equipment according to GMPs and organizational hygiene and sanitation policies when undertaking work. |

- 3.3 Consistently observe the organizational standards for hygiene and sanitation.

RANGE STATEMENT

All range statements must be assessed:

1. Personal protective equipment:

- Goggles/Glasses
- Face masks/Respirators
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

2. Sanitization:

- Heat
- Chemicals

3. Risk:

- Physical agents
- Chemical agents
- Microbiological and biological agents

4. Corrective action:

- Hand washing
- Good housekeeping practices
- Maintaining personal hygiene

5. Product:

- Meat
- Fish
- Shellfish
- Fruits
- Vegetables
- Herbs
- Root crops
- Chemicals
- Packaging materials
- Gases
-

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices (GMPs) and the organizational hygiene and sanitation procedures.
2. What are the different methods to clean and sanitize equipment.
3. What is contamination and cross-contamination and how to identify them.
4. How to avoid contamination/cross-contamination.
5. What corrective action can be taken to deal with contamination/cross-contamination.
6. What are the organizational procedures for reporting hygiene risks and why it is important to do so.
7. What are the organizational and industry requirements for handling and storing products.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U88102

Follow receiving, handling and storage procedures

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to receive, handle and store goods in an agro-processing facility. It deals with ensuring that the correct goods are received and handled safely and that records are kept up-to-date.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | | |
|------------------|-----|--|
| 1. Receive goods | 1.1 | Confirm that required tools and equipment for receiving goods are available and in good working condition. |
| | 1.2 | Confirm that the area for receiving goods is clean and free from hazards and the necessary services are available. |
| | 1.4 | Receive goods in accordance with Good Manufacturing Practices (GMPs) and check that the goods received match the specifications in the order logs. |
| | 1.5 | Inspect goods received carefully to ensure that they are in an acceptable condition and identify and separate goods that are unacceptable. |
| | 1.6 | Record defective goods accurately and complete required documentation in accordance with organizational requirements. |
| 2. Handle goods | 2.1 | Confirm that the area for handling the goods is clean and free from hazards . |
| | 2.2 | Select and use the appropriate personal protective equipment correctly in accordance with organizational and occupational health and safety requirements. |
| | 2.3 | Select and use correctly the appropriate equipment for handling goods . |

- 2.4 Demonstrate the correct method for handling, moving and setting down **goods** in accordance with occupational health and safety requirements.
- 3. Store goods
 - 3.1 Sort **goods** correctly in accordance with storage requirements.
 - 3.2 Store **goods** in the appropriate **location** and in accordance with food safety requirements and GMPs.
 - 3.3 Follow cold chain practices as required by GMPs and food safety regulations.
 - 3.4 Complete all required **documentation** accurately in accordance with organizational requirements.

RANGE STATEMENT

All range statements must be assessed:

1. Tools:

- Temperature
- Light
- Scanner

2. Equipment:

- Lifting
- Transporting

3. Goods:

- Meat
- Fish
- Shellfish
- Fruits
- Vegetables
- Herbs
- Root crops
- Chemicals
- Packaging materials
- Gases

4. Hazards:

- Physical
- Materials
- Ergonomic
- Environmental
- Biological

5. Services:

- Electricity
- Water
- Chemicals
- Steam/ ice
-

6. Condition:

- Damage free
- Not leaking
- Pest free
- No off odor
- No off colour
- Not thawed
- Best before date/Expiry date
- Lot codes/Batch numbers

7. Identification:

- Tagging
- Labelling
- Wrapping

8. Documentation:

- Written
- Electronic

9. Personal protective equipment:

- Goggles/Glasses
- Respirators/Masks
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

10. Location:

- Dry storage
- Refrigerated
- Frozen

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are the required tools for receiving goods.
2. Why it is important to check the delivery vehicle.
3. What are acceptable conditions for goods and why it is important for these conditions to be met.
4. How and why defective goods must be separated.
5. What are hazards and obstructions, how to check for them and how to ensure that the receiving area is free of them.
6. What is the organization's documentation process and why it is important to maintain records of defective goods.
7. What are the organization's goods specifications.
8. What are the types of equipment used to handle goods and how to use them.
9. What are the health and safety requirements and organizational procedures for handling, moving and settling goods.
10. What are the correct methods for handling, moving and settling goods.
11. How to select and use the most appropriate personal protective equipment when receiving goods.
12. What are the GMPs for sorting and storing goods.
13. What are the organizational requirements for sorting and storing goods.
14. How to identify goods that do not meet quality standards.
15. What are the organization's requirements for completing documentation in relation to receiving and sorting goods.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used** except in exceptional circumstances where natural work evidence is unlikely to occur.

U88202**Carry out processing procedures**

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to process food including preparing work areas, equipment and materials and closing down processing operations. It examines mixing ingredients, using processing equipment and monitoring control points. Disposal of waste and maintaining records are also included.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | |
|---------------------------|---|
| 1. Prepare for processing | <ul style="list-style-type: none"> 1.1 Select and the appropriate personal protective equipment correctly wear in accordance with organizational requirements 1.2 Clean and sanitize the work area, equipment and utensils in accordance with Good Manufacturing Practices (GMPs). 1.3 Prepare processing equipment in accordance with GMPs. 1.4 Obtain materials from store-room or supplier and sort, grade and/or weigh according to GMPs. 1.5 Carefully inspect the quality of materials to be used for processing to ensure they meet with GMPs. 1.6 Wash and rinse materials in accordance with GMPs. 1.7 Prepare materials in accordance with GMPs and organizational requirements. |
| 2. Process food | <ul style="list-style-type: none"> 2.1 Mix ingredients in accordance with food safety regulations and organizational requirements. |

- 2.2 **Process** food in accordance with GMPs and food safety and industry standards.
 - 2.3 Observe and regulate **equipment** gauges, sensors and solutions in order to maintain control.
 - 2.4 Monitor and document carefully **food parameters** against safety and industry standards.
 - 2.5 **Record** and **report** product deviations and the corrective action and containment measures taken in accordance with organizational requirements.
3. Shut down processing operations
 - 3.1 Complete end of batch procedures in accordance with instructions and GMPs.
 - 3.2 Shut down processing **equipment** in accordance with organizational procedures and manufacturer's specifications.
 - 3.3 Clean **equipment** after use according to organizational and industry safety and hygiene standards.
 - 3.4 Dispose of and **report waste** in accordance with GMPs, regulatory requirements and organizational requirements.
 - 3.5 Maintain **records** according to organizational requirements.

RANGE STATEMENT

All range statements must be assessed:

5. Personal protective equipment:

- Goggles/Glasses
- Face masks/Respirators
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

6. Sanitization:

- Heat
- Chemicals

7. Equipment:

- Manual
- Mechanical
- Electronic
- Automated
- Semi-automated

8. Materials:

- Fruits/Vegetables
- Meats
- Poultry
- Fish
- Herbs
- Spices
- Dairy
- Root crops

9. Preparation:

- Cleaning
- Peeling/Cutting/Slicing/Trimming

10. Ingredients:

- Food
- Dry

-
- Wet
- Additives

11. Process:

- Fish and seafood processing
- Drying/Dehydration
- Pickling/Brining
- Juicing
- Boiling/Cooking,
- Water bath canning,
- Fermentation,
- Smoking
- Blending and mixing

12. Parameters:

- Taste/Smell
- Texture/Mouthfeel
- Colour
- Dimensions/Size
- Quantity
- Viscosity
- Brix
- Solids
- Moisture content

13. Reports:

- Verbal
- Written
- Electronic

14. Waste:

- Liquid
- Solid
- Hazardous
- Organic
- Recyclable

15. Records:

- Written
- Electronic

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. How to clean and sanitize the work area and equipment.
2. What are the different types of equipment used in processing and how to use them.
3. How to check equipment to ensure that it is in good working condition.
4. What are Good Manufacturing Practices (GMPs).
5. What are critical control points and how to observe and regulate equipment and solutions to maintain them.
6. What are end of batch procedures and how they are carried out.
7. How to shut down processing equipment.
8. How to clean equipment after use.
9. What are the organizational safety and hygiene standards.
10. What are the different types of waste generated during processing and how to dispose of them.
11. What are product deviations and the different types of deviations that occur during the processing.
12. What are the organizational requirements for reporting waste and product deviations and maintaining records.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

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Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U88302**Perform packaging procedures**

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to carry out packaging operations. It involves pre-packaging preparation including gathering information, cleaning, sanitizing and testing the equipment. Candidates will be required to package and label products, operate and monitor the machinery and perform close out procedures.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | |
|--------------------------|---|
| 1. Prepare for packaging | <ul style="list-style-type: none"> 1.1 Obtain the required information for packaging from relevant personnel. 1.2 Clean and sanitize the packaging area according to Good Manufacturing Practices (GMPs). 1.3 Select and correctly use the appropriate personal protective equipment in accordance with organizational requirements. 1.5 Confirm that the required materials are available and loaded into the packaging equipment in accordance with Standard Operating Procedures (SOPs). 1.6 Perform start-up procedures according to SOPs to ensure the equipment is working well and recalibrate when necessary. 1.7 Report promptly any problems to the supervisor as they arise and any corrective action and containment measures taken. |
| 2. Perform packaging | <ul style="list-style-type: none"> 2.1 Select and correctly wear the appropriate personal protective equipment in accordance with occupational health and safety and organizational requirements. 2.2 Operate equipment safely and in accordance with SOPs. |

- 2.3 Apply and verify batch numbers, best before, expiry and used by dates and lot numbers in accordance with regulatory requirements.
- 2.4 Monitor **equipment** and record **variations** in operating conditions in accordance with SOPs.
- 2.5 Identify promptly, rectify and/or **report variations** and out of specification problems in the packaging process in accordance with organizational requirements.
- 2.6 Examine **packaging** quality and seal integrity to ensure that specifications are met.
- 2.7 Notify supervisor promptly of any delays in the process.
- 2.8 Maintain hygiene and sanitation standards according to GMPs.
- 3. Conduct labeling procedures
 - 3.1 Determine the type of labels required for the **products** to be packaged.
 - 3.2 Check the number of labels to ensure that they are sufficient and replenish stock according to organizational requirements.
 - 3.3 Check the accuracy of labels against **specifications**.
 - 3.4 Apply the required labels as specified by SOPs.
- 4. Close out packaging process
 - 4.1 Complete end of batch procedures in accordance with work instructions.
 - 4.2 Shut down packaging **equipment** in accordance with standard operating procedures.

- 4.3 Clean **equipment** after use according to GMPs
 - 4.4 Dispose of damaged and discarded **materials** in accordance with the organizational **waste** disposal procedures.
- 5. Maintain records
 - 5.1 **Report waste** and packaging deviations according to organizational requirements.
 - 5.2 Maintain **records** according to organizational requirements.

RANGE STATEMENT

All range statements must be assessed:

1. Information:

- Verbal
- Written
- Electronic

2. Relevant personnel:

- Supervisors
- Managers
- Line Staff
- Colleagues

3. Sanitize:

- Heat
- Chemicals

4. Personal protective equipment:

- Goggles/Glasses
- Face masks/Respirators
- Hats
- Boots/Shoes
- gloves
- Overalls/Coveralls
- Hearing protection

5. Materials:

- Food
- Packaging

6. Packaging:

- Bottling/Canning
- Bagging/Shrink wrapping
- Vacuum packing

7. Equipment:

- Manual
- Mechanical
- Electrical
- Automated
- Semi- automated

8. Report:

- Verbal
- Written
- Electronic

9. Problems:

- Procedural
- Administrative
- Inter-personal

10. Variations:

- Product
- Equipment
- Packaging

11. Products:

- Meat
- Vegetables
- Fruit
- Poultry
- Fish
- Herbs
- Spices
- Dairy
- Root crops

12. Specifications

- Batch numbers
- Best before dates
- Expiry dates
- Used by dates
- Lot numbers

13. Waste

- Liquid
- Solid
- Hazardous
- Organic
- Recyclable

14. Records

- Written
- Electronic

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. Why it is important to obtain information about packaging requirements.
2. How to clean and sanitize the packaging area.
3. How to select and use the appropriate personal protective equipment required for packaging.
4. How to check and adjust the settings on packaging equipment.
5. What materials are required for packaging and how to load them into the equipment.
6. How to operate packaging equipment.
7. When to recalibrate equipment.
8. How to identify and rectify problems with the equipment.
9. Why it is important to report problems.
10. What is the organizational process for reporting problems.
11. What are the organizational requirements for operating equipment.
12. How to monitor equipment for variations in operating conditions.
13. How to identify, rectify and/or report variations in the packaging process and why it is important to do so promptly.
14. How to monitor packaging quality and seal integrity to meet specifications.
15. What are the organization's hygiene and sanitation standards.
16. How to confirm information on the type and size of labels used for each product.
17. How to determine the type and quantity of labels required.
18. What are the organizational requirements for replenishing stock.
19. How to identify the product contained within the packaging.
20. How to apply labels.
21. What are end of batch procedures and how to complete them.
22. How to shut down packaging equipment and what are the organizational procedures and manufacturer's recommendations for doing so.
23. How to identify, schedule and report maintenance requirements.
24. How to dispose of damaged labels and packaging cases.
25. How and why it is important to report waste and product deviations.
26. What are the organizational requirements for maintaining records.
27. What are GMPs related to packaging.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used** except in exceptional circumstances where natural work evidence is unlikely to occur.

U88402**Monitor a quality assurance system**

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to monitor a quality assurance system. It involves the preparation of quality control equipment including cleaning and sanitation, operating and monitoring the quality control system including monitoring control points and closing down the quality control process including running end of batch procedures and disposal of waste.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | |
|--------------------------------------|--|
| 1. Prepare quality control equipment | 1.1 Clean and sanitize quality control equipment thoroughly according to Good Manufacturing Practices (GMPs) and organizational requirements. |
| | 1.2 Select and correctly wear the appropriate personal protective equipment . |
| | 1.3 Check the condition of equipment carefully, ensuring that it is within the calibration period, standardizing and adjusting equipment settings where necessary to meet organizational requirements. |
| 2. Operate and monitor system | 2.1 Confirm that control instruments are available and ready for use. |
| | 2.2 Start- up quality control system according to Standard Operating Procedures (SOPs). |
| | 2.3 Monitor control points to confirm that performance standards and maintenance specifications are met in accordance with organizational requirements. |
| | 2.4 Monitor environmental requirements to ensure health and safety is maintained. |
| 3. Close quality control process | 3.1 Shut down quality control equipment in accordance with organizational requirements. |

- 3.2 Clean and **sanitize equipment** after use and in accordance with safety and hygiene standards.
 - 3.3 Monitor and dispose of **waste** generated by the system according to organizational standards.
- 4. Maintain records
 - 4.1 **Report** deviations according to GMPs and organizational requirements.
 - 4.2 Maintain **records** according to organizational requirements.

RANGE STATEMENT

All range statements must be assessed:

1. Sanitization:

- Heat
- Chemicals

2. Equipment:

- Manual
- Mechanical
- Electrical

3. Personal protective equipment:

- Goggles/Glasses
- Face masks/Respirator
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

4. Control instruments:

- Digital
- Manual
- Mechanical

5. Waste:

- Liquid
- Solid
- Hazardous
- Organic
- Recyclable

6. Reports:

- Verbal
- Written
- Electronic

7. **Records:**

- Written
- Electronic

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What is quality control equipment and how to clean and sanitize it.
2. What is the appropriate personal protective equipment used in monitoring quality control and how to use it.
3. How to check the condition of quality control equipment.
4. What are the organizational requirements regarding the settings on the equipment and how to adjust the controls.
5. What are quality control instruments and how to use them.
6. How to start up a quality control system.
7. What are control points and maintenance specifications and how to monitor and confirm them.
8. What are the environmental requirements and how to monitor them.
9. What are Good Manufacturing Practices (GMPs)
10. How to complete end of batch procedures.
11. How to shut down quality control equipment.
12. What are the different types of waste that is generated in quality control and how it should be disposed of.
13. How to identify deviations and maintain records in accordance with organizational requirements.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out all of the elements, meeting all the performance criteria, range and underpinning knowledge on more than one occasion. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U88502**Perform first line maintenance**

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to carry out first line maintenance on agro-processing plant and equipment. It takes into consideration shutting down and isolating the plant or equipment requiring maintenance and communicating to those who will be affected by the maintenance. Resolving problems and following occupational health and safety requirements are also accounted for.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | | | |
|----|---------------------------------------|-----|--|
| 1. | Carry out first-line maintenance work | 1.1 | Follow the maintenance schedules to carry out the work which has been allocated in accordance with Good Manufacturing Practices (GMPs) and Standard Operating Procedures (SOPs). |
| | | 1.2 | Arrange for the materials, tools and any parts required to be available and on-site. |
| | | 1.3 | Shutdown and isolate plant and/or equipment for first- line maintenance in line with occupational health and safety requirements and SOPs. |
| | | 1.4 | Select and use the appropriate personal protective equipment in accordance with occupational health and safety regulations. |
| | | 1.5 | Carry out planned first-line maintenance within the agreed timescales. |
| | | 1.6 | Use safe methods of work to carry out plant and equipment maintenance. |
| | | 1.7 | Dispose of waste in accordance with regulatory requirements, environmental standards and organizational procedures. |
| | | 1.8 | Restore and test plant and/or equipment to ensure that they meet the specified operational performance in line with organizational requirements and safety procedures |

2. Use and communicate data and information on first-line maintenance
- 2.1 Issue safety warnings in advance of operational changes to plant and **equipment** in accordance with occupational health and safety regulations and organizational requirements.
 - 2.2 Display all required safety warnings visibly and in accordance with occupational health and safety regulations and issue verbal warnings where relevant.
 - 2.3 Complete and store maintenance **records** in accordance with organizational requirements.
 - 2.4 Maintain audit trails of **records** for quality assurance purposes and in accordance with occupational health and safety regulations and organizational requirements.
3. Resolve problems which arise from first-line maintenance
- 3.1 Resolve routine **problems** in line with Standard Operating Procedures (SOPs) and within the scope of your responsibilities, escalating those outside of your responsibility to the **relevant persons**.
 - 3.2 **Report** any instances where the maintenance activities cannot be met fully or where defects are identified to the relevant people in accordance with organizational requirements.
 - 3.3 Seek assistance from **relevant persons** for difficulties outside own area of responsibility.

RANGE STATEMENT

All range statements must be assessed:

1. Materials:

- Oil
- Lubricants
- Sealants
- Sprays
- Cloths

2. Tools:

- Maintenance tools (screw drivers, pliers, spanners)
- Measurement tools (feeler gauges, tape measure, micrometers, verniers)

3. Equipment:

- Manual
- Mechanical
- Electronic
- Automatic
- Semi-automated

4. Personal protective equipment:

- Goggles/Glasses
Face masks/Respirators
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

5. Disposal:

- Recycle
- Dump

6. Waste:

- Liquid
- Solid
- Hazardous
- Recyclable

7. Records:

- Written
- Electronic

8. Problems:

- Procedural
- Process
- Equipment

9. Relevant persons:

- Technician
- Supervisor
- Manager

10. Reports:

- Verbal
- Written
- Electronic

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices, Occupational Health and Safety Standards, industry standards, Standard Operating Procedures (SOPs) related to agro processing operations.
2. What is the maintenance schedule and why it is important to follow it.
3. What are the materials and tools that are used in first-line maintenance.
4. How to shut down and isolate plant and/equipment for maintenance.
5. What is personal protective equipment and how to select and use the most appropriate.
6. How to carry out planned maintenance within the agreed timescales.
7. What are safe methods of work related to plant and equipment maintenance.
8. How to dispose of waste resulting from maintenance.
9. How to restore and test plant and equipment to ensure that they meet the specified operational performance.
10. Why it is important to issue safety warnings in advance of operational changes and how to do so.
11. How to visibly display safety warnings and why it is important to give verbal warnings where relevant.
12. How to complete and store maintenance records in accordance with organizational requirements.
13. How to maintain audits trails of maintenance records and why it is important to do so.
14. How to resolve routine problems and why it is important to escalate those outside the scope of your responsibility to a supervisor.
15. Why it is important to report instances where maintenance activities cannot be fully met.
16. Why it is important to seek assistance from relevant persons for difficulties outside your own area of responsibility.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U88602

Contribute to team relationships

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to establish and maintain effective workplace relationships. It focuses on communicating effectively, contributing to the team achieving its goals and resolving conflict within the team.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | |
|--|---|
| 1. Contribute to team activities | <ul style="list-style-type: none"> 1.1 Identify and confirm the roles and responsibilities of team members. 1.2 Contribute to the identification of team goals and objectives that are in line with organizational goals. 1.3 Complete activities according to the required standard within agreed timeframes and in accordance with organizational policies and procedures. 1.4 Request assistance from other team members in order to complete tasks where appropriate. 1.5 Support team members to ensure the efficient and safe completion of tasks in accordance with occupational health and safety policies and organizational policies and procedures. 1.6 Regularly and punctually attend team meetings. |
| 2. Give and receive support to and from team members | <ul style="list-style-type: none"> 2.1 Provide feedback and assistance to other team members in an appropriate manner. 2.2 Support team members in achieving workplace goals within limits of authority. 2.3 Act upon feedback from other team members appropriately. |
| 3. Handle conflict situations | <ul style="list-style-type: none"> 3.1 Identify the potential for conflict promptly and take the appropriate action to avoid escalation. |

- 3.2 Encourage, accept and treat all points of views in a respectful manner.
- 3.3 Work with team members to find a solution to conflict, making effective use of **conflict resolution techniques** and implement solutions to conflict within scope of responsibility.
- 3.4 Refer matters of **conflict** to **appropriate persons** if a solution cannot be found within the scope of responsibility.
- 3.5 Document **conflict** and solutions according to organizational procedures.

RANGE STATEMENT

All range statements must be assessed:

1. Contribute:

- Complete tasks
- Achieve new competencies
- Develop new skills
- Attain new knowledge
- Personal development

2. Organizational policies and procedures:

- Legislation relevant to the organization
- Corporate and strategic plans
- Operational procedures and performance standards
- Organizational personnel practices
- Policies and procedures
- Organizational quality standards
- Organizational approach to environmental management and sustainability

3. Feedback:

- Verbal
- Electronic
- Written

4. Conflict:

- Interpersonal
- Procedural

5. Conflict resolution techniques:

- Discussion
- Mediation

6. Appropriate persons:

- Supervisor
- Manager
- HR Officer/Manager
- Union representative

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. How to identify and confirm the roles and responsibilities of team members.
2. How to contribute to the identification of team goals and objectives.
3. Why it is important to complete activities according to standards and within agreed time frames
4. When and why it is important to request assistance to complete tasks.
5. How to request assistance from other team members.
6. Why it is important to assist team members in completing tasks.
7. What are the health and safety and organizational policies and procedures.
8. Why it is important to attend and be punctual for meetings.
9. What is feedback and what are the techniques for giving and receiving it in a constructive manner.
10. What are the techniques for supporting others.
11. How to act on feedback from others.
12. What is a conflict and how to identify and avoid it.
13. Why it is important to accept and treat all points of view with respect.
14. What are the positive behaviours that minimize conflict and increase team work.
15. Why it is important for team members to work together to find solutions to conflict and why it is important to implement only those solutions within one's scope of responsibility.
16. What are conflict resolution techniques.
17. Why it is important to refer incidents of conflict to the supervisor if they cannot be solved.
18. What is the organizational procedure for documenting conflict and solutions.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U88702

Describe and analyze data using mathematical principles

Unit Descriptor:

This unit deals with the knowledge required to use mathematical principles in the description and analysis of data in a work environment.

ELEMENT

PERFORMANCE CRITERIA

To be competent you must achieve the following:

- | | | |
|--|-----|--|
| 1. Identify common units of measurement and dimensions. | 1.1 | Identify SI units of measurement and related unit symbols. |
| | 1.2 | Identify and accurately apply common formulae used to measure characteristics of food. |
| | 1.3 | Perform accurate calculations involving fractions and ratios according to specifications. |
| | 1.4 | Identify common units of measurement and dimensions used to describe physical properties of materials and food. |
| 2. Apply linear algebra to analyze organizational information. | 2.1 | Calculate an unknown value given two known values. |
| | 2.2 | Apply the appropriate principles of transposing values to solve workplace problems. |
| 3. Use graphs to analyze organizational information | 3.1 | Identify the applicable data analysis and presentation requirements. |
| | 3.2 | Select and generate the suitable graphs to analyze and display workplace information. |
| | 3.3 | Construct a process control chart correctly according to specifications. |

RANGE STATEMENT

All range statements must be assessed:

1. Measurement:

- a. Density
- b. Specific gravity
- c. Volume
- d. Weight
- e. Mass
- f. Speed
- g. Viscosity
- h. Velocity

2. Graphs:

- a. Statistical Process Control (SPC) charts
- b. XY charts

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are SI units of measurements and other related unit symbols.
2. What are common formulae used to measure characteristic of food and how to accurately apply them.
3. How to perform calculations involving fractions and ratios.
4. What are common units of measurement and dimensions used to describe food and material properties.
5. How to calculate an unknown value given two known values.
6. What are the principles of transposing values and how to do use them to solve workplace problems.
7. Why it is important to seek the assistance of colleagues and authorities in emergency situations.
8. What are data analysis and presentation techniques and how to identify and use the appropriate one.
9. How to select and generate suitable graphs in order to display workplace information.
10. What is a process control chart and how to construct one.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U88802

Perform drying and dehydration procedures

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to prepare for drying and dehydrating operations including calculating batch sizes, cleaning and setting up equipment and identifying and solving operational problems. Carrying out drying and dehydrating operations to ensure that the product meets specifications is also examined as well as shutting down equipment, conducting post production cleaning and maintenance, disposing of waste and maintaining records.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | |
|---------------------------------------|---|
| 1. Prepare for drying and dehydration | 1.1 Read and interpret the production order, seeking clarification from supervisor where necessary. |
| | 1.2 Check the availability of raw materials and equipment . |
| | 1.3 Calculate the batch size based on the production order and machinery capacity in accordance with organizational requirements. |
| | 1.4 Calculate the raw materials required for processing in accordance with organizational requirements. |
| | 1.5 Ensure that the produce of required specifications is available and fit for use . |
| | 1.6 Select and correctly wear the appropriate personal protective equipment in accordance with occupational health and safety requirements. |
| | 1.7 Clean, sanitize and set up equipment according to drying and dehydrating requirements. |
| | 1.8 Start up the equipment correctly and check that it is running in accordance with Standard Operating Procedures (SOPs) and manufacturers' guidelines. |

- 1.9 Promptly identify any operating **problems** and take the appropriate action in accordance with SOPs.
2. Carry out drying and dehydration
 - 2.1 Load the **produce** into the **equipment** in accordance with GMPs and organizational requirement
 - 2.2 Start, observe and maintain drying and dehydrating process according to specification and SOPs.
 - 2.3 Optimize production flow within scope of work to increase productivity in accordance with SOPs.
 - 2.4 Evaluate the quality of **products** in accordance with organizational procedures.
 - 2.5 Confirm that the **product** meets the correct **specifications** in accordance with SOPs.
 - 2.6 Take effective action in response to **problems** within the limits of your responsibility and refer those outside your responsibility to the **relevant persons**.
 - 2.7 Confirm that the **product** is correctly transferred to the next stage in the manufacturing operation.
 - 2.8 Work and maintain the cleanliness of the work area in accordance with environmental, health, safety and hygiene standards and organizational requirements.
3. Finish drying and dehydrating operations
 - 3.1 Follow SOPs to shut down **equipment** correctly.
 - 3.2 Handle appropriately **product** that can be recycled and or reworked in accordance with standard operating procedures.
 - 3.3 **Dispose** of **waste** in accordance GMPs, regulatory and environmental requirements.

4. Post production cleaning and regular maintenance of equipment
 - 4.1 Clean and **sanitize** the work area, **machinery, equipment** and **tools** in accordance with GMPs and organizational requirements.
 - 4.2 Fix any minor repairs/faults in all **machinery** in accordance with standard operating procedures.
 - 4.3 Ensure **periodic** maintenance of all **machinery** and **equipment** within scope of responsibility following SOPs or suppliers' instructions/manuals.
5. Document and maintain records on the finished products
 - 5.1 **Record** the types of **product** processed in accordance with organizational requirements.
 - 5.2 **Record** the details of the **raw materials** processed such as batch number, date of manufacture, date of expiry, stage it was transferred to, storage conditions, etc. in accordance with organizational requirements.
 - 5.3 Maintain **records** of **deviations** (if any) and **waste** in accordance with organizational requirements.
 - 5.4 Verify the **documents** and track them from processed food to **raw materials**, in case of quality concerns and for quality audits.

RANGE STATEMENT

All range statements must be assessed:

1. Raw materials/Produce/Product:

- a. Fruits/Vegetables
- b. Herbs
- c. Spices
- d. Root crops

2. Equipment/Machinery/Tools:

- a. Manual
- b. Mechanical
- c. Electronic
- d. Automatic
- e. Semi-automated

3. Specifications:

- a. Quality
- b. Quantity
- c. Size
- d. Type of produce

4. Fitness for use:

- a. Clean
- b. Peeled/Skinned
- c. Wholesome
- d. Pest free

5. Personal protective equipment:

- a. Eye and face protection
- b. Head protection
- c. Foot and Leg Protection
- d. Hand and arm protection
- e. Body protection
- f. Hearing protection
- g. Lung protection

6. Sanitization:

- a. Heat
- b. Chemicals

7. Problems/Deviations:

- a. Quality
- b. Quantity
- c. Process
- d. Machinery

8. Relevant People:

- a. Supervisor
- b. Manager
- c. Technician/Equipment Operator

9. Disposal:

- a. Recycle
- b. Dump

10. Waste:

- a. Liquid
- b. Solid
- c. Hazardous
- d. Organic
- e. Recyclable

11. Period:

- a. Daily
- b. Weekly
- c. Monthly
- d. Quarterly
- e. Half yearly
- f. Annual

12. Records:

- Written
- Electronic

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices (GMPs), Occupational Health and Safety regulations, Environmental Standards and other industry standards specific to agro-processing operations.
2. What are the companies Standards Operating Procedures (SOPs) related to drying and dehydration operations.
3. What is the production order and why it is important to read, understand and ask for clarification where necessary.
4. What types of raw materials and equipment are used in the drying and dehydration process and how to check their availability.
5. How to calculate batch sizes and the raw materials required for processing based on the production order and machine capacity.
6. How to ensure that produce is available and fit for use.
7. What is personal protective equipment and how to select and wear the appropriate type.
8. How to clean, sanitize and set- up equipment according to requirements.
9. How to correctly start up equipment and check to ensure that it is running properly.
10. What are the types of operating problems that can occur in drying and dehydrating operations and how to take effective action to solve them.
11. How to load produce into drying and dehydrating equipment.
12. How to start, observe and maintain the drying and dehydration process in accordance with specifications and SOPs.
13. How to optimize the production flow within one's scope of work in order to increase productivity.
14. How to evaluate the quality of the product and how to ensure that the dried product meets the correct specification.
15. Why it is important to escalate problems that are outside the limits of your responsibility.
16. What is the next step in the manufacturing process after drying and how to correctly transfer dried products there.
17. How to maintain the cleanliness of the work area while working.
18. What are the specifications for shutting down drying operations.
19. What are standard operating procedures for shutting down drying and dehydrating operations.
20. How to identify product that can be recycled and reworked and how to deal with it correctly.
21. What waste is produced in drying and dehydrating operations and how to dispose of it correctly.
22. How to clean and sanitize the work area, equipment, machinery and tools and why it is important to do so after use.
23. How to carry out minor repairs on all machinery in accordance with SOPs.

24. What are the periodic maintenance schedules for the machinery used in drying and dehydration operations and how to ensure that they are met.
25. What are the organisation's requirements for maintaining records related to drying and dehydration including types and details of materials being used, deviations and waste
26. How to verify and track documents from processed food to raw materials for the purpose of quality concerns or audits.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U88902**Perform fish processing**

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to carry out fish processing. It speaks to calculating batch sizes, receiving and handling raw material and ensuring that temperature parameters are met. Packing and labelling, maintenance of machinery and maintaining records are also included.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

1. Prepare to process fish.
 - 1.1 Maintain cool temperatures in the work area and ensure that temperature monitoring **equipment** is functioning.
 - 1.2 Check the availability of raw fish, packaging **materials** and **equipment**.
 - 1.3 Calculate the batch size based on the production order and machine capacity in accordance with organizational requirements.
 - 1.4 Calculate the amount of raw fish and **packaging materials** required for processing in accordance to organizational requirements.
 - 1.5 Confirm that raw fish to the required **specifications** is available and **fit for use**.
 - 1.6 Select and correctly wear the appropriate **personal protective equipment** in accordance with organizational and occupational health and safety requirements
 - 1.7 Clean and **sanitize equipment** according to manufacturer's instructions, Good Manufacturing Practices (GMPs) and organizational requirements.
 - 1.8 Obtain raw fish from the store room, checking **physical parameters** to ensure conformance to quality specifications.
 - 1.9 Remove and **dispose** of fish that does not conform to quality specifications.

-
2. Receive and handle raw fish
 - 2.1 Check raw fish to ensure that it is adequately iced and that storage temperatures are maintained in accordance with GMPs, industry standards and organizational requirements.
 - 2.2 Inspect the quality of raw fish by examining the **physical parameters** using the approved quality checklist.
 - 2.3 Immerse raw fish into washing tank, wash and remove from water and place in containers according to industry requirements.
 - 2.4 Handle fresh/frozen raw fish using the appropriate handling methods.
 3. Process fish
 - 3.1 Prepare fish according to industry requirements.
 - 3.2 Inspect and remove damaged portions of fish and cut into fillets based on weight.
 - 3.3 Freeze raw fish to specified temperatures and glaze in accordance with GMPs and industry requirements.
 - 3.4 Evaluate the **quality characteristics** and **physical parameters** of raw fish.
 - 3.5 Optimize the production flow within your scope of work to increase productivity in accordance with Standard Operating Procedures (SOPs).
 - 3.6 Work and maintain the cleanliness of the work area in accordance with environmental, health, safety and hygiene and organizational requirements.
 4. Pack processed fish
 - 4.1 Label and pack weighed quantity of glazed raw fish products in accordance with GMPs and SOPs.
 - 4.2 Sample the raw fish product for quality analysis to ensure conformance to industry standards.

- 4.3 Transfer packed fish products to cold storage room, ensuring that storage temperature is maintained in accordance with industry standards and organizational requirements.
 - 4.4 **Dispose** of **waste** in accordance GMPs, industry and environmental requirements.
- 5. Carry out post production cleaning and regular maintenance of equipment
 - 5.1 Clean and sanitize the work area, **machinery, equipment** and **tools** in accordance with GMPs and organizational requirements.
 - 5.2 Fix any minor repairs/faults in all **machinery** in accordance with SOPs.
 - 5.3 Ensure **periodic** maintenance of all **machines** and **equipment** following SOPs or suppliers' instructions/manuals.
- 6. Document and maintain records of the finished products
 - 6.1 **Record** the types of fish processed in accordance with organizational requirements.
 - 6.2 **Record** the **details** of the materials processed in accordance with organizational requirements.
 - 6.3 Maintain records of **deviations** (if any) and waste related to processed fish in accordance with industry requirements.
 - 6.4 Verify **documents** and track from processed to raw fish for quality concerns and audits.

RANGE STATEMENT

All range statements must be assessed:

1. Equipment/Machinery/Tools:

- Manual
- Mechanical
- Electronic
- Automatic/Semi-automated

2. Packaging materials:

- Plastic
- Brick carton
- Cardboard

3. Specifications:

- Quality
- Quantity
- Size
- Type of produce

4. Fitness for use:

- Clean
- Peeled/ Skinned

5. Personal protective equipment:

- Goggles/Glasses
- Face masks/Respirators
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

6. Sanitization:

- Heat
- Chemicals

7. Physical Parameters:

- Odour
- Scales
- Eyes
- Gills
- Overall appearance/Physical condition

8. Disposal:

- Recycling
- Dumping

9. Quality characteristics:

- Shape
- Smell
- Color

10. Parameters:

- Size
- Weight

11. Waste:

- Liquid
- Solid
- Hazardous
- Organic

12. Period:

- Daily
- Weekly
- Monthly
- Quarterly
- Half yearly
- Annual

13. Records:

- Written
- Electronic

14. Details:

- Batch number
- Time of packing
- Date of manufacture
- Date of expiry
- Other label details
- Primary and secondary packaging material for finished products
- Storage conditions

15. Reports:

- Verbal
- Written
- Electronic

16. Deviations:

- Quality
- Quantity
- Process
- Machinery

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices (GMPs), occupational health and safety regulations, environmental and other industry standards specific to agro-processing operations.
2. What are the organizational Standards Operating Procedures (SOPs) related to fish processing operations.
3. Why it is important to maintain cool temperatures in the work environment.
4. What is the production order and why it is important to read, understand and ask for clarification where necessary.
5. What are the types of fish and equipment used in processing and how to check their availability and that they are functioning.
6. How to calculate batch sizes and the raw materials required for processing based on the production order and machine capacity.
7. How to check the availability of raw materials, packaging materials and equipment.
8. How to calculate batch sizes based on the production order and machine capacity.
9. How to calculate the amount of raw material and packaging material needed for processing.
10. How to ensure that produce is available and fit for use.
11. What is personal protective equipment and how to select and wear the appropriate one.
12. How to clean and sanitize equipment, work area, machinery and tools.
13. What are quality characteristics and physical parameters and how to check them to ensure conformance to quality standards.
14. How to dispose of material that does not meet quality standards
15. What is the storage temperature for fish and how to check that this is maintained.
16. What to look for when inspecting frozen or chilled raw materials and how to conduct a tap and leg movement test.
17. How to wash raw fish.
18. What are the handling methods related to raw fish and how to use them.
19. How to cut fish into portions, remove skin and pin bones and how to inspect and remove damaged portions of fish.
20. How to cut fish into fillets based on weight.
21. What temperature fish should be frozen at and how to glaze fish.
22. How to optimize the production flow within one's scope of work in order to increase productivity.
23. How to maintain the cleanliness of the work area while working
24. How to weigh, label and pack glazed fish products.

25. How to sample fish for quality analysis.
26. How to transfer pack products to cold storage and maintain storage temperature.
27. What are the types of waste produced in fish processing and how to dispose of it.
28. How to fix minor repairs/faults in the machinery.
29. How to ensure that periodic maintenance is completed on all equipment.
30. What are the organizational requirements for recording the types fish, fish processed and the details of the processed materials.
31. How to record deviations and waste.
32. How to verify and track processed fish for quality concerns and audits.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U89002

Perform concentrate and juice processing

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to make squash and juice from raw materials. It requires batch sizes to be calculated and machinery to be monitored and controlled throughout the entire process to maintain quality parameters. Recording and reporting deviations and disposal of waste are also required.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

1. Prepare for processing
 - 1.1 Read and interpret the production order, seeking clarification from the supervisor where necessary.
 - 1.2 Check the availability of **raw materials** and **equipment**.
 - 1.3 Calculate the batch size based on the production order and **machine** capacity.
 - 1.4 Calculate the **raw materials** required for processing.
 - 1.5 Check the availability of **raw materials** and **equipment** required for processing.
 - 1.6 Select and use the appropriate **personal protective equipment** in accordance with organizational and occupational health and safety requirements.
 - 1.7 Clean and **sanitize equipment, tools** and work areas in accordance with Good Manufacturing Practices (GMPs), manufacturer's guidelines organizational requirements.
 - 1.8 Wash and rinse **raw materials** to remove, dirt soil and other impurities in accordance with GMPs, food safety and hygiene standards.
 - 1.9 Inspect **raw materials** to ensure they meet quality specifications.

- 1.10 Remove out of specification material and **dispose** of **waste** following GMPs, environmental standards and Standard Operating Procedures (SOPs).
- 2 Extract juice
 - 2.1 **Prepare raw materials** using appropriate processing methods according to production specifications.
 - 2.2 Set controls on **machinery**, extract juice from **raw materials** and dispose of **waste** in accordance with environmental standards and SOPs.
 - 2.3 **Filter** juice as required by organizational requirements and collect filtered juice in containers according to GMPs and SOPs.
 - 2.4 Evaluate the quality of the juice product in accordance with organizational procedures.
 - 2.5 Optimize the production flow within your scope of work to increase productivity in accordance with SOPs.
 - 2.6 Clean **tools** and **equipment** according to manufacturer's guidelines and SOPs.
 - 2.7 Check and sample juice according to quality checklist and make any necessary adjustments to meet quality **parameters**.
 - 2.8 **Record** and **report** any **deviations** in accordance with organizational policies and procedures.
3. Pasteurize juice
 - 3.1 Set up pasteurizing **equipment** using manufacturer's guidelines and product specifications.
 - 3.2 Pasteurize juice and routinely check the pasteurization process.
 - 3.3 Cool pasteurized juice to required temperatures in accordance with GMPs and SOPs and collect in containers.

- 3.4 **Record** and **report** any **deviations** in accordance with organizational policies and procedures.
4. Prepare concentrate
- 4.1 Identify and select the required **equipment** and prepare concentrate according to product specifications.
- 4.2 Mix the specified amount of **ingredients** in accordance with the formulation.
- 4.3 Heat and perform quality checks in keeping with the defined criteria.
- 4.4 **Mix** juice, syrup and other **ingredients** in accordance with SOPs, checking and adjusting controls where necessary to maintain mixing **parameters**.
- Sample and check physical and chemical **parameters** to ensure uniform mixing in accordance with industry standards and SOPs.
- 4.5 Pasteurize mixture and cool immediately to required temperature according to product specifications.
- 4.6 Evaluate the quality of the product in accordance with organizational procedures.
- 4.7 Perform quality checks and sample according to the defined checklist and make adjustments where necessary to meet quality parameters.
- 4.8 Work and maintain the cleanliness of the work area in accordance with environmental, health, safety and hygiene standards and organizational requirements.
- 4.9 **Record** and **report** any **deviations** in accordance with organizational requirements.
5. Finish concentrate and juice operations
- 5.1 Check the specifications to time shut down accurately.
- 5.2 Follow standard operating procedures to shut down **equipment** correctly.

- 5.3 Appropriately handle **products** that can be recycled and or reworked in accordance with SOPs.
- 5.4 Dispose of **waste** in accordance with environmental standards and organizational requirements.
- 6. Post production cleaning and regular maintenance of equipment
 - 6.1 Clean and sanitize the work area, **machinery, equipment** and **tools** in accordance with GMPs and organizational requirements.
 - 6.2 Fix any minor repairs or faults in all **machinery** in accordance with standard operating procedures.
 - 6.3 Ensure the **periodic** maintenance of all **machines** and **equipment** following SOPs or suppliers' instructions or manuals.
- 7. Document and maintain records on the finished products
 - 7.1 **Record** the types of product processed in accordance with organizational requirements.
 - 7.2 **Record** the **details** of the materials processed in accordance with organizational requirements.
 - 7.3 Maintain **records** of **deviations** (if any) and **waste** related to concentrate and juice processing.
 - 7.4 Verify the **documents** and track them from processed food to raw materials, in case of quality concerns and for quality audits.

RANGE STATEMENT

All range statements must be assessed:

1. Raw materials:

- Roots
- Fruits
- Botanicals

2. Equipment/Machines/Tools:

- Manual
- Mechanical
- Electronic
- Automatic
- Semi-automated

3. Personal protective equipment:

- Goggles/Glasses
- Face masks/Respirators
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

4. Sanitization:

- Heat
- Chemicals

5. Disposal:

- Recycling
- Dumping

6. Waste:

- Liquid
- Solid
- Hazardous
- Organic
- Recyclable

7. Preparation:

- Peeled/Skinned
- De-seed
- Cut/Chopped/Sliced

8. Filter/Mix:

- Manual
- Automated

9. Ingredients:

- Sweeteners
- Stabilizers
- Acidulates
- Preservatives
- Colours
- Flavors

10. Parameters:

- Taste/Smell
- Texture/Mouthfeel
- Colour
- Dimensions/Size
- Count
- Viscosity
- Brix

11. Records:

- Written
- Electronic

12. Reports:

- Verbal
- Written
- Electronic

13. Deviations:

- Quality
- Quantity
- Process
- Machinery

14. Product:

- Juice
- Concentrate

15. Period:

- Daily
- Weekly
- Monthly
- Quarterly
- Half yearly

16. Details:

- Batch number
- Date of manufacture
- Expiry date
- storage conditions

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices (GMPs), occupational health and safety regulations, environmental and other industry standards specific to agro processing operations.
2. What are the companies Standards Operating Procedures (SOPs) related to juicing and concentrate operations.
3. What is the production order and why it is important to read, understand and ask for clarification where necessary.
4. What types of raw materials and equipment are used in the juicing and concentrate process and how to check their availability.
5. How to calculate batch sizes and the raw materials required for processing based on the production order and machine capacity.
6. What is personal protective equipment and how to select and use the most appropriate.
7. How to clean and sanitize equipment, tools and work areas.
8. How to wash, rinse and inspect materials to ensure quality specifications are met.
9. What types of waste are generated in squash and juice processing and how to dispose of it.
10. How to prepare raw material for processing.
11. How to set controls on machinery used for juice extraction.
12. How to filter juice and why it is important to do so.
13. What are the additional ingredients to be added to the juice according to the formulation.
14. How to evaluate the quality of the juice.
15. How to optimize the production flow within one's scope of work in order to increase productivity.
16. What is the quality checklist for juice and how to sample the quality of juice and make adjustments in order to meet quality parameters.
17. What are deviations and how to record and report deviations in the process.
18. What is pasteurization and how and why it is important to pasteurize juice.
19. How to check the pasteurization process.
20. How to cool pasteurized juice and what is the required temperature at which cooling should be completed.
21. What are the various ingredients and product specifications for making concentrates.
22. How to perform quality checks in keeping with the defined criteria for concentrates.
23. How to mix concentrate ingredients and why it is important to maintain mixing parameters during the mixing process.
24. How to pasteurize and cool concentrates to the required temperatures and why it is important to do so.

25. How to evaluate the quality of concentrates and perform quality checks according to the quality check list.
26. How to maintain the cleanliness of the work area while working.
27. What are the specifications for shutting down juicing and concentrate operations.
28. What are SOPs for shutting down juicing and concentrate operations.
29. How to identify products that can be recycled and reworked and how to deal with them correctly.
30. How to clean and sanitize the work area, equipment, machinery and tools and why it is important to do so after use.
31. How to carry out minor repairs on all machinery in accordance with SOPs.
32. What are the periodic maintenance schedules for the machinery used in concentrate and juicing operations and how to ensure that they are met.
33. What are the organizational requirements for maintaining records related to the juice and concentrate process including types and details of materials being used, deviations and waste.
34. How to verify and track documents from processed foods to raw materials for the purpose of quality concerns or audits.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U89102**Perform mixing and blending operations**

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to operate a mixing and blending process including calculating batch sizes. Preparing, checking and cleaning machinery and equipment are examined. The preparation of pre-mixes, the mixing and blending process, shutting down processing, the disposal of waste and reporting are also examined.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | | | |
|----|---------------------------------|-----|--|
| 1. | Prepare for mixing and blending | 1.1 | Read and interpret the production order, seeking clarification from supervisor where necessary. |
| | | 1.2 | Check the availability of raw materials and equipment . |
| | | 1.3 | Calculate the batch size based on the production order and machine capacity in accordance with organizational requirements. |
| | | 1.4 | Calculate the raw materials required for processing in accordance with organizational requirements. |
| | | 1.5 | Confirm that raw materials are available and meet production requirements. |
| | | 1.6 | Select and use the appropriate personal protective equipment in accordance with health and safety requirements and organizational requirements. |
| | | 1.7 | Clean, sanitize and carry out maintenance on equipment and machinery in accordance with Good Manufacturing Practices (GMPs) and Standard Operating Procedures (SOPs). |
| | | 1.8 | Set up and monitor the performance of machinery and equipment and adjust where required in accordance with SOPs and production requirements. |

- | | | |
|--|-----|--|
| | 1.9 | Prepare pre-mixes as specified by formulations and SOPs. |
| 2. Operate and monitor the mixing and blending processes | 2.1 | Deliver ingredients to the mixer in the required quantities and sequence to meet recipe specifications. |
| | 2.2 | Mix and blend in accordance with GMPs and organizational requirements. |
| | 2.3 | Optimize production flow within your scope of work to increase productivity in accordance with SOPs. |
| | 2.4 | Check equipment to identify variations in operating conditions and adjust in accordance with SOPs, reporting variations and maintenance requirements, if any, in accordance with organizational requirements |
| | 2.5 | Monitor the mixing process and ensure that mix specifications are met in accordance with industry standards and organizational requirements. |
| | 2.6 | Evaluate the quality of the product in accordance with organizational procedures. |
| | 2.7 | Identify, rectify and report out-of-specification products or process outcomes. |
| | 2.8 | Transfer the mix to the required production area or storage location. |
| | 2.9 | Work and maintain the cleanliness of the work area in accordance with environmental, health, safety and hygiene standards and organizational requirements. |
| 3. Finish mixing and blending processes | 3.1 | Check the specifications to time shut down accurately. |
| | 3.2 | Follow SOPs to shut down equipment correctly according to organizational procedures. |
| | 3.3 | Handle products that can be re-cycled and or reworked in accordance with SOPs. |

- | | | |
|--|-----|--|
| | 3.4 | Dispose of waste in accordance GMPs, industry and environmental requirements. |
| 4. Carry out post production cleaning and regular maintenance of equipment | 4.1 | Clean and sanitize the work area, machinery, equipment and tools in accordance with GMPs and organizational requirements. |
| | 4.2 | Fix any minor repairs and faults in machinery in accordance with SOPs and manufacturer's instructions. |
| | 4.3 | Carry out periodic maintenance of machines and equipment following SOPs or manufacturer's instructions. |
| 5. Document and maintain records on the finished products | 5.1 | Record the types of products and details of materials processed in accordance with organizational requirements. |
| | 5.2 | Maintain records of deviations (if any) and waste related to mixing and blending. |
| | 5.3 | Verify documents and track them from processed foods to raw materials for quality concerns and audits. |

RANGE STATEMENT

All range statements must be assessed:

1. Raw materials:

- Fruits/Vegetables
- Meats
- Poultry
- Fish
- Herbs
- Spices
- Dairy
- Root crops

2. Equipment/Machinery/Tools:

- Manual
- Mechanical
- Electronic
- Automatic/Semi-automated

3. Personal protective equipment:

- Goggles/Glasses
- Face masks/Respirators
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

4. Sanitization:

- Heat
- Chemicals

5. Ingredients:

- Food
- Dry
- Wet
- Additives

6. Mix:

- Manual
- Automated

7. Reports:

- Verbal
- Written
- Electronic

8. Variations/Deviations:

- Quality
- Quantity
- Process
- Machinery

9. Waste:

- Liquid
- Solid
- Hazardous
- Organic
- Recyclable

10. Disposal:

- Recycling
- Dumping

11. Period:

- Daily
- Weekly
- Monthly
- Quarterly
- Half yearly

12. Records:

- Written
- Electronic

13. Details:

- Batch number
- Time of packing
- Date of manufacture
- Expiry Date
- Other label details

- Primary and secondary
- Packaging materials for all finished products,
- Storage conditions

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices (GMPs), occupational health and safety regulations, environmental and other industry standards specific to agro processing operations.
2. What are the organizational Standard Operating Procedures (SOPs) related to mixing and blending operations.
3. What is the production order and why it is important to read, understand and ask for clarification where necessary.
4. What types of raw materials and equipment are used in the mixing and blending process and how to check their availability.
5. How to calculate batch sizes and the raw materials required for processing based on the production order and machine capacity.
6. What is personal protective equipment and how to select and use the most appropriate.
7. What equipment and machinery are used in mixing and blending operations.
8. How to clean, sanitize and carry out maintenance on equipment and machinery.
9. How to set up machinery to meet operating requirements and how to check the performance of machines and equipment.
10. How to prepare pre-mixes according to formulations and SOPs.
11. What are the required quantities and sequences of ingredients as required by recipes.
12. How to mix and blend ingredients.
13. How to optimize the production flow within one's scope of work in order to increase productivity
14. How to check equipment and identify variations in operating conditions.
15. How to adjust equipment and report variations in operations.
16. How to observe the mixing process to ensure that mixing specifications are met.
17. How to evaluate the quality of the mix and identify, rectify and report out-of-specifications product or process outcomes.
18. How to transfer mix to production or storage areas.
19. How to maintain the cleanliness of the work area.
20. What are the specifications for shutting down mixing and blending operations.
21. What are standard operating procedures for shutting down mixing and blending operations.
22. How to identify products that can be recycled and reworked and how to deal with them correctly.
23. What waste is produced in mixing and blending operations and how to dispose of it correctly.
24. How to clean and sanitize the work area, equipment, machinery and tools and why it is important to do so after use.
25. How to carry out minor repairs on machinery in accordance with SOPs.

26. What are the periodic maintenance schedules for machinery used in mixing and blending operations and how to ensure that they are met.
27. What are the organizational requirements for maintaining records related to mixing and blending including types and details of materials being used, deviations and waste.
28. How to verify and track documents from processed foods to raw materials for the purpose of quality concerns or audits.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U89202**Perform fermentation operations**

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to execute the fermentation process including calculating batch sizes. Candidates will also be required to prepare, check and clean machinery and equipment; monitor the fermentation process and identify and rectify out of specification outcomes. After processing activities such as shutting down processing, disposal of waste and reporting are also included.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | | | |
|----|--|-----|--|
| 1. | Prepare for the fermentation equipment and process for operation | 1.1 | Read and interpret the production order, seeking clarification from supervisor where necessary. |
| | | 1.2 | Check the availability of raw materials and equipment . |
| | | 1.3 | Calculate the batch size based on the production order and machine capacity in accordance with organizational requirements. |
| | | 1.4 | Calculate the raw materials required for processing. |
| | | 1.5 | Confirm that raw materials are available and meet production requirements. |
| | | 1.6 | Select and correctly use the appropriate personal protective equipment in accordance with organizational and occupational health and safety requirements. |
| | | 1.7 | Clean, sanitize and carry out maintenance on equipment, machinery and fermentation vessel in accordance with Good Manufacturing Practices (GMPs) and Standard Operating Procedures (SOPs). |

- 1.8 Fit and adjust machine components and related attachments to meet operating and production requirements, adjusting settings where necessary to meet processing or operating parameters.
- 1.9 Check the performance of **machines** and **equipment** and adjust where required in accordance with SOPs.
2. Carry out the fermentation process
 - 2.1 Commence the fermentation process in accordance with GMPs and organizational requirements.
 - 2.2 Set temperature adjusting settings as required by GMPs and organizational requirements.
 - 2.3 Optimize production flow within your scope of work to increase productivity in accordance with SOPs.
 - 2.4 Check **equipment** to identify variations in operating conditions and adjust in accordance with SOPs, reporting variations and maintenance requirements (if) and organizational requirements.
 - 2.5 Monitor the fermentation process to ensure that undesirable micro-organisms are excluded and specifications are met in accordance with industry standards and organizational requirements.
 - 2.6 Identify, rectify and **report** out-of-specification product or process outcomes.
 - 2.7 Evaluate the quality of products in accordance with organizational procedures.
 - 2.8 Maintain the cleanliness of the work area in accordance with health, safety and hygiene standards and organizational requirements.

3. Complete fermentation operations
 - 3.1 End the process when the product meets the required **parameters** as outlined by specifications.
 - 3.2 Follow SOPs to shut down the process correctly according to organizational requirements.
 - 3.3 Appropriately handle **products** that can be re-cycled and/or reworked in accordance with SOPs.
 - 3.4 **Dispose** of **waste** in accordance with GMPs, industry and environmental requirements.

4. Carry out post production cleaning and regular maintenance of equipment
 - 4.1 Clean and **sanitize** the work area, **machinery**, **equipment** and **tools** in accordance with GMPs and organizational requirements.
 - 4.2 Fix minor repairs or faults in accordance with SOPs.
 - 4.3 Ensure **periodic** maintenance of **machinery** and **equipment** following SOPs or manufacturer's instructions.

5. Document and maintain records on finished products
 - 5.1 **Record** the types of product processed in accordance with organizational requirements.
 - 5.2 **Record** the **details** of the **materials** processed in accordance with organizational requirements.
 - 5.3 Maintain **records** of **deviations** (if any) and **waste** related to fermentation.
 - 5.4 Verify **documents** and track them from processed foods to **raw materials** for quality concerns and audits.

RANGE STATEMENT

All range statements must be assessed:

1. Raw Materials:

- Fruits/Vegetables
- Meats
- Poultry
- Fish
- Herbs
- Spices
- Dairy
- Root crops

2. Equipment/Machinery/Tools:

- Manual
- Mechanical
- Electronic
- Automatic/semi-automated

3. Personal protective equipment:

- Goggles/glasses
- Face masks/respirators
- Hats
- Boots/shoes
- Gloves
- Overalls/coveralls
- Hearing protection

4. Sanitization:

- Heat
- Chemicals

5. Reports:

- Verbal
- Written
- Electronic

6. Waste:

- Liquid
- Solid
- Hazardous
- Organic
- Recyclable

7. Disposal:

- Recycling
- Dumping

8. Parameters:

- Taste/Smell
- Texture/Mouthfeel
- Colour
- Dimensions/Size
- Count
- Viscosity
- Brix

9. Period:

- Daily
- Weekly
- Monthly
- Quarterly
- Half yearly

10. Records:

- Written
- Electronic

11. Deviations:

- Quality
- Quantity
- Process
- Machinery

12. Details:

- Batch number
- Time of packing
- Date of manufacture
- Other label details
- Primary and secondary packaging materials for all finished products
- Storage conditions

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices (GMPs), occupational health and safety regulations, environmental and other industry standards specific to agro-processing operations.
2. What are the organizational Standard Operating Procedures (SOPs) related to fermenting operations.
3. What is the production order and why it is important to read, understand and ask for clarification where necessary.
4. What types of raw materials and equipment are used in the fermenting process and how to check their availability.
5. How to calculate batch sizes and the raw materials required for processing based on the production order and machine capacity.
6. What is personal protective equipment and how to select and use most appropriate.
7. What equipment and machinery are used in fermentation operations.
8. How to clean, sanitize and carry out maintenance on equipment and machinery.
9. How to fit and adjust machine components and settings to meet operating requirements and how to check the performance of machines and equipment.
10. How to start and operate the fermentation process.
11. How to check equipment and identify variations in operating conditions.
12. How to adjust equipment and report variations in operations.
13. How to observe the fermentation process to ensure that specifications are met.
14. How to identify, rectify and report out-of-specifications products or process outcomes.
15. How to evaluate the quality of the product.
16. How to maintain the cleanliness of the work area.
17. How to end the fermentation process when the required parameters are met.
18. What are the SOPs for shutting down fermenting operations.
19. How to identify products that can be recycled and reworked and how to deal with them correctly.
20. What waste is produced in fermenting operations and how to dispose of it correctly.
21. How to clean and sanitize the work area, equipment, machinery and tools and why it is important to do so after use.
22. How to carry out minor repairs on all machinery in accordance with SOPs.
23. What are the periodic maintenance schedules for the machinery used in fermenting operations and how to ensure that they are met.
24. What are the organizational requirements for maintaining records related to fermentation including types and details of materials being used, deviations and waste.

25. How to verify and track documents from processed food to raw materials for the purpose of quality concerns or audits.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U89302

Perform smoking operations

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to carry out smoking operations including calculating batch sizes, preparing, checking, cleaning machinery and equipment; and identifying and rectifying specification outcomes. Candidates will also be required to carry out post processing activities such as shutting down procedures, waste disposal and completing reports.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | | |
|---------------------------------|-----|---|
| 1. Prepare for smoking products | 1.1 | Read and interpret the production order, seeking clarification from supervisor where necessary. |
| | 1.2 | Check the availability of raw materials and equipment . |
| | 1.3 | Calculate the batch size based on the production order and machinery capacity in accordance with organizational requirements. |
| | 1.4 | Calculate the raw materials required for processing in accordance with organizational requirements. |
| | 1.5 | Confirm that raw materials are available and meet production requirements. |
| | 1.6 | Select and use the appropriate personal protective equipment in accordance with organizational and occupational health and safety requirements. |
| | 1.7 | Clean and sanitize work area, equipment and machinery in accordance with Good Manufacturing Practices (GMPs) and Standard Operating Procedures (SOPs). |
| | 1.8 | Obtain raw materials and transfer for processing in accordance with GMPs and SOPs. |

- 1.9 Report **raw materials** shortages according to SOPs.
- 2. Smoke products
 - 2.1 Smoke **products** according to GMPs, safety requirements and SOPs.
 - 2.2 Correctly handle **equipment** in accordance with occupational health and safety regulations and SOPs.
 - 2.3 Check and control **products** and process **parameters** in accordance with GMPs and SOPs.
 - 2.4 Optimize production flow within scope of work to increase productivity in accordance with SOPs.
 - 2.5 Take samples in accordance with SOPs to ensure that smoked **products** conform to industry and quality standards and organizational requirements.
 - 2.6 Identify, rectify and **report** out-of-specification product or process outcomes.
 - 2.7 Monitor smoked products to ensure that they meet they required **specifications** and release for further processing according to GMPs and SOPs.
 - 2.8 Evaluate the quality of **products** in accordance with organizational procedures.
 - 2.9 Maintain the cleanliness of the work area in accordance with health, safety and hygiene standards and organizational requirements.
- 3. Finish smoking operations
 - 3.1 Check specifications to accurately time shut down.
 - 3.2 Follow SOPs to correctly shut down **equipment**.

- 3.3 Appropriately handle **products** that can be recycled and or reworked in accordance with standard operating procedures.
 - 3.4 **Dispose** of **waste** in accordance GMPs, industry and environmental requirements.
 - 4. Carry out post production cleaning and regular maintenance of equipment
 - 4.1 Clean and sanitize the work area, **machinery, equipment** and **tools** in accordance with GMPs and organizational requirements.
 - 4.2 Fix minor repairs or faults in **machinery** in accordance with SOPs.
 - 4.3 Ensure **periodic** maintenance of **machinery** and **equipment** following SOPs or manufacturer's instructions.
 - 5. Document and maintain records on the finished products
 - 5.1 **Record** the types of **products** processed in accordance with organizational requirements.
 - 5.2 **Record** the **details** of **products** processed in accordance with organizational requirements.
 - 5.3 Maintain **records** of **deviations** (if any) and **waste** related to smoking operations.
 - 5.4 Verify the **documents** and track them from processed food to raw materials, in case of quality concerns and for quality audits.

RANGE STATEMENT

All range statements must be assessed:

1. Raw materials/products:

- Fish
- Meat

2. Equipment/machinery/tools:

- Manual
- Mechanical
- Electronic
- Automatic/Semi-automated

3. Personal protective equipment:

- Goggles/Glasses
- Face masks/Respirators
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

4. Sanitization:

- Heat
- Chemicals

5. Transference:

- Manual
- Automated

6. Preliminary activities:

- Brining
- Seasoning
- Filleting
- Cutting
- Chopping
- Trimming

7. Parameters:

- Time
- Temperature
- Pressure

8. Reports:

- Verbal
- Written
- Electronic

9. Disposal:

- Recycling
- Dumping

10. Waste:

- Liquid
- Solid
- Hazardous
- Organic
- Recyclable

11. Periodic:

- Daily
- Weekly
- Monthly
- Quarterly
- Half yearly

12. Records:

- Written
- Electronic

13. Details:

- Batch number
- Time of packing
- Date of manufacture
- Other label details
- Primary and secondary packaging materials for all finished products
- Storage conditions

14. Deviations:

- Quality
- Quantity
- Process
- Machinery

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices (GMPs), occupational health and safety regulations, environmental and other industry standards specific to agro-processing operations.
2. What are the organizational Standards Operating Procedures (SOPs) related to smoking operations.
3. What is the production order and why it is important to read, understand and ask for clarification where necessary.
4. What are the types of raw materials and equipment used in the smoking process and how to check their availability.
5. How to calculate batch sizes and the raw materials required for processing based on the production order and machine capacity.
6. What is personal protective equipment and how to select and use the appropriate type.
7. What equipment and machinery are used in smoking operations and how to use them.
8. How to clean and sanitize equipment and machinery.
9. What are the types of raw material used in smoking operations and how to receive and transfer them for smoking.
10. Why it is important to report raw material shortages and how to do so.
11. What are the preliminary activities that need to be conducted in preparation for smoking.
12. How to correctly handle smoking equipment.
13. How to smoke fish and meats.
14. What are the product and process parameters in smoking operations and how to check and control them.
15. How to optimize production flow within the scope of work in order to increase productivity.
16. How to identify, rectify and report out-of-specifications product or process outcomes.
17. How to take samples of smoked fish and meat.
18. What are the quality standards for smoked fish and meats and how to ensure that they are met.
19. How to release smoked fish or meats for further processing.
20. How to evaluate the quality of smoked products.
21. How to maintain the cleanliness of the work area.
22. What are the specifications for shutting down smoking operations.
23. What are the SOPs for shutting down smoking operations.
24. How to identify products that can be recycled and reworked and how to deal with them correctly.
25. What waste is produced in smoking operations and how to dispose of it correctly.
26. How to clean and sanitize the work area, equipment, machinery and tools and why it is important to do so after use.

27. How to carry out minor repairs on all machinery in accordance with SOPs.
28. What are the periodic maintenance schedules for the machinery used in smoking operations and how to ensure that they are met.
29. What are the organizational requirements for maintaining records related to smoking including types and details of materials being used, deviations and waste.
30. How to verify and track documents from processed food to raw materials for the purpose of quality concerns or audits

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U89402

Perform cooking operations

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to carry out the cooking process. It involves calculating the batch size and raw materials required to meet the production order. It speaks to observing the cooking process to ensure that specifications are met and rectify and report out-of-specification processes or products. Cleaning and maintaining equipment, tools and machinery are also included.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | |
|-------------------------|--|
| 1. Calculate batch size | 1.1 Read and interpret the production order, seeking clarification from the supervisor where necessary. |
| | 1.2 Check the availability of raw materials and equipment . |
| | 1.3 Calculate the batch size based on the production order and machinery capacity. |
| | 1.4 Calculate the raw materials required for processing. |
| Prepare for cooking | 2.1 Select and correctly wear the appropriate personal protective equipment in accordance with occupational health and safety requirements and organizational requirements. |
| | 2.2 Clean and sanitize equipment according to Good Manufacturing Practices (GMPs) and organizational requirements. |
| | 2.3 Fit and adjust machine components and related attachments to meet operating requirements. |
| | 2.4 Adjust settings where necessary to meet processing or operating parameters as required by production requirements. |

- 2.5 Carry out pre-start checks as required by workplace requirements.
 - 2.6 Obtain **produce** from store room, checking physical **parameters** to ensure conformance to industry and organizational quality standards.
 - 2.7 Remove and **dispose** produce that does not conform to industry and organizational quality standards.
 - 2.8 **Prepare produce** according to GMPs and organizational requirements.
3. Operate and monitor the cooking process
- 3.1 Load, start and operate the vessel/kettle, in accordance with GMPs, occupational health and safety standards and organizational procedures.
 - 3.2 Optimize production flow within your scope of work to increase productivity in accordance with SOPs.
 - 3.3 Check **equipment** in order to identify variations in operating conditions and report any variations in accordance to organizational requirements.
 - 3.4 Observe the **cooking** process to ensure that **specifications** are met in accordance with industry standards and organizational requirements.
 - 3.5 Identify, rectify and report out-of-specification **products**/process outcomes to maintain the process within specification.
 - 3.6 Evaluate the quality of **products** in accordance with organizational procedures.
 - 3.7 Work and maintain the cleanliness of the work area in accordance with environmental, health, safety and hygiene standards and organizational requirements.

- | | | | |
|----|---|-----|---|
| 4. | Finish cooking operations | 4.1 | Check the specifications to time shut down accurately. |
| | | 4.2 | Follow SOPs to shut down equipment correctly according to manufacturer's and organizational requirements. |
| | | 4.3 | Appropriately handle products that can be recycled and or reworked in accordance with SOPs. |
| | | 4.4 | Dispose of waste in accordance GMPs, industry and environmental requirements. |
| 5. | Carry out post production cleaning and regular maintenance of equipment | 5.1 | Clean and sanitize the work area, machinery, equipment and tools in accordance with GMPs and organizational requirements. |
| | | 5.2 | Fix any minor faults in machinery in accordance with SOPs. |
| | | 5.3 | Ensure periodic maintenance of machinery and equipment following SOPs or manufacturer's instructions. |
| 6. | Document and maintain records on the finished products | 6.1 | Record the types of products processed in accordance with organizational requirements. |
| | | 6.2 | Record the details of the materials processed in accordance with organizational requirements. |
| | | 6.3 | Maintain records of deviations (if any) and waste related to processed produce . |
| | | 6.4 | Verify the documents and track them from processed food to raw materials, in case of quality concerns audits. |

RANGE STATEMENT

All range statements must be assessed:

1. Raw materials/produce/products:

- Fruits/Vegetables
- Meats
- Poultry
- Fish
- Root crops

2. Equipment/Machinery/Tools:

- Manual
- Mechanical
- Electronic
- Automatic
- Semi-automated

3. Personal protective equipment:

- Goggles/Glasses
- Face masks/Respirators
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

4. Sanitization:

- Heat
- Chemicals

5. Parameters:

- Taste/Smell
- Texture/Mouthfeel
- Colour
- Dimensions/Size
- Count
- Viscosity
- Brix

6. Preparation:

- Cleaning
- Peeling/ Cutting/ Slicing/ Trimming

7. Cooking:

- Steaming
- Boiling
- Blanching

8. Specifications:

- Time
- Temperature
- Pressure

9. Disposal:

- Recycle
- Discard

10. Waste:

- Liquid
- Solid
- Hazardous
- Organic
- Recyclable

11. Periodic:

- Daily
- Weekly
- Monthly
- Quarterly
- Half yearly
- Annual

12. Reports:

- Verbal
- Written
- Electronic

13. Records:

- Written
- Electronic

14. Details:

- Batch number
- Time of packing
- Date of manufacture
- Other label details
- Primary and secondary packaging materials for all finished products
- Storage conditions

15. Deviations:

- Quality
- Quantity
- Process
- Machinery

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices (GMPs), Occupational Health and Safety regulations, Environmental and other industry standards specific to agro-processing operations.
2. What are the organizational Standard Operating Procedures (SOPs) related to cooking operations.
3. Why it is important to read and understand the production order and seek clarification when necessary.
4. How to check the availability of raw materials and equipment.
5. How to calculate batch size based on the production order and machine capacity.
6. How to calculate the amount of raw materials required for processing.
7. What is personal protective equipment and how to select and wear the most appropriate.
8. What are the different types of equipment, machinery and tools used in the cooking process and how to clean, sanitize them.
9. How to fit and adjust machine components and related attachments and adjust settings where necessary.
10. What are processing parameters and how to ensure that they are met.
11. How to carry out pre-start checks.
12. What are the types of produce used in cooking, how to obtain them from the store room, check the quality and dispose of those that do not conform.
13. How to prepare produce according to GMPS and organisational requirements.
14. How to load the vessels/ kettles.
15. How to start and operate the cooking process.
16. How to check equipment to identify variations in operating conditions and why and how to report these variations.
17. How to observe the cooking process to ensure that specifications are met.
18. How to identify, rectify and/or report out-of-specification product/process outcomes in order to maintain the process within specification.
19. How to maintain cleanliness of the work area.
20. How to conduct work in accordance with environmental standards and organizational guidelines.
21. How to shut down the frying process in accordance with Standard Operating Procedures.
22. How to identify, report and fix minor faults in machines and why it is important to refer faults that are outside the scope your expertise and responsibility.
23. How to report discrepancies or concerns to the supervisor.
24. How to conduct periodic maintenance on machines and equipment.
25. How to maintain records in accordance with organizational requirements.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U89502

Perform pickling/brining operations

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to pickle or brine vegetables including calculating batch sizes, cleaning and setting up equipment. It examines the preparation of vegetables and brine solutions, ensuring that the vegetables and brine are observed and tested to maintain conformance to quality standards. Candidates are also required to shut down equipment, conduct post production cleaning and maintenance, dispose of waste and maintain records.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | |
|----------------------------------|---|
| 1. Prepare for pickling/brining. | 1.1 Read and interpret the production order, seeking clarification from supervisor where necessary. |
| | 1.2 Check the availability of vegetables, packaging materials and equipment . |
| | 1.3 Calculate the batch size based on the production order and machine capacity. |
| | 1.4 Calculate the vegetables and packaging materials required for processing. |
| | 1.5 Select and correctly wear the appropriate personal protective equipment in accordance with organizational and occupational health and safety requirements. |
| | 1.6 Clean and sanitize equipment according to Good Manufacturing Practices (GMPs) and organizational requirements. |
| | 1.7 Receive vegetables from store room, checking physical parameters to ensure conformance to industry and organizational quality standards. |
| | 1.8 Remove and dispose of those that do not conform to industry and organizational quality standards. |
| | 1.9 Prepare vegetables according to GMPs and organizational requirements. |

2. Prepare brine solution and cure vegetables
 - 2.1 **Formulate** brine solution in accordance with GMPs and organizational requirements.
 - 2.2 Set up brining **equipment** according to Standard Operating Procedures (SOPs).
 - 2.3 Observe the process to ensure conformance to industry standards and organizational requirements.
 - 2.4 **Transfer** brine solution and allow it to stand for specified time to allow in accordance with GMPs.
 - 2.5 **Mix** vegetables periodically and check for acidity to ensure completion of fermentation in accordance with GMPs and organizational requirements.
 - 2.6 Optimize production flow within scope of work to increase productivity in accordance with SOPs.
 - 2.7 Store cured vegetables according to GMPs and SOPs.
 - 2.8 Work and maintain the cleanliness of the work area in accordance with environmental, health, safety and hygiene standards and organizational requirements.
3. Prepare pickle
 - 3.1 Refer to the work order and formulation to identify the vegetables/batch required for packing.
 - 3.2 Organize cured vegetables, **ingredients**, spices, **packaging material**, from storage area and check conformance to industry standards, food safety and organizational requirements, through physical **parameters**.
 - 3.3 Wash cured vegetables to remove excess salt in accordance with GMPs.
 - 3.4 Make spice mix as per formulation and transfer washed vegetables to the pickle mixing **equipment, combining** spices and produce in accordance with standard operating procedures.
 - 3.5 Evaluate quality of pickled vegetables in accordance with organizational procedures.

- | | | |
|--|-----|---|
| 4. Pack pickle | 4.1 | Fill containers with pickled vegetables and brine/oil, seal and label according to GMPs and organizational requirements. |
| | 4.2 | Check weight of the filled containers periodically for quantity of vegetable and volume of liquid to ensure conformance to industry standards. |
| | 4.3 | Observe filled containers for defects, check the weight of the finished vegetables and sample for quality conformance. |
| | 4.4 | Pack the finished vegetables, transfer to storage area and store following GMPs, health and safety and organizational requirements. |
| | 4.5 | Report discrepancies/concerns to department supervisor for immediate action in accordance with organizational requirements. |
| 5. Finish pickling or brining operations | 5.1 | Check the specifications to time shut down accurately. |
| | 5.2 | Follow SOPs to shut down equipment correctly. |
| | 5.3 | Handle products that can be re-cycled and/or reworked in accordance with SOPs. |
| | 5.4 | Dispose of waste in accordance GMPs, industry and environmental requirements. |
| 6. Carry out post production cleaning and regular maintenance of equipment | 6.1 | Clean and sanitize the work area, machinery, equipment and tools in accordance with GMPs and organizational requirements. |
| | 6.2 | Fix any minor faults in machinery in accordance with SOPs. |
| | 6.3 | Ensure periodic maintenance of machines and equipment following SOPs or manufacturer's instructions. |
| 7. Document and maintain records on the finished products | 7.1 | Record the types of vegetables processed in accordance with organizational requirements. |

- 7.2 **Record** the **details** of the vegetables processed in accordance with organizational requirements.
- 7.3 Maintain **records** of **deviations** (if any) and waste related to pickled vegetables.
- 7.4 Verify the **documents** and track them from pickled vegetables to raw materials, for quality concerns and audits.

RANGE STATEMENT

All range statements must be assessed:

1. Packaging materials/containers:

- Plastic
- Glass

2. Equipment/machinery/tools:

- Manual
- Mechanical
- Electronic
- Automatic
- Semi- automated

3. Personal protective equipment:

- Goggles/glasses
- Face masks/respirators
- Hats/hair nets
- Boots/shoes
- Gloves
- Overalls/coveralls
- Hearing protection

4. Sanitization:

- Heat
- Chemicals

5. Parameters:

- Taste/smell
- Texture
- Colour
- Dimensions/size
- Count
- Viscosity
- Brix
- Salinity
- Acidity
- Packaging integrity

6. Disposal:

- Recycling
- Dumping

7. Preparation:

- Cleaning
- Peeling/Cutting/Slicing/Trimming

8. Formulation/transference/mixture:

- Manually
- Mechanically

9. Ingredients:

- Dry
- Wet
- Additives

10. Reports:

- Verbal
- Written
- Electronic

11. Deviations:

- Quality
- Quantity
- Process
- Machinery

12. Waste:

- Liquid
- Solid
- Hazardous
- Organic

13. Periodic:

- Daily
- Weekly
- Monthly
- Quarterly
- Half yearly
- Annual

14. Records:

- Written
- Electronic

15. Details:

- Batch number
- Time of packing
- Date of manufacture
- Other label details
- Primary and secondary packaging materials for all finished products
- Storage conditions

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices (GMPs), occupational health and safety regulations, environmental and other industry standards specific to agro-processing operations.
2. What are the organizational Standard Operating Procedures (SOPs) related to pickling and brining operations.
3. What is the production order and why it is important to read, understand and ask for clarification where necessary.
4. What are the vegetables and equipment used in the pickling and brining process and how to check their availability.
5. How to calculate batch sizes and the raw materials required for processing based on the production order and machine capacity.
6. What is personal protective equipment and how to select and wear the most appropriate one.
7. What are the different types of equipment, machinery and tools used in the pickling/brining process and how to clean, sanitize them.
8. How to check the conformance of vegetables to quality standards and dispose of those that do not conform.
9. How to prepare vegetables for pickling/brining.
10. How to formulate brine solution in accordance with GMPs and organizational requirements.
11. How to observe and regulate pressure and temperature gauges and how to check brine solution for conformance.
12. How to transfer and store brine solution.
13. What is the specified time for curing vegetables.
14. How and why it is important to mix vegetables for salt equilibrium and how to sample and check for acidity and the completion of the fermentation process.
15. How to optimize the production flow within one's scope of work in order to increase productivity.
16. How to store cured produce.
17. How to maintain the cleanliness of the work area while working
18. Why is it important to identify the vegetables/batch for packing and how to do so.
19. How to check conformance of cured vegetables, ingredients, spices and packaging materials.
20. Why it is important to remove excess salt from cured produce and how to do so.
21. How to make spice mix and combine spice mix and produce in pickle mixing equipment.
22. How to evaluate the quality of pickled vegetables.
23. How to fill containers with pickled vegetables and brine/oil.
24. How to seal and label containers.

25. Why it is important to check the weight of filled containers for quantity of vegetables and volume of liquid and how often this should be done.
26. How to observe containers for defects and the types of defects that can occur.
27. Why and how to sample containers for quality conformance.
28. How to pack finished products and transfer to storage area.
29. How to report discrepancies or concerns to the supervisor.
30. How to identify, report and fix minor faults in machines.
31. What are the specifications for shutting down pickling/brining operations.
32. What are the SOPs for shutting down pickling/brining operations.
33. How to identify products that can be recycled and reworked and how to deal with them correctly.
34. What waste is produced in pickling and brining operations and how to dispose of it correctly.
35. How to clean and sanitize the work area, equipment, machinery and tools and why it is important to do so after use.
36. How to carry out minor repairs on all machinery in accordance with SOPs.
37. What are the periodic maintenance schedules for the machinery used in pickling and brining operations and how to ensure that they are met.
38. What are the organizational requirements for maintaining records related to pickling and brining including types and details of materials being used, deviations and waste
39. How to verify and track documents from processed food to raw materials for the purpose of quality concerns or audits.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U89602

Perform freezing operations

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to perform the freezing process. It involves calculating batch size and raw materials required to meet the production order, observing the freezing process to ensure that specifications are met and rectifying and reporting out-of-specification processes or products. Candidates are also required to clean and maintain equipment, tools and machinery.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | |
|-------------------------|---|
| 1. Calculate batch size | 1.1 Read and interpret the production order, seeking clarification from supervisor where necessary. |
| | 1.2 Check the availability of raw material and equipment . |
| | 1.3 Calculate the batch size based on the production order and machinery capacity in accordance with organizational requirements. |
| | 1.4 Calculate the raw materials required for processing in accordance with organizational requirements. |
| 2. Prepare for freezing | 2.1 Select and correctly wear the appropriate personal protective equipment in accordance with occupational health and safety requirements and organizational requirements. |
| | 2.2 Clean and sanitize equipment according to Good Manufacturing Practices (GMPs) and organizational requirements. |
| | 2.3 Fit and adjust machine components and related attachments to meet operating requirements, adjusting settings where necessary to meet processing or operating parameters as required by production requirements. |
| | 2.4 Carry out pre-start checks as required by organizational requirements. |

- 2.5 Obtain **produce** from store room, checking physical **parameters** to ensure conformance to industry and organizational quality standards, removing and **disposing** of those that do not conform.
- 2.6 **Prepare produce** according to GMPs and Standard Operating Procedures (SOPs)
- 3. Operate and monitor the freezing process
 - 3.1 Start and operate the **freezer** in accordance with GMPs and organizational procedures.
 - 3.2 Load **freezer** in accordance with GMPs, occupational health and safety standards and organizational procedures.
 - 3.3 Optimize production flow within scope of work to increase productivity in accordance with SOPs.
 - 3.4 Check **equipment** to identify variations in operating conditions and report any variations in accordance to organizational requirements.
 - 3.5 Observe the **freezing** process to ensure that specifications are met in accordance with industry standards and organizational requirements.
 - 3.6 Identify, rectify and/or report out-of-specification **product/process** outcomes to maintain the process within specification.
 - 3.7 Evaluate the quality of **products** in accordance with organizational procedures.
 - 3.8 Maintain the cleanliness of the work area in accordance with environmental, health, safety and hygiene standards and organizational requirements.
- 4. Finish freezing operations
 - 4.1 Follow standard operating procedures to shut down **equipment** correctly according to organizational requirements and manufacturer's instructions.
 - 4.2 Handle **products** that can be re-cycled and or reworked in accordance with SOPs.

- 4.3 Dispose of **waste** in accordance GMPs, industry and environmental requirements.
5. Carry out post production cleaning and regular maintenance of equipment
- 5.1 Clean and sanitize the work area, **machinery, equipment** and **tools** in accordance with GMPs and organizational requirements.
- 5.2 Fix any minor faults in **machinery** in accordance with SOPs.
- 5.3 Ensure **periodic** maintenance of **machines** and **equipment** following SOPs or manufacturer's instructions.
6. Document and maintain records on the finished products
- 6.1 **Record** the types of **products** processed in accordance with organizational requirements.
- 6.2 **Record** the details of the materials processed in accordance with organizational requirements.
- 6.3 Maintain **records** of **deviations** (if any) and **waste** related to processed **produce**.
- 6.4 Verify the **documents** and track them from processed food to raw materials, for quality concerns and audits.

RANGE STATEMENT

All range statements must be assessed:

1. Raw materials/produce/product:

- Fruits/Vegetables
- Meats
- Poultry
- Fish
- Root crops

2. Equipment/Machinery/Tools:

- Manual
- Mechanical
- Electronic
- Automatic
- Semi- automated

3. Personal protective equipment:

- Goggles/glasses
- Face masks/respirators
- Hats
- Boots/gloves
- Gloves
- Overalls/coveralls
- Hearing protection

4. Sanitization:

- Heat
- Chemicals

5. Parameters:

- Taste/smell
- Texture
- Colour
- Dimensions/size
- Count
- Viscosity
- Brix

6. Preparation:

- Cleaning
- Peeling/Cutting/Slicing/Trimming

7. Freezing:

- Flash freezing
- Active packaging
- Air freezing
- Plate freezing
- Liquid Immersion Freezing
- Cryogenic freezing
- Contact freezing

8. Disposal:

- Recycling
- Dumping

9. Waste:

- Liquid
- Solid
- Hazardous
- Organic
- Recyclable

10. Periodic:

- Daily
- Weekly
- Monthly
- Quarterly
- Half yearly
- Annual

11. Reports:

- Verbal
- Written
- Electronic

12. Records:

- Written
- Electronic

13. Details:

- Batch number
- Time of packing
- Date of manufacture
- Other label details
- Primary and secondary packaging materials for all finished products
- Storage conditions

14. Deviations:

- Quality
- Quantity
- Process
- Machinery

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices (GMPs), occupational health and safety regulations, environmental and other industry standards specific to agro-processing operations.
2. What are the companies Standards Operating Procedures (SOPs) related to freezing operations.
3. Why it is important to read and understand the production order and seek clarification when necessary.
4. How to check the availability of raw materials and equipment.
5. How to calculate batch size based on the production order and machine capacity.
6. How to calculate the amount of raw materials required for processing.
7. What is personal protective equipment and how to select and wear the most appropriate.
8. What are the different types of equipment, machinery and tools used in the freezing process and how to clean, sanitize them.
9. How to fit and adjust machine components and related attachments and adjust settings where necessary.
10. What are processing parameters and how to ensure that they are met.
11. How to carry out pre-start checks.
12. What are the types of produce used in freezing and how to receive it from the store room and check its quality and dispose of those that do not conform to quality.
13. How to prepare produce according to GMPS and organizational requirements.
14. How to load the freezer
15. How to start and operate the freezing process.
16. How to check equipment in order to identify variations in operating conditions and why and how to report these variations.
17. How to observe the freezing process to ensure that specifications are met.
18. How to identify, rectify and/or report out- of- specification product/process outcomes in order to maintain the process within specification.
19. How to maintain cleanliness of the work area.
20. How to conduct work in accordance with environmental standards and organizational guidelines.
21. How to shut down the frying process in accordance with Standard Operating Procedures.
22. How to identify, report and fix minor faults in machines and why it is important to refer faults that are outside the scope of your expertise and responsibility.
23. How to report discrepancies or concerns to supervisor.
24. How to conduct periodic maintenance on machines and equipment.
25. How to maintain records in accordance with organizational requirements.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

U89702

Perform pasteurization

Unit Descriptor:

This unit deals with the knowledge, skills and attitudes required to perform the pasteurization process. It involves calculating batch size and raw materials required to meet the production order, observing the pasteurization process to ensure that specifications are met and rectifying and reporting out-of- specification processes or products. Candidates are also required to clean and maintain equipment, tools and machinery.

ELEMENT**PERFORMANCE CRITERIA**

To be competent you must achieve the following:

- | | | |
|-------------------------------|-----|---|
| 1. Calculate batch size | 1.1 | Read and interpret the production order, seeking clarification from supervisor where necessary. |
| | 1.2 | Check the availability of raw material and equipment . |
| | 1.3 | Calculate the batch size based on the production order and machinery capacity in accordance with organizational requirements. |
| | 1.4 | Calculate the raw materials required for processing in accordance with organizational requirements. |
| 2. Prepare for pasteurization | 2.1 | Select and correctly wear the appropriate personal protective equipment in accordance with occupational health and safety requirements and organizational requirements. |
| | 2.2 | Clean and sanitize equipment according to Good Manufacturing Practices (GMPs) and organizational requirements. |
| | 2.3 | Fit and adjust machinery components and related attachments to meet operating requirements, adjusting settings where necessary to meet processing or operating parameters as required by production requirements. |
| | 2.4 | Carry out pre-start checks as required by workplace requirements. |

- 2.5 Obtain **produce** from store room, checking physical **parameters** to ensure conformance to industry and organizational quality standards, removing and **disposing** of those that do not conform.
- 2.6 **Prepare produce** according to GMPs and organizational requirements.
- 3. Operate and monitor the pasteurization process
 - 3.1 Start and operate the pasteurizing **equipment** in accordance with GMPs and workplace procedures.
 - 3.2 Optimize production flow within scope of work to increase productivity in accordance with Standard Operating Procedures (SOPs).
 - 3.3 Check **equipment** in order to identify variations in operating conditions and report any variations in accordance to workplace requirements.
 - 3.4 Monitor the pasteurization process to ensure that specifications are met in accordance with industry standards and organizational requirements.
 - 3.5 Identify, rectify and/or report out-of-specification **product/process** outcomes in order to maintain the process within specification.
 - 3.6 Evaluate quality of **product** in accordance with organizational procedures.
 - 3.7 Maintain the cleanliness of the work area in accordance with environmental, health, safety and hygiene standards and organizational requirements.
- 4. Finish pasteurizing operations
 - 4.1 Follow Standard Operating Procedures (SOP)s to shut down **equipment** correctly according to organizational requirements and manufacturer's instructions.
 - 4.2 Handle **products** that can be re-cycled and or reworked in accordance with SOPs.

- | | | |
|--|-----|---|
| | 4.3 | Dispose of waste in accordance with GMPs, industry and environmental requirements. |
| 5. Carry out post production cleaning and regular maintenance of equipment | 5.1 | Clean and sanitize the work area, machinery, equipment and tools in accordance with GMPs and organizational requirements. |
| | 5.2 | Fix any minor faults in machinery in accordance with SOPs. |
| | 5.3 | Ensure periodic maintenance of machinery and equipment following SOPs or manufacturer's instructions. |
| 6. Document and maintain records on the finished products | 6.1 | Record the types of products processed in accordance with organizational requirements. |
| | 6.2 | Record the details of the materials processed in accordance with organizational requirements. |
| | 6.3 | Maintain records of deviations (if any) and waste related to processed produce . |
| | 6.4 | Verify the documents and track them from processed food to raw materials, for quality concerns and audits. |

RANGE STATEMENT

All range statements must be assessed:

1. Raw materials/produce/products:

- Fruits/vegetables
- Meats
- Poultry
- Fish
- Root crops

2. Equipment/Machinery/Tools:

- Manual
- Mechanical
- Electronic
- Automatic
- Semi-automated

3. Personal protective equipment:

- Goggles/Glasses
- Face masks/Respirators
- Hats
- Boots/Shoes
- Gloves
- Overalls/Coveralls
- Hearing protection

4. Sanitization:

- Heat
- Chemicals

5. Parameters:

- Taste/Smell
- Texture/Mouthfeel
- Colour
- Dimensions/Size
- Count
- Viscosity
- Brix

6. Preparation:

- Cleaning
- Peeling/Cutting/Slicing/Trimming

7. Pasteurization:

- UHT Pasteurization
- HTST Pasteurization

8. Disposal:

- Recycling
- Dumping

9. Waste:

- Liquid
- Solid
- Hazardous
- Organic
- Recyclable

10. Periodic:

- Daily
- Weekly
- Monthly
- Quarterly
- Half yearly
- Annual

11. Reports:

- Verbal
- Written
- Electronic

12. Records:

- Written
- Electronic

13. Details:

- Batch number
- Time of packing
- Date of manufacture
- Other label details
- Primary and secondary packaging materials for all finished products
- Storage conditions

14. Deviations:

- Quality
- Quantity
- Process
- Machinery

UNDERPINNING KNOWLEDGE AND SKILLS

You need to know and understand:

1. What are Good Manufacturing Practices (GMPs), occupational health and safety regulations, environmental and other industry standards specific to agro-processing operations.
2. What are the organizational Standard Operating Procedures (SOPs) related to pasteurization operations.
3. Why it is important to read and understand the production order and seek clarification when necessary.
4. How to check the availability of raw materials and equipment.
5. How to calculate batch size based on the production order and machine capacity.
6. How to calculate the amount of raw materials required for processing.
7. What is personal protective equipment and how to select and wear the most appropriate.
8. What are the different types of equipment, machinery and tools used in the pasteurization process and how to clean, sanitize them.
9. How to fit and adjust machine components and related attachments and adjust settings where necessary.
10. What are processing parameters and how to ensure that they are met.
11. How to carry out pre-start checks.
12. What are the different types of produce used in pasteurization and how to obtain them from the store room and check their quality and dispose of those that do not conform to quality.
13. How to prepare produce according to GMPS and organizational requirements.
14. How to start and operate the pasteurization process.
15. How to check equipment in order to identify variations in operating conditions and why and how to report these variations.
16. How to observe the pasteurization process to ensure that specifications are met .
17. How to identify, rectify and/ or report out-of-specification product/process outcomes to maintain the process within specification.
18. How to maintain cleanliness of the work area.
19. How to conduct work in accordance with environmental standards and organizational guidelines.
20. How to shut down the frying process in accordance with Standard Operating Procedures.
21. How to identify, report and fix minor faults in machines and why it is important to refer faults that are outside the scope of your expertise and responsibility.
22. How to report discrepancies or concerns to the supervisor.
23. How to conduct periodic maintenance on machines and equipment.
24. How to maintain records in accordance with organizational requirements.

EVIDENCE GUIDE

For assessment purposes:

1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real working environment.

(2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

(3) Context of Assessment

This unit may be assessed on the job, off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

Assessment methods

The methods which can be used to determine competence in performance and underpinning knowledge.

Assessors

The Assessor's role is determined whether evidence presented by a candidate for assessment within the programme, meets the required standard of competence in the relevant unit or element. The Assessor needs to be competent to assess to national standards in the area under assessment.

Approved Centre

Organization/Centre approved by the TVET Council to offer full National Vocational Qualifications.

Case Studies

In situations where it is difficult for workplace assessment to take place, case studies can offer the candidate an opportunity to demonstrate potential competence.

A case study is a description of an actual or imaginary situation presented in some detail. The way the case study is presented will vary depending upon the qualification, but the most usual methods are written, taped or filmed.

The main advantage of a case study is the amount of evidence of underpinning knowledge they can generate and the specific nature of the evidence produced.

Competence

In the context of vocational qualifications, competence means: the ability to carry out prescribed activities to nationally pre-determined standards in an occupation. The definition embraces cognitive, practical and behavioural skills, underpinning knowledge and understanding and the ability to react appropriately in contingency situations.

Element

An element is a description of an activity which a person should be able to do. It is a description of an action, behaviour or outcome which a person should be able to demonstrate.

Explanation of NVQ Levels

NVQs cover five (5) levels of competence, from entry level staff at Level 1 through to senior management at Level 5

Level 1 - Entry Level

Recognizes competence in a range of varied work activities performed in a variety of contexts. Most work activities are simple and routine. Collaboration with others through work groups or teams may often be a requirement. Substantial supervision is required especially during the early months evolving into more autonomy with time.

Level 2 - Skilled Occupations:

Recognizes competence in a broad range of diverse work activities performed in a variety of contexts. Some of these may be complex and non-routine and involve some responsibility and autonomy. Collaboration with others through work groups or teams and guidance of others may be required.

Level 3 - Technician and Supervisory Occupations:

Recognizes competence in a broad range of complex, technical or professional work activities performed in a wide variety of contexts, with a substantial degree of personal responsibility and autonomy. Responsibility for the work of others and the allocation of resources are often a requirement. The individual is capable of self-directed application, exhibits problem solving, planning, designing and supervisory capabilities.

Level 4 - Technical Specialist and Middle Management Occupations:

Recognizes competence involving the application of a range of fundamental principles and complex techniques across a wide and unpredictable variety of contexts. Requires very substantial personal autonomy and often significant responsibility for the work of others, the allocation of resources, as well as personal accountability for analysis, diagnosis, design, planning, execution and evaluation.

Level 5 - Chartered, Professional and Senior Management Occupations:

Recognizes the ability to exercise personal professional responsibility for the design, development or improvement of a product, process, system or service. Recognizes technical and management competencies at the highest level and includes those who have occupied positions of the highest responsibility and made outstanding contribution to the promotion and practice of their occupation.

External Verifier

The External Verifier is trained and appointed by the TVET Council and is competent to approve and ensure an approved Centre's quality of provision.

Internal Verifier

The Internal Verifier acts in a supporting role for Assessors to ensure consistent quality of assessment and competence. They need to be competent to assess to national standards in the area under assessment.

NVQ

National Vocational Qualifications (NVQs) are work-based qualifications that assess an individual's competence in a work situation and certify that the individual can perform the work role to the standards expected in employment.

NVQs are based on national occupational standards of competence drawn up by standards-setting bodies known as Industry Lead Bodies. The standards describe the level and breadth of performance that is expected of persons working in the industry or sector which the NVQ covers.

NVQ Coordinator

Within each approved Centre offering NVQs, there is a centre contact who has overall responsibility for the operation and administration of the NVQ system.

Observation

Observation of the candidate carrying out his/her job in the workplace is the assessment method recommended in the vast majority of units and elements. Observation of staff carrying out their duties is something that most supervisors and managers do every day.

Performance criteria

Performance criteria indicate what is required for the successful achievement of an element. They are descriptions of what you would expect to see in competent performance.

Product of Work

This could be items produced during the normal course of work, which can be used for evidence purposes such as reports, menus, promotional literature, training plans, etc.

Questioning

Questioning is one of the most appropriate ways to collect evidence to assess a candidate's underpinning knowledge and understanding.

Questioning can also be used to assess a candidate in those areas of work listed in the range which cannot be assessed by observation. Guidance on when this assessment method can be used is given in the assessment guidance of each individual element. As an assessment method, questioning ensures you have all of the evidence about a candidate's performance. It also allows you to clarify situations.

Range statements

The range puts the element of competence into context. A range statement is a description of the range of situations to which an element and its performance criteria is intended to apply.

Range statements are prescriptive therefore each category must be assessed.

Role-plays

Role-plays are simulations where the candidate is asked to act out a situation in the way he/she considers "real" people would behave. By using role-play situations to assess a candidate you are able to collect evidence and make a judgment about how the candidate is most likely to perform. This may be necessary if the range specified includes a situation in which the candidate is unlikely to find himself/herself in the normal course of their work, or where the candidate needs to develop competence, before being judged competently, for example, in a disciplinary situation,

Simulations

Where possible, assessment should always be carried out by observing **natural performance** in the workplace. **Simulated performance**, however, can be used where specified to collect evidence about an aspect of the candidate's work which occurs infrequently or is potentially hazardous; for example, dealing with fires.

By designing the simulated situation, briefing the candidate and observing his/her performance, you will be able to elicit evidence which will help you judge how a candidate is **most likely** to perform in real life.

Supplementary evidence

Supplementary evidence can be used to confirm and support performance evidence. Types of supplementary evidence include witness testimonies, reports, journals or diaries, records of activities, personal statements, simulation (see note in glossary).

Underpinning knowledge

Underpinning knowledge indicates what knowledge is essential for a person to possess in order to successfully achieve an element and prove total competence.

Units

A unit of competence describes one or more activities which form a significant part of an individual's work. Units are accredited separately but in combination can make up a vocational qualification. There are three categories of units:

Mandatory units - are core to a qualification and must to be completed.

Optional units - candidates must choose the required number of individual units, specified in the qualification structure, to achieve the qualification.

Additional units - are units which the candidate can undertake but are not a requirement to achieve a qualification

Work-based projects

Work-based projects are a useful way for you to collect evidence to support any decision you make about a candidate's performance. They are particularly appropriate in determining the level of a candidate's underpinning knowledge and understanding where it may be insufficient to rely only on questioning observation.

A project often involves the identification of a solution to a specific problem identified by you and/or the candidate (such as looking at ways to redress a recent drop in sales), or may be a structured programme of work built around a central situation or idea (such as the introduction of a new job rostering process).