



**NATIONAL OCCUPATIONAL  
STANDARD/NATIONAL SKILLS QUALIFICATION**

**(NOS/NSQ)**

**IN**

**TOMATO PROCESSING**

**LEVEL 2-5**

**MARCH, 2026**

## PREFACE

It is with great pleasure that I present the National Occupational Standards (NOS) for Rice Processing, Tomato Processing, and Agro-Postharvest Management, developed under the Better Education for Africa's Rise (BEAR III) Project jointly supported by UNESCO and the Government of the Republic of Korea, with technical support from the Korean Research Institute for Vocational Education and Training (KRIVET). The BEAR III Project seeks to strengthen TVET systems, improve skills relevance, and enhance youth employability through competency-based training and stronger linkages between education, industry, and the labour market.

The development of these standards represents a significant milestone in Nigeria's efforts to strengthen the agricultural value chain and address critical skills gaps within the agro-processing sector. Rice and tomato processing, alongside agro-postharvest management, are strategic subsectors with immense potential for enhancing food security, reducing post-harvest losses, creating employment opportunities, and contributing to national economic development. The standards provide a clear framework for the acquisition, assessment, certification, and recognition of occupational competencies required by industry practitioners and employers.

These National Occupational Standards were developed through a rigorous consultative process involving industry experts, employers, professional associations, training institutions, Sector Skills Councils, government agencies, and development partners. Their collective expertise ensured that the standards accurately reflect current industry practices, technological advancements, occupational requirements, and emerging trends within the agricultural sector. The standards will serve as essential reference documents for curriculum development, training delivery, assessment, certification, and workforce development under the Nigerian Skills Qualifications Framework (NSQF). They will also facilitate greater industry participation in skills development and support the production of a competent workforce capable of meeting national and international standards.

I wish to express my sincere appreciation to UNESCO, the Government of the Republic of Korea, KRIVET, the Federal Ministry of Education, the Sector Skills Council for Agriculture, industry stakeholders, resource persons, and all organizations and individuals whose contributions made the development of these standards possible. Their commitment and collaboration have been instrumental in ensuring the successful realization of this important initiative. It is my expectation that these National Occupational Standards will contribute significantly to the advancement of skills development, productivity enhancement, and sustainable growth within Nigeria's agricultural sector, while promoting decent employment opportunities and strengthening the nation's competitiveness in the global economy.

**Professor Idris M. Bugaje**  
Executive Secretary  
National Board for Technical Education  
Kaduna, Nigeria

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**TOMATO PROCESSING LEVELS 2**



## GENERAL INFORMATION

### OVERVIEW

This qualification is designed for individuals who are interested in pursuing a career in Tomato processing for the award of National Skills Qualifications (NSQ)/ Occupational Standards (NOS). It is aimed at producing Craftsmen in Tomato Processing. NSQ Level 2 with the competencies necessary to work in Tomato Processing industries. This qualification is subject to review as and when the need arises.

### QUALIFICATION PURPOSE

This qualification is targeted at developing competence in tomato processing. This is focused on knowledge, practical skills, communication skills, health and safety, team work and workplace experience.

### QUALIFICATION REQUIREMENTS

All Candidates must:

- i Be at least (16) years of age;
- ii Be medically fit;
- iii Be mentally fit (Mental alertness);
- iv Have achieved all the Safety and Health mandatory units in the qualification;
- v Other nationals (International passport, residence permit);
- vi Be vetted.

### QUALIFICATION OBJECTIVES

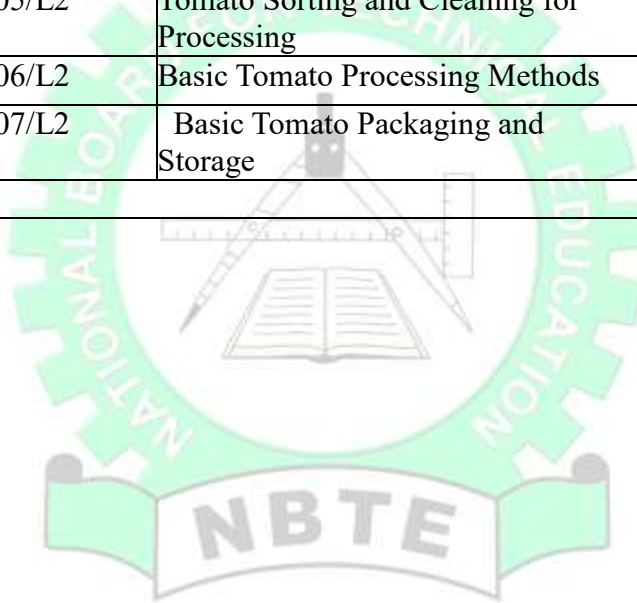
To achieve this qualification, the learner should have the following competencies:

1. Assist in maintain health and safety in tomato processing environment;
2. Assist and communicate effectively in tomato processing environment;
3. Assist in exhibit teamwork;
4. Assist in carry out tomato handling;
5. Assist and carry out tomato sorting and cleaning;
6. Assist and perform basic tomato processing methods;
7. Assist and perform basic tomato packaging and storage.

## NOS LEVEL II IN TOMATO PROCESSING

### Mandatory Units

S/No /Unit No	Reference Number	NOS Title	Credit Value	Guided Learning Hours
1	AGP/TOP/001/L2	Health and Safety in Tomato Processing Environment	3	30
2	AGP/TOP/002/L2	Effective Communication in Tomato Processing Environment	3	30
3	AGP/TOP/003/L2	Teamwork	2	20
4	AGP/TOP/004/L2	Tomato Handling from Harvest to Processing	3	30
5	AGP/TOP/005/L2	Tomato Sorting and Cleaning for Processing	2	20
6	AGP/TOP/006/L2	Basic Tomato Processing Methods	3	30
7	AGP/TOP/007/L2	Basic Tomato Packaging and Storage	6	60
<b>TOTAL</b>			<b>22</b>	<b>220</b>



## GENERAL GUIDE

<b>Unit title</b>	Provides a clear explanation of the content of the unit.
<b>Unit number</b>	The unique number assigned to the unit
<b>Unit reference</b>	The unique reference number given to each unit at qualification approval by NBTE
<b>Unit level</b>	Denotes the level of the unit within the Nigerian Skills Qualification framework NSQF.
<b>Unit credit value</b>	The value that has been given to the unit based on the expected learning time for an average learner. 1 credit = 10 learning hours
<b>Unit aim</b>	Provides a brief outline of the unit content.
<b>Learning outcome</b>	A statement of what a learner will know, understand or be able to do, as a result of a process of learning.
<b>Assessment criteria</b>	A description of the requirements a learner must achieve to demonstrate that a learning outcome has been met.
<b>Unit assessment guidance</b>	Any additional guidance provided to support the assessment of the unit.
<b>Unit guided learning hours</b>	The average number of hours of supervised or directed study time or assessment required to achieve a qualification or unit of a qualification.

## **Unit 1: Health and Safety in Tomato Processing Environment**

**Unit Reference Number: AGP/TOP/001/L2**

**NSQ Level: 2**

**Credit Value: 3**

**Guided Learning Hours: 30**

**Unit Purpose:** This unit is on the adherence to health and safety precaution and avoidance of environmental hazards associated personnel and food

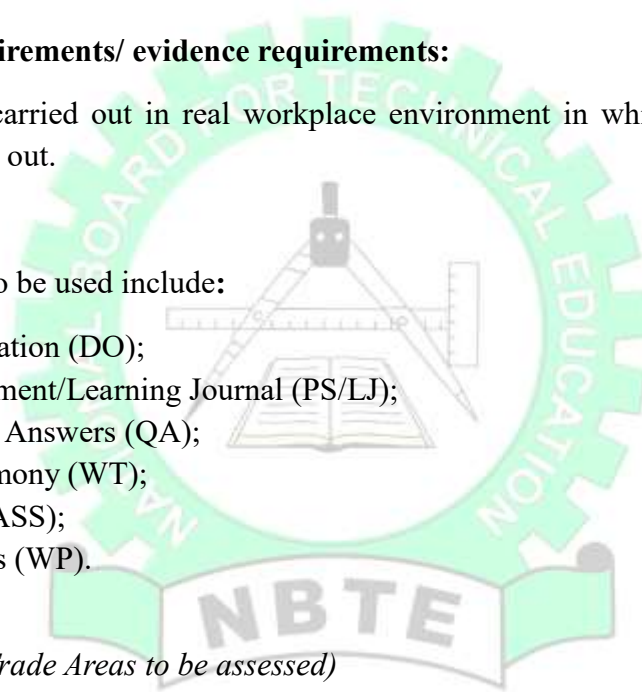
### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

*(This depends on the Trade Areas to be assessed)*

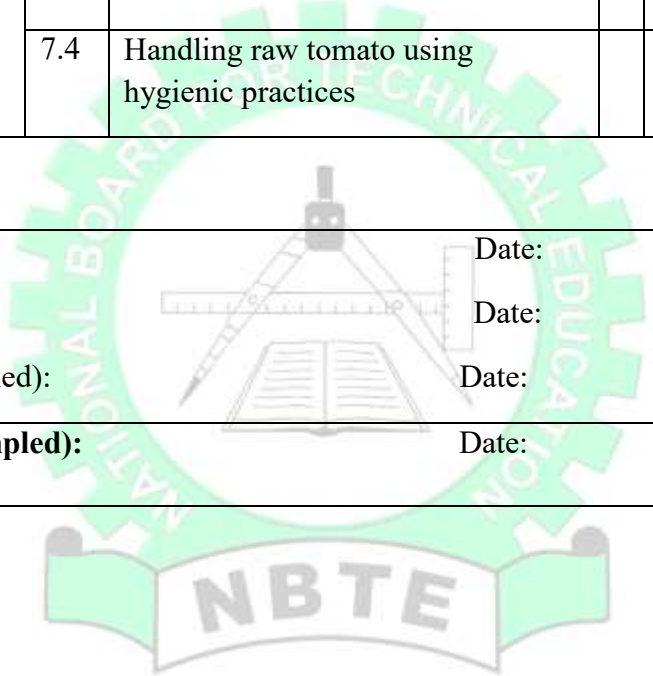


## Unit 1: Health and Safety in Tomato processing Environment

LEARNING OUTCOME(LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref.  Page No.				
<b>LO 1:</b>  Work safely in tomato processing facilities.	1.1	Demonstrate safe work practices along the Tomato value chain.									
	1.2	Identify safety signs and symbols in Tomato processing facilities.									
	1.3	Demonstrate safe work practices and instructions in tomato processing facilities.									
	1.4	Work in accordance with health and safety practices.									
<b>LO 2:</b>  Comply with safety standards in tomato processing facilities	2.1	Identify work environment hazards.									
	2.2	Identify types of hazards and risks in tomato processing facilities.									
	2.3	Use safety tools and materials in tomato processing facilities.									
<b>LO 3:</b>  Apply personal Protective equipment (PPE) in tomato processing facilities	3.1	Identify the types of PPEs.									
	3.2	Select appropriate PPE.									
	3.3	Demonstrate the use of PPE.									
	3.4	Maintain PPE before or after use.									
<b>LO 4:</b> Response to accidents/injury in tomato processing	4.1	Locate first aid facility.									
	4.2	Use basic dressing materials.									
	4.3	Respond to supervisor given instructions.									
	4.4	Report accident/injury to the appropriate Supervisor.									

LEARNING OUTCOME(LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref.  Page No.			
LO 5: Apply safe work habit and clean work environment in tomato processing	5.1	Use safe access and exit routes in the work environment.								
	5.2	Identify appropriate working tools, materials and equipment.								
	5.3	Use tools and equipment safely in accordance with the supervisor's instructions.								
	5.4	Return all tools, equipment and unused materials for appropriate storage.								
	5.5	Carry out general housekeeping of work environment.								
	5.6	Dispose all wastes appropriately to designated waste facilities.								
LO 6: Comply with Standards Safe way of lifting, loading/offloading and stacking of materials in tomato processing facilities	6.1	Identify safe lifting and stacking techniques.								
	6.2	Demonstrate safe lifting techniques in loading and offloading of materials without mechanical assistance.								
	6.3	Demonstrate safe lifting and loading techniques with mechanical assistance.								
	6.4	Stack materials safely.								
LO 7 Comply with basic food safety in tomato processing	7.1	Identify food safety hazard associated with biological contamination								

LEARNING OUTCOME(LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref.  Page No.			
	7.2	Identify food safety hazard associated with chemical contamination								
	7.3	Identify food safety hazard associated with physical contamination								
	7.4	Handling raw tomato using hygienic practices								

Learner's Signature:		Date:
Assessor's Signature:		Date:
IQA Signature (if sampled):		Date:
<b>EQA Signature (if sampled):</b>		Date:

## **Unit 2: Effective Communication in Tomato Processing Environment**

**Unit Reference Number: AGP/TOP/002/L2**

**NSQ Level: 2**

**Credit Value: 3**

**Guided Learning Hours: 30**

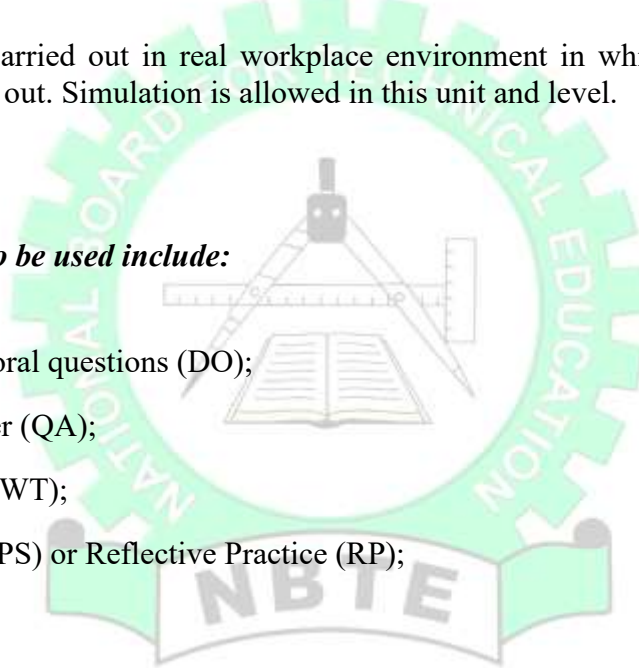
**Unit Purpose:** This unit is about simple communication techniques in Tomato processing Environment

### **Unit assessment requirements/evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

### ***Assessment methods to be used include:***

1. Direct Observation/oral questions (DO);
2. Question and Answer (QA);
3. Witness Testimony (WT);
4. Personal statement (PS) or Reflective Practice (RP);
5. Work Product (WP).

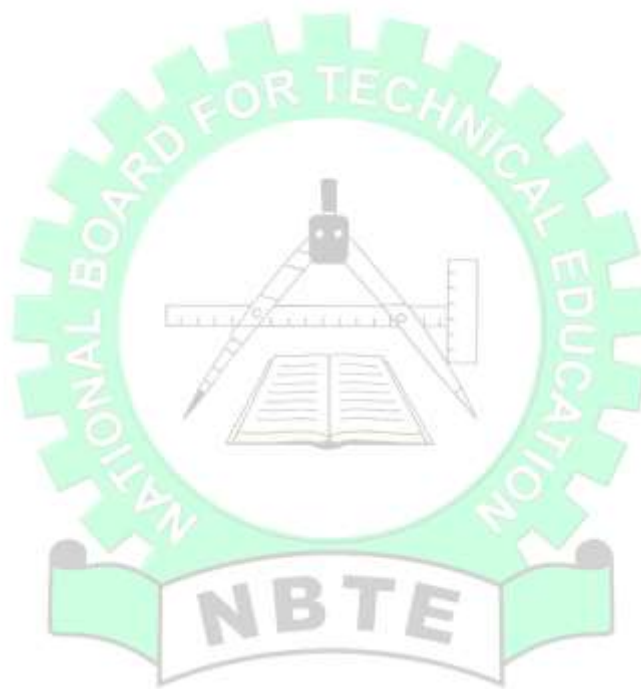


**UNIT 2: Communicate Effectively in Tomato Processing Environment**

<b>LEARNING OBJECTIVE (LO)</b> <b>The learner will:</b>	<b>PERFORMANCE CRITERIA</b> <b>The learner can:</b>	<b>Evidence Type</b>				<b>Evidence Ref. Page No.</b>			
<b>LO 1:</b>  Apply the use of a non-complex communication system in a work environment	1.1 Use a verbal means to pass on necessary information								
	1.2 Use non-verbal means to convey necessary information e.g. body language, signs								
	1.3 Interpret symbols and signs appropriately								
	1.4 Speak in a respectful manner								
	1.5 Use respectful body language								
	1.6 Interpret verbal communication accurately								
<b>LO 2:</b>  Source for information in a work environment	2.1 Identify the source of information in the work environment.								
	2.2 Relate effectively with the source of information.								
	2.3 Use the different information flow systems in a work environment. e.g;								

		<ul style="list-style-type: none"> <li>• Vertical information flow</li> <li>• Horizontal information flow</li> </ul>											
	2.4	Use information gathered to avoid challenges in a work situation.											
	2.5	Report findings appropriately in accordance with laid down procedures in the work environment i.e. Cards, Flip Chart.											
	2.6	Use simple communication gadget like mobile phones and table phones for effective communication.											
LO 3: Apply various means of communication in a work environment	3.1	Locate the various communication equipment in the work environment											
	3.2	Use effectively the various communication equipment in a work environment											
	3.3	Pass information effectively to the right Personnel											
	3.4	Obey instructions in line with ethics of the work environment											

<b>Learners Signature:</b>	
<b>Assessors Signature:</b>	
<b>IQA Signature (if sampled)</b>	
<b>EQA Signature (if sampled)</b>	



### **Unit 3: Teamwork**

**Unit Reference Number: AGP/TOP/003/L2**

**NSQ Level: 2**

**Credit Value: 2**

**Guided Learning Hours: 20**

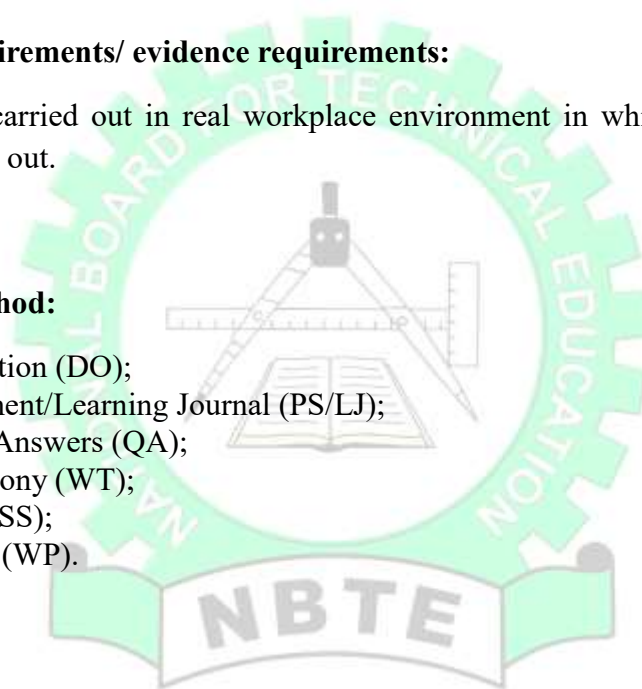
**Unit Purpose:** This unit is designed to provide learners with the knowledge and skills required to develop spirit of teamwork and positive working relationship with co-workers.

#### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

#### **Unit Assessment Method:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).



### Unit 3: Teamwork

LEARNING OBJECTIVE (LO) The learner will:	PERFORMANCE CRITERIA The learner can:	Evidence Type				Evidence Ref. Page No.			
LO 1 Develop good working relationship with co-workers	1.1	Identify team members							
	1.2	List the importance of teamwork							
	1.3	List the qualities of a team player							
LO 2 Take responsibility within the team	2.1	List own roles and responsibilities within a team.							
	2.2	Perform tasks in line with the team rules and regulations.							
	2.3	Work well in a group.							
LO 3 Comply with rule of organization	3.1	Illustrate code of conduct in work environment							
	3.2	Use organizational code of practice							
	3.3	Work in line with organizational standard.							

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQAM Signature (if sampled):	Date:
EQAM Signature (if sampled):	Date:

## **Unit 4: Handling and Storage of Fresh Tomatoes**

**Unit Reference Number: AGP/TOP/004/L2**

**NSQ Level: 2**

**Credit Value: 3**

**Guided Learning Hours: 30**

**Unit Purpose:** This unit is designed to provide learners with the knowledge and skills required for proper handling and storage of fresh tomatoes.

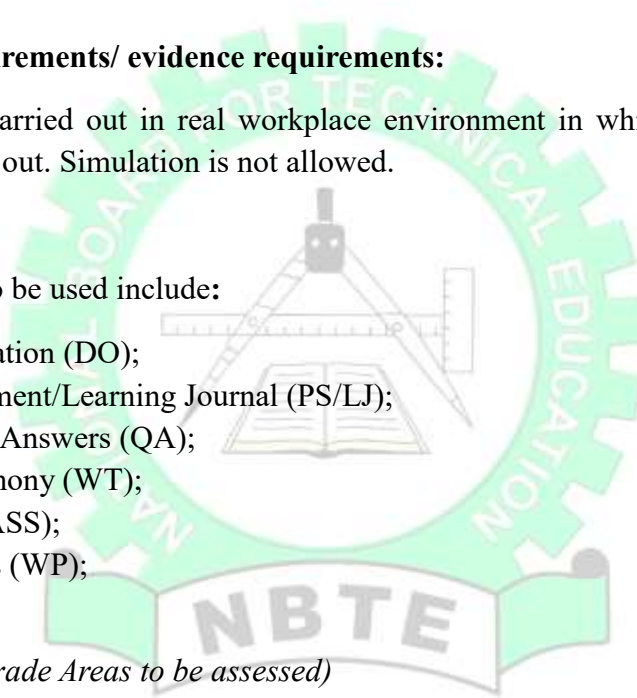
### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is not allowed.

Assessment methods to be used include:

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP);

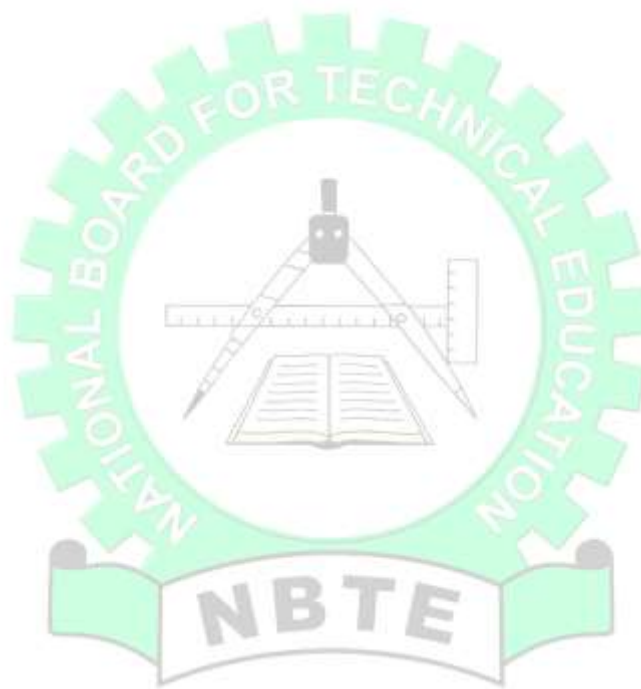
*(This depends on the Trade Areas to be assessed)*



### Unit 4: Handling and Storage of Fresh Tomatoes

LEARNING OUTCOME(LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref.  Page No.				
<b>LO 1:</b>  Demonstrate handling of Fresh tomatoes	1.1	Handle fresh tomato gently.									
	1.2	Use the right lifting equipment when loading and off-loading of tomatoes.									
	1.3	Sort out damage tomatoes before storage.									
	1.4	Store good tomato if not used immediately.									
<b>LO 2:</b>  Observe Conditions for storing fresh tomatoes	2.1	Identify proper condition for storing fresh tomatoes.									
	2.2	Store fresh tomatoes at correct room conditions.									
	2.3	Keep tomatoes away from heat.									
	2.4	Create a walk way in store.									
<b>LO 3:</b>  Use appropriate equipment for storing fresh tomatoes	3.1	Store tomatoes in crates.									
	3.2	Keep the crates on pallets.									
	3.3	Observe the stacking limit.									
	3.4	Use correct lifting equipment.									

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQAM Signature (if sampled):	Date:
EQAM Signature (if sampled):	Date:



## **Unit 5: Tomato Sorting and Cleaning**

**Unit Reference Number: AGP/TOP/005/L2**

**NSQ Level: 2**

**Credit Value: 2**

**Guided Learning Hours: 20**

**Unit Purpose:** The purpose of this unit is to provide learners with basic knowledge and skills required in Tomato sorting and cleaning.

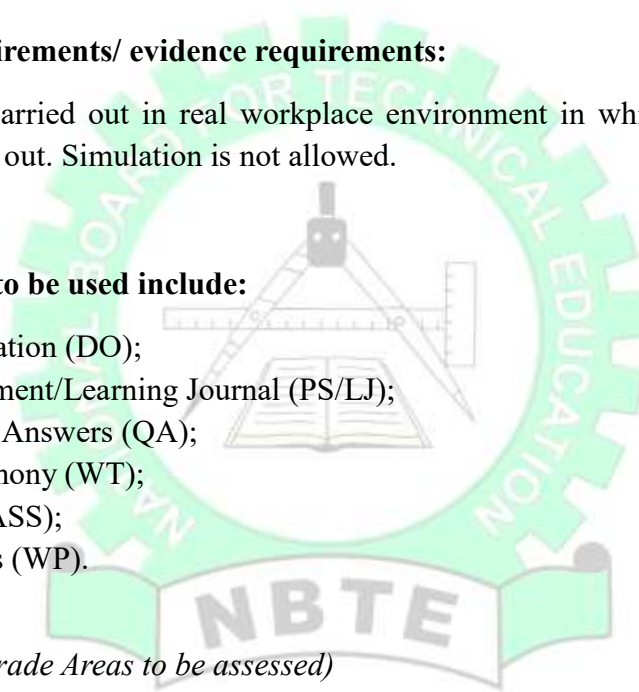
### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is not allowed.

### **Assessment methods to be used include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

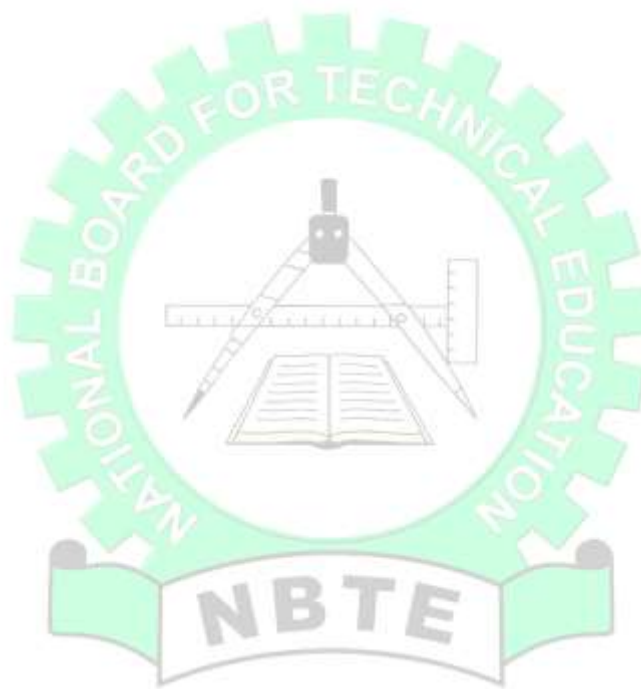
*(This depends on the Trade Areas to be assessed)*



## Unit 5: Tomato Sorting and Cleaning

LEARNING OUTCOME(LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref. Page No.			
<b>LO 1: Conduct tomato sorting.</b>	1.1	Demonstrate tomato sorting.								
	1.2	Identify types of sorting.								
	1.3	Sort tomato by quality and ripeness.								
	1.4	Identify sorting equipment.								
	1.5	Use sorting equipment.								
	1.6	Perform proper disposal of waste and damaged tomatoes.								
<b>LO 2: Conduct tomato cleaning.</b>	2.1	Demonstrate tomato cleaning.								
	2.2	Give a talk on the importance of tomato cleaning								
	2.3	Identify tomato cleaning equipment.								
	2.4	Carryout cleaning.								
<b>LO 3: Practice Hygiene and Safety Practices during cleaning and sorting.</b>	3.1	Demonstrate proper hand washing techniques before processing.								
	3.2	Wear appropriate personal protective equipment (apron, hair cover, gloves etc).								
	3.3	Assist to maintain cleanliness of equipment and processing areas.								
	3.4	Follow basic safety rules when using knives and heat sources.								

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQAM Signature (if sampled):	Date:
EQAM Signature (if sampled):	Date:



## **Unit 6: Basic Tomato Processing Methods**

**Unit Reference Number: AGP/TOP/006/L2**

**NSQ Level: 2**

**Credit Value: 3**

**Guided Learning Hours: 30**

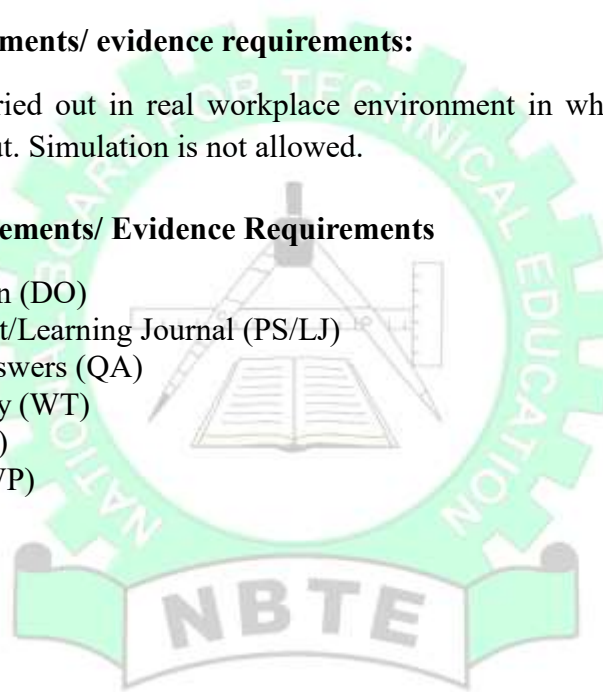
**Unit Purpose:** This unit is designed to provide learners with the knowledge and skills required to carry out simple tomato-processing operations (drying, paste production, and mix preparation) under supervision, using basic tools, equipment, and procedures.

### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is not allowed.

### **Unit Assessment Requirements/ Evidence Requirements**

1. Direct Observation (DO)
2. Personal statement/Learning Journal (PS/LJ)
3. Questions and Answers (QA)
4. Witness Testimony (WT)
5. Assignment (ASS)
6. Work Products (WP)



## Unit 6: Basic Tomato Processing Methods

Learning Outcome Criteria: - The learner will:	Performance Criteria The learner can:	Evidence Type	Evidence Ref Page Number
LO 1 Conduct drying of tomato	1.1. Demonstrate how to dry Tomato		
	1.2. Identify the following: <ul style="list-style-type: none"> <li>• Washing</li> <li>• Sorting</li> <li>• Slicing</li> </ul>		
	1.3. Determine drying techniques		
	1.4. Demonstrate dryness level		
	1.5. Demonstrate how to store dried tomato		
	1.6. Identify equipment used in tomato powder.		
LO 2 Apply basic steps in Tomato Paste processing	2.1. Demonstrate how produce tomato paste		
	2.2. Peel and deseed tomatoes.		
	2.3. Identify basic tools for peel and seeds removal.		
	2.4. Demonstrate how to cook tomatoes.		
LO 3 Apply basic steps in Tomato Mix production.	3.1. Demonstrate tomato mixes.		
	3.2. Identify tomato mixes ingredients.		
	3.3. Demonstrate the difference between mix and paste.		
	3.4. Identify Tomato Mixes flavor.		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQAM Signature (if sampled):	Date:
EQAM Signature (if sampled):	Date:

## **Unit 7: Basic Tomato Packaging and Storage**

**Unit reference number: AGP/TOP/ 007/L2**

**Level:** 2

**Credit value:** 4

**Guided learning hours:** 40

**Unit Purpose:** This unit is designed to provide learners with the knowledge and skills required to demonstrate understanding of the basic Tomato Packaging and Storage Techniques.

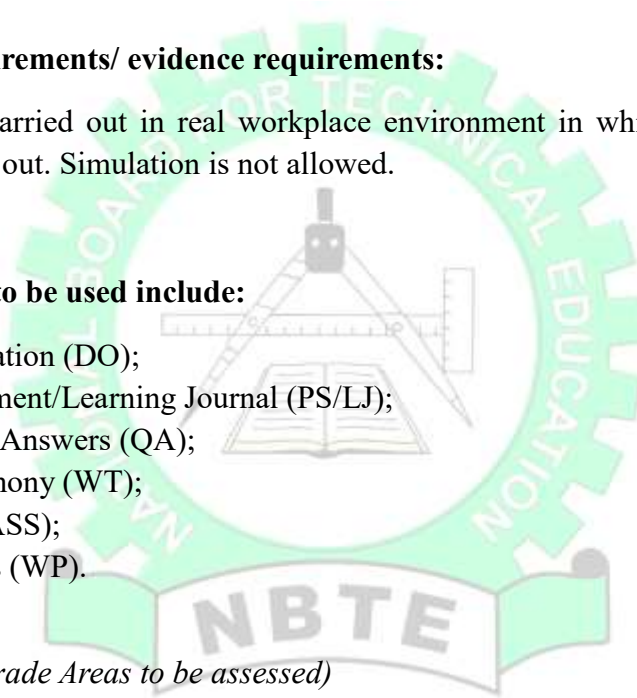
### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is not allowed.

### **Assessment methods to be used include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

*(This depends on the Trade Areas to be assessed)*



## Unit 7: Basic Tomato Packaging and Storage

LEARNING OUTCOME(LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type				Evidence Ref. Page No.				
LO 1: Recognize the Types of Tomato Products for Packaging	1.1	Identify different tomato products (fresh tomatoes, puree, paste, dried).									
	1.2	Identify different product types with their correct packaging method.									
	1.3	Identify correct packaging materials for different product types.									
LO 2: Identify Packaging Materials	2.1	Select different common packaging materials (plastic, bottles, cartons, cans).									
	2.2	Separate cleaned and damaged.									
	2.3	Use Packaging material.									
	2.4	Store packaging materials properly									
LO 3: Prepare Packaging Materials	3.1	Demonstrate how to wash or sanitize containers where required for packaging.									
	3.2	Demonstrate how to keep packaging area clean and organized.									
	3.3	Follow hygiene rules during packaging preparation.									
LO 4: Fill Tomato Products into containers.	4.1	Demonstrate how to fill containers with correct quantity of tomatoes.									
	4.2	Demonstrate how to avoid contamination during filling.									
	4.3	Arrange products neatly in packages.									
	4.4	Follow supervisor's instructions during packaging.									
LO 5: Seal Tomato Product into containers.	5.1	Identify how to use sealing tools safely.									
	5.2	Demonstrate how to seal packages without leakage.									
	5.3	Check seal strength visually.									
	5.4	Report faulty seals.									
LO 6:	6.1	Attach labels correctly on									



**TOMATO PROCESSING LEVEL 3**



## GENERAL INFORMATION

### OVERVIEW

This qualification is designed for individuals who are interested in pursuing a career in **Tomato Processing** Operations for the award of National Skills Qualifications (NSQ)/National Occupational Standards (NOS). is aimed is to produce Senior Foreman for the **Tomato Processing industries**. NSQ Level 3 with the competencies necessary to work in the **Tomato Processing industries**. This qualification is subject to review as and when the need arises.

### QUALIFICATION PURPOSE

This qualification is to equip learners with the essential skills to work safely and effectively in a Tomato processing environment, including Health and Safety, Communication, Teamwork, Dried Tomato Processing, Tomato Paste Production, Tomato Package and Storage, Quality Control and Transport of Processed Tomato Products.

### QUALIFICATION REQUIREMENTS

All Candidates must:

1. Be at least (16) years of age
2. Be medically fit
3. Be mentally fit (Mental alertness)
4. Have achieved all the Safety and Health mandatory units in the qualification
5. Be a Nigerian citizen
6. Other nationals (International passport, residence permit)
7. Be vetted

### QUALIFICATION OBJECTIVES

To achieve this qualification, the learner should have the following competencies:

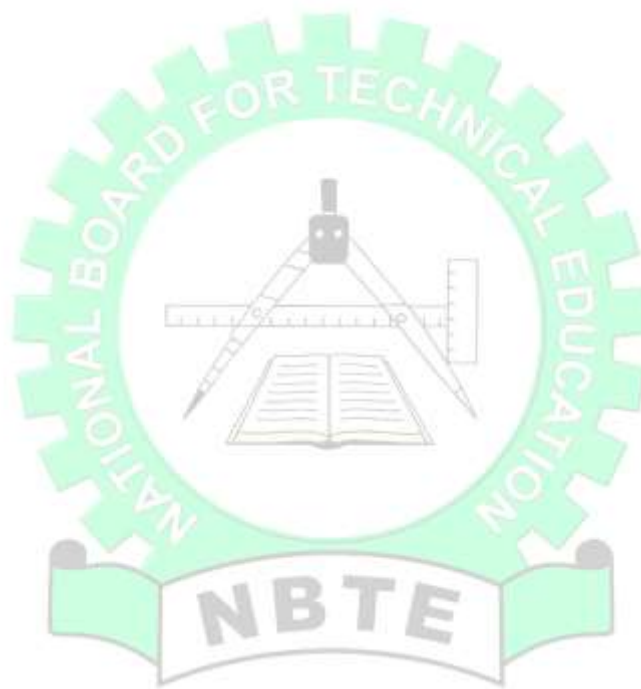
1. Maintain health and safety in tomato processing environment;
2. Communicate effectively in tomato processing environment;
3. Relate effectively with team;
4. Carryout dried tomato processes;
5. Perform tomato paste production;
6. Carryout tomato packaging and storage;
7. Perform quality control;
8. Carryout transport of processed tomato.

## **UNIT ASSESSMENT/EVIDENCE REQUIREMENTS:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Question and Answer (QA);
3. Witness Testimony (WT);
4. Personal statement (PS) or Reflective Practice (RP);
5. Assignment (ASS).



## National Skills Qualification/National Occupation Standard (NSQ/NOS) Unit Table

### LEVEL 3

#### MANDATORY UNITS

Unit	Unit Reference Number	Unit Title	Credit Value	Guided Learning Hours
1	AGP/TOP/001/L3	Health and Safety in Tomato Processing Environment	4	40
2	AGP/TOP/002/L3	Effective Communication in Tomato Processing Environment	3	30
3	AGP/TOP/003/L3	Teamwork	3	30
4	AGP/TOP/004/L3	Dried Tomato Processing	4	40
5	AGP/TOP/005/L3	Tomato Paste Production	6	60
6	AGP/TOP/006/L3	Tomato Packaging and Storage	6	60
7	AGP/TOP/007/L3	Quality Control	6	60
8	AGP/TOP/008/L3	Transport of Processed Tomato	4	40
<b>Total</b>			<b>36</b>	<b>360</b>

## GENERAL GUIDE

<b>Unit title</b>	Provides a clear explanation of the content of the unit.
<b>Unit number</b>	The unique number assigned to the unit.
<b>Unit reference</b>	The unique reference number given to each unit at qualification approval by NBTE
<b>Unit level</b>	Denotes the level of the unit within the National Vocational Qualification framework NSQF.
<b>Unit credit value</b>	The value that has been given to the unit based on the expected learning time for an average learner. 1 credit = 10 learning hours
<b>Unit aim</b>	Provides a brief outline of the unit content.
<b>Learning outcome</b>	A statement of what a learner will know, understand or be able to do, as a result of a process of learning.
<b>Assessment criteria</b>	A description of the requirements a learner must achieve to demonstrate that a learning outcome has been met.
<b>Unit assessment guidance</b>	Any additional guidance provided to support the assessment of the unit.
<b>Unit guided learning hours</b>	The average number of hours of supervised or directed study time or assessment required to achieve a qualification or unit of a qualification.

## **Unit 1: Health and Safety in Tomato Processing Environment**

**Unit Reference Number: AGP/TOP/001/L3**

**NSQ Level: 4**

**Credit Value: 3**

**Guided Learning Hours: 40**

**Unit Purpose:** This unit is to equip learners with the essential knowledge and skill required to maintain safe work place within Tomato Processing Facilities. It enables learner to comply with relevant health and safety standards, correctly PPE, respond appropriately to accidents and follow safe procedures for lifting, loading, and handling material in a Tomato Processing Environment.

### **Unit Assessment Requirements/ Evidence Requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out and simulation is allowed.

### **Assessment Methods to be used include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

*(This depends on the Trade Areas to be assessed)*

## Unit 1: Health and Safety in Tomato Processing Environment

LEARNING OUTCOME(LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref. Page No.			
<b>LO 1:</b>  Maintain safe workplace in Tomato Processing Facilities.	1.1	Demonstrate safe work practices along the tomato value chain.								
	1.2	Recognize safety signs and symbols in Tomato processing facilities.								
	1.3	Establish safe work practices and instructions in tomato processing facilities.								
	1.4	Work in accordance with health and safety practices.								
	1.5	Guide personnel on how to maintain safe workplace								
<b>LO 2:</b>  Maintain safety standards in tomato processing facilities	2.1	Recognize work environment hazards.								
	2.2	Categorize types of hazards and risks in tomato processing facilities.								
	2.3	Use safety tools and materials in Tomato Processing facilities.								
<b>LO 3:</b>  Sustain the use of personal Protective equipment (PPE) in tomato processing	3.1	Recognize the types of PPEs.								
	3.2	Select appropriate PPE for a given task.								
	3.3	Work with appropriate PPE.								
	3.4	Maintain PPE before or after								

LEARNING OUTCOME(LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref. Page No.				
facilities		use.									
LO 4: Take care of accidents/injury in tomato processing	4.1	Locate first aid facility.									
	4.2	Use appropriate first aid item.									
	4.3	Carry out treatment									
	4.4	Report accident/injury to the appropriate Supervisor if necessary									
LO 5: Maintain safe work habit and clean work environment in tomato processing	5.1	Use safe access and exit routes in the work environment.									
	5.2	Recognize appropriate working tools, materials and equipment.									
	5.3	Use tools and equipment safely									
	5.4	Coordinate returning all tools, equipment and unused materials for appropriate storage.									
	5.5	Organize general housekeeping of work environment.									
	5.6	Organize all wastes appropriately to designated waste facilities.									
LO 6: Maintain Safe lifting,	6.1	Recognize lifting and stacking techniques.									
	6.2	Maintain safe lifting techniques in loading and									

<b>LEARNING OUTCOME(LO)</b>		<b>PERFORMANCE CRITERIA</b>	<b>Evidence Type</b>				<b>Evidence Ref. Page No.</b>			
<b>The learner will:</b>		<b>The learner can:</b>								
loading/offloading and stacking of materials in tomato processing facilities		offloading of materials without mechanical assistance.								
	6.3	Carry out safe lifting and loading techniques with mechanical assistance.								
	6.4	Coordinate materials safely.								
<b>LO 7:</b> Maintain food safety in tomato processing	7.1	Maintain food safety hazard associated with biological contamination								
	7.2	Maintain food safety hazard associated with chemical contamination								
	7.3	Maintain food safety hazard associated with physical contamination								
	7.4	Handling Tomato Product using hygienic practices								

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:

## **Unit 2: Effective Communication in Tomato Processing Environment**

**Unit Reference Number: AGP/TOP/002/L3**

**NSQ Level: 3**

**Credit Value: 3**

**Guided Learning Hours: 30**

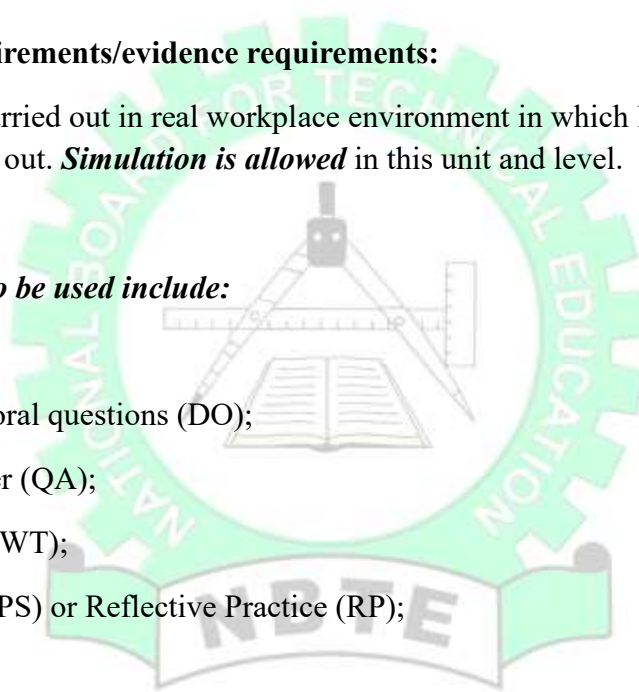
**Unit Purpose:** This unit is designed to provide learners with the knowledge and skills required to maintain and communicate effectively in Tomato processing Environment with co-workers.

### **Unit assessment requirements/evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. *Simulation is allowed* in this unit and level.

#### ***Assessment methods to be used include:***

1. Direct Observation/oral questions (DO);
2. Question and Answer (QA);
3. Witness Testimony (WT);
4. Personal statement (PS) or Reflective Practice (RP);
5. Work Product (WP).



## UNIT 2: Effective Communication in Tomato processing Environment

LEARNING OBJECTIVE (LO) The learner will:	PERFORMANCE CRITERIA The learner can:	Evidence Type				Evidence Ref. Page No.			
LO 1: Apply the use of a communication system in a work environment	1.1	Use a communication system to pass on necessary information							
	1.2	Coordinate the use of non-verbal means to convey necessary information e.g. body language, signs							
	1.3	Interpret symbols and signs appropriately on communication system							
	1.4	Operate communication system							
	1.5	Coordinate the use of communication system							
	1.6	Interpret verbal communication accurately using different emergency alert.							
LO 2: Manage information in a work environment	2.1	Recognize the source of information in the working environment.							
	2.2	Maintain effectively with the source of information.							
	2.3	Use different information flow systems in the working environment.							

	2.4	Collected information to avoid challenges in a work situation.									
	2.5	Manage findings appropriately in accordance with laid down procedures in the work environment i.e. Cards, Flip Chart.									
	2.6	Communicate using gadget like mobile phones and table phones.									
LO 3: Coordinated the used of various means of communication in a work environment	3.1	Distribute various communication Equipment to team number in the work environment									
	3.2	Direct effectively the various communication equipment in a work environment									
	3.3	Pass information effectively to the right Personnel									
	3.4	Manage information in line with ethics of the work environment									

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQAM Signature (if sampled):	Date:
EQAM Signature (if sampled):	Date:

### **Unit 3: Teamwork**

**Unit Reference Number: AGR/TOP/003/L3**

**NSQ Level 3: Teamwork**

**Credit Value: 2**

**Guided Learning Hour: 20 hours**

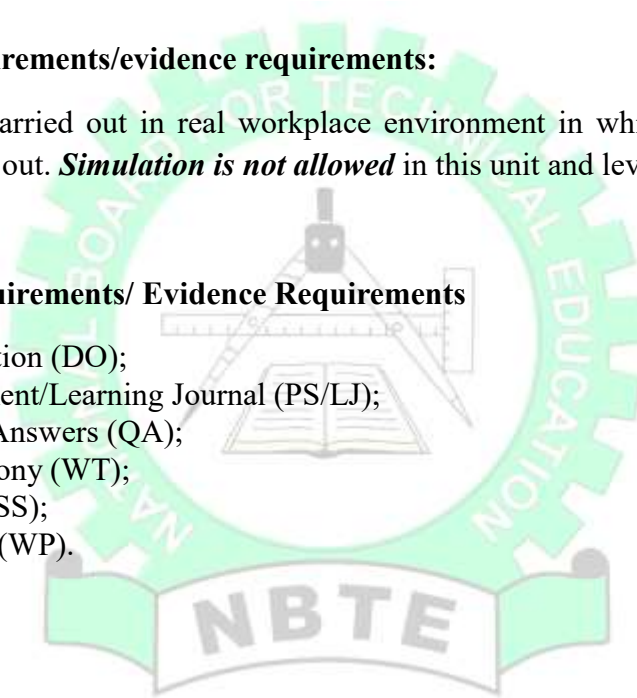
**Unit Purpose:** This unit is designed to provide learners with the knowledge and skills required to manage and develop spirit of teamwork and positive working relationship with co-workers.

#### **Unit assessment requirements/evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. *Simulation is not allowed* in this unit and level.

#### **Unit Assessment Requirements/ Evidence Requirements**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).



### Unit 3: Teamwork

LO (Learning Outcome) Criteria: -			Evidence Type				Evidence Ref Page Number			
LO 1 Manage and develop good working relationship with co-workers	1.1	Manage Team members								
	1.2	Recognize the importance of each team members								
	1.3	Identify the qualities of team players								
LO 2 Coordinate responsibility within the team	2.1	Manage roles and responsibilities of team members.								
	2.2	Perform and coordinate tasks in line with the team rules and regulations.								
	2.3	Coordinate task well in a team.								
LO 3 Coordinate the use of rule of organization	3.1	Apply code of conduct in work environment								
	3.2	Use organizational code of practice								
	3.3	Enforce the use of organizational standard.								

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQAM Signature (if sampled):	Date:
EQAM Signature (if sampled):	Date:

## **Unit 4: Dried Tomato Processing**

**Unit Reference Number: AGP/TOP/004/L3**

**NSQ Level: 3**

**Credit Value: 4**

**Guided Learning Hours: 40**

**Unit Purpose: To equip learners with fundamental competencies required to carry out tomato drying process.**

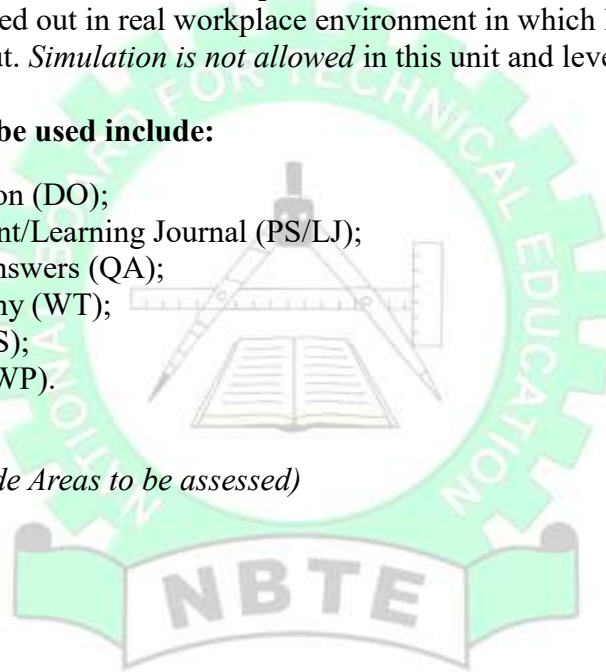
### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. *Simulation is not allowed* in this unit and level.

### **Assessment methods to be used include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

*(This depends on the Trade Areas to be assessed)*



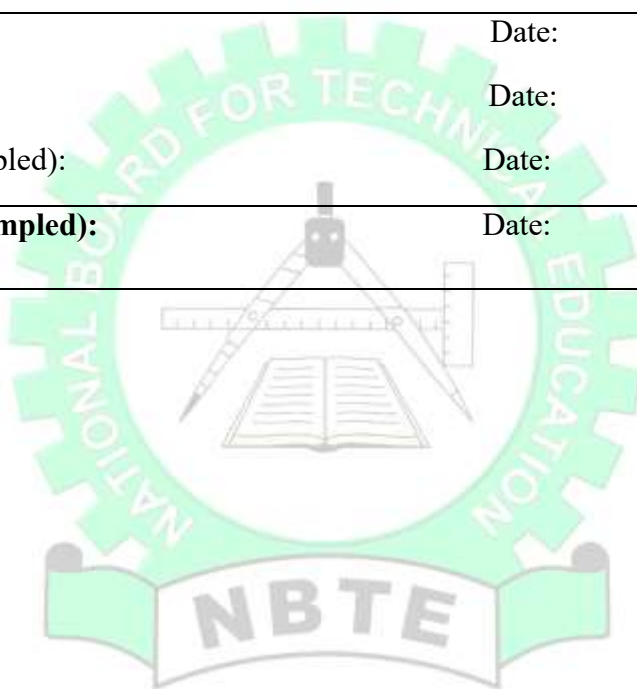
#### Unit 4: Dried Tomato Processing

LEARNING OUTCOME (LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref.  Page No.			
<b>LO 1:</b> Prepare Tomatoes using basic tools to ensure they are suitable for drying.	1.1	Identify ripeness and defects (visual, touch)								
	1.2	Select ripe, firm, and unspoiled tomatoes suitable for drying								
	1.3	Wash tomatoes thoroughly drain to remove dirt and contaminants.								
	1.4	Remove stalks and cut out rotten or damaged sections.								
	1.5	Slice Tomatoes evenly using simple cutting tools to ensure uniform drying.								
	1.6	Arrange tomato slices neatly on clean trays to prepare for sun-drying or mechanical drying.								
<b>LO 2:</b> Dry Tomatoes using sun-drying or basic mechanical drying techniques.	2.1	Position drying trays in a clean, safe, and well-ventilated location for sun-drying								
	2.2	Monitor drying tomatoes regularly to prevent contamination by insects, dust, or moisture.								
	2.3	Arrange tomato slices at intervals to achieve even drying.								
	2.4	Use simple dehydrators.								
	2.5	Use sun-drying.								

LEARNING OUTCOME (LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref.  Page No.			
	2.6	Check dryness level (Humidity) to ensure tomatoes have reached safe moisture content for storage.								
LO 3: Carryout Handing and Packaging of Dried Tomatoes	3.1	Clean hands, tools, and work surfaces before packaging dried tomatoes.								
	3.2	Sort dried tomatoes, removing burnt or overly brittle pieces.								
	3.3	Fill dried tomatoes into clean, dry, airtight containers or food-grade bags.								
	3.4	Seal packages to prevent re-absorption of moisture								
	3.5	Label packages with product name and date.								
LO 4: Maintain Quality of Dried and stored Tomatoes	4.1	Store packaged tomatoes in a cool, dry, well-ventilated area away from pests.								
	4.2	Arrange storage units using First-In-First-Out (FIFO) principles.								
	4.3	Check stored products periodically for moisture, mold, or insect infestation.								
	4.4	Maintain basic records of quantities produced, packaged, and stored.								

LEARNING OUTCOME (LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref.  Page No.			
	4.5	Dispose contaminated or spoilt products safely.								

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:



## **Unit 5: Tomato Paste Production**

**Unit Reference Number: AGP/TOP/005/L3**

**NSQ Level: 3**

**Credit Value: 6**

**Guided Learning Hours: 60**

**Unit Purpose:** This unit is designed to equip learners with fundamental competencies required in the production of Tomato paste

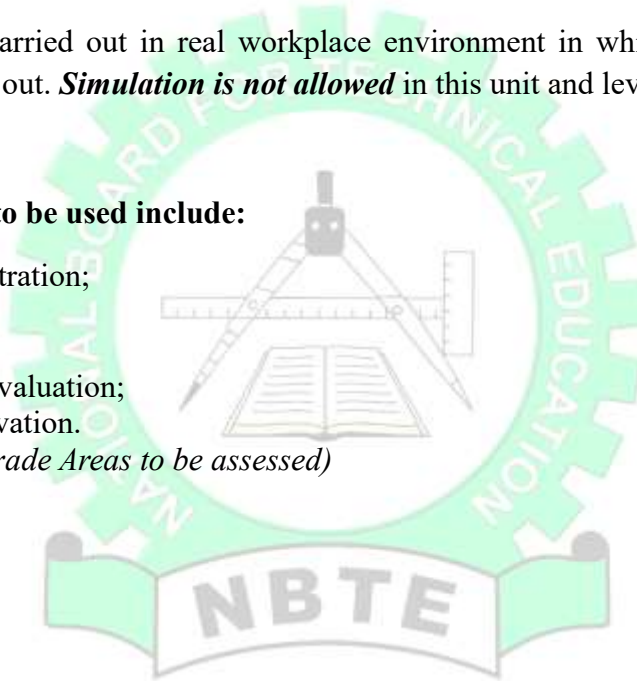
### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. *Simulation is not allowed* in this unit and level.

### **Assessment methods to be used include:**

1. Practical demonstration;
2. Written test;
3. Oral questioning;
4. Product quality evaluation;
5. Workplace observation.

*(This depends on the Trade Areas to be assessed)*



### Unit 5: Tomato Paste Production

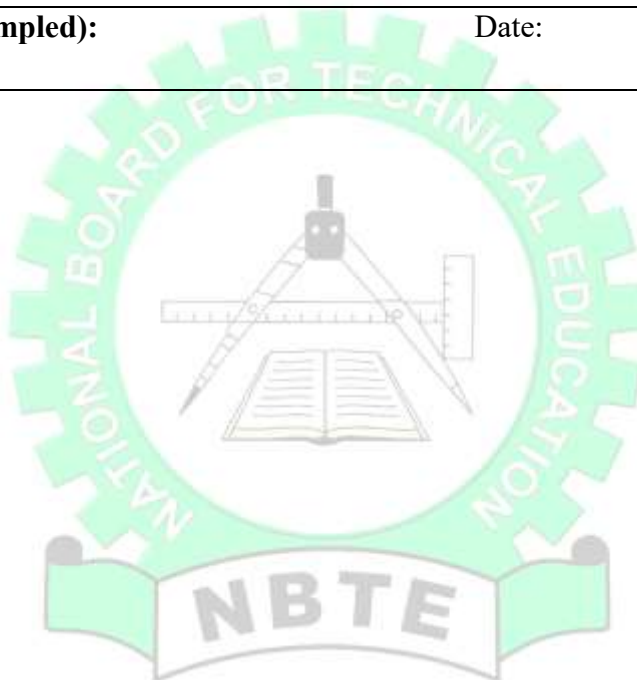
<b>LEARNING OUTCOME(LO)</b> <b>The learner will:</b>		<b>PERFORMANCE CRITERIA</b> <b>The learner can:</b>	<b>Evidence Type</b>				<b>Evidence Ref.</b> <b>Page No.</b>			
<b>LO 1:</b> Prepare tomatoes suitable for paste production.	1.1	Sort tomatoes based on ripeness, colour, firmness, and absence of rot for production.								
	1.2	Remove diseased, damaged, or pest-infested tomatoes.								
	1.3	Wash tomatoes with clean potable water.								
	1.4	Remove stems, dirt, and foreign materials.								
	1.5	Handle prepared tomatoes hygienically.								
<b>LO 2:</b> Produce clean tomato pulp for paste processing.	2.1	Cut tomatoes for processing.								
	2.2	Crush tomatoes for processing								
	2.3	Blanch tomatoes correctly to soften tissues.								
	2.4	Carry out pulping mechanical or manually.								
	2.5	Separate seeds and skins.								
	2.6	Check pulp for consistency,								
	2.7	Clean equipment before and after use.								
	2.8	Keep yield records.								
<b>LO 3:</b> Process tomato	3.1	Sanitize packaging equipment using approved methods.								

pulp into paste level.	3.2	Control heat level to avoid burning.									
	3.3	Stir pulp continuously for uniform concentration.									
	3.4	Measure additives (salt, preservatives) correctly.									
	3.5	Test paste thickness using standard methods.									
	3.6	Record cooking time and temperature.									
	3.7	Transfer pulp into appropriate cooking equipment.									
<b>LO 4:</b> Monitor tomato paste quality requirements.	4.1	Check paste colour, taste, and texture.									
	4.2	Avoid cross-contamination during processing.									
	4.3	Take samples of the paste.									
	4.4	Test samples for conformity.									
	4.5	Record product quality									
<b>LO 5:</b> Package tomato paste for storage.	5.1	Cool the paste to required temperature before packaging.									
	5.2	Package the paste in a sterilized container.									
	5.3	Fill the paste into packaging material hygienically.									
	5.4	Seal the filled containers properly.									
	5.5	Label the packaged product									

		properly.										
	5.6	Check packaged products for defects.										
<b>LO 6:</b> Store packaged tomato paste safely.	6.1	Keep stored product in a clean, cool, dry and ventilated area.										
	6.2	Arrange packaged products using FIFO method.										
	6.3	Monitor temperature and humidity in finished product store.										
	6.4	Apply pest control measures.										
	6.5	Dispose Spoiled products promptly.										
	6.6	Keep finished product record.										
<b>LO 7:</b> Apply good manufacturing practice (GMP).	7.1	Wear PPE correctly during production.										
	7.2	Apply hand sanitization procedures.										
	7.3	Apply equipment sanitization procedures.										
	7.4	Keep work surface clean before and after use.										
	7.5	Dispose waste safely.										
<b>LO 8:</b> Operate Tomato Paste Equipment Safely	8.1	Inspect equipment before use.										
	8.2	Operate machines based on manual guide										
	8.3	Inspect machines for faults.										
	8.4	Lubricate equipment where necessary.										

	8.5	Follow cleaning schedule.								
	8.6	Document reported faults in equipment's.								

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:



## **Unit 6: Tomato Packaging and Storage**

**Unit Reference Number:** AGP/TOP/006/L3

**NSQ Level:** 3

**Credit Value:** 6

**Guided Learning Hours:** 60

**Unit Purpose:** This unit impacts learners with knowledge and skills to package tomato products using appropriate materials, maintain quality standards, supervise packaging operations, and ensure safe storage and labeling according to safety regulations.

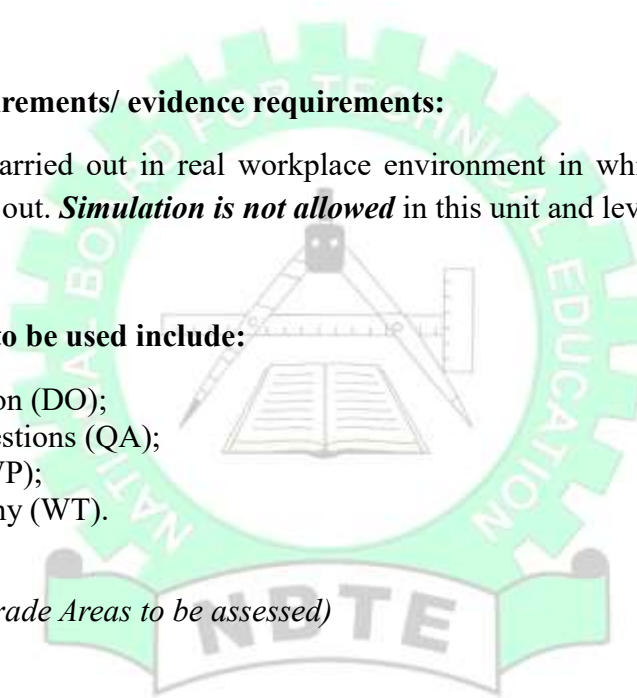
### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. ***Simulation is not allowed*** in this unit and level.

### **Assessment methods to be used include:**

1. Direct Observation (DO);
2. Oral/Written Questions (QA);
3. Work Product (WP);
4. Witness Testimony (WT).

*(This depends on the Trade Areas to be assessed)*



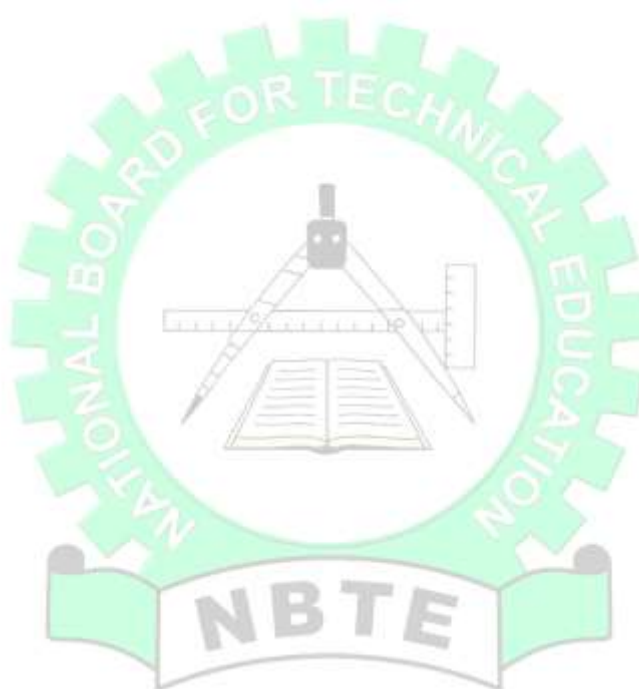
## Unit 6: Tomato Packaging and Storage

LEARNING OUTCOME(LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type				Evidence Ref. Page No.				
<b>LO 1:</b> Classify tomato products for packaging	1.1	Classify tomato products (fresh, paste, puree, dried, canned).									
	1.2	Select suitable packaging method based on product requirement.									
	1.3	Determine packaging types based on market requirements.									
	1.4	Estimate packaging quantities required for a batch production.									
	1.5	Carryout sorting and grading before packaging.									
<b>LO 2:</b> Manage packaging materials and selection	2.1	Select packaging materials based on product type and storage period.									
	2.2	Evaluate the strength, cleanliness, and suitability of packaging materials									
	2.3	Store packaging materials according to safety standards.									
	2.4	Determine packaging materials for production yield.									
	2.5	Keep inventory of packaging materials and products.									
<b>LO 3:</b> Prepare packaging area and equipment	3.1	Sanitize packaging equipment using approved methods.									
	3.2	Maintain hygienic packaging environment.									
	3.3	Calibrate weighing scales and sealing machines.									
	3.4	Organize workflow for efficient									

		packaging.																	
	3.5	Train assistants on hygiene procedures.																	
<b>LO 4:</b> Package tomato products correctly	4.1	Fill containers accurately using weighing scale.																	
	4.2	Demonstrate contamination avoidance during filling process.																	
	4.3	Arrange products in packages for safe transport.																	
	4.4	Apply batch control during packaging.																	
<b>LO 5:</b> Seal packages safely and Correctly	5.1	Operate sealing machines safely.																	
	5.2	Check seal strength and leakage.																	
	5.3	Maintain sealing equipment.																	
	5.4	Identify faulty seals and correct them.																	
	5.5	Document sealing problems and corrective actions.																	
<b>LO 6:</b> Label packaged tomato products	6.1	Check labels for correct information.																	
	6.2	Apply labels correctly and uniformly.																	
	6.3	Verify label accuracy (date, weight, product type, manufacturing date, expiring date).																	
	6.4	Follow national food labelling standards.																	
	6.5	Record batch numbers and traceability information																	
<b>LO 7:</b> Maintain hygiene and food safety during packaging.	7.1	Enforce hygiene rules in packaging area.																	
	7.2	Use protective clothing properly.																	
	7.3	Implement simple Hazard Analysis Critical Control Point (HACCP) practices.																	

	7.4	Dispose waste according to safety rules.																	
	7.5	Monitor workers' hygiene compliance during packaging.																	
<b>LO 8:</b> Handle packaging equipment safely	8.1	Operate sealing and weighing machines correctly.																	
	8.2	Carry out basic maintenance of equipment.																	
	8.3	Report faulty tools.																	
	8.4	Train assistants on safe equipment use.																	
	8.5	Follow electrical and mechanical safety rules.																	
<b>LO 9:</b> Store packaged tomato products	9.1	Arrange products based on first in first out (FIFO) method.																	
	9.2	Maintain suitable temperature and humidity.																	
	9.3	Prevent damage during stacking and transport.																	
	9.4	Monitor storage conditions regularly.																	
	9.5	Keep storage records.																	
<b>LO 10:</b> Conduct Quality Control Checks	10.1	Inspect packages for leaks or defects.																	
	10.2	Check product weight accuracy.																	
	10.3	Maintain quality control checklist.																	
	10.4	Reject substandard products.																	
	10.5	Report quality issues to supervisor.																	
<b>LO 11:</b> Keep Packaging Records	11.1	Record daily packaging output.																	
	11.2	Document material usage.																	
	11.3	Prepare simple packaging report.																	
	11.4	Maintain traceability records.																	

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:



## **Unit 7: Quality Control**

**Unit Reference Number: AGP/TOP/007/L3**

**NSQ Level: 3**

**Credit Value: 6**

**Guided Learning Hours:60**

**Unit Purpose:** This unit is designed to provide learners with the knowledge and skills required for quality control and assurance of tomato products.

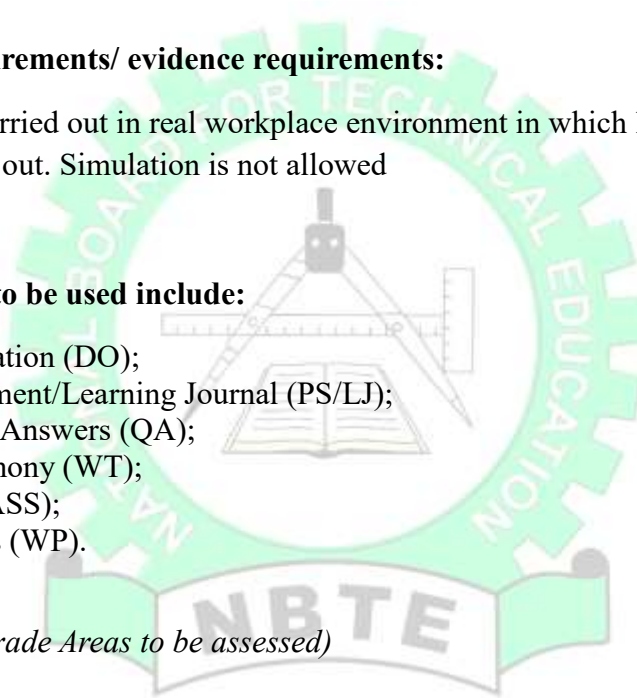
### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is not allowed

### **Assessment methods to be used include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

*(This depends on the Trade Areas to be assessed)*



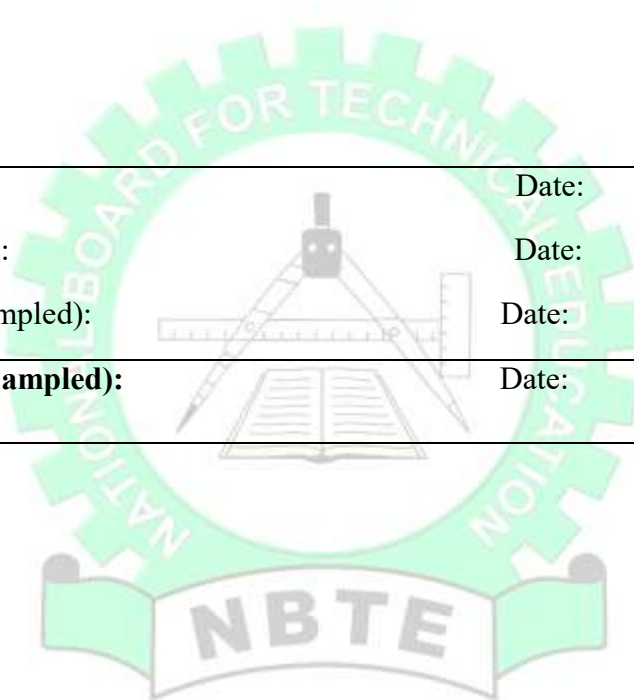
### Unit 7: Quality Control

LEARNING OUTCOME(LO) The learner will:	PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref. Page No.						
<b>LO 1:</b> Demonstrate Quality Control in Tomato Processing	1.1 Give a talk to explain quality control process								
	1.2 Give a talk on Quality Assurance								
	1.3 Identify quality parameters of fresh tomatoes								
	1.4 Identify quality parameters of processed tomato products.								
	1.5 Give a talk to summarize the importance of quality control in tomato processing								
	1.6 Determine quality deterioration in fresh tomatoes.								
<b>LO 2:</b> Determine acceptable physical quality of fresh tomatoes for processing	2.1 Identify size, colour and firmness in fresh tomatoes.								
	2.2 Determine Total Soluble Solids (TSS) in fresh tomato juice.								
	2.3 Carry out visual tomato colour measurement.								
	2.4 Identify defects in fresh tomatoes.								
<b>LO 3:</b> Carry out good Manufacturing Practices (GMP) in Tomato Processing	3.1 Identify the components of GMP								
	3.2 Perform cleaning and sanitation								
	3.3 Observe personal hygiene in tomato processing facilities.								

LEARNING OUTCOME(LO) The learner will:	PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref. Page No.						
	3.4 Carry out documentation and record keeping								
	3.5 Identify the tools and equipment used in GMP.								
<b>LO 4:</b> Identify tomato product specifications and standards	4.1 Identify the following tomato product quality parameters: brix, pH and colour								
	4.2 Determine specifications of product quality parameters (brix, pH and colour).								
	4.3 Identify packaging and labelling specifications								
	4.4 Identify the acceptable quality requirements of the product								
	4.5 Identify In-house and National Standards like NAFDAC, SON for tomato products.								
<b>LO 5:</b> Demonstrate Microbiological Checks in Tomato Processing	5.1 Identify microbiological agents in tomato processing								
	5.2 Identify microorganisms responsible for tomato spoilage (bacteria and fungi).								
	5.3 Carryout pasteurization and sterilization								
	5.4 Apply control measures against microorganisms- pasteurization, Sterilization, Drying								
	5.5 Carryout documentation of quality checks and results								

LEARNING OUTCOME(LO) The learner will:	PERFORMANCE CRITERIA The learner can:	Evidence Type				Evidence Ref. Page No.			
	5.6 Apply quarantine before product release process								
	5.7 Monitor conditions for storage of products during observation								

Learner's Signature:		Date:
Assessor's Signature:		Date:
IQA Signature (if sampled):		Date:
<b>EQA Signature (if sampled):</b>		Date:



## **Unit 8: Transport of Processed Tomato**

**Unit reference number: AGP/TOP/ 008/L3**

**Level:** 3

**Credit value:** 4

**Guided learning hours:** 40

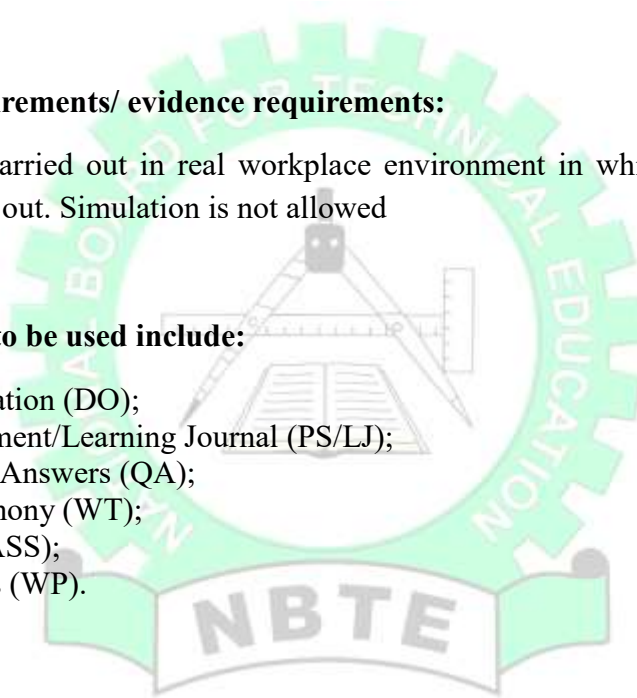
**Unit Purpose:** This unit is designed to provide learners with the knowledge and skills required to demonstrate understanding of the fundamentals of transportation and marketing of processed Tomatoes.

### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is not allowed

### **Assessment methods to be used include:**

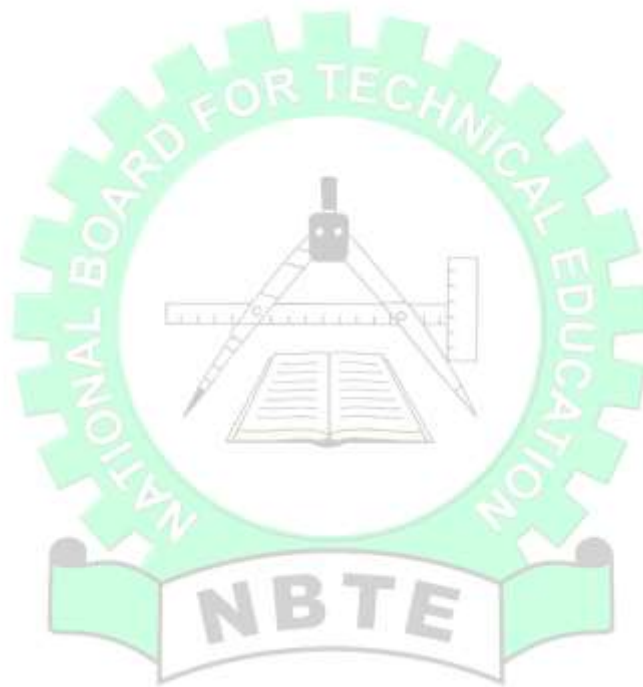
1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).



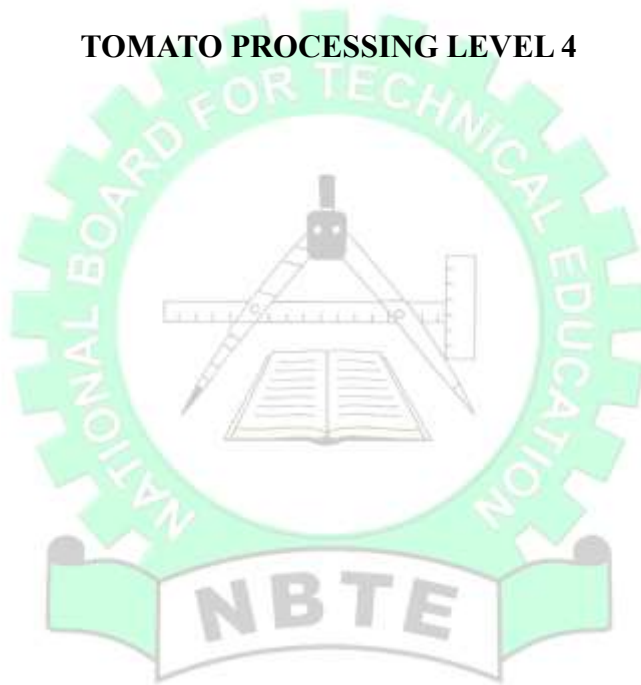
## Unit 8: Transport of Processed Tomato

LO (Learning outcome) Criteria:-			Evidence Type				Evidence Ref Page number			
<b>LO1:</b> Plan Transportation of Tomato products	1.1	Present a talk on means of transporting Tomato products.								
	1.2	Identify means of transporting Tomato products.								
	1.3	Use transport means to convey Tomato products								
	1.4	Load tomato products appropriately.								
<b>LO 2</b> Carryout vehicle inspection	2.1	Demonstrate vehicle inspection.								
	2.2	Identify the conditions of the vehicles.								
	2.3	Assist in vehicle inspection.								
<b>LO 3</b> Describe marketing of Tomato products	3.1	Identify market for tomato products.								
	3.2	Identify marketing requirements of fresh tomatoes								
	3.3	Identify marketing requiremenst of processed tomatoes.								
	3.4	Assist in measuring tomato products (weight).								

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQAM Signature (if sampled):	Date:
EQAM Signature (if sampled):	Date:



**TOMATO PROCESSING LEVEL 4**



## GENERAL INFORMATION

### OVERVIEW

This qualification is designed for individuals who are interested in pursuing a career in Tomato Processing for the award of National Skills Qualifications (NSQ)/National Occupational Standards (NOS). It is aimed at Senior Foremen workers in Tomato Processing Industries. NSQ Level 4 with the competencies necessary to support in Tomato Processing industries. This qualification is subject to review as and when the need arises.

### QUALIFICATION PURPOSE

This qualification is targeted at developing competence in Tomato Processing. This is focused on skills, incorporate supervision of processes, quality assurance (QA), and resource management responsibilities.

### QUALIFICATION REQUIREMENTS

All Candidates must:

- a. Be at least (16) years of age;
- b. Be medically fit;
- c. Be mentally fit (Mental alertness);
- d. Have achieved all the Safety and Health mandatory units in the qualification;
- e. Be a Nigerian citizen;
- f. Other nationals (International passport, residence permit);
- g. Be vetted.

### QUALIFICATION OBJECTIVES

To achieve this qualification, the learner should have the following competencies:

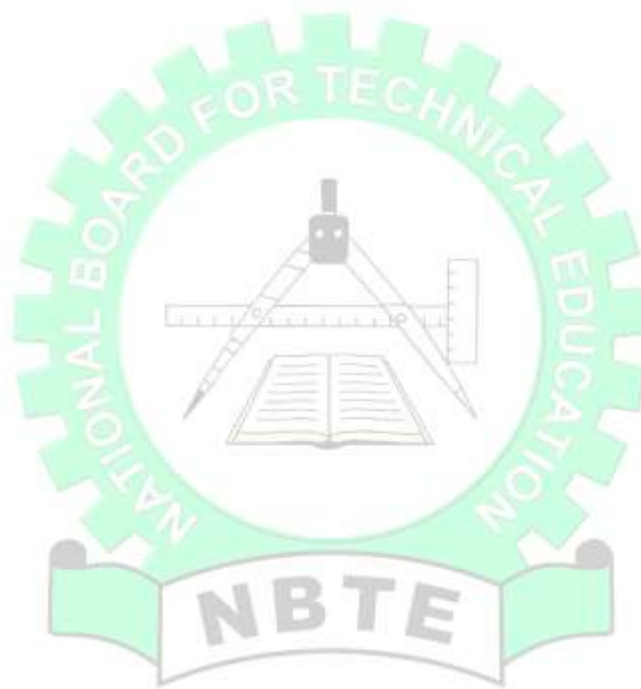
1. Supervised and maintaining health and Safety in tomato processing Environment;
2. Ensure effectively Communication in tomato processing Environment;
3. Supervised in exhibiting Teamwork;
4. Supervised Tomato Paste Production
5. Supervised Tomato Mix Production
6. Ensure Quality Control for Raw Materials
7. Ensure In-Process Quality Control
8. Ensure Finished Tomato Quality Control & Assurance

### **UNIT ASSESSMENT/EVIDENCE REQUIREMENTS:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Question and Answer (QA);
3. Witness Testimony (WT);
4. Personal statement (PS) or Reflective Practice (RP);
5. Assignment (ASS).



## National Skills Qualification/National Occupation Standard (NSQ/NOS) Unit Table

### LEVEL 4

#### MANDATORY UNITS

Unit	Unit Reference Number	Unit Title	Credit Value	Guided Learning Hours
1	AGP/TOP/001/L4	Health and Safety in tomato processing Environment	4	40
2	AGP/TOP/002/L4	Effective Communication in Tomato Processing Environment	3	30
3	AGP/TOP/003/L4	Teamwork	3	30
4	AGP/TOP/004/L4	Tomato Paste Production	8	80
5	AGP/TOP/005/L4	Tomato Mix Production	8	80
6	AGP/TOP/006/L4	Production Planning and Resource Management	6	60
7	AGP/TOP/007/L4	Quality Control for Raw Materials	7	70
8	AGP/TOP/008/L4	In-Process Quality Control	7	70
9	AGP/TOP/009/L4	Finished Tomato Quality Control and Assurance	7	70
			53	530



## GENERAL GUIDE

<b>Unit title</b>	Provides a clear explanation of the content of the unit.
<b>Unit number</b>	The unique number assigned to the unit.
<b>Unit reference</b>	The unique reference number given to each unit at qualification approval by NBTE
<b>Unit level</b>	Denotes the level of the unit within the National Vocational Qualification framework NSQF.
<b>Unit credit value</b>	The value that has been given to the unit based on the expected learning time for an average learner. 1 credit = 10 learning hours
<b>Unit aim</b>	Provides a brief outline of the unit content.
<b>Learning outcome</b>	A statement of what a learner will know, understand or be able to do, as a result of a process of learning.
<b>Assessment criteria</b>	A description of the requirements a learner must achieve to demonstrate that a learning outcome has been met.
<b>Unit assessment guidance</b>	Any additional guidance provided to support the assessment of the unit.
<b>Unit guided learning hours</b>	The average number of hours of supervised or directed study time or assessment required to achieve a qualification or unit of a qualification.

## **Unit 1: Health and Safety in Tomato Processing Environment**

**Unit Reference Number: AGP/TOP/001/L4**

**NSQ Level: 4**

**Credit Value: 4**

**Guided Learning Hours: 40**

**Unit Purpose:** This Unit is to equip learners with the essential knowledge and skills required to supervised and maintain safe work environment within Tomato Processing Facilities. It enables learners to supervised relevant health and safety standards, appropriate used of PPEs, respond appropriately to accidents and safe procedures for lifting, loading, and handling material in Tomato Processing industries.

### **Unit Assessment Requirements/ Evidence Requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

### **Assessment Methods to be Used Include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

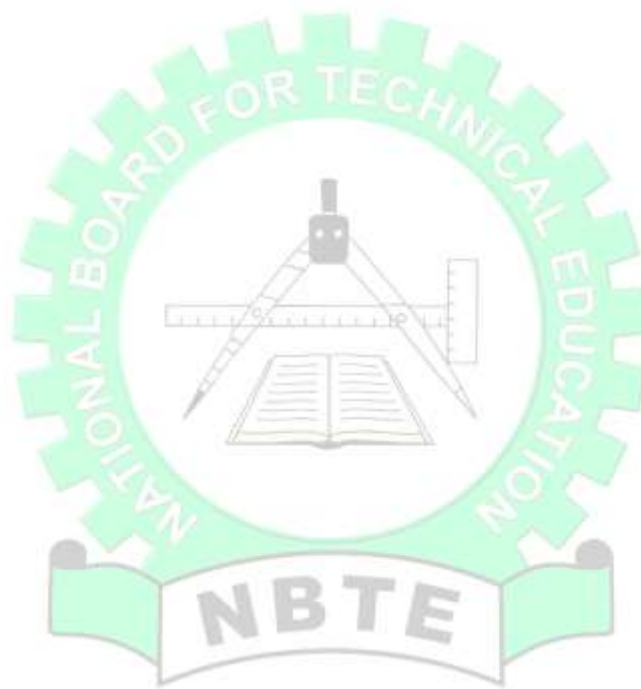
*(This depends on the Trade Areas to be assessed)*

### Unit 1: Health and Safety in Tomato Processing Environment

LEARNING OUTCOME (LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref.  Page No.			
<b>LO 1:</b>  Maintain safe working environment in tomato processing facilities.	1.1	Observe safe work practices along the tomato value chain.								
	1.2	Follow safety signs and symbols in Tomato Processing facilities.								
	1.3	Supervise safe work practices and instructions in tomato processing facilities.								
	1.4	Verify tasks are in accordance with health and safety practices.								
<b>LO 2:</b>  Supervise the uses of safety standards in Tomato processing facilities	2.1	Assess work environment for hazards in tomato processing facilities.								
	2.2	Enforce standard operations in tomato processing facilities.								
	2.3	Supervise the use safety tools and materials in tomato processing facilities.								
<b>LO 3:</b>  Supervise use of personal Protective equipment (PPE) in tomato processing facilities	3.1	Check the types and quality of PPEs.								
	3.2	Select appropriate PPE.								
	3.3	Supervise the use of PPE for a given task.								
	3.4	Maintain PPE before and after use.								
<b>LO 4:</b>	4.1	Locate first aid facility.								
	4.2	Use basic dressing materials.								

LEARNING OUTCOME (LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type					Evidence Ref.  Page No.					
Respond promptly to accidents/injury in tomato processing	4.3	Respond to instructions given by the Supervisor											
	4.4	Report accident or injury to the appropriate supervisor.											
<b>LO 5:</b>  Organize safe work habit and clean work environment in tomato processing.	5.1	Use safe access and exit routes in the work environment.											
	5.2	Ensure appropriate working tools, materials and equipment.											
	5.3	Supervised use tools and equipment safely											
	5.4	Confirm all tools, equipment and unused materials for appropriate return to storage.											
	5.5	Supervise general housekeeping of work environment.											
	5.6	Organize appropriately wastes dispose to designated waste facilities.											
<b>LO 6:</b>  Maintain safe lifting, loading/offloading and stacking of materials in Tomato processing facilities	6.1	Verify the selects safe lifting and stacking techniques.											
	6.2	Supervise safe lifting task in loading and offloading of materials without mechanical assistance.											
	6.3	Confirm safe lifting and loading techniques with mechanical assistance.											
	6.4	Supervise stack materials correctly.											

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:



## **Unit 2: Effective Communication in Tomato Processing Environment**

**Unit Reference Number: AGP/TOP/002/L4**

**NSQ Level: 4**

**Credit Value: 3**

**Guided Learning Hours: 30**

**Unit Purpose:** This unit is to ensure effective communication in Tomato processing Environment

**Unit assessment requirements/evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

***Assessment methods to be used include:***

1. Direct Observation/Oral Questions (DO);
2. Question and Answer (QA);
3. Witness Testimony (WT);
4. Personal Statement (PS) or Reflective Practice (RP);
5. Work Product (WP).

*. (This depends on the Trade Areas to be assessed)*

## UNIT 2: Communicate Effectively in Tomato Processing Environment

LEARNING OBJECTIVE (LO)	PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
		The learner can:							
The learner will:									
LO 1: Supervise the use of a non-complex communication system in a work environment	1.1	Supervise use of correct verbal means to pass on necessary information							
	1.2	Supervise use of non-verbal means to convey necessary information e.g. body language, signs							
	1.3	Supervise symbols and signs are interpret appropriately							
	1.4	Supervise speaking in a respectful manner							
LO 2: Ensure reliable information used in work environment	2.1	Verify the source of information in the working environment.							
	2.2	Maintain effectively with the source of information.							
	2.3	Supervise the use the different information flow systems in the working environment.							
	2.4	Access information to avoid challenges in the work situation.							
	2.5	Analyse findings appropriately in accordance with laid down procedures in the work environment i.e. Cards, Flip Chart.							
	2.6	Supervise the uses gadget like ICT for communication							
LO 3: Supervise various means of communication in a work environment	3.1	Verify communication equipment are in the work environment							
	3.2	Supervise the use of various communication equipment in a work environment effectively							
	3.3	Confirm effective dissemination of information to the right Personnel							
	3.4	Give instruction in line with ethics of the work environment							

### **Unit 3: Teamwork**

**Unit Reference Number: AGR/TOP/003/L4**

**NSQ Level: 4**

**Credit Value: 3**

**Guided Learning Hour: 30 hours**

**Unit Purpose:** This unit is designed to provide learners with the knowledge and skills required to supervise team members and develop spirit of teamwork to achieved common goal.

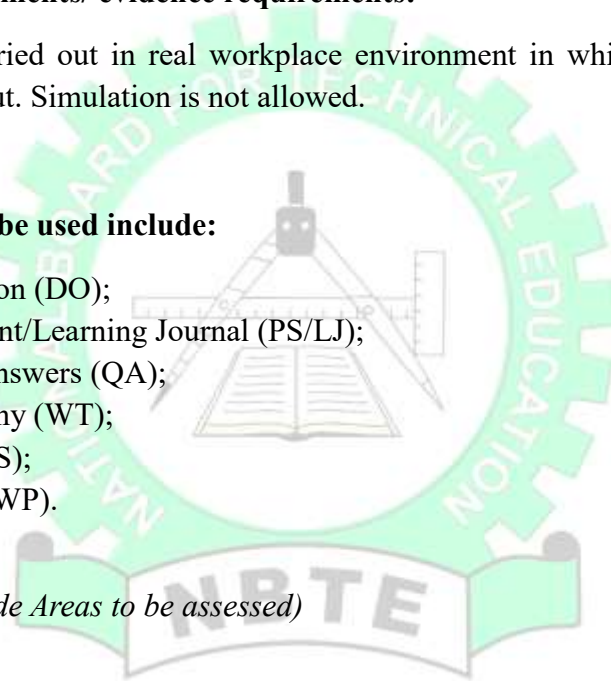
#### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is not allowed.

#### **Assessment methods to be used include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

*(This depends on the Trade Areas to be assessed)*



### Unit 3: Teamwork

LO (Learning Outcome) Criteria: -			Evidence Type				Evidence Ref Page Number			
<b>LO 1</b> Ensure good working relationship with co-workers	1.1	Supervise team members								
	1.2	Analyse the importance of each team member								
	1.3	Support all the team members contribute in a given task								
<b>LO 2</b> Supervise responsibility within the team	2.1	Supervise roles of each team member.								
	2.2	Supervise tasks in line with the team rules and regulations.								
	2.3	Supervise group task.								
<b>LO 3</b> Confirm the rule of organization are comply.	3.1	Confirm code of conduct is followed in work environment								
	3.2	Confirm the use organizational code of practice								
	3.3	Confirm the work is in line with organizational standard.								

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQAM Signature (if sampled):	Date:
EQAM Signature (if sampled):	Date:

## **Unit 4: Tomato Paste Production**

**Unit Reference Number:** AGP/TOP/004/L4

**NSQ Level:** 4

**Credit Value:** 8

**Guided Learning Hours:** 80

**Unit Purpose:** This unit covers competencies required to supervise tomato paste production operations including raw material inspection, process control, concentration monitoring, quality assurance, packaging supervision, documentation, and decision-making to meet industrial standards.

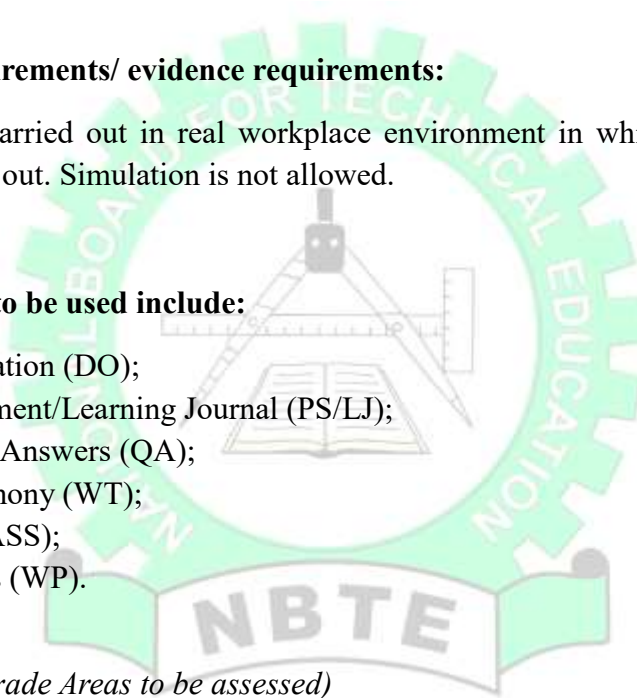
### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is not allowed.

### **Assessment methods to be used include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

*(This depends on the Trade Areas to be assessed)*



#### Unit 4: Tomato Paste Production

LEARNING OUTCOME (LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref. Page No.			
LO 1: Plan for Tomato Paste Production	1.1	Prepare production schedule according to demand.								
	1.2	Estimate raw material requirements.								
	1.3	Document equipment availability and readiness.								
	1.4	Assign tasks to personnel.								
	1.5	Communicate production targets clearly.								
LO 2: Inspect Raw Tomatoes for production.	2.1	Sample tomato according to Quality Control (QC) procedures.								
	2.2	Assess physical quality parameters.								
	2.3	Analyze the result of quality check.								
	2.4	Reject non-conforming materials								
	2.5	Records result of inspection and actions taken.								
LO 3: Supervise Washing, Sorting, and Blanching	3.1	Monitor washing procedures for hygiene.								
	3.2	Sort to remove defective tomatoes.								
	3.3	Control blanching temperature and time.								
	3.4	Verify equipment sanitation.								
	3.5	Dispose waste safely.								

<b>LO 4:</b> Control Pulping and Concentration Process	4.1	Operate pulping machines safely.																		
	4.2	Supervise removal seeds and skins efficiently.																		
	4.3	Monitor evaporation temperature and pressure.																		
	4.4	Control paste concentration (Brix level).																		
	4.5	Maintain energy efficiency.																		
<b>LO 5:</b> Conduct Quality Control on Tomato Paste	5.1	Evaluate paste consistency and colour.																		
	5.2	Measure brix.																		
	5.3	Measure pH levels.																		
	5.4	Eliminate microbial risks.																		
	5.5	Monitor additives to be within standard limits.																		
	5.6	Compare test results with industry standards and regulation.																		
<b>LO 6:</b> Supervise Packaging and Storage	6.1	Inspect packaging materials for quality.																		
	6.2	Control filling temperature and weight.																		
	6.3	Check sealing integrity.																		
	6.4	Use labels that meet regulatory requirements.																		
	6.5	Maintain hygienic storage conditions.																		
<b>LO 7:</b> Maintain Production Records	7.1	Complete batch production records																		
	7.2	Document quality control (QC) results.																		
	7.3	Update equipment maintenance logs.																		

	7.4	Submit report to management.											
<b>LO 8:</b> Make Production Decisions and Solve Problems	8.1	Identify process deviations early.											
	8.2	Implement corrective actions where necessary.											
	8.3	Suggest production efficiency and improvements.											
	8.4	Report equipment faults promptly.											
	8.5	Mentor team members.											
<b>LO 9:</b> Apply Food Safety and Regulatory Standards	9.1	Confirm compliance with HACCP procedures.											
	9.2	Enforce hygiene rules.											
	9.3	Minimize food contamination risks.											
	9.4	Follow occupational safety rules.											
	9.5	Apply environmental guidelines.											

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQAM Signature (if sampled):	Date:
EQAM Signature (if sampled):	Date:

## **Unit 5: Tomato Mix Production**

**Unit reference number: AGP/TOP/ 005/L4**

**Level: 4**

**Credit value: 8**

**Guided learning hours: 80**

**Unit Purpose:** This unit is designed to provide learners with the knowledge and skills required to demonstrate understanding of the tomato mix production.

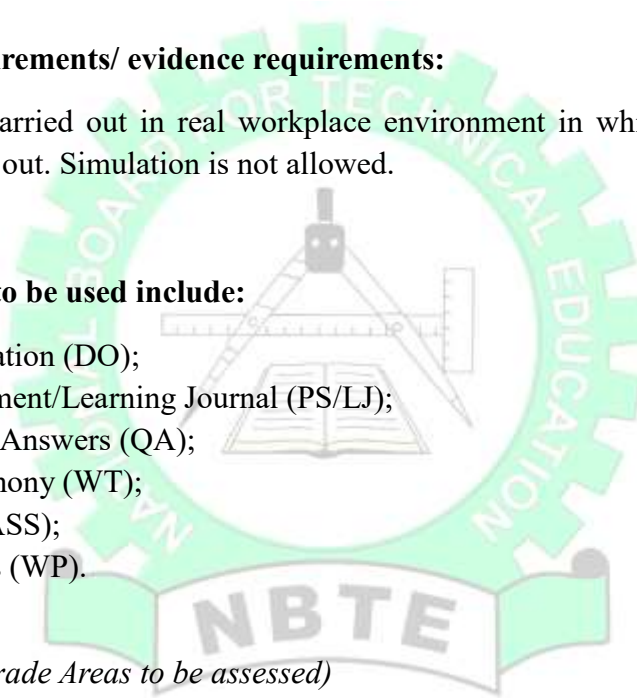
### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is not allowed.

### **Assessment methods to be used include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

*(This depends on the Trade Areas to be assessed)*

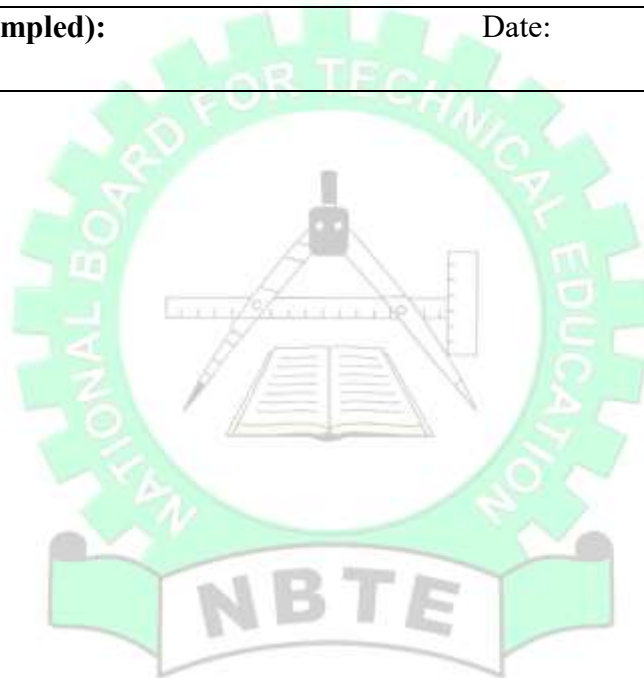


## Unit 5: Tomato Mix Production

LEARNING OUTCOME (LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref. Page No.			
LO 1  Produce tomato mix according to specified requirements.	1.1	Follow approved recipe formulation for tomato mix								
	1.2	Weigh required ingredient using a Standard Operating Procedure (SOP)								
	1.3	Mix the ingredient accurately								
LO 2  Tomato mix processing	2.1	Weigh all the required ingredients								
	2.2	Prepare ingredient (washing, chopping, pre-mix)								
	2.3	Mix the ingredients according to SOP								
	2.4	Ensure proper blending and cooking								
LO 3  Carryout Quality Check	3.1	Check product consistency using refractometer								
	3.2	Test viscosity using viscometer								
	3.3	Check taste using tongue.								
LO 4  Package and Label of Tomato Mix	4.1	Package products in approved containers								
	4.2	Label products accurately								
	4.3	Confirm packaging is clean and secure								
LO 5  Carry Out Documentation	5.1	Record production date, batch number and quantity produced								
	5.2	Record any deviation issues								
	5.3	Keep records of quality check and test								
LO 6  Safety and Hygiene	6.1	Follow GMP and safety guide lines								
	6.2	Ensure work area is clean and sanitized								
	6.3	Use personnel protective equipment (PPE).								

LO 7 Equipment handling	7.1	Operate equipment correctly using manual or SOP										
	7.2	Carryout equipment check before use										
	7.3	Carryout equipment check after use										

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:



## **Unit 6: Production Planning and Resource Management in Tomato Processing**

**Unit Reference Number: AGP/TOP/006/L4**

**NSQ Level: 4**

**Credit Value: 6**

**Guided Learning Hours: 60**

**Unit Purpose:** This unit covered the competencies required to plan, monitor, optimize production operations, and efficiently managed resources in a Tomato processing facility.

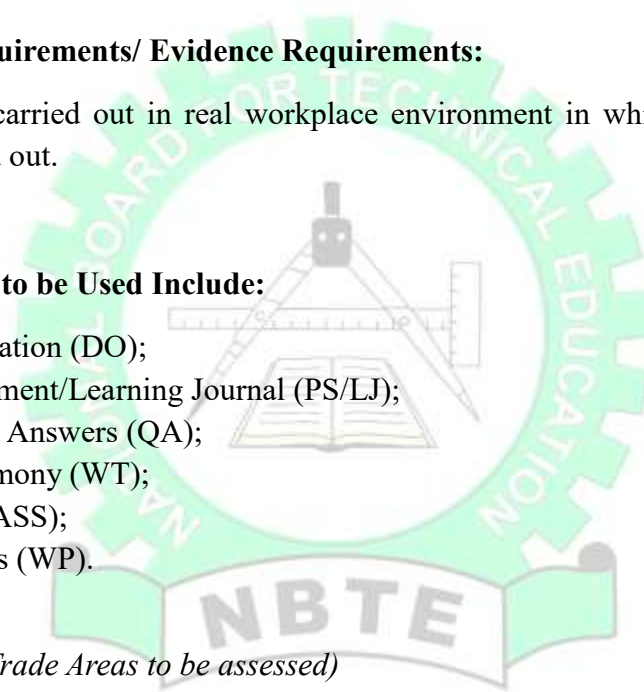
### **Unit Assessment Requirements/ Evidence Requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

### **Assessment Methods to be Used Include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

*(This depends on the Trade Areas to be assessed)*



## Unit 6: Production Planning and Resource Management in Tomato Processing

LEARNING OUTCOME(LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type				Evidence Ref. Page No.							
<b>LO 1:</b> Plan Production Activities for Tomato Processing Operations	1.1	Interpret production orders, processing targets and customer specification accurately.												
	1.2	Develop a production schedule based on supply of tomatoes, equipment capacity and workforce availability												
	1.3	Determine appropriate batch sizes for various tomato products (purée, paste, juice, diced tomatoes, dried tomatoes)												
	1.4	Identify potential production bottlenecks and adjust schedules to minimise downtime												
	1.5	Communicate production plans clearly to relevant departments, including procurement, quality control and maintenance												
<b>LO 2:</b> Manage Resources for Efficient Tomato Processing	2.1	Estimate quantity and quality of tomatoes required, applying FEFO/FIFO principles.												
	2.2	Allocate personnel to workstations based on skills, shift requirements and safety considerations.												
	2.3	Confirm availability and proper functioning of processing equipment												
	2.4	Plan effective utilisation of utilities (water, energy, steam) to support continuous production.												

LEARNING OUTCOME(LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type				Evidence Ref. Page No.				
	2.5	Coordinate preventive maintenance to reduce equipment breakdowns and optimise productivity.									
LO 3: Monitor production processes and maintain accurate documentation	3.1	Track daily production output against planned targets									
	3.2	Monitor material usage									
	3.3	Maintain accurate batch records, shift logs, resource-use sheets and production reports.									
	3.4	Report deviations, hazards or quality issues promptly to supervisors or the quality assurance team.									

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled):	Date:
EQA Signature (if sampled):	Date:

## **Unit 7: Quality Control for Raw Materials**

**Unit Reference Number:** AGP/TOP/007/L4

**NSQ Level:** 4

**Credit Value:** 7

**Guided Learning Hours:** 70

**Unit Purpose:** This unit covers the competencies required to conduct physical and chemical analysis of raw Tomato materials, maintain quality records, and make quality control decisions before final processing.

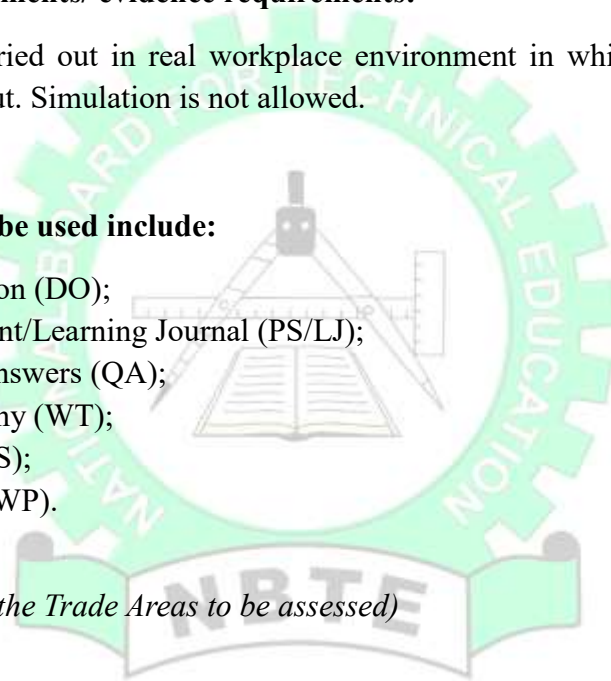
### **Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is not allowed.

### **Assessment methods to be used include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

*(This depends on the Trade Areas to be assessed)*

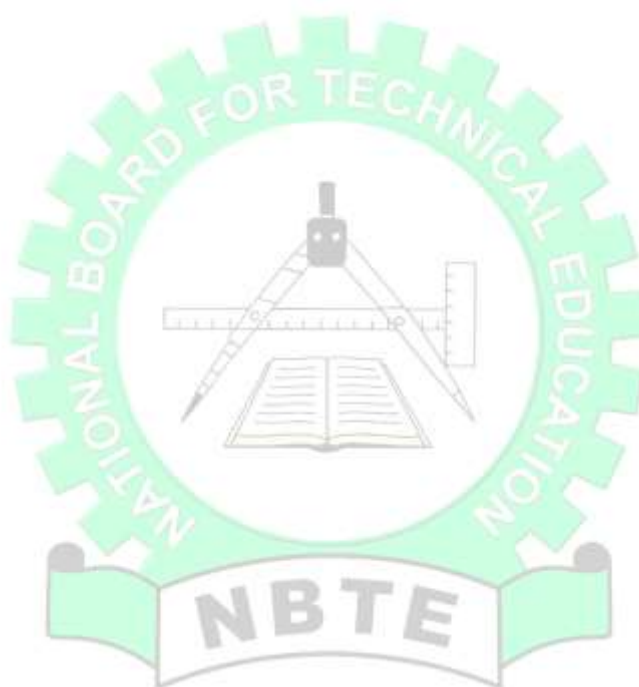


## UNIT 7: Quality Control for Raw Materials

LEARNING OUTCOME(LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref. Page No.			
LO 1: Prepare raw materials for quality inspection	1.1	Observe processing standards and specifications.								
	1.2	Prepare sampling plan according to standard operating procedures (SOP).								
	1.3	Calibrate tools and equipment.								
	1.4	Wear personal protective equipment (PPE) correctly.								
	1.5	Comply with internal and regulatory agency food safety standard e.g NAFDAC								
LO 2: Conduct physical analysis of raw tomatoes	2.1	Sample tomatoes using standard operating procedure for sampling.								
	2.2	Assess size, weight, colour, firmness, and ripeness.								
	2.3	Identify damages such as bruises, rot, insect infestation, and cracks.								
	2.4	Check Foreign materials.								
	2.5	Remove foreign materials.								
	2.6	Record physical quality analysis report.								
LO 3: Conduct chemical analysis of raw tomatoes	3.1	Measure pH of tomato samples using a pH meter.								
	3.2	Determine total soluble solids (TSS/Brix) using refractometer.								
	3.3	Measure moisture content using standard methods.								

	3.4	Determine the acidity level by titration method.												
	3.5	Compare chemical analysis results with processing standards.												
<b>LO 4:</b> Maintain quality control records	4.1	Record data in approved QC formats.												
	4.2	Document batch numbers and supplier details.												
	4.3	Store records safely for traceability.												
	4.4	Use digital record systems where available.												
<b>LO 5:</b> Interpret results and make quality decisions	5.1	Evaluate physical and chemical results against standards.												
	5.2	Recommend to accept, reject, or re-grade raw materials												
	5.3	Recommend corrective actions.												
	5.4	Notify the suppliers of quality issues.												
	5.5	Adjust processing where necessary.												
<b>LO 6:</b> Apply food safety and quality standards	6.1	Apply Hazard Analysis and Critical Control Point (HACCP) during inspection.												
	6.2	Control food safety hazards.												
	6.3	Observe hygiene and sanitation procedures.												
	6.4	Follow workplace safety regulations.												
	6.5	Observe environmental waste disposal guidelines.												

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:



## **Unit 8: In-Process Quality Control**

**Unit Reference Number: AGP/TOP/008/L4**

**NSQ Level: 4**

**Credit Value: 7**

**Guided Learning Hours: 70**

**Unit Purpose:** the purpose of this unit is to train the learners on quality control procedures and how it's applied through all stages of tomato processing activities

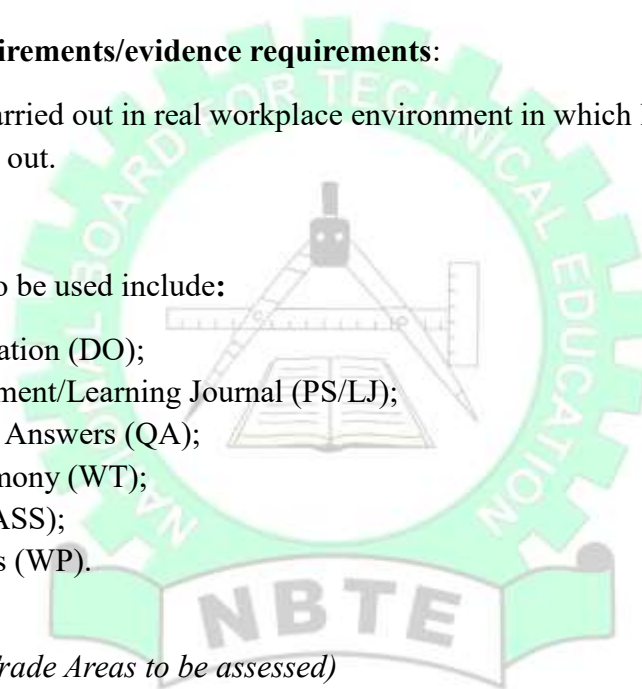
### **Unit assessment requirements/evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

*(This depends on the Trade Areas to be assessed)*

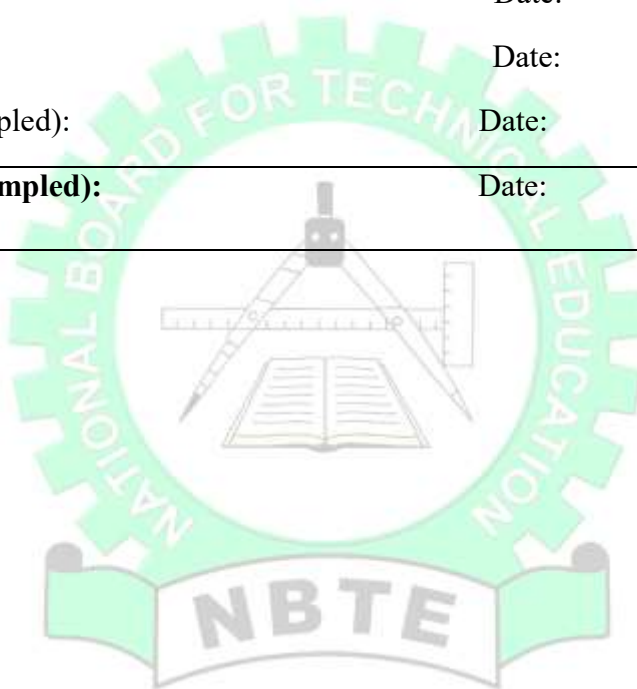


## Unit 8: In-Process Quality Control

<b>LEARNING OUTCOME(LO)</b>  <b>The learner will:</b>	<b>PERFORMANCE CRITERIA</b>  <b>The learner can:</b>			<b>Evidence Type</b>	<b>Evidence Ref.</b>  <b>Page No.</b>			
<b>LO 1:</b>  Monitor sorting and cleaning of fresh tomato.	1.1	Check the quality of sorted and clean Tomato.						
	1.2	Confirm rejects are properly disposed.						
	1.3	Check the quality of water used in cleaning.						
<b>LO 2:</b>  Monitor the quality of tomatoes during pre-heating	2.1	Inspect the skin of the tomato for cracks.						
	2.2	Inspect the texture of the tomato.						
	2.3	Monitor the color of the tomatoes						
<b>LO 3:</b>  Monitor the quality of the tomatoes during evaporation/ concentration	3.1	Monitor brix quality using refractometer						
	3.2	Monitor temperature of the tomatoes						
	3.3	Check the product for consistency using flow test						
<b>LO 4:</b>  Monitor the quality of tomatoes during filling and sealing	4.1	Monitor target temperature of the product before filling and sealing						
	4.2	Check the level or weight of packaged products.						
	4.3	Check container integrity (seal strength, etc)						
<b>LO 5:</b>  Take action based on quality checks.	5.1	Keep record of QC activities						
	5.2	Advice production supervisor about making corrections						
	5.3	Take immediate decisions on quality						

LEARNING OUTCOME(LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type	Evidence Ref.  Page No.
		issues.		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:



## **Unit 9: Finished Tomato Product- Quality Control and Assurance**

**Unit Reference Number: AGP/TOP/009/L4**

**NSQ Level: 4**

**Credit Value: 7**

**Guided Learning Hours: 70**

**Unit Purpose:** The purpose of this unit is to ensure that learners will be equipped with skills and knowledge that enable the production of tomato products to meet established quality, safety and verification of regulatory compliance for the finished products.

**Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

**Assessment methods to be used include:**

1. Direct Observation (DO);
2. Personal statement/Learning Journal (PS/LJ);
3. Questions and Answers (QA);
4. Witness Testimony (WT);
5. Assignment (ASS);
6. Work Products (WP).

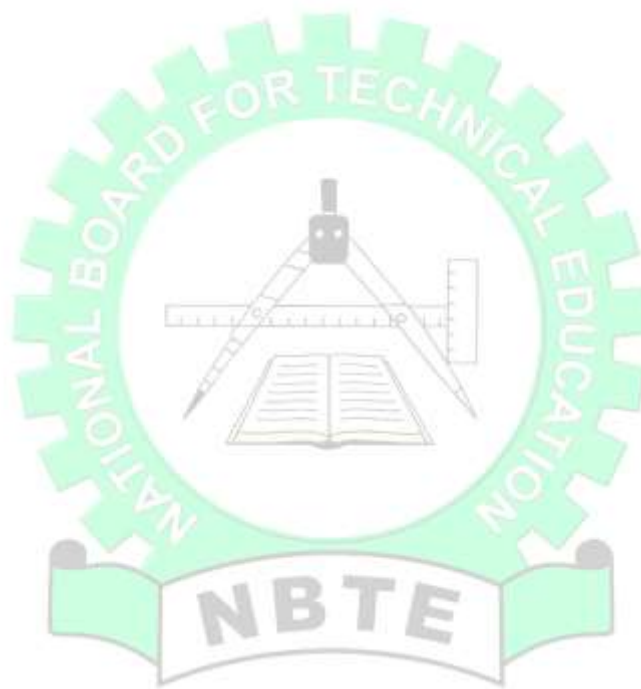
*(This depends on the Trade Areas to be assessed)*

## UNIT 9: Tomato Product- Quality Control and Assurance

LEARNING OUTCOME(LO)  The learner will:		PERFORMANCE CRITERIA  The learner can:	Evidence Type				Evidence Ref. Page No.				
<b>LO 1:</b> Implement quality control and assurance principles in tomato product manufacturing.	1.1	Conduct sensory evaluations of finished tomato products (e.g., taste, texture, color, flavour).									
	1.2	Perform chemical tests (e.g., pH, Titratable acidity, Salt Content).									
	1.3	Perform physical tests (e.g., Consistency, Colour, Brix).									
	1.4	Verify packaging and labelling compliance with regulations and standards.									
	1.5	Apply preservatives and additives where applicable									
	1.6	Carry out Cleaning In Place (CIP)									
<b>LO 2:</b> Apply quality control and assurance procedures to ensure finished tomato products meet specifications.	2.1	Monitor production processes to ensure adherence to quality standards.									
	2.2	Identify potential quality hazards and implement controls.									
	2.3	Collaborate with production team to resolve quality issues.									
	2.4	Interpret quality control results against standards									
<b>LO 3:</b> Carry out corrective and preventive	3.1	Investigate quality deviations and identify root causes.									
	3.2	Implement corrective actions to									

LEARNING OUTCOME(LO)  The learner will:	PERFORMANCE CRITERIA  The learner can:	Evidence Type	Evidence Ref. Page No.						
actions		prevent future occurrences.							
	3.3	Document and communicate quality deviations to relevant stakeholders.							
<b>LO 4:</b> Conduct Microbiological Quality Assessment of finished product.	4.1	Identify common microorganisms associated with tomato spoilage.							
	4.2	Perform total aerobic count							
	4.3	Perform Howard Mould Count (HMC)							
	4.4	Formulate hygienic practices to prevent contamination							
	4.5	Interpret microbiological results in relation to safety standards							
<b>LO 5:</b> Implement Quality Control Reports and documentation	5.1	Develop Quality Control Standard Operating Procedures - SOPs							
	5.2	Maintain Laboratory records							
	5.3	Apply traceability procedures							
	5.4	Apply product recall procedures							
	5.5	Prepare quality Assurance reports							
	5.6	Prepare sensory evaluation reports							
	5.7	Review and update quality procedures as needed.							

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:



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**National Zero Draft Development Workshop**

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## NSQ TOMATO PROCESSING TOOLS AND EQUIPMENT LIST

### TOMATO PROCESSING TRAINING FUNCTIONAL SECTIONS

1. Receiving & Sorting Area
2. Washing & Preparation Area
3. Processing Area (Cooking/Drying/Milling)
4. Packaging Area
5. Storage Area

### HEALTH & SAFETY IN TOMATO PROCESSING ENVIRONMENT

#### Personal Protective Equipment (PPE)

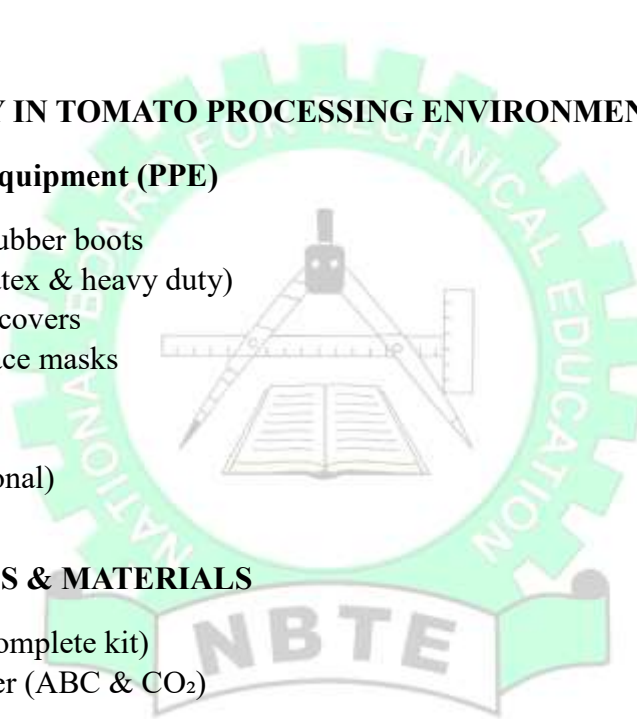
1. Safety boots / rubber boots
2. Hand gloves (latex & heavy duty)
3. Hair nets / hair covers
4. Nose masks / face masks
5. Aprons
6. Safety goggles
7. Ear plugs (optional)
8. Reflective vest

#### SAFETY FACILITIES & MATERIALS

1. First aid box (complete kit)
2. Fire extinguisher (ABC & CO<sub>2</sub>)
3. Fire blanket
4. Emergency exit signs
5. Warning and safety signs
6. Hand washing station (soap + sanitizer)
7. Waste bins (covered & labelled)
8. Spill cleaning kit
9. Stretchers

#### HANDLING & LIFTING AIDS

1. Wheelbarrow
2. Hand trolley
3. Pallets
4. Plastic crates



## COMMUNICATION IN WORK ENVIRONMENT

1. Notice board
2. Flip charts & markers
3. Record books/log books
4. SOP Manuals
5. Two-way radios (optional)
6. Mobile phone
7. Desk bell/alert buzzer
8. Work instruction cards

## HANDLING & STORAGE OF FRESH TOMATOES

1. Harvesting baskets
2. Plastic crates (ventilated)
3. Wooden pallets
4. Weighing scale (manual & digital)
5. Storage racks
6. Thermometer (room/storage)
7. Hygrometer
8. Ventilated storage shelves
9. Sorting tables

## TOMATO SORTING & CLEANING

1. Sorting tables
2. Sorting trays
3. Grading sieve
4. Sorting conveyor (optional small unit)
5. Reject/waste bins
6. Washing tanks/basins
7. Running water system / hose
8. Spray nozzles
9. Brushes (soft)
10. Food-grade detergent
11. Knife set (stainless steel)
12. Cutting boards (food grade)
13. Air pump

## HYGIENE EQUIPMENT

1. Handwashing sink
2. Soap dispenser
3. Disposable towels
4. Hand dryer
5. Sanitizer solution container



## **BASIC TOMATO PROCESSING METHODS**

### **Cutting & Preparation**

1. Stainless steel knives
2. Chopping boards
3. Slicing machine/manual slicer
4. Peeler
5. Seed remover/sieve
6. Drying tray

### **Cooking & Processing**

1. Gas cooker/industrial burner
2. Cooking pots (stainless steel)
3. Steam kettle (optional)
4. Stirring paddles/spoons
5. Thermometer (food grade)
6. Measuring cups & spoons

### **Drying**

1. Solar dryer
2. Tray dryer
3. Drying racks
4. Drying trays
5. Moisture meter (optional)

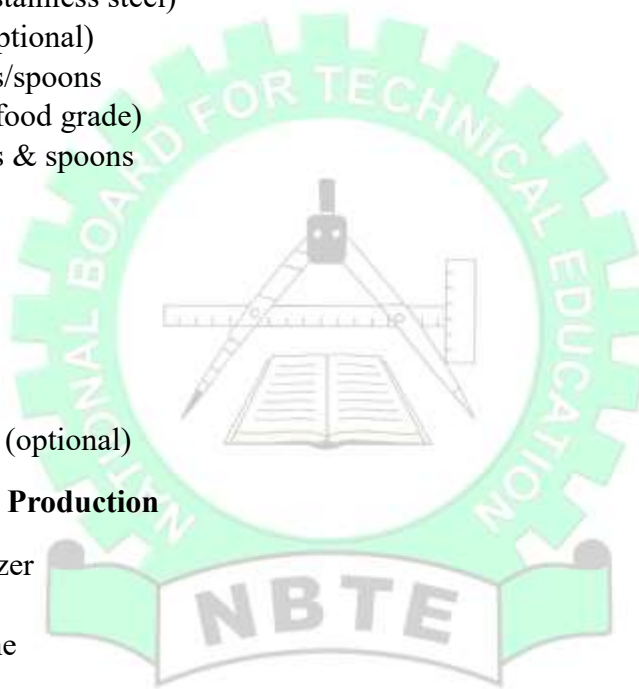
### **Milling/Paste/Powder Production**

1. Blender/liquidizer
2. Grinder/mill
3. Pulping machine
4. Sieves/filters
5. Mixing bowls
6. Mixing paddle

## **PACKAGING & STORAGE**

### **Packaging Materials**

1. Plastic containers
2. Glass bottles
3. Sachet nylon
4. Aluminum foil packs
5. Cartons
6. Cans (optional)
7. Labels & stickers



## **Packaging Equipment**

1. Weighing scale (precision)
2. Funnel
3. Ladle

## **Manual filling machine**

1. Heat sealer
2. Cap sealing machine
3. Can seamer (optional)
4. Vacuum sealer (optional)

## **Labelling & Documentation**

1. Label printer/marker
2. Date coding stamp
3. Record sheets
4. Packaging register

## **STORAGE EQUIPMENT**

1. Storage shelves
2. Pallets
3. Finished goods racks
4. Cold room/refrigerator (optional small-scale)
5. Hygrometer & thermometer

## **CLEANING & SANITATION EQUIPMENT**

1. Detergents (food grade)
2. Disinfectant/sanitizer
3. Brushes (floor & equipment)
4. Mops & buckets
5. Drainage screens
6. Cleaning cloths
7. Drying racks
8. Waste disposal container

