



NATIONAL BOARD FOR TECHNICAL EDUCATION

PLOT B BIDA ROAD, P.M.B. 2239, KADUNA, NIGERIA

IN COLLABORATION WITH



NATIONAL OCCUPATIONAL STANDARDS (NOS)

HORTICULTURE LEVELS 4 & 5

JUNE, 2026



**RENEWED HOPE
IN AGRICULTURE**

PREFACE

The development of the National Occupational Standards (NOS) for the agricultural sector marks another important milestone in Nigeria's commitment to strengthening Technical and Vocational Education and Training (TVET), promoting skills development, and improving workforce productivity. These standards have been developed to provide nationally recognized benchmarks for the knowledge, skills, and competencies required for effective performance in various agricultural occupations.

The National Occupational Standards were developed through a collaborative process involving industry experts, employers, professional bodies, regulatory agencies, training institutions, development partners, and other key stakeholders. Their contributions ensured that the standards reflect current industry practices, emerging technologies, and the competency requirements of the modern agricultural sector.

I wish to express my sincere appreciation to the Honourable Minister of Education for providing the policy direction that made this initiative possible. I also acknowledge the support of the Honourable Minister of Agriculture and Food Security and the Honourable Minister of Livestock Development for their commitment to advancing agricultural skills development in Nigeria.

I extend my profound gratitude to the Tertiary Education Trust Fund (TETFund) for its intervention and support, which facilitated the development of these National Occupational Standards. I also appreciate the invaluable contributions of the Sector Skills Council for Agriculture (SSC4A), members of the Implementation Committee, resource persons, industry practitioners, employers, professional associations, regulatory agencies, the French Embassy in Nigeria, development partners, and all stakeholders who contributed their expertise throughout the development process.

These National Occupational Standards will serve as an important reference for competency-based training, assessment, certification, apprenticeship, Recognition of Prior Learning (RPL), and workforce development within the agricultural sector. It is my expectation that all implementing institutions and industry partners will effectively utilize these standards to enhance the quality, relevance, and competitiveness of agricultural skills development in Nigeria.

I commend all stakeholders for their dedication and commitment to this important national assignment and look forward to the successful implementation of these National Occupational Standards for the benefit of the agricultural sector and the nation as a whole.

Professor Idris M. Bugaje, FNSE
Chairman, Implementation Committee

EXECUTIVE SECRETARY

National Board for Technical Education (NBTE), Kaduna

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**NATIONAL SKILLS QUALIFICATIONS/NATIONAL OCCUPATIONAL
STANDARDS/ (NSQ/NOS)**

IN

HORTICULTURE



GENERAL INFORMATION

OVERVIEW

This qualification is designed for individuals who are interested in pursuing a career in **Horticulture** for the award of National Skills Qualification (NSQ)/National Occupational Standards. It is aimed at producing competencies necessary to support in **Horticulture** at **NSQ Level 4**.

This qualification is subject to review as and when the need arises.

QUALIFICATION PURPOSE

The qualification is designed to produce competent horticultural assistants with knowledge, skills, and attitude required to perform routine horticulture production activities using basic precision agriculture principles and tools.

QUALIFICATION REQUIREMENTS

There are no formal academic entry requirements.

Candidates should:

- At least sixteen (16) years of age;
- Medically fit;
- Mentally fit (Mental alertness);
- A Nigerian citizen;
- Other nationals should present international passport, residence permit or Parent work permit;
- Vetted
- Interest in agricultural production and related support operations;
- Ability to carry out practical tasks independently and to supervise the work of others.

QUALIFICATION OBJECTIVES

1. Supervise Health and Safety Operations
2. Manage Workplace Communication.
3. Lead Team Work and Cooperation.
4. Oversee Land Preparation.
5. Coordinate Fertilizer, Manure, and Compost Application.
6. Implement Integrated Management Practices.
7. Manage Smart Irrigation and Drainage Systems.
8. Direct Plant Propagation Operations.
9. Supervise Pruning and Trimming.
10. Execute Landscape Design and Management.
11. Drive Marketing in Horticulture.

12. Coordinate Seed Collection and Selection.
13. Oversee Post-harvest Management.
14. Coordinate Value Addition and Management value.
15. Implement Soil Health and Conservation Frameworks.



NATIONAL SKILLS QUALIFICATION TABLE

Unit No	Reference Number	NSQ Title	Credit Value	Guided Learning Hours	Practice Time	Remarks
Unit 001	AGR/HOT/001/L4	Health and Safety	3	30	90	Mandatory
Unit 002	AGR/HOT/002/L4	Communication	3	30	90	Mandatory
Unit 003	AGR/HOT/003/L4	Team work	3	30	90	Mandatory
Unit 004	AGR/HOT/004/L4	Land preparation	5	50	200	Mandatory
Unit 005	AGR/HOT/005/L4	Fertilizer, Manure and Compost application	6	60	210	Mandatory
Unit 006	AGR/HOT/006/L4	Integrated Management Practices	6	60	210	Mandatory
Unit 007	AGR/HOT/007/L4	Smart Irrigation and Drainage systems	4	40	150	Mandatory
Unit 008	AGR/HOT/008/L4	Plant Propagation	5	50	200	Mandatory
Unit 009	AGR/HOT/009/L4	Pruning and trimming	5	50	200	Mandatory
Unit 010	AGR/HOT/010/L4	Landscape Design and Management	5	50	200	Mandatory
Unit 011	AGR/HOT/011/L4	Marketing in Horticulture	3	30	100	Mandatory
SUB-TOTAL			48	480	1740	
Unit 012	AGR/HOT/012/L4	Seed Collection and Selection	3	30	90	Optional
Unit 013	AGR/HOT/013/L4	Post-harvest Management	3	30	90	Optional
Unit 014	AGR/HOT/014/L4	Value Addition and management	3	30	90	Optional
Unit 015	AGR/HOT/015/L4	Soil health and Conservation	3	30	90	Optional
SUB-TOTAL			12	120	360	

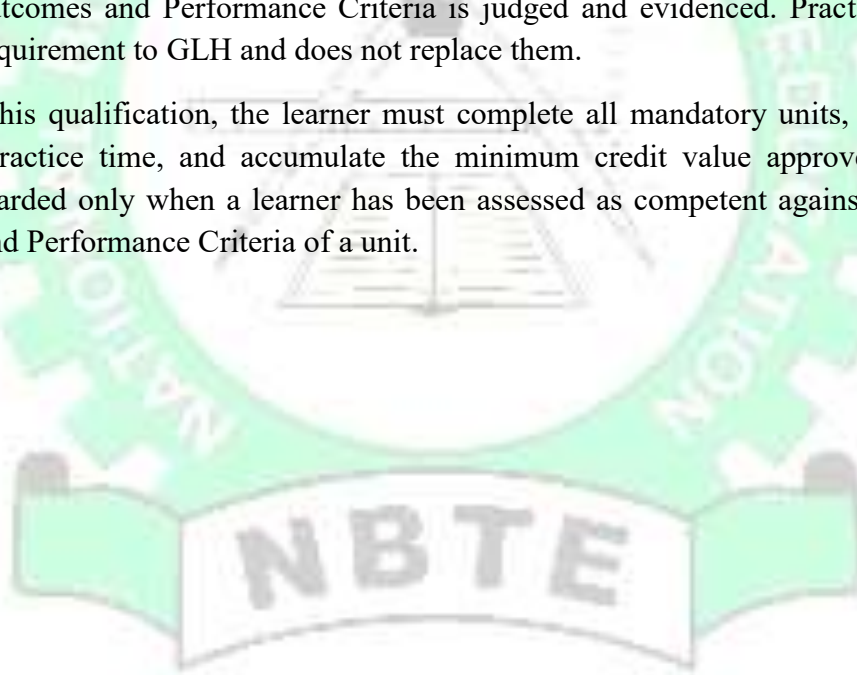
GRAND-TOTAL	60	600	2100	

QUALIFICATION STRUCTURE

This qualification comprises a total of **fifteen (15) Mandatory and Optional Units**, with a credit value of **60 and 600 Guided Learning Hours (GLH)** across the full qualification. One (1) credit is equivalent to **ten (10) GLH**. Guided Learning Hours are the time a learner spends in the classroom, workshop and laboratory of the Skills Training Centre (STC), being taught, instructed, supervised or assessed by a qualified trainer, facilitator or assessor.

In addition to the GLH, the qualification requires at least twice or thrice the GLH as practice time. Practice time is the time a learner is expected to spend applying the skills of each unit in a real workplace environment, carrying out the same tasks repeatedly until performance becomes consistent, accurate and habitual to the standard the qualification demands. It is undertaken under the guidance of a workplace supervisor, recorded in the learner's logbook and duly endorsed. Practice time is the principal setting where core assessment is conducted. It is through repeated performance in the workplace that a learner's achievement of the Learning Outcomes and Performance Criteria is judged and evidenced. Practice time is an additional requirement to GLH and does not replace them.

To achieve this qualification, the learner must complete all mandatory units, undertake the prescribed practice time, and accumulate the minimum credit value approved by NBTE. Credit is awarded only when a learner has been assessed as competent against all Learning Outcomes and Performance Criteria of a unit.



GENERAL GUIDE

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

UNIT 001: HEALTH AND SAFETY

Unit Reference Number: AGR/HOT/001/L4

NSQ Level: 4

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 90 hours

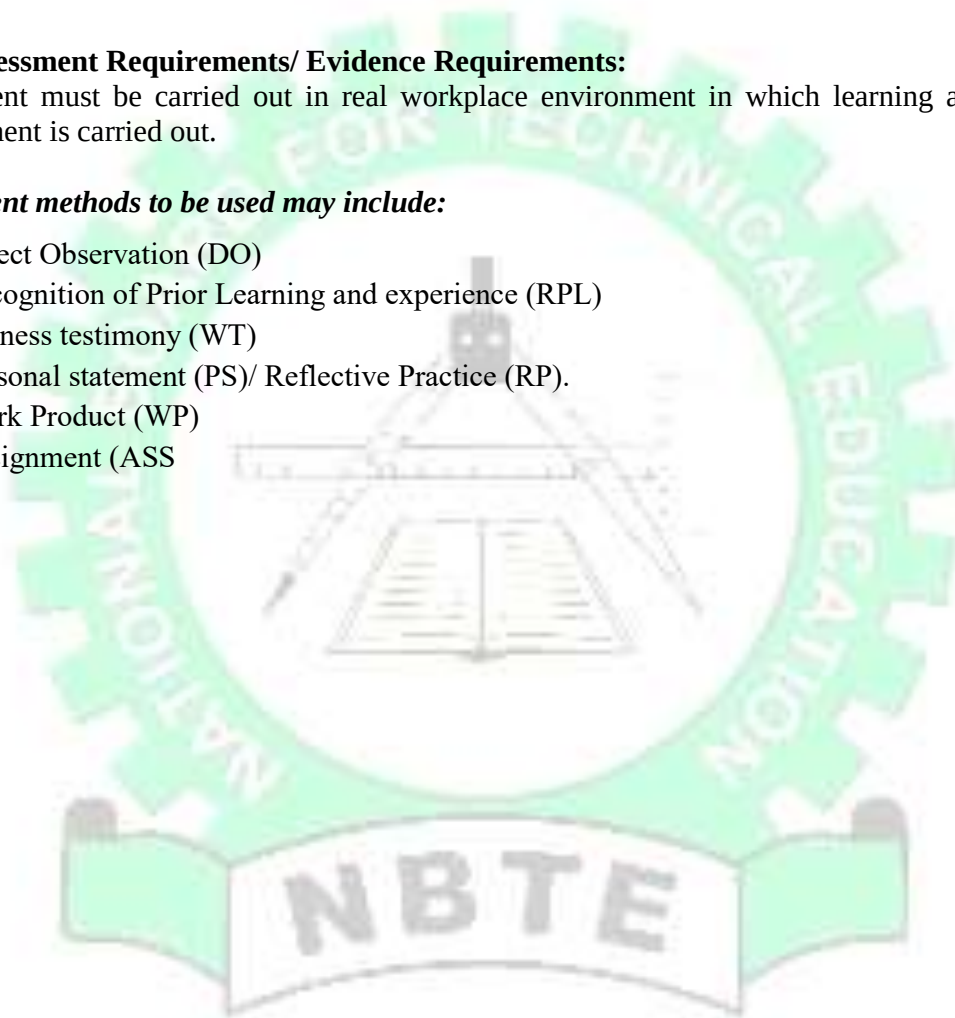
Unit Purpose: This unit is designed to provide the learner with the knowledge, skills, and attitudes required to maintain a safe and healthy working environment in horticultural settings.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 001: Health and Safety

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Identify health and safety laws and regulations in horticulture</i>	1.1	Identify relevant health and safety laws that apply to gardening and horticulture workplaces		
	1.2	Explain the duties of an employer and employee under health and safety law		
	1.3	Describe the consequences of ignoring health and safety rules		
LO 2: <i>Apply safe working practices in garden and landscape environments</i>	2.1	Conduct a risk assessment for common gardening activities		
	2.2	Select appropriate Personal Protective Equipment (PPE) for specific tasks		
	2.3	Use appropriate Personal Protective Equipment (PPE) for specific tasks		
	2.4	Store hazardous chemicals and tools appropriately		
LO 3: <i>Identify first Aid measures in horticultural practices</i>	3.1	Identify causes of accident in horticultural practices		
	3.2	List precautionary measures to be taken against the causes of accident		
	3.3	Select first aid materials in the event of an accident		
	3.4	Use first aid materials in the event of an accident		

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

UNIT 002: COMMUNICATION

Unit reference number: AGR/HOT/002/L4

NSQ Level: 4

Credit value: 3

Guided learning hours: 30

Practice Time: 90 hours

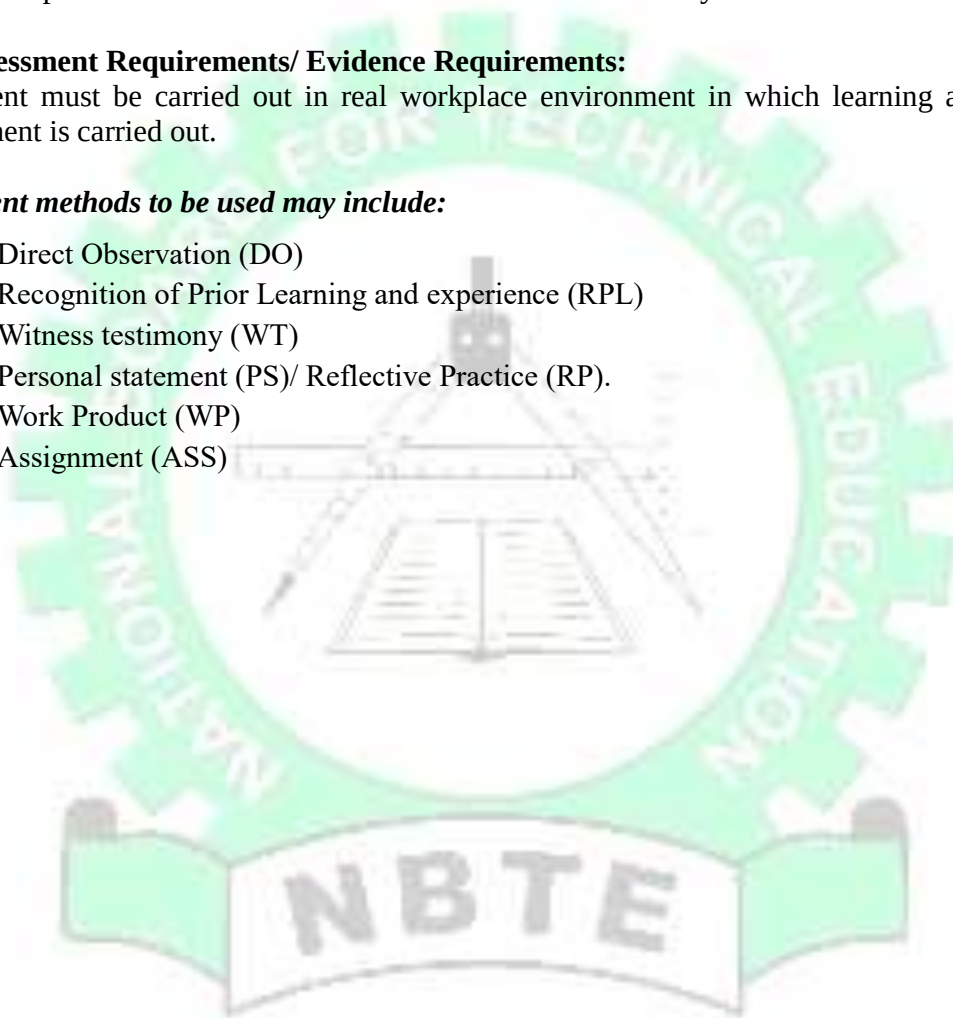
Unit Purpose: This unit is designed to equip the learner with effective communication skills required for professional interactions in the horticultural industry.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 002: Communication

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Communicate effectively in a horticultural work environment</i>	1.1	Use appropriate communication method to give instructions to workers		
	1.2	Write clear reports, memos, and work orders related to garden operations		
	1.3	Interpret information from technical manuals, plant labels, and horticultural guides		
LO 2: <i>Write report on garden activities</i>	2.1	Prepare a report on garden activities using appropriate tools		
	2.2	Present a report on garden activities using appropriate tools		
	2.3	Communicate with clients, suppliers, and team members professionally		
LO 3: <i>Use digital and non-digital tools to communicate in horticulture</i>	3.1	Identify digital tools used in communication (phones, laptop, camera, projector etc.)		
	3.2	Identify non-digital tools used in communication (marker board, flyers, bulletins, paper etc.)		
	3.3	Communicate effectively using digital tools		
	3.4	Communicate effectively using non-digital tools		

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

UNIT 003: TEAMWORK

Unit Reference Number: AGR/HOT/003/L4

NSQ Level: 4

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 90 hours

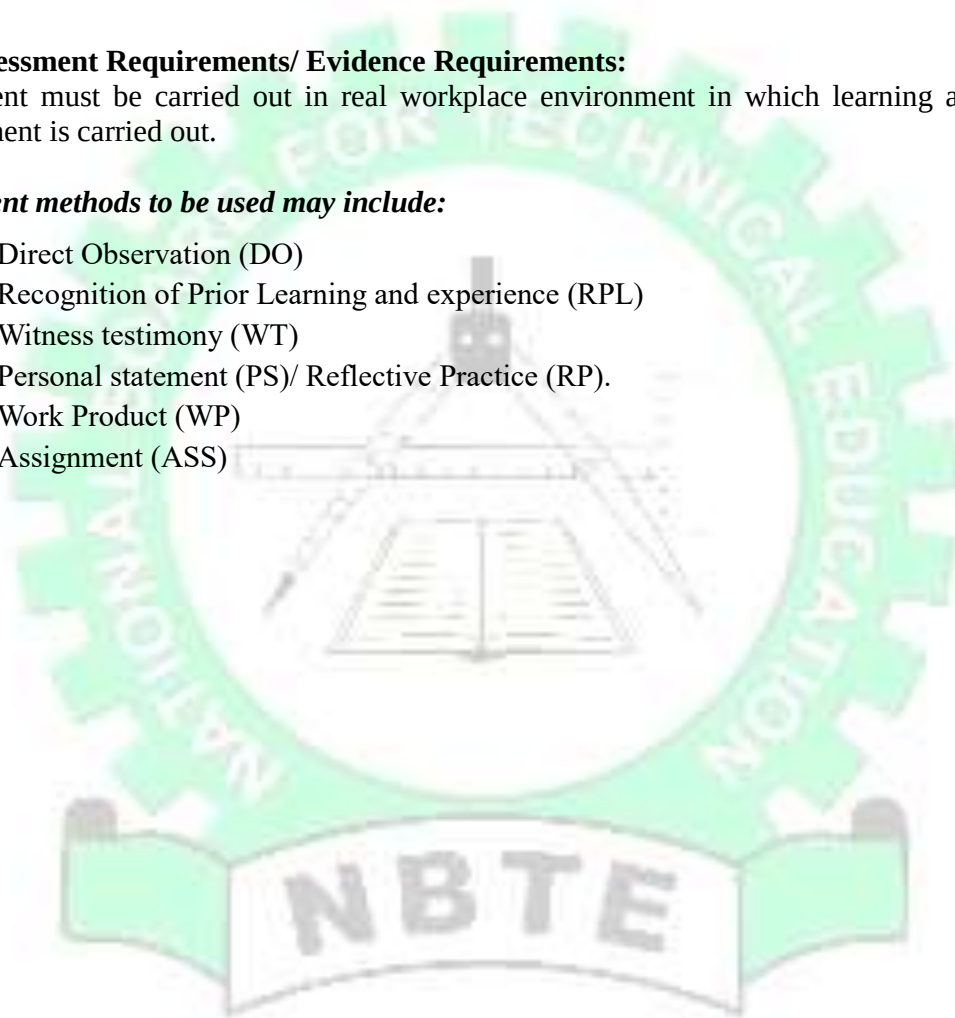
Unit Purpose: This unit is designed to equip the learner with the interpersonal and collaborative skills necessary for effective participation in team-based horticultural work environments.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 003: Teamwork

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Work as a team in horticultural environment</i>	1.1	Define Teamwork		
	1.2	Discuss the roles and responsibilities of members within a horticultural environment		
	1.3	Identify conflicts that may arise within the horticultural environment		
	1.4	Resolve conflicts within the horticultural environment		
	1.5	Demonstrate collaborative behaviour on horticultural task		
LO 2: <i>Coordinate a small horticulture team</i>	2.1	Identify leadership positions in horticultural environment		
	2.2	Identify administrative roles in horticultural environment		
	2.3	Assign responsibilities to the leaders in horticultural environment		
	2.4	Monitor the performance of the leaders in horticultural environment		
	2.5	Record performance evidences generated by the leaders		
	2.6	Review performances		
	2.7	Recognize performing leaders		
	2.8	Motivate performing leaders		
	2.9	Provide feedback to the leaders in horticultural environment		
LO 3: <i>Assess the benefits of working as a team in a horticultural environment</i>	3.1	Identify the benefits of working as a team		
	3.2	Identify strengths of team members		
	3.3	Identify weaknesses of team members		
	3.4	Observe the leadership qualities of team members		

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

UNIT 004: LAND PREPARATION

Unit Reference Number: AGR/HOT/004/L4

NSQ Level: 4

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 200

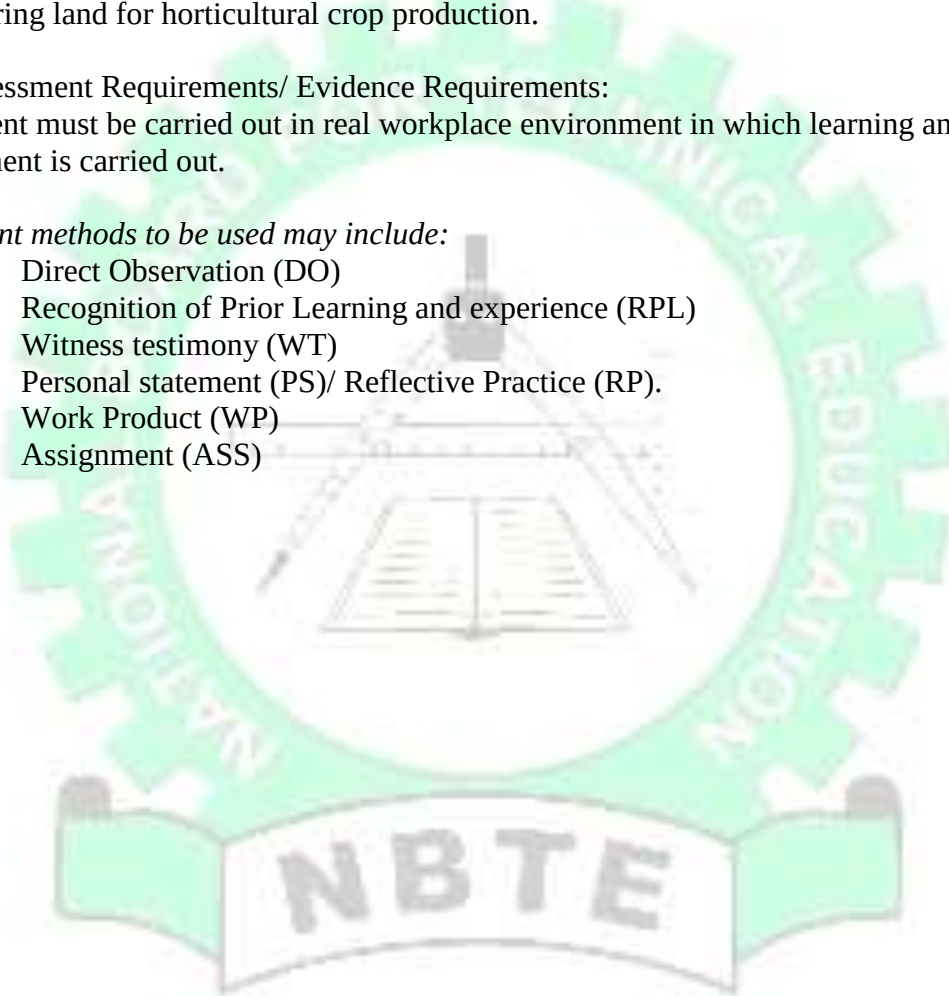
Unit Purpose: This unit is designed to provide the learner with skills and knowledge required for preparing land for horticultural crop production.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 004: Land Preparation

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Describe the principles of land preparation for horticulture</i>	1.1	Describe the principles of land preparation for horticulture		
	1.2	Determine appropriate time for land preparation		
	1.3	Explain the consequences of inappropriate land preparation		
	1.4	List the benefits of appropriate land preparation		
LO 2: <i>Analyse the methods of land preparation</i>	2.1	Explain the stages of land clearing		
	2.2	Explain the stages of tillage, and bed preparation		
	2.3	Identify the appropriate tools and equipment for different types of land preparation		
	2.4	Assess soil conditions for bed preparation		
	2.5	Determine appropriate preparation methods based on soil condition		
LO 3: <i>Carry out effective land preparation for horticultural crops</i>	3.1	Apply appropriate soil amendments prior to planting (where applicable)		
	3.2	Prepare land according to crop requirements and planting schedules		
	3.3	Prepare suitable seed beds compatible with crop and season		
	3.4	Make provision for drainage and water conservation		

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

UNIT 005: FERTILIZER, MANURE AND COMPOST APPLICATION

Unit Reference Number: AGR/HOT/005/L4

NSQ Level: 4

Credit Value: 6

Guided Learning Hours: 60

Practice Time: 210 hours

Unit Purpose: This unit is designed to provide the learner with the knowledge and skills required to select, prepare, and apply fertilizers, manure, and compost for sustainable soil fertility management in horticulture.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 005: Fertilizer, Manure and Compost Application

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: Explain fertilizer, manure, and compost	1.1	Explain the following: Organic fertilizers Inorganic fertilizers		
	1.2	Describe the process of composting		
	1.3	Discuss the benefits of manure application		
LO 2: Discuss methods of fertilizer application	2.1	Discuss the methods of fertilizer application (broadcast, banding, foliar)		
	2.2	Determine the appropriate time for fertilizer application		
	2.3	Discuss the benefits of appropriate application of fertilizer		
	2.4	Discuss the consequences of inappropriate application of fertilizer		
LO 3: Apply fertilizers, manure, and compost in a safe and effective manner	3.1	Discuss the fertilizer requirement for horticultural crops		
	3.2	Calculate fertilizer rates for horticultural crops		
	3.3	Prepare application schedules for horticultural crops		
	3.4	Apply fertilizers using appropriate methods (broadcast, banding, foliar)		
	3.5	Store fertilizers safely according to guidelines		
	3.6	Identify signs of nutrient deficiency in plants		
	3.7	Recommend the appropriate corrective measures to be taken on nutrient deficiencies		

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

UNIT 006: INTEGRATED MANAGEMENT PRACTICES

Unit Reference Number: AGR/HOT/006/L4

NSQ Level: 4

Credit Value: 6

Guided Learning Hours: 60

Practice Time: 210 hours

Unit Purpose: This unit is designed to equip the learner with competencies in integrated crop management strategies for sustainable horticultural production.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 006: Integrated Management Practices

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain the principles of Integrated Management Practices (IMP)</i>	1.1	Define Integrated Management Practices (biological, cultural, physical and chemical)		
	1.2	Explain the benefit of IMP over single management practice		
	1.3	Explain the different methods of integrated management practices		
LO 2: <i>Identify common pests, diseases and weeds affecting horticultural crops</i>	2.1	Outline the common pest of horticultural crops		
	2.2	Enumerate the common diseases of horticultural crops		
	2.3	List the common weeds of horticultural crops		
LO 3: <i>Apply IMP strategies to protect horticultural crops</i>	3.1	Adopt the biological, cultural, physical and chemical methods		
	3.2	Monitor pest, diseases and weed incidences on a horticultural site		
	3.3	Record pest, disease and weeds incidences on a horticultural site		
	3.4	Recommend appropriate curative measures for pest, disease and weeds incidences.		

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

UNIT 007: SMART IRRIGATION AND DRAINAGE SYSTEMS

Unit Reference Number: AGR/HOT/007/L4

NSQ Level: 4

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 150 hours

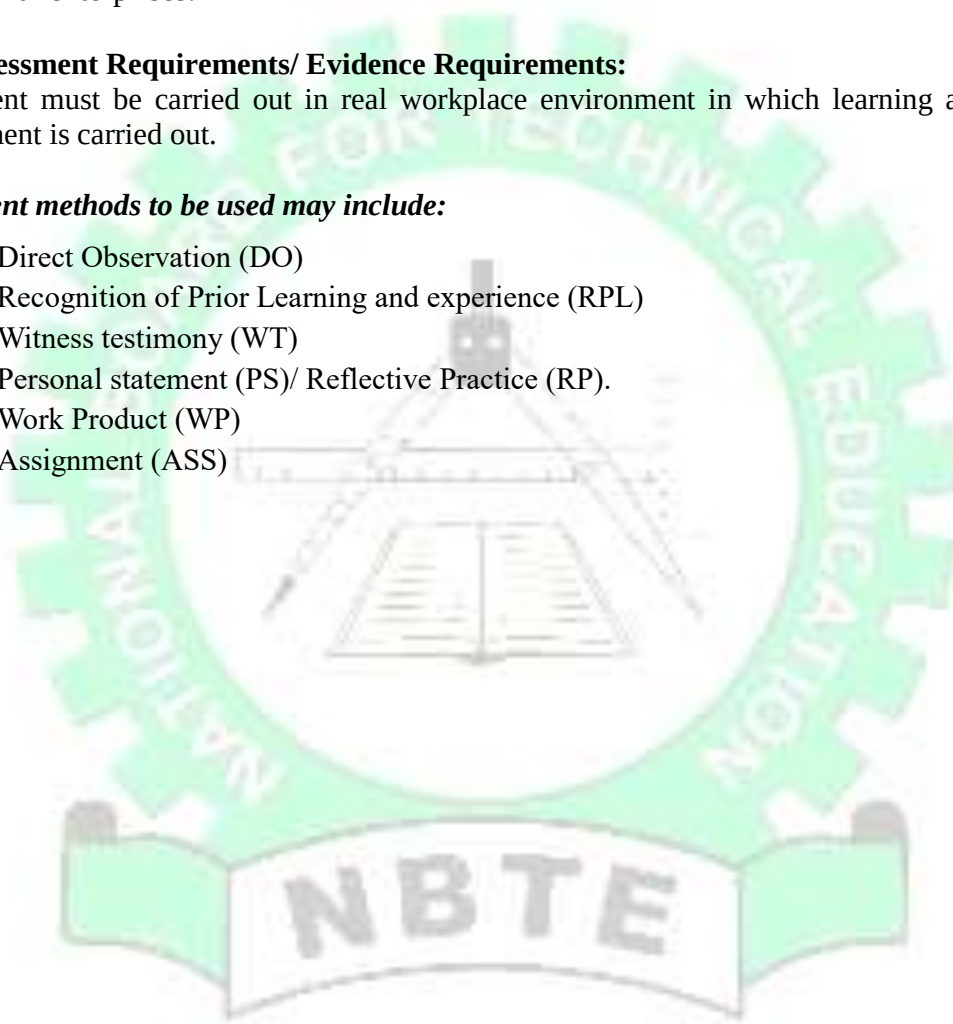
Unit Purpose: This unit is designed to provide the learner with the knowledge and skills required to design, install, operate, and maintain smart irrigation and drainage systems for horticultural enterprises.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 007: Smart Irrigation and Drainage Systems

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Discuss the principles of smart irrigation and drainage systems in horticulture</i>	1.1	Define smart irrigation and drainage systems		
	1.2	Discuss different types of smart irrigation and drainage systems		
	1.3	Explain the benefits of smart irrigation and drainage systems		
	1.4	Discuss smart irrigation and drainage technologies		
LO 2: <i>Install smart irrigation and drainage system</i>	2.1	Identify components of smart irrigation and drainage systems		
	2.2	Plan a basic irrigation layout for a horticultural site		
	2.3	Design a basic irrigation layout for a horticultural site		
	2.4	Programme a smart irrigation controller or timer		
	2.5	Operate a smart irrigation controller or timer		
	2.6	Carry out routine maintenance		
	2.7	Troubleshoot common irrigation faults		
LO 3: <i>Assess water requirements of plants</i>	3.1	Explain the water requirements of different horticultural crops		
	3.2	Discuss methods of application to be used based on the requirements		
	3.3	Discuss water requirements in relation to types of soil		

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

UNIT 008: PLANT PROPAGATION

Unit Reference Number: AGR/HOT/008/L4

NSQ Level: 4

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 200 hours

Unit Purpose: This unit is designed to develop in the learner the skills and knowledge required to propagate horticultural crops using sexual and asexual methods.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 008: Plant Propagation

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain principles of plant propagation</i>	1.1	Explain sexual and asexual methods of plant propagation		
	1.2	Identify the materials used for sexual and asexual plant propagation		
	1.3	Identify the difference between sexual and asexual plant propagation		
LO 2: <i>Explain the methods of sexual propagation</i>	2.1	Explain seed as a material for propagation		
	2.2	Discuss methods of seed selection		
	2.3	Identify factors that determine seed viability		
	2.4	Carry out pre-germination treatment		
	2.5	Explain management of nursery in sexually propagated horticulture crop		
LO 3: <i>Explain the methods of Asexual propagation</i>	3.1	Identify the plant materials used for asexual propagation		
	3.2	Explain guidelines for asexual propagation		
	3.3	Discuss the hardening procedure in asexual propagation		
	3.4	Explain management of nursery in asexually propagated horticulture crop		
LO 4: <i>Carry out plant propagation techniques</i>	4.1	Propagate plants using at least three different methods (Budding, grafting layering and tissue culture) etc.		
	4.2	Set up a propagation environment (nursery or propagator)		
	4.3	Maintain a propagation environment (nursery or propagator)		
	4.4	Describe the role of plant growth hormones in vegetative propagation		

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

UNIT 009: PRUNING AND TRIMMING

Unit Reference Number: AGR/HOT/009/L4

NSQ Level: 4

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 200 hours

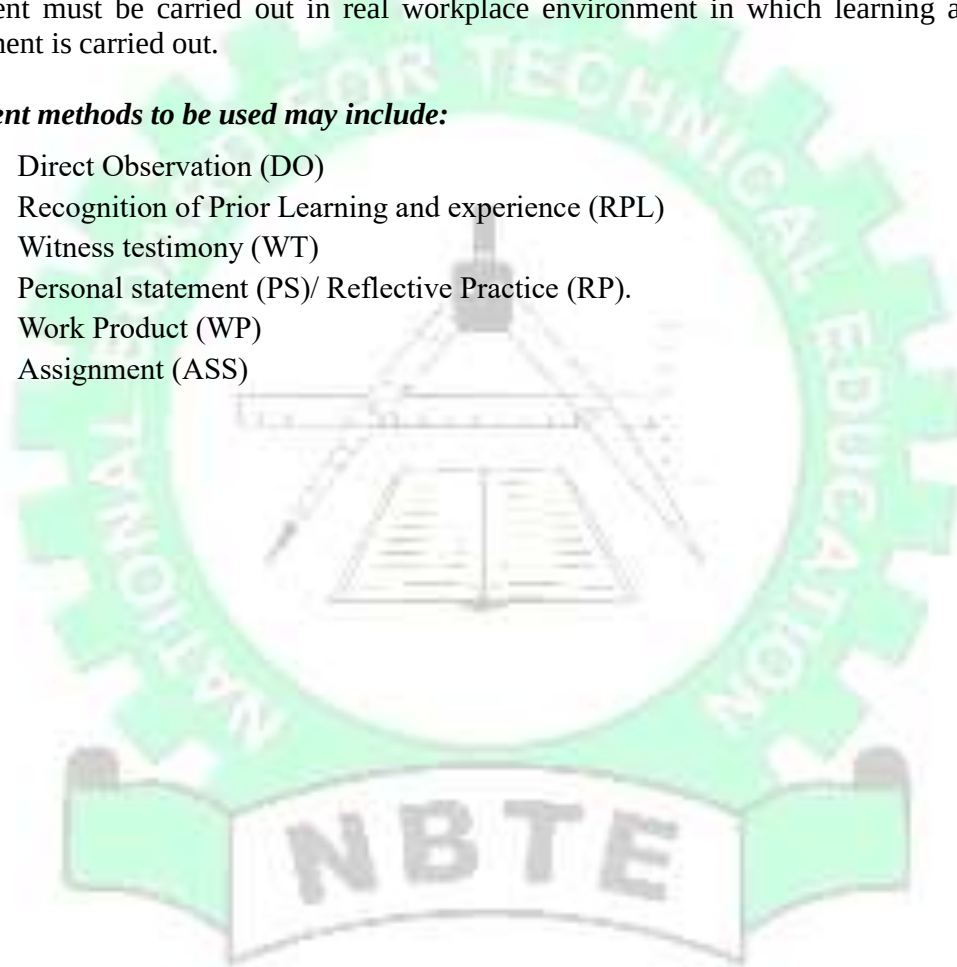
Unit Purpose: This unit is designed to equip the learner with the knowledge and skills required to carry out pruning and trimming of horticultural plants.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 009: Pruning and Trimming

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain the principles of pruning and trimming</i>	1.1	Define pruning and trimming in horticulture		
	1.2	Explain the benefits of pruning and trimming plants		
	1.3	Identify the correct timing for pruning and trimming different plants		
LO 2: <i>Explain methods of pruning and trimming</i>	2.1	Identify common tools for pruning and trimming		
	2.2	Discuss the different pruning and trimming techniques for trees, shrubs, hedges, vegetables and fruit plants		
	2.3	Outline the different methods of maintaining tools for pruning and trimming		
LO 3: <i>Carry out pruning and trimming tasks to a professional standard</i>	3.1	Select the appropriate tools for pruning and trimming tasks safely		
	3.2	Use the appropriate tools for pruning and trimming tasks safely		
	3.3	Prune a range of selected plants using appropriate tools and techniques		

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

UNIT 010: LANDSCAPE DESIGN AND MANAGEMENT

Unit Reference Number: AGR/HOT/010/L4

NSQ Level: 4

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 200 hours

Unit Purpose: This unit is designed to provide the learner with the knowledge and skills required to design, establish, and maintain landscape environments for aesthetic and functional purposes.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 010: Landscape Design and Management

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Describe landscape design principles and elements</i>	1.1	Describe the key principles and elements of landscape design		
	1.2	Identify suitable plants for different landscape situations		
	1.3	Design basic landscape plan		
	1.4	Interpret basic landscape plan		
LO 2: <i>Identify the different types of landscape materials</i>	2.1	Identify different components of landscape area		
	2.2	Classify landscape materials into soft and hard		
	2.3	List the tools and equipment used in landscaping		
	2.4	Outline the maintenance practice of landscape tools and equipment		
	2.5	Outline the maintenance practice of landscape materials		
LO 3: <i>Manage a landscape project</i>	3.1	Prepare a simple landscape design proposal for a client		
	3.2	Use tools and equipment in landscaping		
	3.3	Implement a designed landscape to specification		
	3.4	Maintain landscape materials		
	3.5	Maintain a designed landscape to specification		

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

UNIT 011: MARKETING IN HORTICULTURE

Unit Reference Number: AGR/HOT/011/L4

NSQ Level: 4

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 100 hours

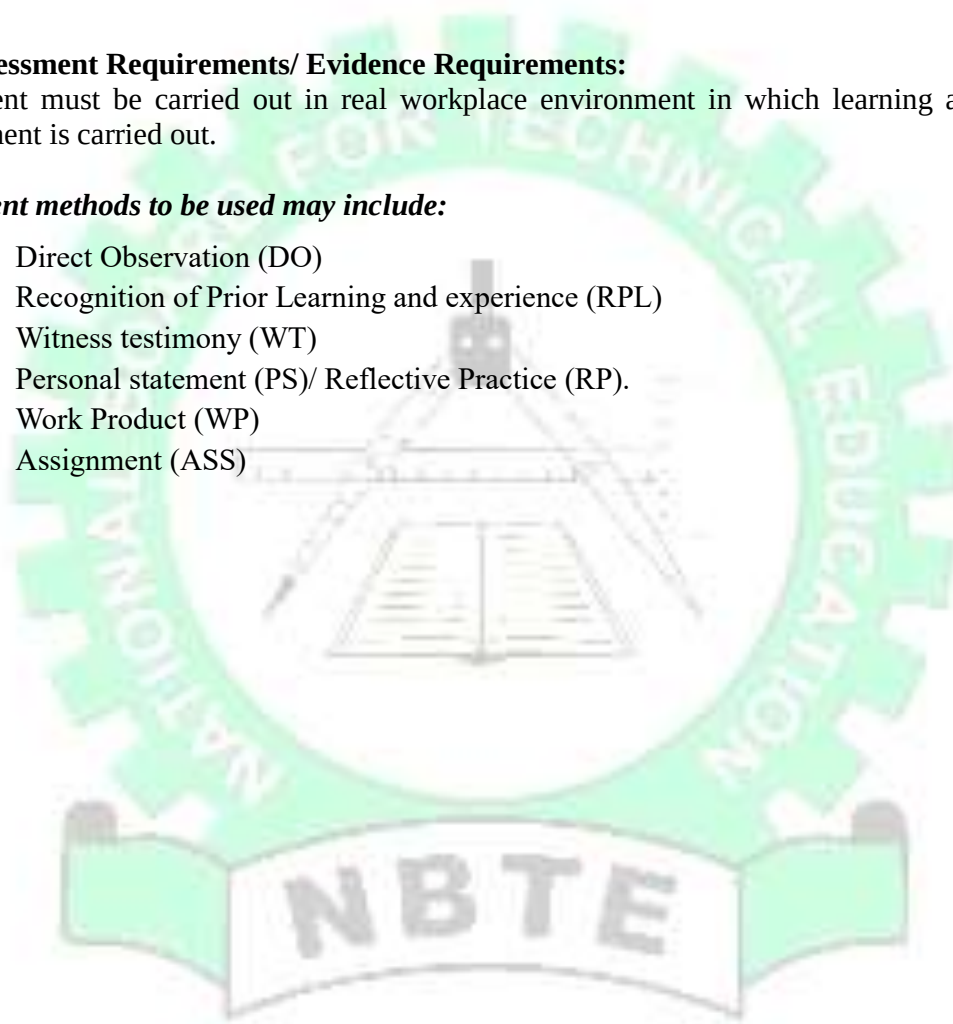
Unit Purpose: This unit is designed to equip the learner with the knowledge and skills required to market horticultural products effectively in competitive domestic and export markets.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 011: MARKETING IN HORTICULTURE

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain marketing concepts in horticulture</i>	1.1	Explain the basic principles of marketing in horticulture		
	1.2	Explain the 4Ps (Product, Price, Place, Promotion) of the marketing mix		
	1.3	Identify target markets for horticultural products and services		
	1.4	Describe current market trends affecting horticulture in Nigeria		
LO 2: <i>Prepare horticultural products for marketing</i>	2.1	Identify suitable materials to market horticultural products		
	2.2	Sort horticultural products for marketing		
	2.3	Grade horticultural products for marketing		
	2.4	Package horticultural products		
	2.5	Label horticultural products		
LO 3: <i>Identify marketing skills for horticultural products and services</i>	3.1	Develop a basic marketing plan for a horticultural enterprise		
	3.2	Use social media and other tools to promote horticultural products		
	3.3	Add value to promote horticultural products and services		
LO 4: <i>Identify the ideal means of transportation for horticultural products</i>	4.1	Identify different means of transportation for horticultural products		
	4.2	Select the most suitable means of transportation for horticultural products		
	4.3	Monitor loading and offloading of horticultural products		

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

UNIT 012: SEED COLLECTION AND SELECTION

Unit Reference Number: AGR/HOT/012/L4

NSQ Level: 4

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 90 hours

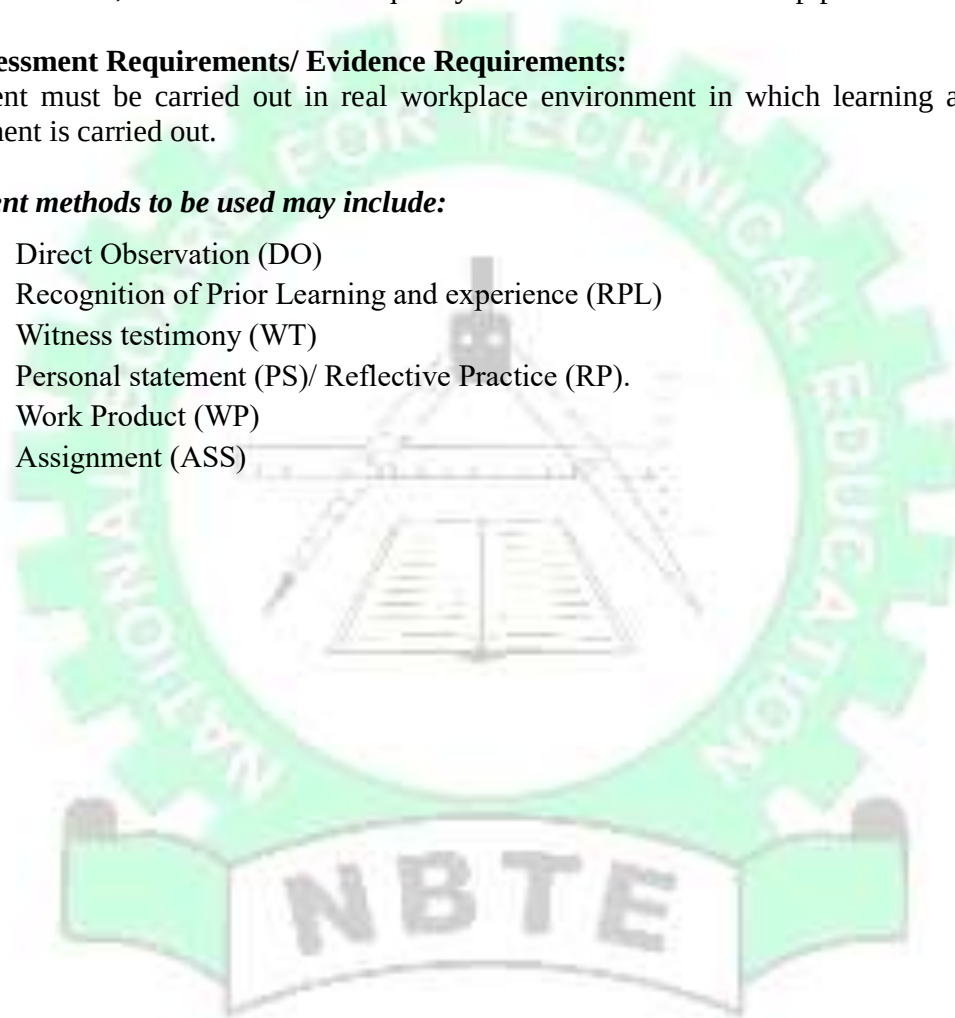
Unit Purpose: This unit is designed to provide the learner with the knowledge and skills required to collect, select and evaluate quality seeds in horticultural crop production.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 012: SEED COLLECTION AND SELECTION

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Describe principles of seed biology and quality</i>	1.1	Explain the structure of a seed		
	1.2	Describe the stages of seed development		
	1.3	Describe the factors that affect seed viability and germination		
	1.4	Identify the indicators of high-quality seeds suitable for planting		
LO 2: <i>Carry out seed collection and selection</i>	2.1	Identify seed maturity indices for horticultural crops		
	2.2	Select appropriate seed from healthy parent plants		
	2.3	Collect seeds from healthy parent plants		
	2.4	Dry seeds at the appropriate time		
	2.5	Process seeds to maintain viability		
LO 3: <i>Carry out seed treatment practices</i>	3.1	Dress seeds with appropriate chemical formulation		
	3.2	Carry out seed viability test		
	3.3	Carry out pre-germination treatment		
	3.4	Select desirable packaging materials for the seed		
	3.5	Label the materials for packaging		
LO 4: <i>Identify proper seed storage practices</i>	4.1	Identify factors affecting seed storage in horticulture		
	4.2	Outline favorable conditions for seed storage in horticulture		
	4.3	Select appropriate seed storage facilities		
	4.4	Store seeds in the appropriate seed storage facilities		

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

Unit 013: Post-Harvest Management

Unit Reference Number: AGR/HOT/013/L4

NSQ Level: 4

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 90 hours

Unit Purpose: This unit is designed to equip the learner with the knowledge and skills required to minimize post-harvest losses and maintain the quality of horticultural produce from harvest to market.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 013: POST HARVEST MANAGEMENT

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Identify post-harvest losses in horticulture</i>	1.1	Identify the causes of post-harvest losses in horticultural produce		
	1.2	Explain the role of temperature and humidity in post-harvest management		
	1.3	Outline the indicators of postharvest changes in horticulture products		
	1.4	Highlight measures to prevent postharvest losses		
LO 2: <i>Explain the quality control factors in horticulture</i>	2.1	Identify quality standards measures for horticultural produce		
	2.2	Grade horticultural products for quality control		
	2.3	Examine the suitability of packaging materials for quality standard		
LO 3: <i>Apply post-harvest handling and storage techniques effectively</i>	3.1	Carryout activities involved in postharvest handling		
	3.2	Maintain temperature and relative humidity		
	3.3	Sort horticultural products		
	3.4	Grade horticultural products		
	3.5	Package horticultural produce using appropriate materials		
	3.6	Label horticultural produce using appropriate materials		
	3.7	Apply post-harvest treatments to extend shelf life safely		
	3.8	Store horticultural products appropriately		

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

UNIT 014: VALUE ADDITION AND MANAGEMENT

Unit Reference Number: AGR/HOT/014/L4

NSQ Level: 4

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 90 hours

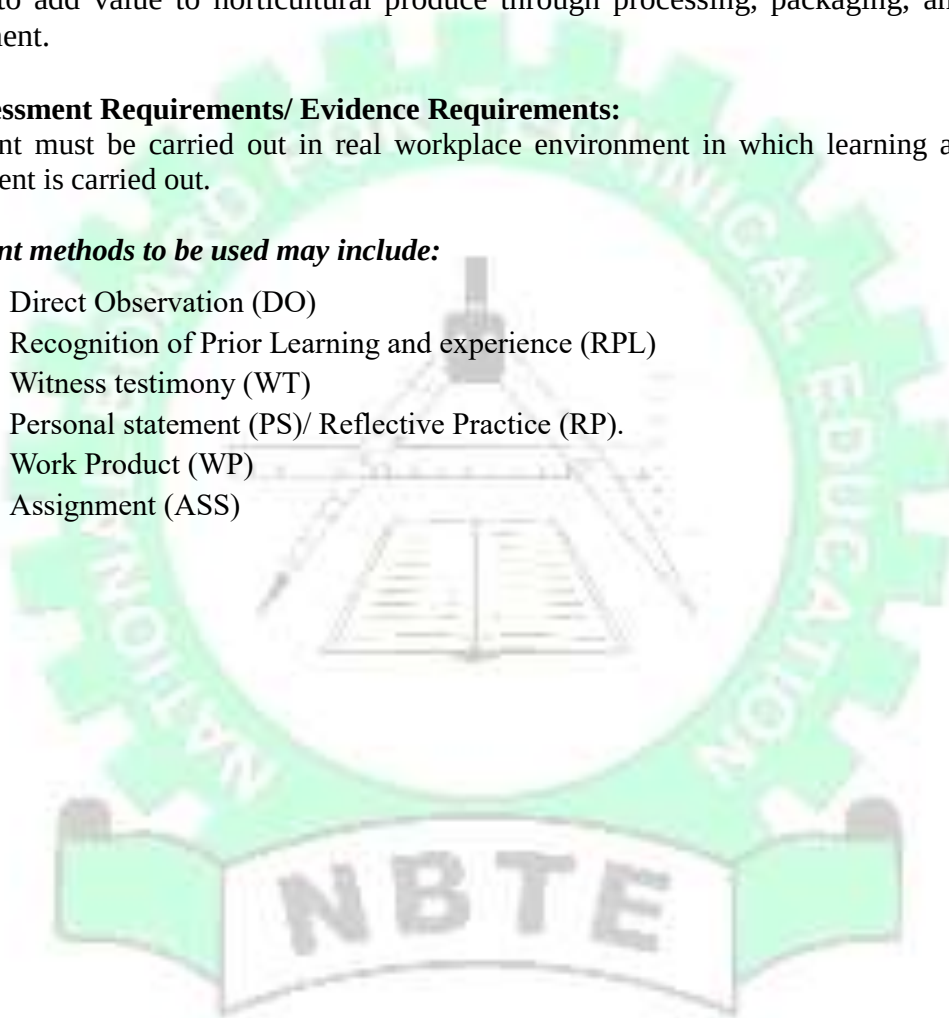
Unit Purpose: This unit is designed to provide the learner with the knowledge and skills required to add value to horticultural produce through processing, packaging, and product development.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 014: VALUE ADDITION AND MANAGEMENT

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain the concept and importance of value addition in horticulture</i>	1.1	Explain value addition in the context of horticultural produce		
	1.2	Discuss the importance of value addition in horticultural products		
	1.3	Identify opportunities for value addition in horticultural supply chain		
	1.4	Describe small-scale processing methods applicable to horticultural crops		
LO 2: <i>Develop a simple value-addition plan</i>	2.1	Design a business plan for a value-addition product		
	2.2	Implement the business plan for a value-addition product		
	2.3	Monitor the progress of the business plan for a value-addition product		
LO 3: <i>Manage a simple value-addition plan</i>	3.1	Maintain hygiene and safety during value-addition activities		
	3.2	Keep records of the activities involved in value addition plan		
	3.3	Evaluate the efficiency of the value addition activities		
	3.4	Ensure sustainability of the value addition plan		

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

UNIT 015: SOIL HEALTH AND CONSERVATION

Unit Reference Number: AGR/HOT/015/L4

NSQ Level: 4

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 90 hours

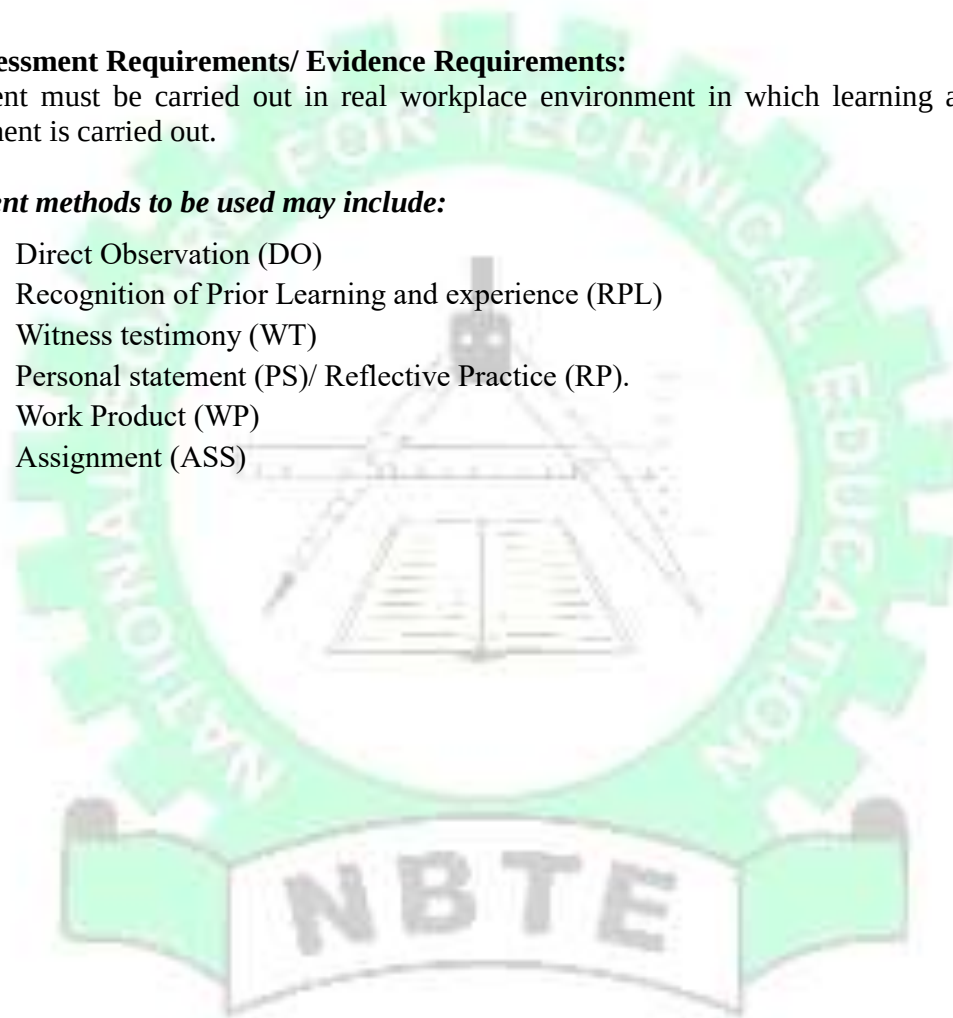
Unit Purpose: This unit is designed to provide the learner with the knowledge and skills required to assess, manage, and conserve soil resources for sustainable horticultural production.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 015: SOIL HEALTH AND CONSERVATION

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain the properties of soil in horticulture</i>	1.1	Explain the physical, chemical, and biological properties of soil		
	1.2	Identify signs of soil degradation		
	1.3	Outline the impact of soil degradation on horticultural production		
	1.4	Explain how soil biological activity supports plant nutrition and health		
LO 2: <i>Explain the importance of soil health in horticulture</i>	2.1	Outline the benefits of soil health in horticulture		
	2.2	Highlight factors affecting soil health		
	2.3	Carry out soil testing		
	2.4	Determine the physical and biological health status of the soil		
LO 3: <i>Discuss soil conservation and improvement practices</i>	3.1	Discuss soil conservation methods		
	3.2	List the benefits of soil conservation		
	3.3	Implement soil conservation practices on a horticultural site		

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

**NATIONAL SKILLS QUALIFICATIONS/NATIONAL OCCUPATIONAL
STANDARDS/ (NSQ/NOS)**

IN

HORTICULTURE

LEVEL 5

JULY, 2026



GENERAL INFORMATION

OVERVIEW

This qualification is designed for individuals who are interested in pursuing a career in **Horticulture** for the award of National Skills Qualifications (NSQ)/National Occupational Standards (NOS). It is aimed at producing competencies necessary to support in **Horticulture at NSQ Level 5**.

This qualification is subject to review as and when the need arises.

QUALIFICATION PURPOSE

The qualification is designed to produce competent horticulture assistants with knowledge, skills, and attitude required to perform routine horticultural production activities using basic precision agriculture principles and tools.

QUALIFICATION REQUIREMENTS

- All Candidates must:
- Be at least twenty (20) years of age
- Be medically fit
- Be mentally fit (Mental alertness)
- Have achieved the NSQ Level 4 qualification in Horticulture, or its equivalent
- Be a Nigerian citizen
- Other nationals (International passport, residence permit)
- Be vetted

QUALIFICATION OBJECTIVES

1. Establish Health, Safety and Environmental Management Frameworks
2. Drive Strategic Communication
3. Lead Enterprise Team Work
4. Design Garden Layout Planning and Maintenance Systems
5. Formulate Plant Nutrition Management Programs
6. Direct Climate Smart Integrated Management Practices.
7. Optimize Smart Irrigation and Drainage Systems.
8. Develop Strategic Business Planning for Horticulture.
9. Formulate Soil Health and Conservation Frameworks.
10. Manage Advanced Pomology Operations.
11. Direct Commercial Olericulture Production.
12. Advance Landscape Technology Integration.
13. Direct Horticultural Plant Production under a Protected Environment.

NATIONAL SKILLS QUALIFICATION TABLE

Unit No	Reference Number	NSQ Title	Credit Value	Guided Learning Hours	Practice Time	Remarks
Unit 001	AGR/HOT/001/L5	Health, Safety and Environmental Management	4	40	120	Mandatory
Unit 002	AGR/HOT/002/L5	Strategic Communication	5	50	150	Mandatory
Unit 003	AGR/HOT/003/L5	Team Work	5	50	150	Mandatory
Unit 004	AGR/HOT/004/L5	Garden Layout Planning and Maintenance	8	80	300	Mandatory
Unit 005	AGR/HOT/005/L5	Plant Nutrition Management	6	60	200	Mandatory
Unit 006	AGR/HOT/006/L5	Climate Smart Integrated Management Practices	10	100	500	Mandatory
Unit 007	AGR/HOT/007/L5	Smart Irrigation and Drainage systems	7	70	250	Mandatory
Unit 008	AGR/HOT/008/L5	Strategic Business Planning for Horticulture	5	50	200	Mandatory
Unit 009	AGR/HOT/009/L5	Soil Health and Conservation	6	60	200	Mandatory
SUB-TOTAL			56	560	2070	
Unit 010	AGR/HOT/010/L5	Pomology	5	50	150	Optional
Unit 011	AGR/HOT/011/L5	Olericulture	5	50	150	Optional
Unit 012	AGR/HOT/012/L5	Landscape Technology	5	50	150	Optional
Unit 013	AGR/HOT/013/L5	Horticultural Plant	5	50	150	Optional

		Production under a Protected Environment				
SUB-TOTAL			20	200	600	
GRAND-TOTAL			76	760	2670	

QUALIFICATION STRUCTURE

This qualification comprises a total of **thirteen (13) Mandatory and Optional Units**, with a credit value of **76 and 760 Guided Learning Hours (GLH)** across the full qualification. One (1) credit is equivalent to **ten (10) GLH**. Guided Learning Hours are the time a learner spends in the classroom, workshop and laboratory of the Skills Training Centre (STC), being taught, instructed, supervised or assessed by a qualified trainer, facilitator or assessor.

In addition to the GLH, the qualification requires at least twice or thrice the GLH as practice time. Practice time is the time a learner is expected to spend applying the skills of each unit in a real workplace environment, carrying out the same tasks repeatedly until performance becomes consistent, accurate and habitual to the standard the qualification demands. It is undertaken under the guidance of a workplace supervisor, recorded in the learner's logbook and duly endorsed. Practice time is the principal setting where core assessment is conducted. It is through repeated performance in the workplace that a learner's achievement of the Learning Outcomes and Performance Criteria is judged and evidenced. Practice time is an additional requirement to GLH and does not replace them.

To achieve this qualification, the learner must complete all mandatory units, undertake the prescribed practice time, and accumulate the minimum credit value approved by NBTE. Credit is awarded only when a learner has been assessed as competent against all Learning Outcomes and Performance Criteria of a unit.



GENERAL GUIDE

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

Unit 001: HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT

Unit Reference Number: AGR/HOT/001/L5

NSQ Level: 5

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 120hours

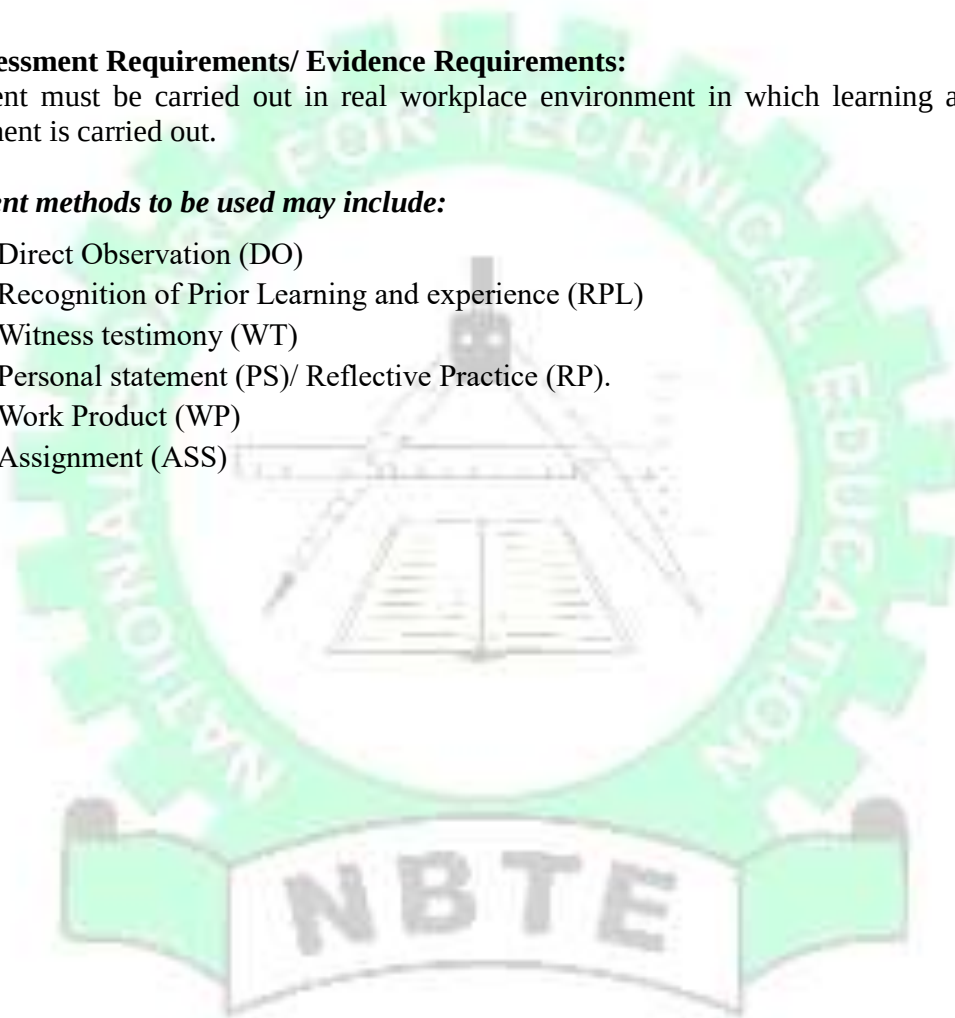
Unit Purpose: The purpose of this unit is to equip learners with knowledge and skills for promoting workplace safety, environmental sustainability, and compliance with health regulations.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 001: Health, Safety and Environmental Management

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain health and safety policies affecting horticultural operations</i>	1.1	Comprehend legal and regulatory framework governing occupational health and safety in Nigeria		
	1.2	Adopt existing legal and regulatory framework governing occupational health and safety		
	1.3	Outline the impacts of health and safety policy on horticultural operations		
	1.4	Propose mitigation strategies of the impact of health and safety policy on horticultural operations		
LO 2: <i>Identify environmental management in horticultural operations</i>	2.1	Identify environmental hazards affecting horticultural operations		
	2.2	Assess the impact of environmental hazards		
	2.3	Outline precautionary measures to overcome environmental hazards		
LO 3: <i>Explain the environmental policies affecting horticultural operations</i>	3.1	Comprehend legal and regulatory framework governing environmental policies in Nigeria		
	3.2	Adopt existing legal and regulatory framework governing environmental policies		
	3.3	Outline the impacts of environmental policies on horticultural operations		
	3.4	Propose mitigation strategies of the impact of environmental policies on horticultural operations		

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

Unit 002: STRATEGIC COMMUNICATION

Unit Reference Number: AGR/HOT/002/L5

NSQ Level: 5

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 150 hours

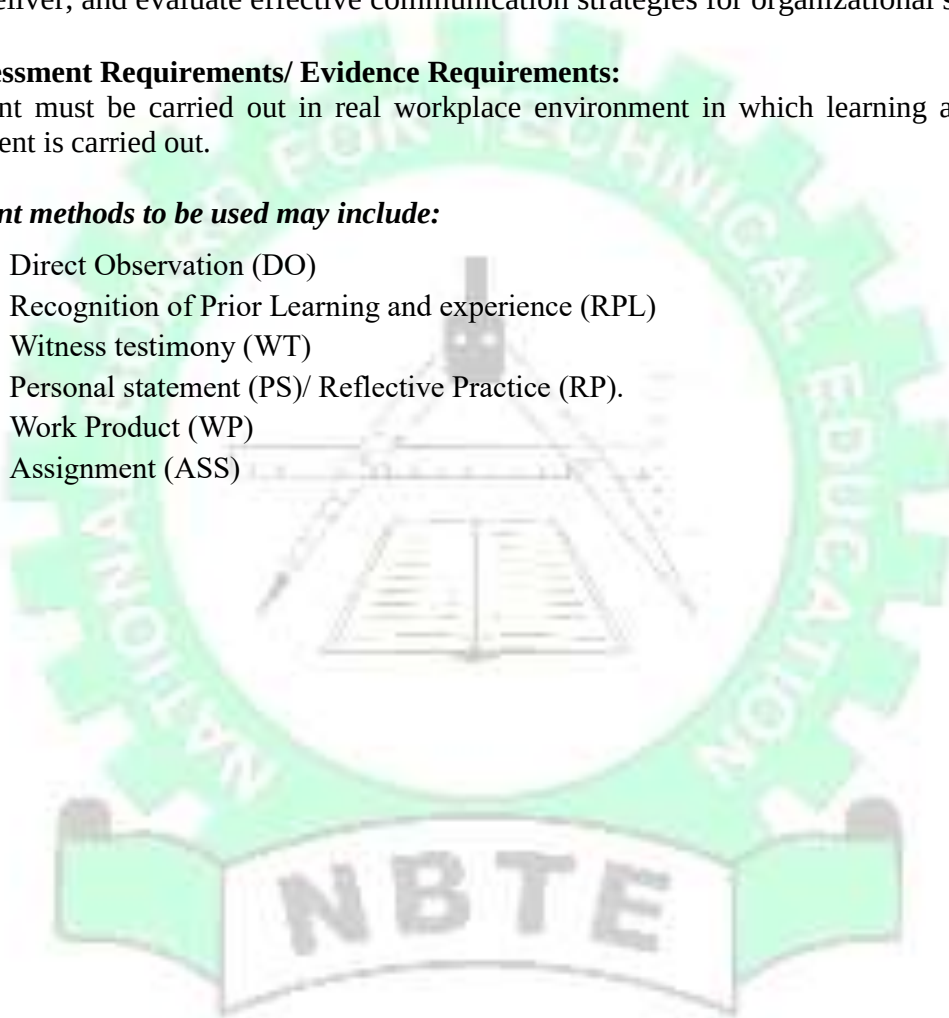
Unit Purpose: The purpose of this unit is to equip learners with knowledge and skills to design, deliver, and evaluate effective communication strategies for organizational success

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 002: Strategic Communication

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain strategic communication</i>	1.1	Explain strategic communication		
	1.2	Identify the steps involved in achieving strategic communication		
	1.3	Construct a strategic communication plan for a selected target group		
LO 2: <i>Outline the scope of strategic communication</i>	2.1	Outline the channels used for strategic communication		
	2.2	Identify the institutions that utilise strategic communication		
	2.3	Determine the differences between conventional and strategic communication		
LO 3: <i>Design strategic communication as a job creator</i>	3.1	Determine the areas of learning in strategic communication		
	3.2	List the career opportunities available in strategic communication: Executive Assistant Social Media Marketing Manager Human Resource Specialist etc.		
	3.3	Design a plan for strategic communication		
	3.4	Design a strategic communication material		
	3.5	Demonstrate strategic communication		

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

UNIT 003: TEAM WORK

Unit Reference Number: AGR/HOT/003/L5

NSQ Level: 5

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 150 hours

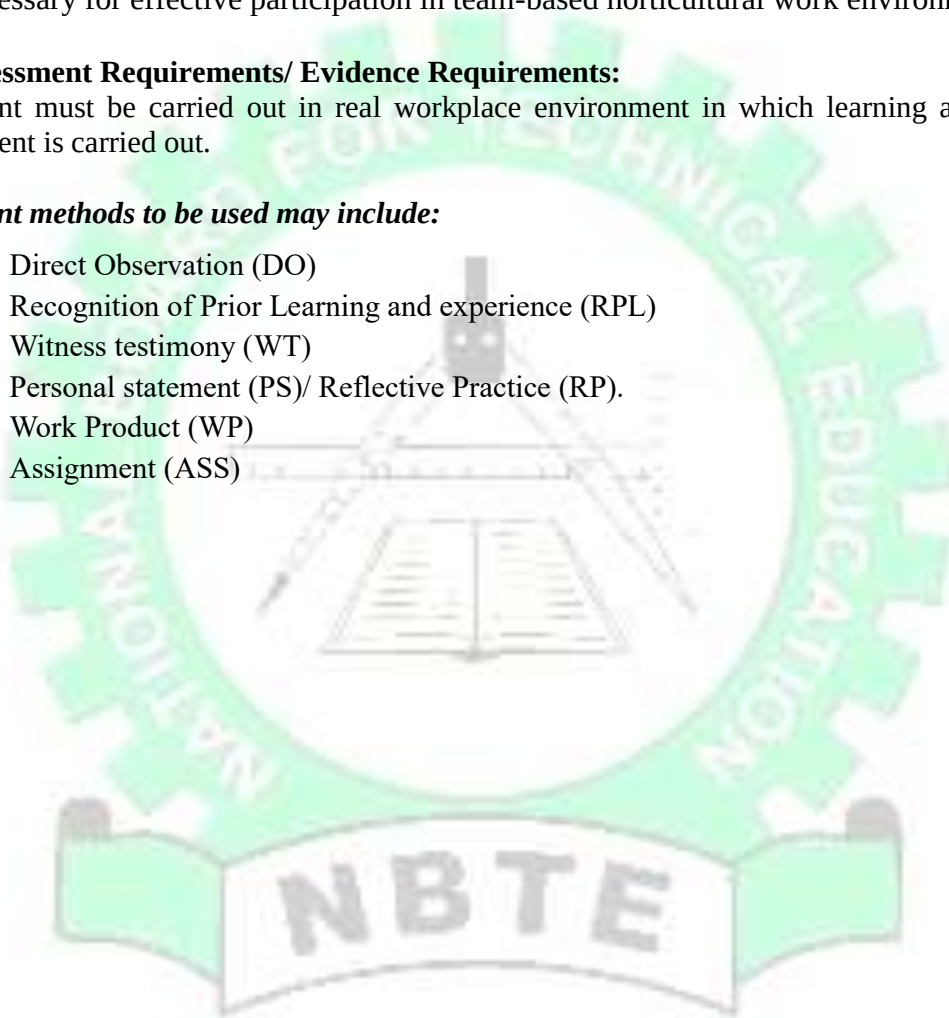
Unit Purpose: This unit is designed to equip the learner with interpersonal and collaborative skills necessary for effective participation in team-based horticultural work environments.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 003: Teamwork

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Define team work in horticultural environment</i>	1.1	Define Teamwork		
	1.2	Discuss the roles and responsibilities of members within a horticultural environment		
	1.3	Identify conflict that may arise within the horticultural environment		
	1.4	Resolve conflicts within the horticultural environment		
	1.5	Demonstrate collaborative behaviour on horticultural task		
LO 2: <i>Coordinate a small horticulture team</i>	2.1	Identify leadership positions in horticultural environment		
	2.2	Identify administrative roles in horticultural environment		
	2.3	Assign responsibilities to the leaders in horticultural environment		
	2.4	Monitor the performance of the leaders in horticultural environment		
	2.5	Record performance evidences generated by the leaders		
	2.6	Review performances		
	2.7	Recognise performing leaders		
	2.8	Motivate performing leaders		
	2.9	Provide feedback to the leaders in horticultural environment		
LO 3: <i>Assess the benefits of working as a team in a horticultural environment</i>	3.1	Identify the benefits of working as a team		
	3.2	Identify strengths of team members		
	3.3	Identify weaknesses of team members		
	3.4	Observe the leadership qualities of team members		

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

Unit 004: GARDEN LAYOUT PLANNING AND MAINTENANCE

Unit Reference Number: AGR/HOT/004/L5

NSQ Level: 5

Credit Value: 8

Guided Learning Hours: 80

Practice Time: 300 hours

Unit Purpose: The purpose of this unit is to train learners in designing, establishing, and maintaining functional and aesthetic gardens for diverse purposes.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 004: Garden Layout Planning and Maintenance

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Discuss the approach in making Garden layout</i>	1.1	Discuss Garden layout in horticulture environment		
	1.2	Identify the various components of a Garden in horticulture environment		
	1.3	Sketch a garden layout to display its components		
	1.4	Place each of the garden components in the layout appropriately.		
	1.5	Display the components of a garden layout		
LO 2: <i>Identify the different types of Garden Plans</i>	2.1	Identify different types of Garden Plan in Horticulture environment		
	2.2	Outline the procedures involved in executing a garden plan in horticulture environment		
	2.3	Implement a selected Garden Plan in Horticulture environment		
LO 3: <i>Outline the Maintenance measures of garden in horticulture environment</i>	3.1	Outline the maintenance measures in Garden of Horticulture environment		
	3.2	Differentiate between the routine and periodic maintenance operations in a Garden		
	3.3	Identify the consequences of poor maintenance in a horticultural garden		
	3.4	Carry out maintenance operations in a garden		

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

UNIT 005: PLANT NUTRITION MANAGEMENT

Unit Reference Number: AGR/HOT/005/L5

NSQ Level: 5

Credit Value: 6

Guided Learning Hours: 60

Practice Time: 200 hours

Unit Purpose: The purpose of this unit is to enable learners to apply principles of soil fertility and nutrient management for optimal plant growth and yield.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 005: Plant Nutrition Management

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain the nutrient requirements of plants</i>	1.1	Classify essential plant nutrients (macro and micro nutrients)		
	1.2	Explain the function of essential nutrients in plant growth and development		
	1.3	Explain the importance of fertilizer application and its requirement to plants		
	1.4	Assess nutrient requirements for different horticultural crops		
	1.5	Collect soil sample		
	1.6	Test soil sample		
	1.7	Interpret soil test reports		
LO 2: <i>Develop nutrient management plan</i>	2.1	Determine crop nutrient requirements based on stage of growth and better yield		
	2.2	Prepare specific crop nutrient management plan		
	2.3	Calculate fertilizer requirement using test result		
	2.4	Estimate the cost of nutrients required		
LO 3: <i>Select integrated nutrient management practices</i>	3.1	Select appropriate nutrient fixation crops		
	3.2	Identify nutrient recycling mechanism by plants		
	3.3	Follow appropriate cultural practices for nutrient conservation		
	3.4	Promote sustainable nutrient cycling within production system		
	3.5	Practice mixed farming		

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

UNIT 006: CLIMATE SMART INTEGRATED MANAGEMENT PRACTICE

Unit Reference Number: AGR/HOT/006/L5

NSQ Level: 5

Credit Value: 10

Guided Learning Hours: 100

Practice Time: 500 hours

Unit Purpose: The purpose of this unit is to provide learners with competency in planning, implementing, monitoring and evaluation of climate smart integrated management practices in horticultural production.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 006: Climate Smart Integrated Management Practice

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>EXPLAIN THE IMPACT OF CLIMATE CHANGE ON HORTICULTURAL CROPS</i>	1.1	Explain climate smart horticulture		
	1.2	Identify the effect of climatic changes on crops productivity		
	1.3	Identify climate related risks affecting production systems		
	1.4	Detect vulnerability of horticultural crops to climate changes		
	1.5	Identify adaptation and mitigation opportunities in horticultural production		
	1.6	Prepare report on risk associated with climatic changes		
LO 2: <i>Develop climate smart production plans</i>	2.1	Collect data on climate, soil, water and crop		
	2.2	Analyse data collated for better plan of horticultural production		
	2.3	Identify climate smart technologies suitable for specific production systems		
	2.4	Develop an integrated climate smart production plan		
LO 3: <i>Explain climate smart soil and water conservation</i>	3.1	Explain soil conservation measures to reduce land degradation		
	3.2	Describe integrated soil fertility management practices		
	3.3	Identify efficient water use technologies and practices		
	3.4	Describe the effectiveness of soil and water management interventions		
	3.5	Identify mulching techniques for soil protection		
	3.6	Explain cover crops as means to reduce soil loss		
	3.7	Monitor the effectiveness of soil conservation measures		
	3.8	Adjust irrigation schedules based on crop and environmental conditions		
	3.9	Evaluate irrigation performance indicators		

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



UNIT 007: SMART IRRIGATION AND DRAINAGE SYSTEMS

Unit Reference Number: AGR/HOT/007/L5

NSQ Level: 5

Credit Value: 7

Guided Learning Hours: 70

Practice Time: 250 hours

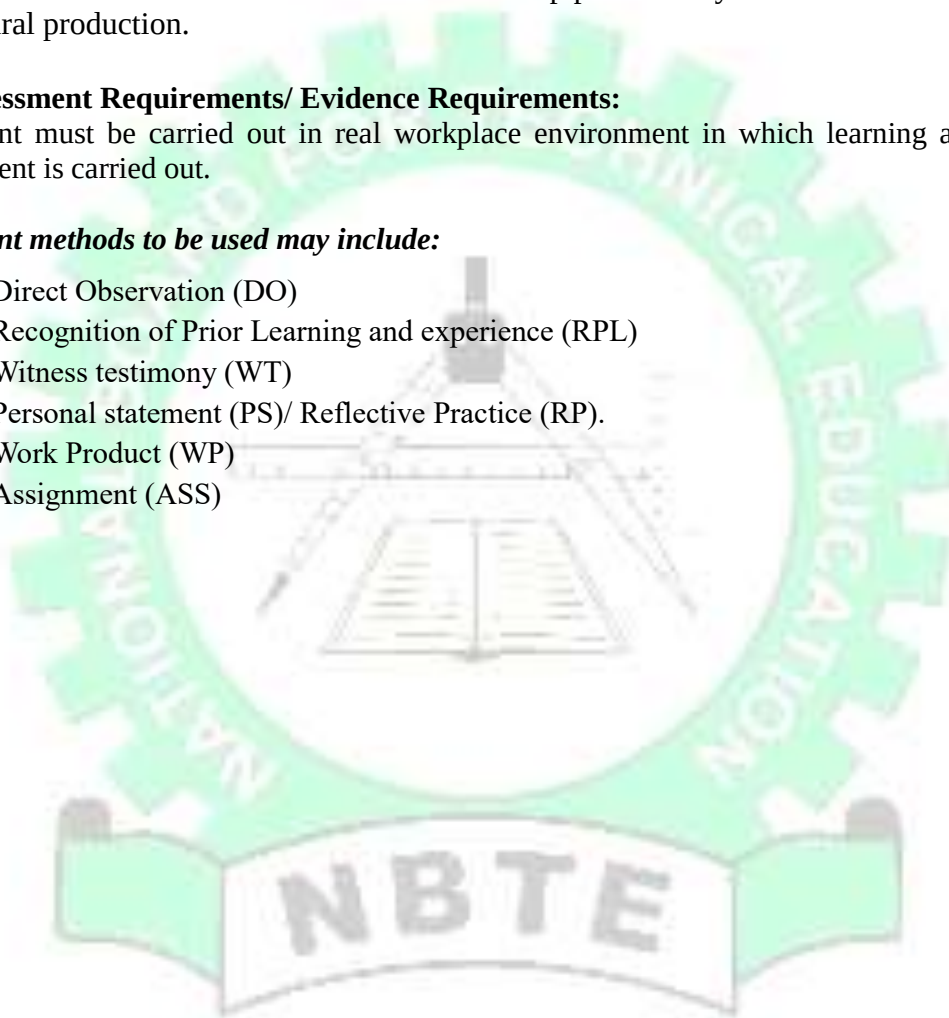
Unit Purpose: The purpose of this unit is to equip learners with knowledge and skills in design, installation, operation, monitoring and evaluation of smart irrigation and drainage systems for efficient water utilization to enhance crop productivity for sustainable horticultural production.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 007: Smart Irrigation and Drainage Systems

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Measure water requirement for crops</i>	1.1	Measure crop water requirements at different stages of growth		
	1.2	Identify soil characteristics affecting irrigation and drainage		
	1.3	Collate climatic and weather data for irrigation planning		
	1.4	Recommend appropriate irrigation system based on crop water requirement		
LO 2: <i>Assess site conditions for irrigation planning</i>	2.1	Determine the land topography		
	2.2	Prepare site assessment report		
	2.3	Design appropriate irrigation method based on site assessment report		
LO 3: <i>Design smart irrigation system</i>	3.1	Determine irrigation system based on crop and site condition		
	3.2	Select appropriate smart irrigation technologies		
	3.3	Prepare irrigation plan and system specifications		
	3.4	Calculate water rates and irrigation schedules		
LO 4: <i>Design smart drainage system</i>	4.1	Outline surface and subsurface drainage requirements		
	4.2	Install drainage structure and facilities		
	4.3	Monitor the drainage performance and water movement		
	4.4	Evaluate the effectiveness of drainage system		
LO 5: <i>Manage smart irrigation system</i>	5.1	Monitor soil moisture, weather and crop water status		
	5.2	Assess data generated for irrigation decision making		
	5.3	Adjust irrigation schedules based on crop and environmental conditions		
	5.4	Evaluate irrigation performance indicators		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQA Signature (if sampled):

Date:

EQA Signature (if sampled):

Date:



UNIT 008: STRATEGIC BUSINESS PLANNING FOR HORTICULTURE

Unit Reference Number: AGR/HOT/008/L5

NSQ Level: 5

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 200 hours

Unit Purpose: The purpose of this unit is to train learners in developing and executing business strategies that ensure profitability and sustainability in horticultural enterprises.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 008: Strategic Business Planning for Horticulture

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Develop business plan for horticultural enterprises</i>	1.1	Assess the horticultural business environment		
	1.2	Develop a business plan for a horticultural enterprise		
	1.3	Apply financial management tools to ensure business viability and growth		
	1.4	Evaluate the financial implications of the business plan		
LO 2: <i>Execute the developed business plan for horticultural enterprises</i>	2.1	Identify steps in the execution of the business plan		
	2.2	Identify the resources needed for executing the business plan		
	2.3	Allocate the resources appropriately		
	2.4	Apply risk management strategies		
LO 3: <i>Explain entrepreneurial skills in executing a business plan</i>	3.1	Explain entrepreneurship		
	3.2	Outline entrepreneurial skills in executing a business plan		
	3.3	Apply entrepreneurial skills in executing a business plan in horticultural enterprise		

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

UNIT 009: SOIL HEALTH AND CONSERVATION

Unit Reference Number: AGR/HOT/009/L5

NSQ Level: 5

Credit Value: 6

Guided Learning Hours: 60

Practice Time: 200 hours

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 009: SOIL HEALTH AND CONSERVATION

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain the properties of soil in horticulture</i>	1.1	Explain the physical, chemical, and biological properties of soil		
	1.2	Identify signs of soil degradation		
	1.3	Outline the impact of soil degradation on horticultural production		
	1.4	Explain how soil biological activity supports plant nutrition and health		
LO 2: <i>Outline the importance of soil health in horticulture</i>	2.1	Outline the benefits of soil health in horticulture		
	2.2	Highlight factors affecting soil health		
	2.3	Carry out soil testing		
	2.4	Determine the physical and biological health status of the soil		
LO 3: <i>Apply soil conservation and improvement practices</i>	3.1	Discuss soil conservation methods		
	3.2	List the benefits of soil conservation		
	3.3	Implement soil conservation practices on a horticultural site		

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

Unit 010: POMOLOGY

Unit Reference Number: AGR/HOT/010/L5

NSQ Level: 5

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 150 hours

Unit Purpose: The purpose of this unit is to provide learners with knowledge and skills in fruit crop production, management, and improvement.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 010: Pomology

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain pomology</i>	1.1	Explain pomology		
	1.2	Outline the importance of fruit and nuts cultivation		
	1.3	Identify fruits and nuts within the tropical region		
LO 2: <i>Identify the production practices of fruits and nuts</i>	2.1	Identify the appropriate site for fruits and nuts		
	2.2	Select viable seeds		
	2.3	Prepare land according to crop requirements		
	2.4	Establish nursery for seedlings production		
LO 3: <i>Establish an orchard</i>	3.1	Carry out field layout		
	3.2	Transplant according to recommended spacing		
	3.3	Observe recommended cultural practices for different crops		
LO 4: <i>Identify harvesting in pomology</i>	4.1	Identify suitable harvesting methods in pomology		
	4.2	Select suitable harvesting tools		
	4.3	Observe maturity indices		
	4.4	Carry out harvesting		

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

Unit 011: OLERICULTURE

Unit Reference Number: AGR/HOT/011/L5

NSQ Level: 5

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 150 hours

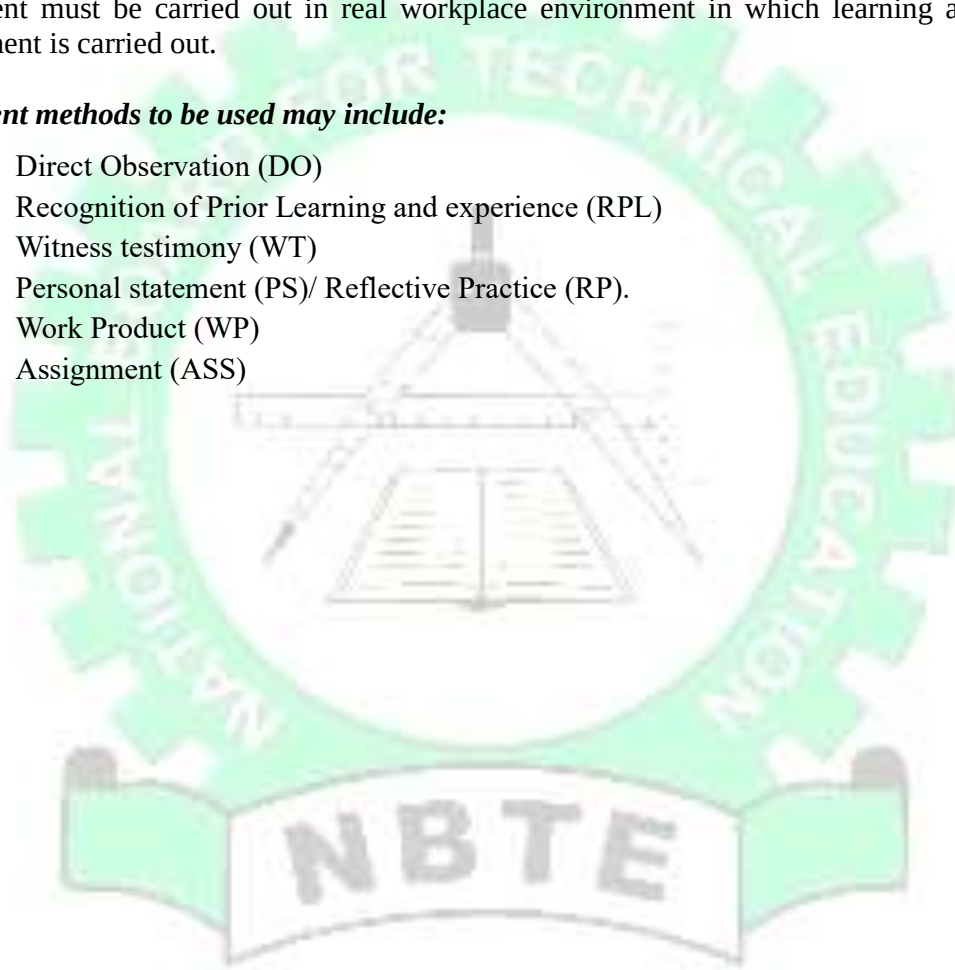
Unit Purpose: The purpose of this unit is to enable learners to cultivate, manage, and market vegetable crops effectively for food security and income generation.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 011: Olericulture

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Explain the Principles of vegetable crops production</i>	1.1	Define Olericulture		
	1.2	Explain the importance of vegetable crops		
	1.3	Classify vegetable crops according to their botany, life cycle and edible parts		
	1.4	Explain environmental requirements for vegetable production		
	1.5	Select suitable crop based on agroecological conditions		
	1.6	Identify steps involved in vegetable production		
LO 2: <i>Establish vegetable garden</i>	2.1	Identify the criteria for the selection of suitable site for production		
	2.2	Prepare land according to crop requirements		
	2.3	Select quality seed or planting materials		
	2.4	Establish nursery/bed for seedlings production		
	2.5	Transplant vegetable crops using recommended practices		
	2.6	Observe maintenance operation of established vegetable garden		
LO 3: <i>Manage pests, diseases and weeds in vegetable crops</i>	3.1	Identify major pests, diseases and weeds affecting vegetable crops		
	3.2	Carry out preventive measures for pests, diseases and weeds in vegetable crops		
	3.3	Assess the impact of pest, disease and weeds infestations on vegetable crops		
	3.4	Carry out appropriate control measure where necessary		
LO 4: <i>Harvest vegetable crops (produce)</i>	4.1	Determine appropriate time for harvesting vegetable crops		
	4.2	Identify harvesting methods for vegetable crops		
	4.3	Harvest vegetable crops		

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

UNIT 012: LANDSCAPE TECHNOLOGY

Unit Reference Number: AGR/HOT/012/L5

NSQ Level: 5

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 150 hours

Unit Purpose: The purpose of this unit is to equip learners with technical skills in planning, constructing, and managing landscapes for environmental and aesthetic value.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 012: Landscape Technology

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Outline landscape technology</i>	1.1	Explain landscaping		
	1.2	Identify types of landscape operations		
	1.3	Identify materials used in landscape operations		
	1.4	Outline the importance of landscaping		
	1.5	Outline hard landscape features		
	1.6	Outline soft landscape features		
LO 2: <i>Determine the planning and execution of landscape operation</i>	2.1	Determine appropriate land preparation methods for landscaping		
	2.2	Identify landscape construction materials technologies, and methods for suitability, sustainability, and cost		
	2.3	Carry out landscape operations		
LO 3: <i>Manage landscape area</i>	3.1	Carry out trimming		
	3.2	Carry out pruning		
	3.3	Carryout mowing		
	3.4	Apply supplementary nutrients		
	3.5	Control pests and diseases		

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

UNIT 013: HORTICULTURAL PLANT PRODUCTION UNDER A PROTECTED ENVIRONMENT

Unit Reference Number: AGR/HOT/013/L5

NSQ Level: 5

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 150 hours

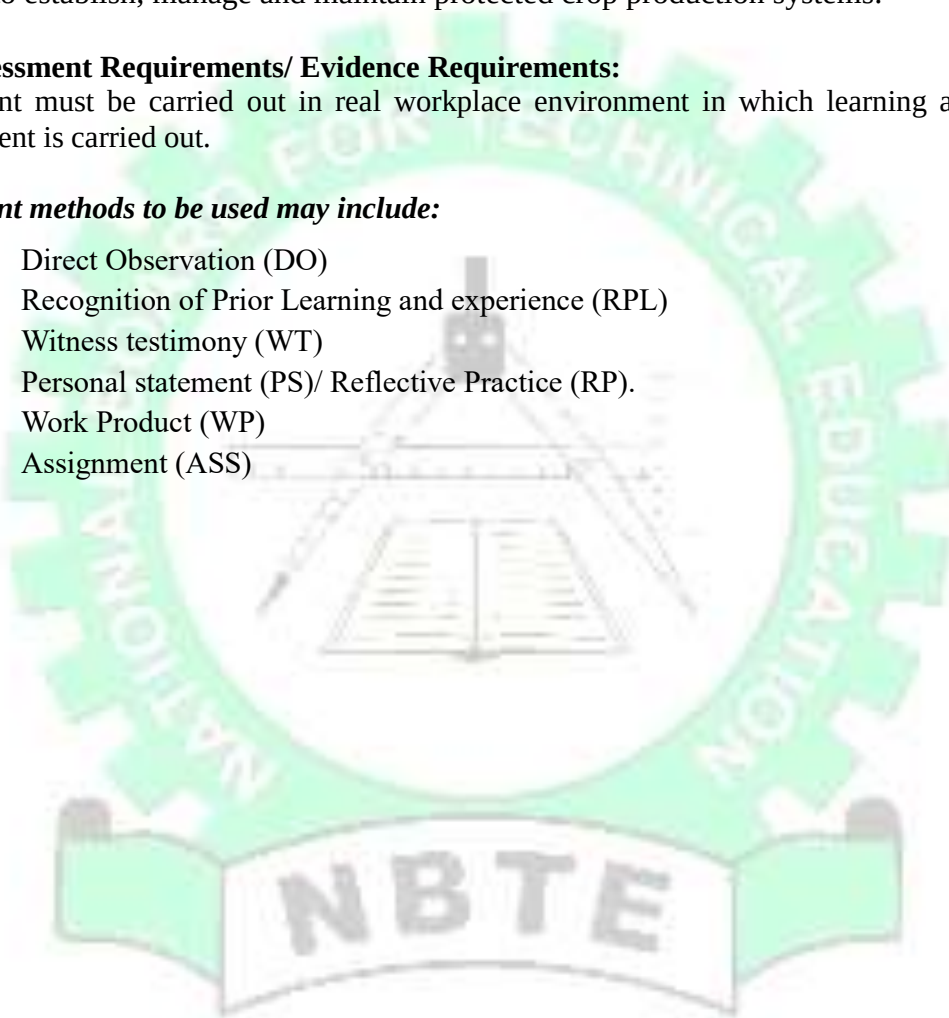
Unit Purpose: The purpose of this unit is to equip learners with the knowledge and skills, required to establish, manage and maintain protected crop production systems.

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 may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 013: Horticultural Plant Production under a Protected Environment

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: Explain protected environment	1.1	Explain protected environment		
	1.2	Identify the structures used as protected environment		
	1.3	List the crops grown under protected environment		
	1.4	Outline the advantages of protected environment over open field production		
LO 2: Explain the features of a Protected environment	2.1	Identify the features of a protected environment for plant Production		
	2.2	Identify the materials used for production		
	2.3	Sketch a protected environment for crop production		
	2.4	Erect a protected environment structure		
LO 3: Carry out plant production practices	3.1	Prepare growth media suitable for plant production		
	3.2	Provide channel of water supply		
	3.3	Transplant the seedlings to the prepared growth medium		
	3.4	Carry out IMP where applicable		
LO 4: Carry out maintenance practices	4.1	Maintain optimum temperature		
	4.2	Maintain optimum humidity		
	4.3	Maintain sanitation and safety measures PPE inclusive		
	4.4	Carry out routine maintenance		
LO 5: Perform Harvesting operation	5.1	Observe the signs of maturity		
	5.2	Identify the suitable method of harvesting the crop produced		
	5.3	Use suitable harvesting tools		
	5.4	Sort the produce		
	5.5	Grade the produce		
	5.6	Package the produce in suitable containers		

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



LIST OF TOOLS AND EQUIPMENT	
ITEM/EQUIPMENT	QUANTITY
1. Tractor	1
2. Disc Plough	1
3. Disc harrow	1
4. Ridger	1
5. Hoe	5
6. Digger	2
7. PVC cover	Assorted
8. Measuring tools	Assorted
9. Water storage tank	1
10. Fertigation tank	1
11. Crates	10
12. Cartons	10
13. Bags	10
14. Sorting/Grading tables	2
15. Trellising materials	Assorted
16. String Trimmers	2
17. Hedge cutters	2
18. Lawn mowers	1
19. Sprinkler	Assorted
20. Green house/Screen house	1
21. Soil Testing kit	1
22. Soil thermometer	1
23. Shade net	1
24. Seedling's tray	10
25. Work gloves/Gumboots	10
26. Nose mask	10
27. Survey Equipment	Assorted
28. Safety Glasses	10
29. Overall coats/Dust coats	10
30. Cutlass	10
31. Rake	10

32. Secateur	5
33. Mower	2
34. Head pan	5
35. Hand trowel	10
36. Hand fork	10
37. Hand shovel	5
38. Shovel	5
39. CP3 Sprayer	2
40. Knapsack sprayer	2
41. Hand sprayer	2
42. Peg/Rope and measuring tape	Assorted
43. Trap nets	5
44. Potting bag/pen knife/machete	Assorted
45. Pruning saw	2
46. Axe	2
47. Ladder	1
48. Watering Can/Watering hose	5
49. Water storage tank	2
50. Surface sprinkler	1
51. Nets	Assorted
52. Drip irrigation kits	Assorted
53. Water pumping machine	1
54. Wheel barrow	5
55. PPE	Assorted
56. Propagation tunnels	Assorted
57. Motorized Pruning saw	1
58. Motorized mower	1
59. Motorized Weeder	1
60. Motorized Digger	1
61. Fertilizer Applicator	1
62. Hand Pruner	5
63. Weighing Scale	2

**LIST OF PARTICIPANTS DURING THE NATIONAL OCCUPATIONAL STANDARD
REVIEW AND VALIDATION WORKSHOP**

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