



COMPETENCY-BASED MODULAR CURRICULUM

FOR AGRICULTURE AND EXTENSION LEVEL 5 (CYCLE 3)

PROGRAMME CODE: 0811 454A



**TVET CDACC
P.O. BOX 15745-00100
NAIROBI**

PERENNIAL CROPS PRODUCTION

UNIT CODE: 0811 451 11A

TVET CDACC UNIT CODE: AGR/CU/EXT/CR/01/5/MA

UNIT DURATION: 150 HOURS

Relationship to Occupational Standards

This unit addresses the Unit of Competency produce perennial crops: it involves Prepare planting materials, prepare crop seedbed, plant perennial crops, manage Perennial crops harvest perennial crop, process perennial crops products.

Unit Description

This unit specifies competencies required to produce perennial crops.

Summary of Learning Outcomes

By the end of this unit, the learner should be able to:

S/No	Learning Outcomes	Duration (Hours)
1.	Prepare planting materials	20
2.	Prepare crop seedbed	20
3.	Plant perennial crops	20
4.	Manage perennial crops	40
5.	Harvest perennial crops	20
6.	Process perennial crops products.	30
Total		150

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcomes	Content	Suggested Assessment Methods
1. Prepare planting materials	<p>Theory</p> <p>1.1 Prepare planting materials</p> <p> 1.1.1 Definition of terms</p> <p> 1.1.2 Assemble land preparation tools and equipment</p> <p> 1.1.2.1 Axes</p> <p> 1.1.2.2 Panga</p> <p> 1.1.2.3 Rake</p> <p> 1.1.2.4 Slasher</p> <p> 1.1.2.5 Tillage tools/equipment/machinery</p> <p> 1.1.2.6 Fork jembe</p> <p> 1.1.2.7 Harrows</p> <p> 1.1.2.8 Hoe</p> <p> 1.1.2.9 Tractor</p> <p> 1.1.2.10 Equipment</p> <p> 1.1.2.11 Mower</p> <p> 1.1.2.12 Rotavator</p> <p> 1.1.2.13 Wheelbarrow</p> <p> 1.1.2.14 Ridgers</p> <p> 1.1.2.15 Moulboard plough</p> <p> 1.1.2.16 Disc plough</p> <p> 1.1.2.17 Disc harrow</p> <p>1.2 Uses of land preparation tools and equipment</p> <p>1.3 Maintenance of land preparation tools and equipment</p> <p> 1.4 Obtain planting materials</p> <p> 1.4.1 Types of planting materials</p> <p> 1.4.1.1 Seeds and seedlings</p>	<ul style="list-style-type: none"> • Written tests • Projects • Interviews/ Oral questions • Individual/group assignments • Practical

	<p>1.4.1.2 Splits</p> <p>1.4.1.3 Crowns</p> <p>1.4.1.4 Slips</p> <p>1.4.1.5 Cuttings</p> <p>1.4.1.6 Suckers</p>	
2. Prepare crop seedbed	<p>Theory</p> <p>2.1 Land clearing</p> <p>2.2 importance of land clearing</p> <p>2.3 methods of land clearing</p> <p> 2.3.1.1 manual clearing</p> <p> 2.3.1.2 mechanical clearing</p> <p> 2.3.1.3 controlled burning</p> <p> 2.3.1.4 chemical clearing</p> <p> 2.3.1.5 grubbing</p> <p> 2.3.1.6 grazing</p> <p>2.4. Perform tillage operations</p> <p> 2.4.1 definition of terms</p> <p> 2.4.2 importance of tillage</p> <p> 2.4.3 Types of tillage</p> <p> 2.4.3.1 Primary tillage</p> <p> 2.4.3.2 Secondary tillage</p> <p> 2.4.3.3 Tertiary tillage</p> <p> 2.4.3.4 Zero/minimum tillage</p> <p>Practice</p> <p>2.5 carry out soil conservation measures</p> <p> 2.5.1 Contour planting</p> <p> 2.5.2 Terraces</p> <p> 2.5.3 Gabions</p> <p> 2.5.4 Mulching</p> <p> 2.5.5 Cover cropping</p> <p> 2.5.6 Minimum tillage</p> <p> 2.5.7 Crop rotation</p>	<ul style="list-style-type: none"> • Written tests • Projects • Interviews/ Oral questions • Individual/group assignments • Practical

	<p>2.5.8 Intercropping</p> <p>2.6 carry out tillage operations</p>	
3. Plant Annual crops	<p>Theory</p> <p>3.1 plant perennial crops</p> <p>3.1.1 types of farm inputs</p> <p>3.1.1.1 inorganic fertilizers</p> <p>3.1.1.2 Seeds</p> <p>3.1.1.3 Vegetative propagation materials</p> <p>3.1.1.4 Manures</p> <p>3.2 methods of planting perennial crops</p> <p>3.2.1 Direct seeding</p> <p>3.2.2 Transplanting</p> <p>3.2.3 Drilling</p> <p>3.2.4 Broadcasting</p> <p>3.2.5 Row planting</p> <p>3.3 Advantages and disadvantages of various planting methods</p> <p>3.4 Prepare annual crops planting records</p> <p>Practice</p> <p>3.5 carry out the establishment of perennial crops.</p>	<ul style="list-style-type: none"> Written tests Projects Interviews/ Oral questions Individual/group assignments Practical
4. Manage perennial crops	<p>Theory</p> <p>4.1 field management practices in perennial crops</p> <p>4.2 importance of field management practices in perennial crops</p> <p>4.3 types of field management practices in perennial crops</p> <p>4.3.1 Mulching</p> <p>4.3.2 Gapping</p> <p>4.3.3 Thinning</p> <p>4.3.4 Training</p> <p>4.3.5 Fertilizer application</p>	<ul style="list-style-type: none"> Written tests Projects Interviews/ Oral questions Individual/group assignments Practical

	<p>4.3.6 Pruning</p> <p>4.3.7 Trellising</p> <p>4.4 prepare perennial crops field management records</p> <p>Practice</p> <p>4.4 Carry out field management practices in perennial crops.</p>	
5. Harvest perennial crops	<p>Theory</p> <p>5.1 Harvesting perennial crops</p> <p>5.1.1 Definition of terms</p> <p>5.1.2 Importance of timely harvesting of perennial crops</p> <p>5.2 Harvesting tools and equipment</p> <p>5.2.1 Sickle</p> <p>5.2.2 Hoes and shovels</p> <p>5.2.3 Harvesting knife</p> <p>5.2.4 Buckets and baskets</p> <p>5.2.5 Pruning shears</p> <p>5.3 Uses of harvesting tools and equipment in perennial crops</p> <p>5.4 Maintenance of harvesting tools and equipment in perennial crops</p> <p>5.5 Maturity indices in perennial crops</p> <p>5.5.1 Indices</p> <p>5.5.1.1 Colour</p> <p>5.5.1.2 texture</p> <p>5.5.1.3 Size and shape</p> <p>5.5.1.4 Firmness</p> <p>importance of maturity indices in perennial crops</p> <p>5.6 Methods of harvesting perennial crops</p>	<ul style="list-style-type: none"> • Written tests • Projects • Interviews/ Oral questions • Individual/group assignments • Practical

	<p>5.6.1 Hand picking</p> <p>5.6.2 Use of tools</p> <p>5.6.3 Use of machinery</p> <p>5.7 prepare harvesting records</p> <p>Practice</p> <p>5.8 Carry out harvesting of perennial crops</p>	
6. Process perennial crops products	<p>Theory</p> <p>6.1. Process perennial crops products</p> <p> 6.1.1. Definition of terms</p> <p> 6.1.2. Importance of processing perennial crops products</p> <p>6.2. Processing tools and equipment and machines</p> <p> 6.2.1. Blender</p> <p> 6.2.2. Mortar and pestle</p> <p> 6.2.3. Weighing scale</p> <p> 6.2.4. Knives/cutting materials</p> <p> 6.2.5. Weighing cup</p> <p> 6.2.6. Bowl choppers</p> <p> 6.2.7. Bandsaws</p> <p> 6.2.8. Slicers</p> <p> 6.2.9. Marinating</p> <p> 6.2.10. vacuum tumblers</p> <p> 6.2.11. Peelers</p> <p>6.3. Uses of processing tools and equipment</p> <p>6.4. Maintenance of processing tools and equipment</p> <p>6.5. Methods of processing perennial crops products</p> <p> 6.5.1. Harvesting</p> <p> 6.5.2. Threshing</p> <p> 6.5.3. drying</p> <p> 6.5.4. cleaning</p>	<ul style="list-style-type: none"> • Written tests • Projects • Interviews/ Oral questions • Individual/group assignments • Practical

	<p>6.5.5. milling /grinding</p> <p>6.6. Distribution of perennial crops products</p> <p>6.7. Preparation of perennial crops product records</p> <p>Practice</p> <p>Carry out processing of perennial crops products using various methods</p>	
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Suggested Methods of Instruction

- Role playing
- Group discussion
- Direct instruction

Recommended Resources for 25 Trainees

S/No.	Category/Item	Description/Specifications	Quantity	Recommended Ratio (Item: Trainee)
A	Learning Materials			
1.	Journals		5 pcs	1:5
2.	writing materials		50	2:1
3.	Charts		1	1:25
4.	PowerPoint presentations	For trainer's use		
5.	Whiteboard		1	1:25
6.	Assorted color of whiteboard markers	For trainer's use		
7.	Printers		1	1:25
8.	Projector		1	1:25
B	Learning Facilities & infrastructure			
3.	Lecture/theory room		1	1:25

4.	Agriculture lab		1	1:25
C	Tools and Equipment			
6.	Hoe		25	1:1
7.	Machete		25	1:1
8.	Harrows		1	1:25
9.	Subsoilers		1	1:25
10.	Planters		1	1:25
11.	Sprayers	Knapsack sprayer	5	1:5
12.	Dusters		1	1:25