



**COMPETENCY-BASED MODULAR CURRICULUM**

**FOR AGRICULTURE AND EXTENSION  
LEVEL 5  
(CYCLE 3)**

**PROGRAMME CODE: 0811 454A**



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

## **ANNUAL CROP PRODUCTION**

**UNIT CODE:** 0811 451 10A

**TVET CDACC UNIT CODE:** AGR/CU/EXT/CR/02/4/MA

**UNIT DURATION:** 100 HOURS

### **Relationship to Occupational Standards**

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

### **Unit Description**

This unit specifies competencies required to produce annual crop.

### **Summary of Learning Outcomes**

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

<b>S/No</b>	<b>Learning Outcomes</b>	<b>Duration (Hours)</b>
1.	Prepare planting materials,	10
2.	Prepare crop seedbed	20
3.	Plant annual crops	20
4.	Manage annual crops	20
5.	Harvest annual crops	10
6.	Process annual crops products.	20
<b>Total</b>		<b>100</b>

### **Learning Outcomes, Content and Suggested Assessment Methods**

<b>Learning</b>	<b>Content</b>	<b>Suggested</b>	<b>Assessment</b>

<b>Outcomes</b>		<b>Methods</b>
<p>1. Prepare planting materials</p>	<p><b>Theory</b></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/mac hinery</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 Personal Protective Equipment</p> <p>    1.2.1 Gloves</p> <p>    1.2.2 Helmet</p> <p>    1.2.3 Gumboots</p> <p>    1.2.4 Face mask</p> <p>    1.2.5 Protective googles.</p>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Projects</li> <li>• Interviews/Oral questions</li> <li>• Individual/group assignments</li> <li>• Practicals</li> </ul>

	<p>1.3 Uses of land preparation tools and equipment</p> <p>1.4 Maintenance of land preparation tools and equipment</p> <p>1.5 Obtain planting materials</p> <p>1.5.1 Types of planting materials</p> <p>1.5.1.1 Seeds and seedlings</p> <p>1.5.1.2 Splits</p> <p>1.5.1.3 Crowns</p> <p>1.5.1.4 Slips</p> <p>1.5.1.5 Cuttings</p> <p>1.5.1.6 Suckers</p> <p>1.5.1.7 Vines</p> <p>1.5.1.8 Stem tubers</p>	
2. Prepare crop seedbed	<p><b>Theory</b></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>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Projects</li> <li>• Interviews/Oral questions</li> <li>• Individual/group assignments</li> <li>• practical</li> </ul>

	<p><b>Practice</b></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> <p>    2.5.8 Intercropping</p> <p>2.6 carry out tillage operations</p>	
3. Plant Annual crops	<p><b>Theory</b></p> <p>3.1 plant annual 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 annual 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 Hill planting</p> <p>    3.2.6 Row planting</p> <p>3.3 advantages and disadvantages of various planting methods</p> <p>3.4 prepare annual crops planting records</p> <p><b>Practice</b></p> <p>3.5 carry out the establishment of annual crops.</p>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Projects</li> <li>• Interviews/ Oral questions</li> <li>• Individual/group assignments</li> <li>• practical</li> </ul>

<p>4. Manage annual crops</p>	<p><b>Theory</b></p> <p>1.1 field management practices in annual crops</p> <p>1.2 importance of field management practices in annual crops</p> <p>1.3 types of field management practices in annual crops</p> <p>    1.3.1 Mulching</p> <p>    1.3.2 Gapping</p> <p>    1.3.3 Thinning</p> <p>    1.3.4 Training</p> <p>    1.3.5 Fertilizer application</p> <p>    1.3.6 Pruning</p> <p>    1.3.7 Trellising</p> <p>1.4 prepare annual crops field management records</p> <p><b>Practice</b></p> <p>1.5 Carry out field management practices in annual crops.</p>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Projects</li> <li>• Interviews/Oral questions</li> <li>• Individual/group assignments</li> <li>• Practicals</li> </ul>
<p>5. Harvest Annual crops</p>	<p><b>Theory</b></p> <p>5.1 Harvesting annual crops</p> <p>    5.1.1 Definition of terms</p> <p>    5.1.2 Importance of timely harvesting of annual crops</p> <p>5.2 Harvesting tools and equipment</p> <p>    5.2.1 Sickle</p> <p>    5.2.2 Combined harvesters</p> <p>    5.2.3 Hoes and shovels</p> <p>    5.2.4 Harvesting knife</p> <p>    5.2.5 Buckets and baskets</p> <p>    5.2.6 Pruning shears</p> <p>5.3 uses of harvesting tools and equipment</p>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Reflection papers</li> <li>• Projects</li> <li>• Interviews/ Oral questions</li> <li>• Workshop reports</li> <li>• Individual/group assignments</li> <li>• Practical</li> </ul>

	<p>in annual crops</p> <p>5.4 maintenance of harvesting tools and equipment in annual crops</p> <p>5.5 maturity indices in annual 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>5.5.2 importance of maturity indices in annual crops</p> <p>5.6 Methods of harvesting annual crops</p> <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><b>Practice</b></p> <p>5.8 Carry out harvesting of annual crops</p>	
6. Process annual crops products	<p><b>Theory</b></p> <p>6.1 Process annual crops products</p> <p>    6.1.1 Definition of terms</p> <p>    6.1.2 Importance of processing annual crops products</p> <p>6.2 processing tools and Equipments 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>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Projects</li> <li>• Interviews/ Oral questions</li> <li>• Individual/group assignments</li> <li>• Practicals</li> </ul>

	<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 annual crops products</p> <p>    6.5.1.1 harvesting</p> <p>    6.5.1.2 threshing</p> <p>    6.5.1.3 drying</p> <p>    6.5.1.4 cleaning</p> <p>    6.5.1.5 milling /grinding</p> <p>6.6 Distribution of annual crops products</p> <p>6.7 Preparation of annual crops product records</p> <p><b>Practice</b></p> <p>6.8 Carry out processing of annual 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)
<b>A</b>	<b>Learning Materials</b>			
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>B</b>	<b>Learning Facilities &amp; infrastructure</b>			
1.	Lecture/theory room		1	1:25
2.	Agriculture lab		1	1:25
<b>C</b>	<b>Tools and Equipment</b>			
1.	Hoe		25	1:1
2.	Machete		25	1:1
3.	Harrows		1	1:25
4.	Subsoilers		1	1:25
5.	Planters		1	1:25