



REPUBLIC OF KENYA

COMPETENCY-BASED MODULAR CURRICULUM

FOR

**AGRICULTURE AND EXTENSION LEVEL 6
(CYCLE 3)**

ISCED PROGRAMME CODE: 0811 554 A



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

HORTICULTURE CROP PRODUCTION

UNIT CODE: 0811 551 03A

TVET CDACC UNIT CODE: AGR/CU/EXT/CR/03/4/MA

UNIT DURATION: 100 HOURS

Relationship to Occupational Standards

This unit addresses the Unit of Competency produce horticulture crops: it involves Preparation of planting materials, preparation of crop seedbed, planting horticultural crops, harvesting horticulture crop and processing horticulture crops products.

Unit Description

This unit specifies competencies required to produce horticulture 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 | 15 |
| 2. | Prepare crop seedbed | 15 |
| 3. | Plant horticulture crops | 20 |
| 4. | Manage horticulture crops | 20 |
| 5. | Harvest horticulture crops | 10 |
| 6. | Process horticulture crops products. | 20 |
| Total | | 100 |

Learning Outcomes, Content and Suggested Assessment Methods

| | | |
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| <p>1. Prepare planting materials</p> | <p>Theory</p> <p>1.1 planting materials preparation</p> <p>1.1.1 Definition of terms</p> <p>1.1.2 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 Mouldboard plough</p> <p>1.1.2.16 Disc plough</p> <p>1.1.2.17 Disc harrow</p> <p>1.2 land preparation tools and equipment use</p> <p>1.3 land preparation tools and equipment maintenance</p> <p>1.4 planting materials</p> <p>1.4.1 Types of planting materials</p> <p>1.4.1.1 Seeds and seedlings</p> <p>1.4.1.2 Splits</p> | <ul style="list-style-type: none"> • Written tests • Projects • Interviews/ Oral questions • Individual/group assignments • Practicals |
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|------------------------|---|--|
| | 1.4.1.3 Crowns 1.4.1.4 Slips 1.4.1.5 Cuttings 1.4.1.6 Suckers 1.4.1.7 Vines | |
| 2 Prepare crop seedbed | Theory 2.1 Land clearing 2.2 Importance of land clearing 2.3 Methods of land clearing 2.3.1 manual clearing 2.3.2 mechanical clearing 2.3.3 controlled burning 2.3.4 chemical clearing 2.3.5 grubbing 2.3.6 grazing 2.4. Tillage operations 2.4.1 definition of terms 2.4.2 importance of tillage 2.4.3 Types of tillage 2.4.3.1 Primary tillage 2.4.3.2 Secondary tillage 2.4.3.3 Tertiary tillage 2.4.3.4 Zero/minimum tillage Practice 2.5 carry out soil conservation measures 2.5.1 Contour planting 2.5.2 Terraces 2.5.3 Gabions 2.5.4 Mulching 2.5.5 Cover cropping 2.5.6 Minimum tillage 2.5.7 Crop rotation 2.5.8 Intercropping | <ul style="list-style-type: none"> • Written tests • Projects • Interviews/ Oral questions • Individual/group assignments • practical |

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| | 2.6 carry out tillage operations | |
| 3 Plant horticulture crops | <p>Theory</p> <p>3.1 horticulture crops establishment</p> <p>3.1.1 types of farm inputs</p> <p>3.1.1.1 inorganic fertilizer</p> <p>3.1.1.2 Vegetative propagation materials</p> <p>3.1.1.3 Manures</p> <p>3.1.2 methods of planting horticulture crops</p> <p>3.1.2.1 Direct seeding</p> <p>3.1.2.2 Transplanting</p> <p>3.1.2.3 Drilling</p> <p>3.1.2.4 Broadcasting</p> <p>3.1.2.5 Row planting</p> <p>3.1.3 advantages and disadvantages of various planting methods</p> <p>3.2 horticulture crops planting records preparation</p> <p>Practice</p> <p>3.3 carry out the establishment of different horticulture crops.</p> | <ul style="list-style-type: none"> • Written tests • Projects • Interviews/ Oral questions • Individual/group assignments • practical |
| 4 Manage horticulture crops | <p>Theory</p> <p>4.1 Horticulture crop management.</p> <p>4.1.1 Definition of terms</p> <p>4.1.2 management practices in horticulture crops</p> <p>4.1.3 importance of management practices.</p> <p>4.2 Types of horticulture crops management practices.</p> <p>4.2.1 Mulching</p> | <ul style="list-style-type: none"> • Written tests • Projects • Interviews/ Oral questions • Individual/group assignments • Practicals |

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| | <p>4.2.2 Gapping</p> <p>4.2.3 Thinning</p> <p>4.2.4 Training</p> <p>4.2.5 Fertilizer application</p> <p>4.2.6 Pruning</p> <p>4.2.7 Trellising</p> <p>4.4 prepare horticulture crops management records</p> <p>Practice</p> <p>4.3 Carry out management practices in horticulture crops.</p> | |
| 5 5. Harvest horticulture crops | <p>Theory</p> <p>5.1 Harvesting horticulture 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 horticulture crops</p> <p>5.4 maintenance of harvesting tools and equipment in horticulture crops</p> <p>5.5 maturity indices in horticulture crops</p> <p>5.5.1 indices</p> <p>5.5.1.1 colour</p> <p>5.5.1.2 texture</p> | <ul style="list-style-type: none"> • Written tests • Projects • Interviews/ Oral questions • Individual/group assignments • Practical |

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|---|---|---|
| | <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 horticulture crops</p> <p>5.6 Methods of harvesting horticulture 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>Practice</p> <p>5.8 carry out establishment of horticulture crops</p> <p>5.9 Carry out harvesting of horticulture crops</p> | |
| <p>6. Process horticulture crops products</p> | <p>Theory</p> <p>1.1 Process horticulture crops products</p> <p>1.1.1 Definition of terms</p> <p>1.1.2 Importance of processing horticulture crops products</p> <p>1.2 processing tools and equipment and machines</p> <p>1.2.1 Blender</p> <p>1.2.2 Mortar and pestle</p> <p>1.2.3 Weighing scale</p> <p>1.2.4 Knives/cutting materials</p> <p>1.2.5 Weighing cup</p> <p>1.2.6 Bowl choppers</p> <p>1.2.7 Bandsaws</p> <p>1.2.8 Slicers</p> <p>1.2.9 Marinating</p> <p>1.2.10 vacuum tumblers</p> <p>1.2.11 Peelers</p> | <ul style="list-style-type: none"> • Written tests • Projects • Interviews/ Oral questions • Individual/group assignments • Practicals |

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| | 1.3 Uses of processing tools and equipment 1.4 Maintenance of processing tools and equipment 1.5 Methods of processing horticulture crops products 1.5.1.1 Cleaning and grading 1.5.1.2 Cooling and storage 1.5.1.3 Canning 1.5.1.4 Juicing and pulping 1.5.1.5 pickling 1.6 Distribution of horticulture crops products 1.7 Preparation of horticulture crops product records Practice 1.8 Carry out processing of horticulture crops products using various methods | |
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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 | | |

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|----------|---|-------------------|-------|-------------|
| 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 | | | |
| 1. | Lecture/theory room | | 1 | 1:25 |
| 2. | Agriculture lab | | 1 | 1:25 |
| | Consumable materials | | | |
| 7. | Fertilizers | 1-50kg bag | 1:25 | Fertilizers |
| 8. | Seeds | 1 | 1: 25 | |
| 9. | Stem cuttings | 0.25 | 1:25 | |
| C | Tools and Equipment | | | |
| 1. | Hoe | | 1 | 1:25 |
| 2. | Machete | | 1 | 1:25 |
| 3. | Rake | | 5 | 5:1 |
| 4. | Harvesting knives | | 5 | 5:1 |
| 5. | Nursery trays | | 1 | 1:25 |