

## FARM MACHINERY OPERATION

**UNIT CODE:** 0716 451 07A

**TVET CDACC UNIT CODE:** AGR/CU/AP/CC/01/5/MA

### Relationship to Occupational Standards

This unit addresses the unit of competency: Operate Farm Machinery

**DURATION OF UNIT: 100 Hours**

### UNIT DESCRIPTION

This unit equips trainees with knowledge and skills to operate farm power and machinery. It involves operating hand tools and equipment, operating tillage machinery, operating planting machinery, operating crop protection machinery, operating harvesting machinery and operating agro-processing machinery.

### Summary of Learning Outcomes

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

S/No	Learning Outcomes	Duration (Hours)
1.	Operate hand tools and equipment	10
2.	Operate tillage machinery	20
3.	Operate planting machinery	20
4.	Operate crop protection machinery	10
5.	Operate harvesting machinery	20
6.	Operate Agro-processing machinery	20
<b>Total</b>		<b>100</b>

### Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Operate hand tools and	1.1. Hand tools and equipment classification	➤ Written assessment

equipment	<p>1.1.1. Garden tools and equipment</p> <ul style="list-style-type: none"> <li>● Panga</li> <li>● Slasher</li> <li>● Spade</li> <li>● Rake</li> <li>● Secateurs</li> <li>● Fork Jembe</li> <li>● Dibber</li> </ul> <p>1.1.2. Workshop tools and equipment</p> <ul style="list-style-type: none"> <li>● Jack plane</li> <li>● Hand saw</li> <li>● Hammer</li> <li>● Hand drill</li> <li>● Tape measure</li> <li>● Files</li> </ul> <p>1.1.3. Carpentry tools and equipment</p> <ul style="list-style-type: none"> <li>● Hand saw</li> <li>● Hammer</li> <li>● Chisel</li> <li>● Try square</li> <li>● Coping saw</li> </ul> <p>1.1.4. Masonry tools and equipment</p> <ul style="list-style-type: none"> <li>● Plumb line</li> <li>● Brick hammer</li> <li>● Cold chisel</li> <li>● Masons level</li> <li>● Wheelbarrow</li> <li>● Masonry saw</li> <li>● Masonry tape measure</li> </ul> <p>1.1.5. Livestock handling tools and equipment</p>	<ul style="list-style-type: none"> <li>➤ Practical</li> <li>➤ Projects</li> <li>➤ Third party report</li> <li>➤ Portfolio of evidence</li> <li>➤ Oral questions</li> </ul>
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	<ul style="list-style-type: none"> <li>• Burdizzo</li> <li>• Tooth clipper</li> <li>• Ear notcher</li> <li>• Hoof trimmer</li> <li>• Elastrator</li> <li>• Shears</li> <li>• Halter</li> </ul> <p>1.2. Hand tools and equipment utilization</p> <p>1.3. Servicing of hand tools and equipment</p> <p>1.4. Storage of hand tools and equipment</p>	
2. Operate tillage machinery	<p>2.1. Personal protective equipment</p> <ul style="list-style-type: none"> <li>• Googles</li> <li>• Ear muffs</li> <li>• Safety boots</li> <li>• Nose mask</li> <li>• Gloves</li> <li>• Overall</li> <li>• Dust coat</li> </ul> <p>2.2. Operation of tillage machinery</p> <p>2.2.1. Ploughs</p> <ul style="list-style-type: none"> <li>• Disc plough</li> <li>• Mouldboard plough</li> <li>• Ox- plough</li> <li>• Harrows</li> <li>• Disc harrow</li> <li>• Spring tine harrow</li> </ul> <p>2.2.2. Tillers</p> <ul style="list-style-type: none"> <li>• Chisel plough</li> <li>• Subsoilers</li> </ul> <p>2.3. Maintenance of tillage machinery</p>	<ul style="list-style-type: none"> <li>• Written assessment</li> <li>• Practical</li> <li>• Projects</li> <li>• Third party report</li> <li>• Portfolio of evidence</li> <li>• Oral questions</li> </ul>

	2.4. Storage of tillage machinery	
3. Operate planting machinery	3.1. Personal protective equipment 3.2. Calibration of planting machinery <ul style="list-style-type: none"> <li>3.2.1. Seed drills</li> <li>3.2.2. Planters</li> <li>3.2.3. Ridgers</li> <li>3.2.4. Fertilizer distributors</li> <li>3.2.5. Manure spreaders</li> </ul> 3.3. Operation of planting machinery 3.4. Maintenance of planting machinery 3.5. Storage of planting machinery	<ul style="list-style-type: none"> <li>● Written assessment</li> <li>● Practical</li> <li>● Projects</li> <li>● Third party report</li> <li>● Portfolio of evidence</li> <li>● Oral questions</li> </ul>
4. Operate crop protection machinery	4.1. Personal protective equipment 4.2. Calibration of crop protection machinery <ul style="list-style-type: none"> <li>4.2.1. Sprayers</li> <li>4.2.2. Dusters</li> </ul> 4.3. Operation of crop protection machinery 4.4. Maintenance of crop protection machinery 4.5. Storage of crop protection machinery	<ul style="list-style-type: none"> <li>● Written assessment</li> <li>● Practical</li> <li>● Projects</li> <li>● Third party report</li> <li>● Portfolio of evidence</li> <li>● Oral questions</li> </ul>
5. Operate harvesting machinery	5.1. Personal protective equipment 5.2. Operation of harvesting machinery <ul style="list-style-type: none"> <li>5.2.1. Mowers</li> <li>5.2.2. Combined harvesters</li> <li>5.2.3. Potato harvester</li> <li>5.2.4. Threshers</li> <li>5.2.5. Balers</li> </ul> 5.3. Maintenance of harvesting machinery 5.4. Storage of harvesting machinery	<ul style="list-style-type: none"> <li>● Written assessment</li> <li>● Practical</li> <li>● Projects</li> <li>● Third party report</li> <li>● Portfolio of evidence</li> <li>● Oral questions</li> </ul>
6. Operate Agro-processing machinery	6.1. Personal protective equipment 6.2. Operation of Agro-processing	<ul style="list-style-type: none"> <li>● Written assessment</li> <li>● Practical</li> </ul>

	machinery 6.2.1. Mills 6.2.2. Grinders 6.2.3. Shellers 6.2.4. Dryers 6.2.5. Elevator conveyors 6.3. Maintenance of Agro-processing machinery 6.4. Storage of Agro-processing machinery	<ul style="list-style-type: none"> <li>● Projects</li> <li>● Third party report</li> <li>● Portfolio of evidence</li> <li>● Oral questions</li> </ul>
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### Suggested methods of delivery

- Demonstration
- Practical
- Discussions
- Direct instruction

### Recommended Resources for 25 Trainees

S/No.	Category/Item	Description/Specifications	Quantity	Recommended Ratio (Item: Trainee)
A	<b>Learning Materials</b>			
1.	Charts	<ul style="list-style-type: none"> <li>● Flip Charts</li> <li>● Rules and Regulations</li> </ul>	5	1:5
2.	Markers	whiteboard markers and permanent markers	5	1:5
3.	Video clips Audio tapes	MP4, MP3	5	1:5

4.	Newspapers and Handouts	Daily	25	1:1
5.	Business Journals	Annual, Monthly, Daily	25	1:1
<b>B</b>	<b>Learning Facilities &amp; Infrastructure</b>			
6.	Lecture/Theory Room	(9* 8 sq. metres)	1	1:25
7.	Internet Connection	WI-FI, Dial-Up, Cable, Fixed-wireless,	1	1:25
<b>C</b>	<b>Consumable Materials</b>			
8.	Flashcards	Alphabet, Numbers, Math	25	1:1
9.	Stationery	Printing Papers, and Exercise Books Sizes A4, A3, A2 etc	5 reams	1:5
<b>D</b>	<b>Tools And Equipment</b>			
10.	Computers/Laptops	Any model	1	1:25
11.	Projector	LED.LCD, Laser	1	1:25
12.	Whiteboard	Glass, melamine, porcelain	1	1:25
13.	Tools	Carpentry tools, Garden, Workshop, Carpentry, Masonry and Livestock handling tools and equipment tools	Sufficient	
14.	Machineries	Ploughs, Harrows, Tillers, Rotavators, Subsoilers, Seed drills, Planters, Ridgers, Fertilizer distributors, Manure spreaders, Sprayers etc	Sufficient	