



**REPUBLIC OF KENYA**

**COMPETENCY- BASED MODULAR CURRICULUM**

**FOR**

**AGRIPRENEURSHIP**

**KNQF LEVEL 6  
(CYCLE 3)**

**ISCED PROGRAMME CODE: 0811 554A**



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

## FARM MACHINERY OPERATION

**ISCED UNIT CODE:** 0811 551 07A

**TVETCDACC UNIT CODE:** AG/CU/PN/CC/04/6/MA

### Relationship to occupational standards

This unit addresses the unit of competency: Operate farm machinery

**Duration of Unit:** 220 HOURS

### UNIT DESCRIPTION

The unit specify the competences required to operate farm machinery. It includes, operating hand tool and equipment, tillage machinery, planting machinery, crop protection machinery, harvesting machinery and Agro-processing machinery.

### Summary of learning outcomes

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

S/No	Learning Outcomes	Duration (Hours)
1.	Operate hand tools and equipment	40
2.	Operate tillage machinery	40
3.	Operate planting machinery	40
4.	Operate crop protection machinery	40
5.	Operate harvesting machinery	30
6.	Operate agro-processing machinery	30
<b>Total</b>		<b>220</b>

### Learning Outcomes, Content and Suggested Assessment Methods

Learning outcome	content	Suggested assessment method
1. Operate hand tools and	1.1 Hand tools and equipment 1.1.1 Garden Tools and equipment	<ul style="list-style-type: none"><li>• Practical</li><li>• Project</li><li>• Third party report</li></ul>

equipment	1.1.2 Livestock handling tools and equipment 1.1.3 Cultivation tools and equipment 1.1.4 Harvesting tools and equipment 1.1.5 Crop protection tools and equipment 1.2 Utilizing of hand tools and equipment 1.3 Servicing of hand tools and equipment 1.4 Storage of the hand tools and equipment <b>Practices</b> -Tool identification -Maintenance of hand tools...	<ul style="list-style-type: none"> <li>• Portfolio of evidence</li> <li>• Written tests</li> <li>• Oral questioning</li> </ul>
2. Operate tillage machinery	2.1 Personal protective equipment 2.1.1 Eye protection equipment 2.1.2 Hearing protection equipment 2.1.3 Feet protection equipment 2.1.4 Respiratory protection equipment 2.1.5 Gloves 2.1.6 Full body suits  2.2 Tillage machinery 2.2.1 Ploughs 2.2.2 Harrows 2.2.3 Tillers 2.2.4 Rotavators 2.2.5 Subsoilers 2.3 Maintenance of tillage machinery 2.4 Storage of tillage machinery	<ul style="list-style-type: none"> <li>• Practical</li> <li>• Project</li> <li>• Third party report</li> <li>• Portfolio of evidence</li> <li>• Written tests</li> <li>• Oral questioning</li> </ul>
3. Operate planting machinery	3.1 Personal protective equipment <ul style="list-style-type: none"> <li>• Types</li> <li>• Uses</li> </ul>	<ul style="list-style-type: none"> <li>• Practical</li> <li>• Project</li> <li>• Third party report</li> </ul>

	3.2 Calibration of planting 3.2.1 machinery 3.2.2 Seed drills 3.2.3 Planters 3.2.4 Ridgers 3.2.5 Fertilizer distributors 3.2.6 Manure spreaders 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>• Portfolio of evidence</li> <li>• Written tests</li> <li>• Oral questioning</li> </ul>
4. Operate crop protection machinery	4.1 Personal protective equipment is worn 4.2 Calibration of crop protection machinery 4.2.1 Sprayers 4.2.2 Dusters 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>• Practical</li> <li>• Project</li> <li>• Third party report</li> <li>• Portfolio of evidence</li> <li>• Written tests</li> <li>• Oral questioning</li> </ul>
5. Operate harvesting machinery	5.1 Personal protective equipment is worn 5.2 Operation of harvesting machinery 5.3 Maintenance of harvesting machinery 5.4 Storage of harvesting machinery	<ul style="list-style-type: none"> <li>• Practical</li> <li>• Project</li> <li>• Third party report</li> <li>• Portfolio of evidence</li> <li>• Written tests</li> <li>• Oral questioning</li> </ul>
6. Operate Agro-processing machinery	6.1 Personal protective equipment is worn 6.2 Operation of Agro-processing machinery 6.2.1 Mills 6.2.2 Grinders 6.2.3 Shellers 6.2.4 Dryers 6.2.5 Elevators conveyers 6.3 Maintenance of Agro-processing machinery	<ul style="list-style-type: none"> <li>• Practical</li> <li>• Project</li> <li>• Third party report</li> <li>• Portfolio of evidence</li> <li>• Written tests</li> <li>• Oral questioning</li> </ul>

	6.4 Storage of Agro-processing machinery	
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### Suggested methods

- Project
- Demonstration
- Practicals
- Discussions
- Direct instruction

### Recommended resources for 25 trainees

S/No	Item/Category	Description/Specification	Quantity	Recommended Ratio (Item: Trainee)
A	<b>Learning Materials</b>			
	Text books and E-Learning materials	Agricultural engineering book-Farm machinery	5	1:5
B	<b>Learning Facilities &amp; infrastructure</b>			
	Classroom/computer lab	Desktops, internet and printers	1	1:25
	workshop		1	1:25
C	<b>Consumable materials</b>			
	Printing papers	A4 SIZE	5 reams	1:5
	Assorted whiteboard markers	Erasable	1	1:25
	Note books	A4	25	1:1
	Flip charts		1	1:25
D	<b>Tools and Equipment</b>			
	Tractor		1	1:25
	Goggles		25	1:1
	Earmuffs		25	1:1
	Gumboots		25	1:1
	Face Mask		25	1:1
	Gloves 25 pairs		25	1:1
	Apron		25	1:1
	Panga		5	1:5
	Jembes		5	1:5
	Ploughs	Disc plough	1	1:25

	Harrows	Disc harrow	1	1:25
	Tillers		1	1:25
	Rotavators		1	1:12
	Subsoilers		1	1:12
	Seed drills		1	1:12
	Planters	Seed planter	1	1:12
	Ridgers		1	1:12
	Fertilizer distributors		2	1:12
	Manure spreaders		2	1:12
	Sprayers		2	1:12