



Republic of Rwanda  
Ministry of Education



**RTB** | RWANDA  
TVET BOARD

## CEREALS GROWING

AGRCG401

### GROW CEREALS

## Competence

RQF Level:4

Learning Hours



50

Credits: 5

Sector: Agriculture and food processing

Trade: Agriculture

Module Type: Specific

Curriculum: TVET Certificate IV in AGRICULTURE

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Issue Date: May,2023

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<b>Purpose statement</b>	This module describes the skills, knowledge and attitude required to grow cereals. It is designed for learners who have successfully completed TVET Certificate III in Agriculture or its equivalent and pursuing TVET Certificate IV in Agriculture or any other related qualifications. At the end of this module, learners will be able to select the site for cereals growing, conduct cereals plantation, and handle harvested produce of cereals. Qualified learners deemed competent may work with others for regional, national and international professional work under maximum supervision.					
<b>Learning assumed to be in place</b>	N.A					
<b>Delivery modality</b>	<b>Training delivery</b>		<b>100%</b>	<b>Assessment</b>		<b>Total 100%</b>
	<b>Theoretical content</b>		<b>30%</b>	<b>Formative assessment</b>	<b>30%</b>	<b>50%</b>
	<b>Practical work:</b>		<b>70%</b>		<b>70%</b>	
	Group project and presentation	....%				
	Individual project /Work	....%				
			<b>Summative Assessment</b>		<b>50%</b>	

### Elements of Competence and Performance Criteria

Elements of competence	Performance criteria
1.Prepare for cereal establishment operations	1.1. Adequate selection of tools and equipment is referred to cereals species.
	1.2. Proper assessment of Occupational Health and Safety (OHS) hazards and risks is done for reporting to the supervisor.
	1.3. Suitable PPE selection is made according to the desired operation.
	1.4. Proper identification of environmental implications of cereals growing is done for discussion with the supervisor.
	2.1. Proper selection of cereal species in terms of ecological requirements and quality standards is made.

2. Prepare the site, tool, materials and equipment for cereals growing	2.2. Proper identification of the field according to cereals requirements is done.
	2.3. Adequate land clearing according to the selected site is performed.
	2.4. Adequate tillage for cereals growing according to their requirements is carried out.
	2.5. Proper application of soil amendment and fertilizers complying with cereals requirements is ensured.
	2.6. Appropriate planting pattern marking out according to the crop production plan is done.
	2.7. Proper record keeping as required by the supervisor is maintained.
3. carry out planting and post planting operation	3.1. Effective preparation of cereals seeds/seedlings as required by cereals species is done.
	3.2. Appropriate sowing of cereals seeds/seedlings referring to cereal species, quality, and market standards is conducted.
	3.3. Proper maintenance of cereals plantation according to cereal requirements and market quality standards is ensured.
	3.4. Proper record keeping as required by the supervisor is maintained.
4. Harvest cereals	4.1. Proper assessment of maturity stages based on market requirements is carried out.
	4.2. Proper application of harvesting techniques specific to cereals species and market requirements is performed.
	4.3. Effective application of handling techniques specific to cereal species and market requirements is ensured.
	4.4. Proper record keeping as required by the supervisor is maintained.

## Knowledge, Skills, and Attitude

<b>Knowledge</b>	<b>Skills</b>	<b>Attitude</b>
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<ul style="list-style-type: none"> <li>✓ Identifying optimal planting seasons.</li> <li>✓ Analyzing soil composition for suitable crop selection.</li> <li>✓ Recognizing common cereal varieties and their growth requirements</li> </ul>	<ul style="list-style-type: none"> <li>✓ Planting cereals with precision and consistency.</li> <li>✓ Implementing irrigation techniques for moisture control.</li> <li>✓ Monitoring crop health through visual inspection</li> </ul>	<ul style="list-style-type: none"> <li>✓ Demonstrating patience and dedication in nurturing cereal crops.</li> <li>✓ Displaying a proactive approach to addressing potential issues.</li> <li>✓ Maintaining a positive attitude towards adapting to changing environmental conditions</li> </ul>
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### Course content

Learning outcomes	<p>At the end of the module the learner will be able to:</p> <ol style="list-style-type: none"> <li>1. Prepare for cereal establishment operations</li> <li>2. Prepare the site, tool, materials and equipment for cereals growing</li> <li>3. Carry out planting and post planting operation</li> <li>4. Harvest cereals</li> </ol>
<b>Learning outcome 1: Prepare for cereal establishment operations</b>	<b>Learning hours: 5</b>

### Indicative content

<ul style="list-style-type: none"> <li>• Selection of tools and equipment <ul style="list-style-type: none"> <li>✓ Types of tools used in cereals growing: <ul style="list-style-type: none"> <li>✚ Land clearing tools and equipment :</li> <li>✚ First tillage tools and equipment:</li> <li>✚ Second tillage tools and equipment:</li> <li>✚ Cereals maintenance tools and equipment</li> <li>✚ Cereals harvesting tools and equipment</li> <li>✚ Cereals produce handling tools and equipment</li> </ul> </li> <li>✓ Tools and equipment selection Criteria <ul style="list-style-type: none"> <li>✚ Activity to be done</li> </ul> </li> </ul> </li> </ul>
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- ✚ Working conditions of tools and equipment
- ✚ Availability and accessibility
- ✚ Cost
- ✚ Tools and equipment efficiency
- ✚ Durability
- ✚ Manoeuvrability

- **Assessment of Occupational Health and Safety (OHS) hazards and risks**

- ✓ Types of hazards associated with cereals growing

- ✚ Biological hazards
- ✚ Chemical hazards
- ✚ Physical hazards

- ✓ Hazards risks

- ✚ Risks associated with biological hazards in cereals growing
- ✚ Risks associated with physical hazards in cereals growing
- ✚ Risks associated with chemical hazards in cereals growing

- **Selection of PPE**

- ✓ **Types/categories of PPE used in cereals growing**

- ✚ Hand protection
- ✚ Head protection equipment
- ✚ Respiratory protection
- ✚ Eyes and face protection
- ✚ Body protection
- ✚ Hearing protection

- ✓ **PPE Selection criteria**

- ✚ Use
- ✚ Potential hazards
- ✚ Availability
- ✚ Exposure to hazards
- ✚ Level of protection
- ✚ Fitness
- ✚ Awareness of limitation
- ✚ Compatibility

- Identification environmental implication of cereals growing

- ✓ Definition of environmental impact assessment

- ✓ Types of impact of cereals growing on environment

- ✚ Negative impact

- Deforestation
- Water scarcity
- Water pollution
- Air pollution

- Water lodging
- Soil erosion
- Loss of wild biodiversity
- Genetic diversity
- Outbreak of new pests and disease



**Positive impact**

- Ecosystem preservation
- Nitrogen fixation
- Carbon sequestration
- Erosion control

**Resources required for the learning outcome**

Equipment	<ul style="list-style-type: none"> <li>● Wheelbarrow</li> <li>● sprayers</li> </ul>
Materials	<ul style="list-style-type: none"> <li>● Seeds, Fertilizers, Pesticides</li> </ul>
Tools	<ul style="list-style-type: none"> <li>● Hoe</li> <li>● Panga</li> <li>● Hammer</li> <li>● Rake</li> <li>● Spade</li> </ul>
Facilitation techniques	<ul style="list-style-type: none"> <li>● Brainstorming, group discussion and oral presentation</li> <li>● Watching of audio visual, simulation</li> <li>● Practical exercise</li> </ul>
Formative assessment methods	<ul style="list-style-type: none"> <li>● Written assessment</li> <li>● Oral question</li> <li>● Performance assessment</li> </ul>

Learning outcome 2: Prepare the site, tool, materials and equipment for cereals growing

**Learning hours: 10**

**Indicative content**

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- Selection of cereals species
  - ✓ Priority cereals crop species grown in Rwanda:
    - ✚ Rice
    - ✚ Maize or corn
    - ✚ Wheat
    - ✚ Sorghum
  - ✓ Selection criteria of cereals species
    - ✚ Adaptability on Ecological conditions
    - ✚ Productivity
    - ✚ Marketability
    - ✚ Life cycle
- Identification of field
  - ✓ Ecological requirements
  - ✓ Climatic requirements
    - ✚ Temperature
    - ✚ Rainfall
    - ✚ Altitude
    - ✚ Relative humidity
    - ✚ Wind
  - ✓ Edaphic requirements
    - ✚ Soil pH
    - ✚ Soil fertility
    - ✚ Soil Depth
    - ✚ Soil water holding capacity
    - ✚ Irrigation
    - ✚ Drainage
  - ✓ Field background
    - ✚ Previous crop
    - ✚ Fertilization types
    - ✚ Pesticides types
    - ✚ Pests and disease
  - ✓ Field accessibility
    - ✚ Infrastructure
    - ✚ Market
    - ✚ Field slope
- Land clearing
  - ✓ Definition of land clearing
  - ✓ Importance of land clearing
  - ✓ Site obstacles:
    - ✚ Shrubs/ bushes

- ✚ Stones
- ✚ Stumps
- ✚ Holes
- ✓ Methods/ways of land clearing
  - ✚ Manual clearing
  - ✚ Mechanical clearing
  - ✚ Chemical spray clearing
- Tilling the land for cereals growing
  - ✓ Tillage types:
    - ✚ Primary tillage
    - ✚ Secondary tillage
  - ✓ Cultivation methods
    - ✚ Flat cultivation
    - ✚ Mound cultivation
  - ✓ Objectives of primary tillage and secondary tillage
- Application of soil amendment complying with cereals requirements
  - ✓ Objectives of soil amendment application
  - ✓ Types of soil amendment
    - ✓ Organic amendments
      - ✚ Farmyard manure
      - ✚ Compost
      - ✚ Green manure
    - ✓ Inorganic amendment
      - ✚ Lime
      - ✚ Travertine
      - ✚ Perlite
      - ✚ Dolomite
      - ✚ Gypsum
  - ✓ Selection criteria of soil amendments
    - ✚ Soil of pH
    - ✚ pH of amendment
    - ✚ soil texture
    - ✚ Soil salinity
  - ✓ Sources of soil amendment
    - ✚ On farm soil amendment
    - ✚ Off farm soil amendment
- Making out planting pattern
  - ✓ Importance of planting pattern
  - ✓ Planting patterns for cereals growing:
    - ✚ Square
    - ✚ Double
    - ✚ Triangle/staggered

- ✚ Rectangular
- ✓ Criteria of field layout selection
  - ✚ Spacing
  - ✚ Pathways
  - ✚ Access
- Record keeping
- ✓ Importance of farm records keeping
- ✓ Content of record form
  - ✚ Cereals species
  - ✚ Date
  - ✚ Activity
  - ✚ Site location
  - ✚ Quantity
  - ✚ Unit/Designation
  - ✚ Field size
  - ✚ purpose of growing
- ✓ Method of recording
  - ✚ Written recording
  - ✚ Soft record on computer

### Resources required for the indicative content

Equipment	<ul style="list-style-type: none"> <li>- Sprayer</li> <li>- Wheelbarrow</li> <li>- PPE</li> </ul>
Tools	<ul style="list-style-type: none"> <li>- Hoe</li> <li>- Panga</li> <li>- Forked hoe</li> <li>- Spade</li> <li>- Watering can</li> <li>- Measuring tape</li> <li>- Pegs</li> <li>- Bags</li> <li>- Baskets</li> <li>- <b>Ropes</b></li> </ul>
Materials	<ul style="list-style-type: none"> <li>- Maize seeds</li> <li>- Organic fertilizer (FYM, Compost, Green manure)</li> <li>- Mineral fertilizer (NPK, UREA, DAP)</li> <li>- <b>Pesticides</b></li> </ul>
Facilitation techniques	<ul style="list-style-type: none"> <li>• Brainstorming, group discussion and oral presentation</li> <li>• Watching of audio visual, simulation</li> <li>• Practical exercise</li> </ul>

Formative assessment methods	<ul style="list-style-type: none"> <li>• Written assessment</li> <li>• Oral question</li> <li>• Performance assessment</li> </ul>
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Learning outcome 3: Carry out planting and post planting operation	Learning hours: 25
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**Indicative content**

- Prepare cereals seeds/ seedlings
  - ✓ Pre-treatment methods
    - + Cleaning
    - + winnowing
    - + Sorting
    - + Seeds coating
    - + Germination rate test
  - ✓ Characteristic of good cereals seeds
    - + Viability
    - + Purity
    - + Germination rate
    - + Moisture contents
    - + Health
    - + Non deformation /required size
- Sowing/ transplanting cereals seeds/ seedlings
  - ✓ Spacing of rice, maize or corn, wheat and sorghum/ planting density
  - ✓ Methods of sowing
    - + Broadcasting methods
    - + Seeds drilling
    - + Dibbling
- Management of Crops throughout Growth Cycle
  - ✓ Different maintenance practices
    - + Irrigation or Watering
    - + Weeding
    - + Gapping
    - + Earthing up
    - + Hoeing
    - + Fertilization
  - ✓ Control of main pests and disease of cereals
    - + Physical control methods
    - + Mechanical control methods
    - + Cultural control methods
    - + Chemical control methods

- Record keeping on plant maintenance
  - ✓ Importance of farm records keeping
  - ✓ Content of record form
    - ✚ Cereals species
    - ✚ Date
    - ✚ Activity
    - ✚ Site location
    - ✚ Quantity of inputs
    - ✚ Type of pest and disease
    - ✚ Unit/Designation
    - ✚ Field size
    - ✚ purpose of maintenance
  - ✓ **Method of recording**
    - ✚ Written recording
    - ✚ Soft record on computer

### Resources required for the indicative content

Equipment	<ul style="list-style-type: none"> <li>- Sprayer</li> <li>- Wheelbarrow</li> <li>- PPE</li> </ul>
Tools	<ul style="list-style-type: none"> <li>- Hoe</li> <li>- Panga</li> <li>- Forked hoe</li> <li>- Spade</li> <li>- Watering can</li> <li>- Measuring tape</li> <li>- Pegs</li> <li>- Bags</li> <li>- Baskets</li> <li>- <b>Ropes</b></li> </ul>
Materials	<ul style="list-style-type: none"> <li>- Maize seeds</li> <li>- Organic fertilizer (FYM, Compost, Green manure)</li> <li>- Mineral fertilizer (NPK, UREA, DAP)</li> <li>- <b>Pesticides</b></li> </ul>
Facilitation techniques	<ul style="list-style-type: none"> <li>• Brainstorming, group discussion and oral presentation</li> <li>• Watching of audio visual, simulation</li> <li>• Practical exercise</li> </ul>
Formative assessment methods	<ul style="list-style-type: none"> <li>• Written assessment</li> <li>• Oral question</li> <li>• Performance assessment</li> </ul>

Learning outcome 4: Harvest cereals

Learning hours: 10

**Indicative content**

- Identification of maturity stages
- ✓ Types of maturity
  - + Utility maturity
  - + Physiological maturity
- ✓ Physiological signs of maturity for cereals crops
  - + Color
  - + Size
  - + Shape
- ✓ Crop periods
- ✓ Methods of maturity indices determination
  - + Visual methods
  - + Physical method
  - + Chemical method
  - + Physiological
  - + Computation
- Application of harvesting techniques
- ✓ Different part to be harvested on cereals crops
  - + Grains
  - + Cobs
  - + panicle
- ✓ Harvesting techniques on cereals crops.
  - + Selective harvesting
  - + Non selective harvesting
- ✓ Harvesting methods
  - + Manual harvesting
  - + Mechanical harvesting
- Application of handling techniques
- ✓ Techniques of products handling
  - + Drying
  - + Shelling
  - + Threshing
  - + Winnowing
  - + Sorting and grading
  - + Moisture content determination
  - + Pest control
- ✓ Packaging

- ✚ Characteristic of good packages
- ✚ Types of packages
- ✓ Labelling
- ✓ Characteristic of label
- ✚ Readable
- ✚ Visible
- ✚ Understandable
- ✚ Presentable
- ✓ Types of label

### Resources required for the indicative content

Equipment	<ul style="list-style-type: none"> <li>- Sprayer</li> <li>- Wheelbarrow</li> </ul> <p>PPE</p>
Tools	<ul style="list-style-type: none"> <li>- Hoe</li> <li>- Panga</li> <li>- Forked hoe</li> <li>- Spade</li> <li>- Watering can</li> <li>- Measuring tape</li> <li>- Pegs</li> <li>- Bags</li> <li>- Baskets</li> </ul> <p>Ropes</p>
Materials	<ul style="list-style-type: none"> <li>- Maize seeds</li> <li>- Organic fertilizer (FYM, Compost, Green manure)</li> <li>- Mineral fertilizer (NPK, UREA, DAP)</li> </ul> <p>Pesticides</p>
Facilitation techniques	<ul style="list-style-type: none"> <li>• Brainstorming, group discussion and oral presentation</li> <li>• Watching of audio visual, simulation</li> <li>• Practical exercise</li> </ul>
Formative assessment methods	<ul style="list-style-type: none"> <li>• Written assessment</li> <li>• Oral question</li> <li>• Performance assessment</li> </ul>

### Integrated/Summative assessment

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## Integrated situation

Abanyamurava is a farmers' cooperative that cultivates maize on a 25-hectare piece of land located in the Agasharu marshland of Rulindo District, specifically in the Bushoki sector. The cooperative is currently facing challenges related to low productivity, primarily due to poor planting techniques, inadequate plantation maintenance, and improper harvesting practices. To address these issues, the cooperative is actively seeking a farm assistant technician. This technician will play a vital role in helping them overcome these challenges.

The designated farm assistant technician will be responsible for establishing a demonstration plot measuring 4 square meters (2 meters by 2 meters). This plot will serve as an effective method for transferring agricultural knowledge and skills related to planting techniques (with a spacing of 70 centimeters by 30 centimeters), plantation maintenance, and proper harvesting practices. The goal is to provide cooperative members with the necessary expertise to enhance their land productivity.

These educational activities are expected to be completed within a timeframe of 3 hours. The cooperative has made available all the required agricultural tools, materials, and equipment in their store to facilitate the tasks

<b>Equipment</b>	<ul style="list-style-type: none"> <li>- Sprayer</li> <li>- Wheelbarrow</li> <li>- PPE</li> </ul>
<b>Tools</b>	<ul style="list-style-type: none"> <li>- Hoe</li> <li>- Panga</li> <li>- Forked hoe</li> <li>- Spade</li> <li>- Watering can</li> <li>- Measuring tape</li> <li>- Pegs</li> <li>- Bags</li> <li>- Baskets</li> <li>- Ropes</li> </ul>
<b>Materials/ Consumables</b>	<ul style="list-style-type: none"> <li>- Maize seeds</li> <li>- Organic fertilizer (FYM, Compost, Green manure)</li> <li>- Mineral fertilizer (NPK, UREA, DAP)</li> <li>- Pesticides</li> </ul>

Assessable outcomes	Assessment criteria (Based on performance criteria)	Indicator	Observation		Marks allocation
			Yes	No	

1.Prepare for cereal establishment operations	1.1. Adequate selection of tools and equipment is referred to cereals species.	Assessment Indicator 1: The appropriateness of tool and equipment selection based on the specific requirements of cereals species is evaluated.			1
		Assessment Indicator 2: The alignment of selected tools and equipment with the unique needs and characteristics of cereals species is assessed.			1
		Assessment Indicator 3: The effectiveness of choosing tools and equipment that match the demands of cereals species is evaluated.			1
	1.2. Proper assessment of Occupational Health and Safety (OHS) hazards and risks is done for reporting to the supervisor.	Assessment Indicator 1: The accuracy of assessing OHS hazards and risks related to the task is evaluated for comprehensive identification.			1
		Assessment Indicator 2: The alignment of hazard and risk assessment actions with established OHS protocols is assessed.			1
		Assessment Indicator 3: The effectiveness of hazard and risk assessment in informing comprehensive reporting to the supervisor is evaluated.			1
	1.3. Suitable PPE selection is made according to the desired operation.	Assessment Indicator 1: The appropriateness of Personal Protective Equipment (PPE) selection based on the nature of the task is evaluated.			1
		Assessment Indicator 2: The alignment of PPE selection with the specific requirements of the desired operation is assessed.			1
		Assessment Indicator 3: The effectiveness of choosing suitable PPE to ensure safety during the intended operation is evaluated.			1
	1.4. Proper identification of environmental implications of cereals growing is done for discussion with the supervisor.	Assessment Indicator 1: The accuracy of identifying environmental implications related to cereals growing is evaluated to ensure comprehensive recognition.			1
		Assessment Indicator 2: The alignment of environmental implication identification with the			1

		intended purpose of discussing with the supervisor is assessed.			
		Assessment Indicator 3: The effectiveness of conveying identified environmental implications to the supervisor for appropriate decision-making is evaluated.			2
2. Prepare the site, tool, materials and equipment for cereals growing	2.1. Proper selection of cereal species in terms of ecological requirements and quality standards is made.	Assessment Indicator 1: The accuracy of selecting cereal species based on their ecological requirements and adherence to quality standards is evaluated.			2
		Assessment Indicator 2: The alignment of chosen cereal species with their specific ecological needs and the established quality criteria is assessed.			2
		Assessment Indicator 3: The effectiveness of cereal species selection in promoting optimal growth and quality is evaluated.			2
	2.2. Proper identification of the field according to cereals requirements is done.	Assessment Indicator 1: The accuracy of field identification based on the specific requirements of cereals is evaluated for suitability.			2
		Assessment Indicator 2: The alignment of field identification actions with the unique demands of cereals is assessed.			2
		Assessment Indicator 3: The effectiveness of field identification in ensuring an appropriate growing environment for cereals is evaluated.			2
	2.3. Adequate land clearing according to the selected site is performed.	Assessment Indicator 1: The adequacy of land clearing activities based on the characteristics of the chosen site is evaluated.			2
		Assessment Indicator 2: The alignment of land clearing actions with the specific needs and conditions of the selected site is assessed.			2
		Assessment Indicator 3: The effectiveness of land clearing in preparing a suitable growing area for cereals is evaluated.			2

2.4. Adequate tillage for cereals growing according to their requirements is carried out.	Assessment Indicator 1: The adequacy of tillage activities based on the specific requirements of cereals is evaluated.			2
	Assessment Indicator 2: The alignment of tillage actions with the unique demands of cereals for optimal growth is assessed.			2
	Assessment Indicator 3: The effectiveness of tillage in promoting proper soil structure and preparation for cereals growing is evaluated.			2
2.5. Proper application of soil amendment and fertilizers complying with cereals requirements is ensured.	Assessment Indicator 1: The accuracy of applying soil amendments and fertilizers that meet cereals' specific requirements is evaluated.			2
	Assessment Indicator 2: The alignment of soil amendment and fertilizer application with the nutritional needs of cereals is assessed.			2
	Assessment Indicator 3: The effectiveness of applying amendments and fertilizers to enhance soil fertility and support cereal growth is evaluated.			2
2.6. Appropriate planting pattern marking out according to the crop production plan is done.	Assessment Indicator 1: The appropriateness of planting pattern marking based on the crop production plan is evaluated.			2
	Assessment Indicator 2: The alignment of planting pattern marking with the goals and requirements of the crop production plan is assessed.			2
	Assessment Indicator 3: The effectiveness of planting pattern marking in ensuring proper crop arrangement and spacing is evaluated.			2
2.7. Proper record keeping as required by the supervisor is maintained.	Assessment Indicator 1: The accuracy and completeness of record keeping as per supervisor requirements are evaluated.			2
	Assessment Indicator 2: The alignment of recorded information with the prescribed documentation			2

		guidelines set by the supervisor is assessed.			
		Assessment Indicator 3: The effectiveness of maintaining proper records for facilitating supervisory oversight and decision-making is evaluated			2
3.carry out planting and post planting operation	3.1. Effective preparation of cereals seeds/seedlings as required by cereals species is done.	Assessment Indicator 1: The effectiveness of preparing cereals seeds/seedlings based on the specific requirements of the cereal species is evaluated.			2
		Assessment Indicator 2: The alignment of seed/seedling preparation actions with the unique needs of the chosen cereal species is assessed.			2
		Assessment Indicator 3: The accuracy of preparation techniques in promoting optimal growth and quality of cereals seeds/seedlings is evaluated.			2
	3.2. Appropriate sowing of cereals seeds/seedlings referring to cereal species, quality, and market standards is conducted.	Assessment Indicator 1: The appropriateness of sowing cereals seeds/seedlings based on their species, quality, and market standards is evaluated.			2
		Assessment Indicator 2: The alignment of sowing practices with the specific characteristics and demands of the cereal species is assessed.			2
		Assessment Indicator 3: The effectiveness of sowing methods in promoting proper germination and growth of cereals seeds/seedlings is evaluated.			2
	3.3. Proper maintenance of cereals plantation according to cereal requirements and market quality standards is ensured.	Assessment Indicator 1: The accuracy of maintaining the cereals plantation in line with the specific requirements of the chosen cereals is evaluated.			2
		Assessment Indicator 2: The alignment of maintenance actions with the market quality standards and the unique needs of the cereals is assessed.			2
		Assessment Indicator 3: The effectiveness of maintenance			2

		activities in achieving desired crop growth, health, and quality is evaluated.			
	3.4. Proper record keeping as required by the supervisor is maintained.	Assessment Indicator 1: The accuracy and completeness of record keeping in accordance with the supervisor's requirements are evaluated.			2
		Assessment Indicator 2: The alignment of recorded information with the documentation standards set by the supervisor is assessed.			2
		Assessment Indicator 3: The effectiveness of maintaining proper records for supervisory oversight and decision-making purposes is evaluated.			2
4. Harvest cereals	4.1. Proper assessment of maturity stages based on market requirements is carried out.	Assessment Indicator 1: The accuracy of assessing maturity stages of cereals in alignment with market requirements is evaluated.			2
		Assessment Indicator 2: The effectiveness of using appropriate criteria to determine cereal maturity stages for optimal harvest is assessed.			2
		Assessment Indicator 3: The alignment of maturity assessment actions with market demands to ensure timely and quality harvest is evaluated.			2
	4.2. Proper application of harvesting techniques specific to cereals species and market requirements is performed.	Assessment Indicator 1: The accuracy of applying harvesting techniques that match the characteristics of the chosen cereal species and meet market standards is evaluated.			2
		Assessment Indicator 2: The alignment of harvesting methods with the unique needs and demands of the cereal species and market is assessed.			2
		Assessment Indicator 3: The effectiveness of harvesting practices in ensuring efficient and high-quality crop collection is evaluated.			2
4.3. Effective application of handling techniques specific to	Assessment Indicator 1: The effectiveness of applying handling techniques that cater to the			2	

	cereal species and market requirements is ensured.	characteristics of the selected cereal species and fulfill market requirements is evaluated.			
		Assessment Indicator 2: The alignment of handling methods with the distinct needs and market expectations of the cereal species is assessed.			2
		Assessment Indicator 3: The accuracy of handling techniques in preserving crop quality during post-harvest activities is evaluated.			2
	4.4. Proper record keeping as required by the supervisor is maintained.	Assessment Indicator 1: The accuracy and completeness of record keeping in accordance with supervisor's requirements are evaluated.			1
		Assessment Indicator 2: The alignment of recorded information with the documentation standards specified by the supervisor is assessed.			1
		Assessment Indicator 3: The effectiveness of maintaining proper records for facilitating supervisory oversight and decision-making is evaluated.			1
<b>Total marks</b>				100	
<b>Percentage Weightage</b>				100%	
<b>Minimum Passing line % (Aggregate): 70%</b>					

**Reference:**

1. Acland J.D. 1980. *East Africa crops*. Longman, London.
2. Abdullahi, A. & Haile, A. 1991. Research on the control of insect and rodent pests of wheat in Ethiopia. In *Wheat research in Ethiopia: a historical perspective*. Addis Ababa, IAR/CIMMYT.

3. Appert, J. 1987. *The storage of food grains and seeds*. London, Technical Centre for Agricultural and Rural Cooperation (CTA), MacMillan Education.
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