

527/2
AGRICULTURE
Paper 2
2024



UGANDA NATIONAL EXAMINATIONS BOARD
Uganda Certificate of Education

AGRICULTURE

Paper 2
Practical

SCORING GUIDE

527/2 sample expected responses.

1 sample expected responses

Aim of the experiment: To compare the amounts of water retained by soil samples X and Y.

Hypothesis: The Kayunga soil sample retains more water than the Gayaza sample.

Variables: Soil type and amount of water retained.

Materials and equipment: measuring cylinders, two soil samples (X and Y), filter papers/cotton wool, water, funnels, beakers, protective equipment.

Procedure:

1. Put on protective equipment for safety.
2. Label two measuring cylinders X and Y.
3. Plug a funnel using a filter paper/cotton wool and place it on the measuring cylinder labelled X.
4. Measure the required volume of soil sample X and place it in the funnel on cylinder X.
5. Measure the required volume of water and add it to the soil in the funnel on cylinder X while at the same time starting a stop clock. After 10 minutes remove the funnel from the cylinder, stop the clock and read out the volume of water collected in the measuring cylinder. Record your results. Repeat this procedure with soil sample Y.

Data presentation: Draw a table and record in it the volumes of soil used, amounts of water added and collected from each soil sample after 10 minutes.

Soil Sample	Volume of soil used	Volume of water added	Volume of water collected
Sample X			
Sample Y			

Analysis: compare the amounts of water collected/retained by the two soil samples.

Conclusion/Recommendation: soil sample X retained more water than soil sample Y. Therefore, soil sample X is the one from Kayunga since the Kayunga pond had adequate water.

- a. Although the Gayaza pond was receiving water from the inlet pipe, most of the water drained through the unstable walls of the pond and through the pond bottom because the soil type (sandy soil) cannot hold/retain much water because of its wide air spaces.

2 sample expected Responses

a. Specimen A:

Observation: Dark brown to black sunken lesions/spots on stems, leaves and pods

Explanation: Anthracnose; a condition caused by a fungus.

Specimen B:

Observation: Wilting or drying of upper leaves; ragged irregular holes chewed in newly unrolled leaves; tunnels bored in the stalk

Explanation: destruction done by the maize stalk borer

Specimen C:

Observation: dark brown tunnels bored in the tuber

Explanation: damage caused by the sweet potato weevil

b. Control

Specimen A:

- Crop rotation
- Removing and destroying affected plants
- Treating seeds with appropriate fungicides.
- Plant resistant varieties

Specimen B:

- Crop rotation
- Apply ash or dry soil into the leaf funnel of young plants
- Destroy the remains of previous crops
- Deep ploughing to bury eggs and other stages of the borer
- Early planting
- Spraying with appropriate pesticide

Specimen C:

- Crop rotation
- Timely harvesting
- Using clean planting materials
- Application of systemic pesticides
- Maintaining soil moisture by irrigation

Specimen D:

- Deep cultivation to remove rhizomes which are later dried and burnt.
- Applying a systemic herbicide.