

The People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific Research
University Center of Mila
Faculty of Natural and Life Sciences
Department of Biological and Agronomic Sciences
DW 02 – Methods And Practices Of Investigation

Exercise 1

For each of the following research situations in plant production, identify the most appropriate data collection method (Observation, Experimentation, or Survey) and justify your choice.

1. Monitoring wheat phenological stages throughout the growing season.
2. Testing the effect of three nitrogen fertilizer doses on maize yield.
3. Understanding farmers' reasons for adopting drip irrigation.
4. Recording pest infestation levels in a tomato field without intervening.
5. Studying consumer preferences for locally produced vegetables.

Exercise 2

Match each situation with the correct type of observation:

- a) Using yield records from the last 10 years
- b) Working alongside farmers during transplanting
- c) Recording crop growth using a standardized checklist
- d) Watching irrigation practices without interacting
- e) Exploratory field notes without a predefined plan

Types:

1. Indirect observation
2. Participant observation
3. Structured observation
4. Non-participant observation
5. Unstructured observation

Exercise 3

A student conducts a field experiment to study the effect of three irrigation levels on tomato yield. The field has a slope, creating variability in soil moisture.

1. Identify the most suitable experimental design.
2. Define:
 - Independent variable
 - Dependent variable
 - Experimental unit
 - Control treatment

Exercise 4:

You plan a survey to study fertilizer use practices among vegetable farmers.

1. Propose two closed-ended questions and one open-ended question.
2. State three ethical principles that must be respected during the survey.
3. Mention two advantages of using online survey tool