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This presentation is used with
Lesson Plan 22: Interpreting
Results in the
Drinking Water Quality Testing
Trainer Manual.

Available at

www.cawst.org/resources



Interpreting Results



Learning Expectations

1. Interpret water quality testing data to make basic observations and recommendations.
2. Discuss different types of errors and how to identify and limit them.
3. Discuss the importance of reporting water quality testing results.

Three Approaches

1. Comparison

- Compare results to WHO Guidelines or national standards

2. Trend

- Compare results over time and/or location

3. Statistical

- Academic or scientific research
- E.g., technology verification

Steps to Interpret Results

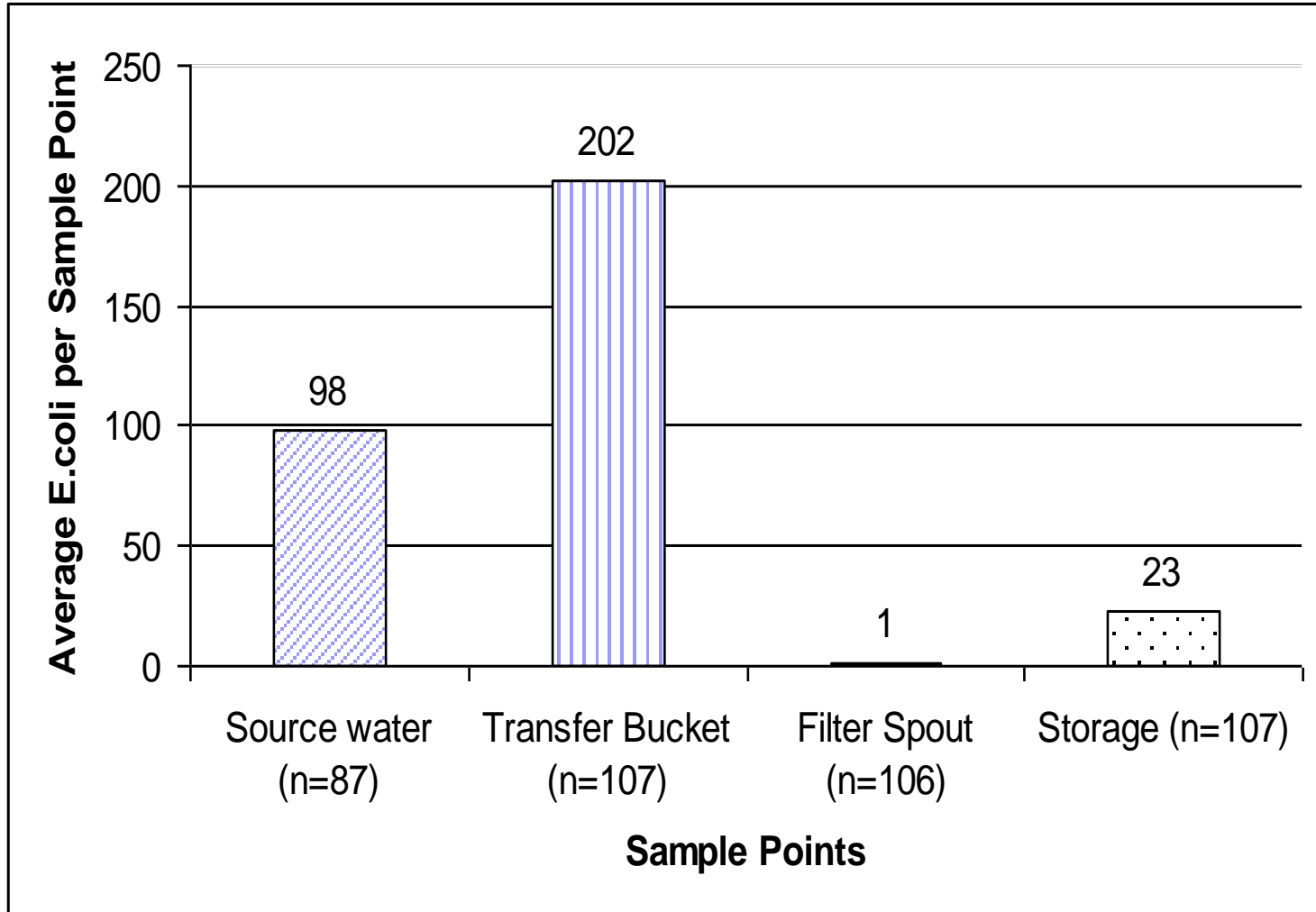
1. Collect data for analysis (e.g., data recording forms)
2. Check data quality (e.g., look for errors)
3. Choose appropriate analysis
 - Comparison
 - Trend
 - Statistical
4. Interpret data in relation to the objectives
5. Report the results

% Removal Effectiveness of a Household Water Treatment Technology

$$\frac{\text{Source water colony count} - \text{Filtered water colony count}}{\text{Source water colony count}} \times 100 = \% \text{ Removal Effectiveness}$$

$$\frac{\text{Source water parameter} - \text{Filtered water parameter}}{\text{Source water parameter}} \times 100 = \% \text{ Removal Effectiveness}$$

What Conclusions Can You Make?



How Can Data Recording Errors Happen?

- Using wrong units (e.g., ppb instead of ppm)
- Writing not clear
- Missing or incomplete data
- Putting the decimal in the wrong place
- Recording data for the wrong sample
- Recording the result in the wrong place

How Can We Minimize Errors?

- Collect all data recording forms each day
- Enter data as soon as possible
- Use data recording forms specific to the project
- Train technicians collecting the data
- Run duplicate test samples
- When there is an unusual or unexpected result
 - Check with technician for clarification
 - Take another sample and repeat the test

General Report Format

- Summary
- Introduction
- Objectives
- Materials and methodology
- Results
- Conclusions and recommendations
 - Informal reports often compare results to guidelines or standards with recommendations and comments
 - Most lab reports are formatted in this way

Review

1. What is the primary purpose of a report?
 - To share your results, conclusions, and recommendations
2. Name 3 approaches to interpreting results.
 - Comparison
 - Trend
 - Statistical