

Soil and Biochar Mixture Lab Sheet **Answer Key**

Predictions

Might biochar affect each soil type's ability to retain water? Prediction; answers will vary.

If so, would it increase or decrease water retention for each soil type?

Prediction; answers will vary.

Which type of soil/biochar mixture do you expect to retain the most water? Prediction; answers will vary.

Data Collection Instructions

- Record your water retention levels in the table below.
- Subtract the volume of the drained water in the graduated cylinder from the volume of water you started with (100 ml).
- Record the difference in the amount of water retained column.

Part 1: Soil

Soil Type	Amount of Water Collected	Amount of Water Retained
Sand		
Loam		
Clay		

Analysis Questions

Which soil type was best at retaining water? clay

Which soil type was worst at retaining water? sand

Part 2: Soil/Biochar Mixtures

Type of Soil and Biochar Mixture	Amount of Water Collected	Amount of Water Retained
Sand/Biochar Mixture		
Loam/Biochar Mixture		
Clay/Biochar Mixture		

Analysis Questions

1. Did biochar affect each soil type’s ability to retain water? Explain.

Yes, biochar had a big impact on sand, more than clay and loam. Results show that the addition of biochar has the potential to increase total water retained for sand and loam. In this experiment, biochar had little to no impact on clay soil.

2. Did biochar increase or decrease each type of soil water retention level? Explain.

We found no significant differences in water retention, and drainage in clay/biochar.

The loam/biochar mixture had a small increase in water retention level. However, the addition of biochar significantly increased the water retention levels for sand.

3. Which type of soil/biochar mixture retained the most water?

The clay/biochar mixture retained the most water.