

To Harvest or Not To Harvest

Reflection Section Answer Guide

Introduction

In your own words and in the form of a question, what did the scientists want to study?

Students may have individual answers to this question. The scientists wanted to determine how harvesting impacted black cohosh. The scientists specifically wanted to know how much black cohosh could be harvested sustainably.

Why do you think it might be important to determine how to sustainably harvest black cohosh?

Students may have individual answers to this question. Black cohosh is important to both people and to its surrounding environment. Because it's important in multiple ways, the scientists wanted to understand how to best balance competing uses of black cohosh.

Methods

When the scientists harvested the black cohosh, they tried to remove as much of the aboveground and belowground plant material as possible. However, the scientists noted that some rhizome fragments were inevitably left behind in the soil. Why might this fact be important in the research?

Students may have individual answers to this question. The scientists provided these details to help readers understand that some possible areas of the research which were difficult to control. Rhizome fragments in the soil could impact the findings of the study, and it's important for other scientists to understand the limitations to the research.

The scientists ended up having three research sites. Do you think having multiple research sites is important? Why or why not?

Multiple research sites provide replication of results. Results in a research study that are replicated multiple times enable scientists to draw bigger or more complete conclusions. For instance, if the scientists found results occur in all three research sites, the scientists would be more confident in the results than if the results occurred in only one research site.

Findings

When looking at all measurements, the scientists found that by recovery year 3 there were no noticeable differences between the treatment plot and the control plot. What do you think this might mean?

Students may have individual answers to this question. After reading this section, students may draw the conclusion that after year 3, the plants may need only up to three years to reach the size of the control plants, or the size they had prior to being harvested.

How do you think the people can use the findings to help sustainably harvest black cohosh?

Students may have individual answers to this question. People can use this research to better understand the sustainable way to harvest black cohosh. More specifically, people can harvest black cohosh in different locations and allow for black cohosh to grow back to full size before harvesting the plants again.

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Reflection Section Answer Guide *continued*

Discussion

In your own words, how would you explain the results of this study to a friend or family member?

Students may have individual answers to this question. Students can cite various things they learned from the research, including how the research was conducted and how to implement the findings in situations where black cohosh may be harvested.

What is one thing that you want to learn more about after reading this research on black cohosh?

Students may have individual answers to this question. Students may want to learn more about how this research experiment is created, how it the scientists collected data, or how this research could be applied to other plants. Encourage students to share their questions and consider setting up experiments to help students test those questions.