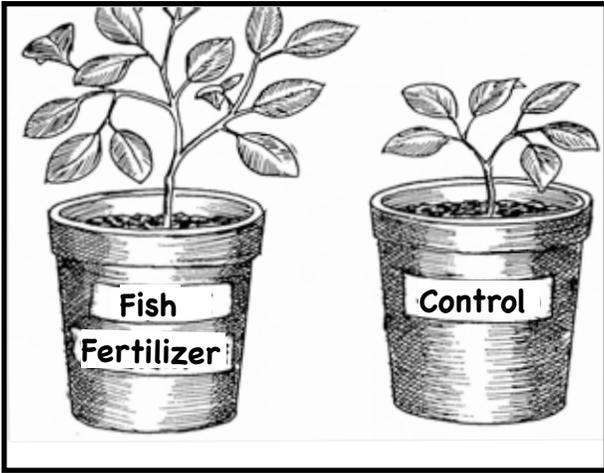


How Salmon Fertilize Trees

Classroom Experiment



Materials:

- Handout: Salmon Bring Nutrients
- Commercial fish fertilizer
- Fast-growing seeds, alfalfa or radish
- Potting soil and containers
- Water

Time required:

60 to 90 minutes in two periods, plus time for observations over two weeks or more

Introduction

- Refer to Handout: Salmon Bring Nutrients Home and ask students what happens to the bodies of salmon spawners after they die. *They are eaten by birds, bears and other wildlife or their bodies decompose, fertilizing the spawning lakes and rivers. Plants and micro-organisms grow in the rich and productive environment, providing a habitat and food source for salmon fry when they are growing.*
- Ask the class to act as scientists who want to test how the bodies of dead salmon affect plants growing in the environment. Have them form a hypothesis and develop a procedure, similar to the following, which they can use to test their hypothesis.

Explanation

- Ask students to describe their experiences at home using fertilizer to encourage the growth of plants and gardens. Explain that fish fertilizer is made from fish scraps from processing plants. The scraps are composted in a way that resembles what happens to fish bodies when they decompose in nature.

Experiment

- Have students plant fast-growing seeds (e.g., alfalfa or radish) approximately one inch deep in soil, in two identical pots. Label one pot, "Control", and the other, "Fish Fertilizer". Place the pots in a warm, bright location. The seeds should receive about one inch of water per week and a little more when they are first developing. Don't overwater.
- Have students water the pot labelled "Control" with water and the pot labelled "Fish Fertilizer" with a solution of commercial fish fertilizer. Read the instructions on the fish fertilizer label to determine when and how much to fertilize young plants (often fertilizing only begins when plants have developed their second set of leaves).
- Have students observe and record the growth of the plants over 2 weeks or more. *Note: some fish fertilizer products have low or no odour, but it is best to not use these so students will have a rich opportunity to enhance their direct experience with nature.*

Summation

- Have students use their data to form a conclusion about their hypothesis. Discuss what the results show about the significance of salmon bodies in the environment.
- How did the growth of the plants with the fertilizer compare with the growth of the other plants? *The plants with the fertilizer should be bigger.*
- What could explain the results? *Nutrients, especially nitrogen, in the fertilizer gave the plants food to grow bigger.*
- How is the experiment similar to what happens in nature? How is it different? *In both cases, the fish remains provide nutrients for plant growth. However, in nature, salmon bodies decay slowly and release their nutrients over a longer period of time. When the salmon bodies are carried onto the land by animals, they fertilize plants and trees.*