



Basic Vegetable Gardening Short Lesson Plans

Lesson 9a: Plant Diseases

Lesson Summary: Members will learn about the disease triangle and common plant diseases.

Boys and girls will learn:

three things necessary for a plant to have a disease.

some insects are good for the garden.

when to treat insects or diseases in the garden.

Time: 30 minutes

What you will need:

Disease Triangle poster

Lesson Steps

1. (2 minutes) – Introduction

Welcome group. Review what you did at the last lesson.

2. (10 minutes) – Members think about how insects can be good for the garden.

2.1 Have boys and girls think of ways that insects are good for the garden.

Have the members discuss in small groups first, then share their thoughts with the class.

Members may say that:

- Bees are important for pollinating many plants.
- Microbes such as helpful bacteria and soil fungi are important for improving soil structure.
- Bacteria change nitrogen found in the air into a type of nitrogen that plants can use.
- Bacteria also break down elements in the soil, decompose organic matter, and break down unhealthy chemicals.

If the members do not say these things, tell them about the good organisms that are important for the garden. Tell them that not all organisms are pests in the garden. Some are very important for plant growth.

Some insects are good. The best friends of your garden are some insects.

3. (12 minutes) – Members learn about the disease triangle.

3.1 Show members the disease triangle poster. (Use the picture at the end of this lesson if you do not have the large poster.) Explain that in order to have a diseased plant, there needs to be 3 things:

1. A susceptible host (a plant that is able to become diseased)
2. A favorable environment (an environment that allows disease to happen)
3. A pathogen (a pest that will cause disease)

All three factors must be present or there will be no disease, as inside the center of the triangle.

3.2 Be sure the boys and girls understand the words you are using.

Susceptible – easily affected.

Some plants are stronger and not *susceptible* to insects. Or some kinds of plants may be more *susceptible* to certain kinds of insects than other kinds of plants.

Pathogen – an organism that causes a disease.

Some insects carry *pathogens* that can harm a plant.

3.3 Think of ways to keep diseases from starting or spreading.

What can you do?

1. Susceptible Host—Plant disease-resistant varieties or vegetables.
2. Favorable Environment—Use proper watering techniques. Water so that plant leaves dry by nightfall. Plant the plants with enough space between them. When there is more space between the same kind of plants, diseases cannot spread as easily. As the plants grow, trim or prune them for good air flow.
3. Pathogen—Keep the plant area clean. Take out diseased plants. Take out what is left of plants after you harvest produce. Rotate crops. Use organic homemade solutions.



3.4 Have members draw a disease triangle in their notebooks. They should label the three different parts of the triangle and color it.

4. (5 minutes) - Summary and Debrief

Ask the members these questions:

- When are pests and insects good for the garden?
- What 3 things are needed for a disease to harm a plant?

5. (1 minute) - Close

At the next meeting you will look for disease or pest problems in your gardens. At the next meeting you will also make natural pesticides.

**Plant Diseases
The Disease Triangle**

