**Home Lab #11 Answers:**

The following are answers that we came up with. You may see how the particular action breaks additional links. If so, make that argument for us all to learn from.

1: Rinsing your pruning shears in 10% Clorox solution after cutting and removing a diseased pepper plant from your garden.

A: This will break the virulent pathogen link because you are preventing it from spreading from diseased plants to healthy plants.

2: Irrigating your garden with a soaker hose instead of an overhead sprinkler.

A: This will break the conducive environment link because you are preventing the accumulation of water on the plant leaf surface.

3: Purchasing pepper plants from your local garden center instead of getting free plants from your neighbor.

A: This will break the virulent pathogen link because you are starting with a potential host that does not have disease on it already. This action does not guarantee that the plants you get are disease-free. However, professional growers pay more attention and have more experience in keeping plants disease-free.

4: Planting cucumber variety Bristol (HR: A, ALS, CMV, S, ZYMV. IR: DM, PM, PRSV.) instead of Striped Armenian, an heirloom variety.

A: This will break the susceptible host link. Bristol has genetic resistance to multiple disease-causing organisms. That’s what all those letters after the name mean in the seed catalog. Striped Armenian has no proven disease resistance.

5: Planting tomato plants 2 feet apart instead of 1 foot apart.

A: This will break the conducive environment link. Planting the plants farther apart allows for more air flow through and amongst the plants thus reducing the microclimate relative humidity.

6: Adding 3” of dark pine bark mulch around the squash plants in your garden in early spring.

A: This practice may possibly break several of the links. This breaks the environmental link because the mulch will help to retain soil moisture and make it available for the plant. Because you are using dark mulch early in the year, this will also tend to make the soil around your plants a little warmer.

This will break the pathogen link by preventing splashing of possible pathogens in the soil onto the upper plant parts. It also will keep down weeds which could be alternate hosts for insects or disease organisms.

7: Adding sand and organic matter to the heavy clay soil in your garden.

A: This will possibly break the conducive environment link by increasing the drainage in your garden. Sand increases soil pore space and organic matter gives the soil more texture.

This may also break the susceptible host link. The organic matter increases the nutrients available to your plant thus preventing nutrient stress. This also makes the soil lighter and the plant roots can grow deeper and stronger making the plant healthier.

8: Purchasing Cherokee Purple tomato plants that have been grafted onto a disease resistant rootstock.

A: This is intended to break the susceptible host link because the plants will produce Cherokee Purple heirloom tomatoes but they are growing on a root system that is resistant to soil-borne pathogens that the Cherokee Purple roots would not be resistant to.

9: Growing your vegetables in a raised bed garden instead of inground.

A: This would possibly break the conducive environmental link by giving your garden good drainage. Many soil-borne plant pathogens are more prevalent in soggy soils.

10: Planting cucumbers in the raised bed that you used for growing tomatoes last year.

A: This is crop rotation which can break the virulent pathogen link and the susceptible host link. By removing the host, the pathogens in the soil may die, so you’re getting rid of the virulent pathogen. By planting crops from different families, you’re possibly removing the susceptible host; thus, breaking that link.