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Natural controls for blight

“There is a tale...It tells of the days when a blight hung over our land. Nothing prospered. Nothing flourished. Not even zucchini would grow.” Cameron Dokey.

Blight is a generic term, an epithet for disease, scourge, curse, plague, or menace. In the case of the gardener, blight usually means spots on tomatoes or spotting and wilting of other plants.

There are numerous natural controls of “blights”; some anecdotal and some based on research. In today's environmentally conscious world some gardeners have chosen to control blights and insects using natural controls, eschewing the use of chemical pesticides such as fungicides and insecticides. So what is a natural control? Simply, a natural control is any method that uses non chemical means to control a disease or insect. Another way to look at a natural control is any method that does not pose a chemical hazard to living things such as animals or people.

There are organic fungicides on the market that are considered as a natural control and are safe to warm blooded creatures. Their active ingredient are bacteria, some use *Streptomyces* spp., others *Bacillus subtilis*. Also considered as natural controls are the minerals copper and sulfur that are normally applied in a liquid form.

There are other factors, other than natural fungicides, that reduce the incidence of plant diseases by taking advantage of some vulnerability of the causal organism. For example, fungi have to overwinter in residue or soil and require moisture to germinate and infect plants the following spring. Reducing or eliminating moisture or overwintering sites reduces disease incidence and severity. Following are some disease reducing measures.

1. Prune or stake plants to improve air circulation and allow the plant surface to dry out thus preventing any fungus from either germinating or subsequently forming a fern tube that penetrates the plant. It is also suggested that, in the case of tomatoes, plants be spaced about three feet apart.

2. Disinfect pruning shears after each cut with one part bleach to four parts of water. This is especially important in the case of bacteria-caused diseases that are transmitted from infected to healthy plants on tools.

3. Keep the soil under plants clean and free of garden debris by adding a layer of organic compost to prevent spores from being splashed or blown onto nearby vegetation

4. Use either drip irrigation, soaker hoses or carefully water the soil, not the foliage. Properly watered tomatoes are less susceptible to diseases than water-stressed plants. This method is compromised when rain wets plants allowing pathogens to grow on the wet foliage.

5. When early symptoms of blight occur, begin applying a copper fungicide weekly until harvest to prevent further disease incidence.

6. Remove and destroy all infected garden residue after harvest and consider growing susceptible plants in an area removed from its prior location by several feet.

7. If only one plant has blight, remove it but be aware that your hands may be now be carrying fungus or bacterial spores. Therefore, wash afterwards with soap and water.

There are other disease control suggestions that sound far fetched but in some instances may actually work.

1. Baking soda spray. Baking soda contains sodium bicarbonate that has antifungal properties that aid in controlling diseases on tomato such as early blight, powdery mildew and anthracnose. Put one tablespoon of baking soda mixed with 2 1/2 tablespoons of vegetable oil. place in one gallon of water with a half teaspoon of castile soap (a mixture of olive oil and sodium hydroxide); however most liquid dish washing soaps would suffice as the purpose of the soap is to help the baking soda spread uniformly over the plant. Apply to upper and lower leaves every five to seven days as a preventative measure or to control the fungi at the first signs of infection.

2. Aspirin fungal spray. Research by the University of Rhode Island concluded that tomato plants applied with an aspirin spray yielded better than untreated plants to which even commercial fertilizers were applied. Perhaps there was a reduction in plant heart disease? Dissolve two uncoated tablets of 325 milligrams each in one quart of water and apply every seven days This treatment has been especially useful in controlling powdery mildew.

3. Skim milk spray to control tomato viruses. Tomatoes are prone to several viruses including tomato leaf blight, tomato mosaic virus and spotted wilt virus. The skim milk inactivates viruses, especially if they are insect-borne but may not be of benefit if is a seed-borne virus. Eight ounces of skim milk together with a half teaspoon of an antitranspirant (reduces transpiration and is used on cut flowers or newly transplanted shrubs) are mixed into one gallon of water. Besides virus inactivation it also has the added benefit of adding calcium to the plant, helping in the prevention of blossom end rot that is caused by a calcium deficiency.

This control is historically valid. Tobacco mosaic virus is a closely related virus to tomato mosaic virus and can become a problem in green houses. Workers who smoke are required to dip their hands in a milk solution before entering the greenhouse to inactivate the virus on their person.

4. Cornmeal also can be used to manage fungal infections. Mix one cup of cornmeal with five gallons of water, strain, and then spray on tomato plants. For warding off early blight, mix two tablespoons each of cooking oil, organic baby shampoo and baking soda with one gallon of water. Spray both sides of the leaves for the best prevention.

There are many allegorical suggestions in the literature to prevent blight. Some tend to be of dubious value. There are reports of placing powdered milk or crushed

eggshells into the soil around the plant taking care not to disturb the roots. However calcium in the eggshells or milk is not normally available to the plant and is therefore of doubtful benefit. Compost water is applied to a plant with the supposition the compost will have good microbes in it that control blight. However, compost water may also contain spores of pathogens including fungi and bacterial spores. Other sources suggest spraying the garden soil in late fall and early spring with a combination of bleach and baby shampoo in a gallon of water. It is doubtful that enough bleach and shampoo can be applied to soil to have any effect on microorganisms. Most soils tend to have a dampening effect on such chemicals unless applied in prodigious quantities.

May your zucchini be hale and hearty.

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