

## Avoiding Tomato Diseases

After proper variety selection, and in the absence of a resistant variety, cultural practices are crucial to avoiding tomato diseases.

Although these control methods are separated by disease, many issues can be alleviated by following the same practices.

### Septoria Leaf Spot and Early Blight Control

Sanitation measures in the fall reduce the amount of inoculum available for infection the following year. In the fall, deep plow tomato plots to bury tomato debris, or remove and destroy dead plants. Avoid planting tomatoes in the same area of the garden year after year. Start the year with clean, healthy seeds or transplants. Avoid overhead irrigation to reduce humidity and leaf wetness. To improve airflow, use staking and appropriate plant spacing. To prevent rain splash, use mulch. Avoid composting diseased plant material.

### Anthracnose Control

Several cultural practices help reduce the incidence of anthracnose. Mulching around the tomato plants prevents splashing of spores from the soil onto the fruits. Staking tomatoes increases air movement and decreases the likelihood of favorable environmental conditions for infection. Avoid overhead watering and remove infected or rotting fruits from the plant.

### Bacterial Speck and Spot Control

Control measures for these two diseases are similar. Removing plant debris in the fall, cultivation of weeds, rotation, and the use of clean (non infested) seed and transplants reduces the severity of, or prevents these diseases. To reduce humidity and leaf wetness, avoid overhead irrigation. Use staking and appropriate plant spacing to improve airflow. Use mulch to prevent rain splash. Do not work in the tomato planting area when plants are wet.

### Bacterial Canker Control

The most important means of controlling bacterial canker is using clean seed from a reputable firm and transplanting into disease-free soil. If you have an outbreak of bacterial canker, do not plant tomatoes or other crops in the tomato family (pepper, eggplant, potatoes) into that bed for at least 3 years. Avoid overhead irrigation, which spreads bacteria and allows infection to occur. Avoid working with plants under wet conditions. Sanitize tools such as pruning shears. Use mulch to prevent rain splash.

### Blossom End Rot Control

Providing even and adequate soil moisture, especially during fruit set, can reduce the incidence of blossom end rot. For uniform soil moisture, mulch and use a balanced irrigation program. Avoid overfertilization of the plant with nitrogen, especially of the ammonia formulation.

### Leaf Roll Control

The condition is temporary and the plant will recover on its own. To prevent leaf roll, keep soil evenly moist (not too wet, not too dry) and avoid cultivation that damages roots.

### Growth Cracks Control

Provide even water and balanced nutrition to avoid overly lush growth. Limit fruit exposure to sun through proper staking or trellising, and by managing foliar diseases.

### Fusarium and Verticillium Wilt Control

Rotating from tomatoes (4 to 6 years) to non-hosts may help to reduce fungal population levels in the soil, but it will not completely control these diseases. Both organisms can survive for a long time in the soil, and Verticillium has a wide host range. Rotate to cereal crops if possible and control weeds, which might be hosts. Remove and destroy diseased plant tissue at the end of the season. Use clean stakes, cages, and other items that come in contact with soil and debris. Appropriate fertility and irrigation can help to maintain plant vigor and suppress disease.

### Root Knot Control

Root knot may be prevented by avoiding the introduction of the pathogen into the garden or field. Carefully check and discard any transplants showing swelling or galling of the roots. Never introduce soil into the garden from areas where root knot is known to be a problem. Rotation periods of 3 to 5 years with corn or other non-host plants will reduce nematode populations in the soil.

### Viral Disease Control

Virus diseases cannot be controlled once the plant is infected. Therefore, every effort should be made to prevent introduction of virus diseases into the garden. Sanitation is key for prevention of all virus diseases. Infected plants should be removed immediately to prevent spread of the pathogens. Perennial weeds, which may serve as alternate hosts, should be controlled in and adjacent to the garden. The use of tobacco products during cultural practices should be avoided to prevent inoculation of plants with the tobacco mosaic virus. People who use tobacco or work with infected plant material should wash their

hands thoroughly in soapy water before handling tomato plants. Control of insects, especially aphids and thrips, will help reduce the likelihood of cucumber mosaic and spotted wilt.

Although sprays are available for some of these issues, they should always be a last resort. Starting with resistant varieties and practicing all of these control methods are a solid foundation for healthy plants. If you are still experiencing disease issues, contact the Shawnee County Extension Office for further control methods.