Some Common Tomato Problems

After weeks of careful preparation and cultivation, many gardeners are eagerly awaiting a great tomato harvest. This is the time of year to watch for, prevent, or treat several problems that can inhibit tomato production. Identifying a disease, a pest invasion, or even a physiological problem, and then treating the issue, can help to result in a plentiful tomato crop.

Tomato disease can be either infectious or non-infectious. The first step in controlling tomato diseases is properly identifying it. When something goes wrong with your plants, it is common to think infection first. However, non-infectious diseases can result from chemicals or physical factors, and should always be considered and addressed as well.

Noninfectious (abiotic)

One common noninfectious tomato disease is called ***blossom drop***. Blossom drop presents with affected blossoms drying, turning brown, and eventually falling from the stem. Environmental stresses and improper soil fertility are often the causes of this issue. Prolonged high temperatures over 90° F and daytime wind often cause blossom drop. Additionally, excessively high nighttime temperatures can also have negative effects. Proper fertilization ratios should also be considered. Excessive nitrogen fertilization is thought to encourage blossom drop. To address, be sure to follow recommended fertilizer ratios for tomatoes and seek out the more heat-tolerant cultivars.

Blossom-end rot is an equally destructive problem caused by noninfectious agents. The tomato fruit is affected, with symptoms appearing as a small, tan, water-soaked area near the blossom end of the fruit. This too can be a response to high temperatures and wind or excessive nitrogen fertilization. Too little water can enhance blossom-end rot. Counter intuitively, excessive soil moisture for a prolonged time can also cause this condition.

To address blossom-end rot, consider using nitrate forms of nitrogen fertilizer rather than ammonium forms. Avoid highly susceptible varieties such as Roma. Maintain adequate soil moisture, ideally with a drip irrigation system.

Blossom End Rot

Chemical injury is another consideration for failing tomatoes. Phenoxy herbicides such as 2,4-D and dicamba can easily damage tomato plants. Used to control broadleaf weeds in lawns, these chemicals can easily migrate to tomato crops, causing significant damage. Symptoms include narrow and pointed new leaf growth and/or twisted, split, and brittle stems and/or irregularly shaped fruit. Symptoms are often uniform throughout the plant. Simply put, avoid using these herbicides in areas where tomatoes are being grown.

Infectious (Biotic)

Infectious microorganisms include fungi, bacteria, viruses, and nematodes. Just as in humans, identifying the specific type and strain of infection is key to treatment or control. Looking at specific characteristics of both the infected plant and the fruit is important for proper identification.

Fungi

Fungi are the most common cause of infectious plant diseases and can have a significant impact on tomatoes. Wilts, blights, leaf spot, fruit rot, and soil rot are all fungal infections that can appear this time of year. Wilt diseases occur from a fungal pathogen attacking the vascular tissue of the plant, inhibiting water flow throughout the plant's system. Plants suffering from a form of wilt disease often appear under watered, even when appropriate water is supplied.

Fusarium wilt is the most common wilt disease of tomato crops in Oklahoma. With this infection, the lower leaves turn yellow, gradually wilting and dying. This wilt is in the soil and enters the plants through the roots. One cannot plant again in the same spot for about 3 years.
Southern blight, also quite common in Oklahoma, appears as a rapid wilting of the entire plant. Often, a white mold will appear on the stem near the soil line and can be an identifying feature of southern blight.

Fusarium Wilt

Several types of leaf spots resulting from fungal infections can be present this time of year as well. ***Early blight*** can show up as large brown target-like spots. ***Septoria leaf spots***, on the other hand, are small spots with gray centers and dark borders.

Fungal infections can also affect the tomato fruit. ***Anthracnose*** is a widespread rot of ripe or overripe tomatoes that presents as small, sunken, circular spots. These spots can get as large as ½ inch in diameter. Anthracnose is common during warm rainy weather or when overhead irrigation is being used. ***Soil rot*** is caused by fungi living in the soil and can affect fruit that comes in contact with this soil.

Treatment of fungal infections includes use of a fungicidal spray such as copper fungicide or implementation of a soil fungicide. Removal of infected leaves and fruit should also occur. Avoiding overhead watering systems can help prevent the spread of fungal infections as well.

Bacteria, Viruses, and Nematodes

If your tomatoes are being damaged by an infectious agent but do not appear to have any of the fungal infection symptoms, a bacteria, virus, or nematode may be the culprit. These infectious agents are less common than fungal infections but are much more difficult to control.

Bacteria

Bacterial spot is widespread in Oklahoma and can reduce tomato yield and quality by defoliation and spotting of the tomato fruit. There is a general yellowing of the leaves with numerous small spotting, followed by leaf scorch. Bacterial spots can affect the fruit as well, appearing as raised, scabby, dark brown spots up to 1/3 inch in diameter. Other bacterial infections of the tomato include ***bacterial speck*****, *****bacterial canker*****, and *****bacterial wilt*****.** All of these bacterial infections can cause varying degrees of damage to your tomato crop and can often be specifically identified by their variations in appearance.

Bacterial Spot

Bacterial infections are difficult to control, with prevention being the ideal method. Rotating tomatoes with crops other than tomatoes and peppers from year to year helps to avoid the carryover of bacteria. Additionally, the use of drip irrigation as opposed to sprinkler irrigation reduces bacterial spread. Weekly bactericide sprays that include a mixture of copper and fungicide may also partially help to control disease.

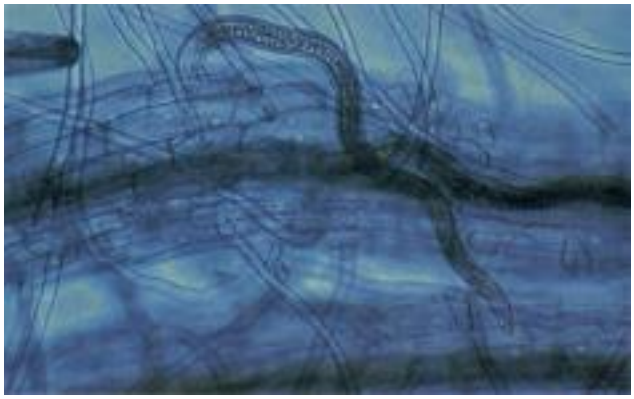
Viruses

Several viruses are present in Oklahoma that can affect tomato crops as well. Insects such as aphids, thrips, and leafhoppers often spread these viruses. ***Beet Curly Top Virus*** is one such disease spread by the beet leafhopper. Symptoms begin with the upper leaves turning pale green and curling. New growth is stunted, leaves become thickened and develop purple veins, and branches become brittle and snap. Other viral infections, including ***tobacco mosaic*** and ***tomato spotted wilt***, can affect crops as well. Control strategies for tomato viral infections are limited because virus-infected plants usually cannot be cured. Additionally, insecticide sprays are often ineffective. Choosing viral resistant plants is the best approach.

Beet Curly Top Virus

Nematodes

Nematodes are microscopic round worms most often found in warm sandy soils. They can decrease tomato crop production by feeding on the roots of the plants. One of the most common nematode diseases in Oklahoma is ***Root-Knot***. Plants infected with root-knot nematodes are yellow or pale green in color and often appear wilted. In addition to decreasing fruit yield, nematode feedings can also decrease your plants' resistance to other soilborne infections, including Fusarium wilt. Again, planting nematode resistant varieties is the most effective way to avoid these infestations.



Root-Knot Nematode

After looking at many of the possible diseases that can affect tomato crops, it can feel daunting trying to grow them. Take heart that Oklahomans continue to have excellent tomato harvests each year. Using proper cultural practices, choosing some of the many disease resistant varied that exist, and selecting or avoiding certain chemicals can ensure a great tomato crop each year. For more information, see Oklahoma Cooperative Extension Service Fact Sheets:

EPP-7625 (Fungi)
EPP-7626 (Bacteria, Viruses, Nematodes)
EPP-7627 (Non-Infectious Diseases)

References:

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