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Common Tomato Fruit and Leaf Spot Issues
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Waiting for the first ripe tomatoes from the garden seems like an eternity. When the plants begin to develop a rotten spot on the bottom of the fruit, no fruit, and/or leaf spots, gardeners begin to ask what is happening, and what should I do?

Two common issues occur with the fruit of tomato plants. As the first fruits begin to develop and ripen, a water-soaked spot usually appears on the blossom end, or bottom of the fruit. This is called blossom end rot. The spot shrinks and becomes flattened or sunken. Later, secondary fungi may invade the affected area, resulting in further decay.

Environmental conditions prevent the distribution of calcium to the fruits, causing blossom end rot to occur. Conditions such as low soil moisture, hot and dry winds, heavy applications of nitrogen fertilizer, and fluctuations in soil moisture contribute to blossom end rot development. Under environmental stress conditions, calcium moves with the water inside the plant to the leaves and bypasses the fruit. The tissue at the blossom end of the tomato breaks down without the calcium.

To manage blossom end rot, maintain an even moisture supply by watering plants as needed when they are dry and mulching the plants with straw to conserve soil moisture.

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Applications of calcium to the soil or foliage do not prevent or cure the disorder. Blossom end rot is not caused by a lack of calcium in many cases, but by poor distribution of calcium in the plant.

The second is the lack of fruit set, which is also affected by environmental conditions. Blossoms drop, which means fruit do not set, occurs during beating rains, sudden periods of cool weather, hot and drying winds, or when low or high night temperatures occur. Unless the night temperature is between 55 and 75 degrees F for at least part of the night, most tomato varieties will not set fruit. In addition, excessive applications of nitrogen fertilizer result in a beautiful plant but no fruit.

Two common tomato leaf diseases cause spots on the leaves. The first is early blight. The fungus, *Alternaria solani*, generally causes small, irregular, brown, dead spots on the lower, older leaves of the plant first. As the spots enlarge, they show ridged, concentric rings in a target pattern surrounded by a yellow area. During periods of high temperatures and humidity, the fungus spreads.

The second one is septoria leaf spot, caused by the fungus *Septoria lycopersici*, occurs on tomatoes, too. Infections usually start on older leaves of the plant near the ground. At first, the spots appear water-soaked and are often scattered thickly over the leaf. They become roughly circular with gray centers surrounded by dark margins. These spots are smaller and more numerous than those of early blight. Numerous spots on the leaves cause the entire leaf to turn yellow, then brown, and wither. This disease is favored by moderate temperatures and rainfall.

Both fungal diseases spread by spores they produce, and often occur on the same leaves. Spores are carried by wind or by raindrops splashing them onto the surface of leaves, where they germinate and infect the tissue if the temperature and moisture conditions are right.

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Use cultural practices first to manage early blight and septoria leaf spot. Good air circulation around the plants dries the leaves off quickly, discouraging disease development. Caging or staking plants increases air movement around them. Rotate the growing location of tomatoes in the garden each year to prevent a buildup of diseases in one location. Picking off the leaves when you see the spots of early blight as they first appear may reduce its spread early in the season.

Correctly applied fungicides can be used to help manage these diseases after cultural practices are used. It is best to apply the fungicides before the plant is infected. A fungicide containing the active ingredient mancozeb can be used before fruit harvest starts, and chlorothalonil can be used while picking fruit. Good coverage with the fungicide on both sides of the leaves is important to protect the plant from continued infections. Apply the fungicide according to the label directions. Make sure the product is labeled for use on tomato plants. Check label directions on how often to apply the fungicide and the number of days to wait after spraying before harvesting the fruit. The fungicide needs to be applied every seven to 10 days according to the label to protect the new growing foliage.

For more information about growing tomatoes, contact the Daviess County Cooperative Extension Service at 270-685-8480 or email annette.heisdorffer@uky.edu.

Annette's Tips:

Poor pollination of summer squash flowers may result in fruit shriveling. The plant must produce both female and male flowers. The female flower has a miniature squash fruit right behind the flower. Male flowers have a straight stem before the blossom. Cucumbers also have male and female flowers and follow the same characteristics as squash. As the weather becomes

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consistent, both flower types should be produced. Insects are required to pollinate the female flower.

Planting pumpkin seeds around Father's Day is a good rule of thumb for producing pumpkins for Halloween decorations. If the pumpkin seeds are planted too early, the pumpkins may rot before the holiday. Check the number of days to harvest before purchasing seed, because some varieties may have a long maturity period, so there may not be enough time to produce mature fruit for the holiday.

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