



## Summer Disease of Tomatoes

Late frost, hail, heavy rains and cool weather have certainly affected some of our crops in the vegetable garden. One of which are our tomatoes. Between the extreme weather events, hopefully anyone wishing to grow tomatoes has gotten some good growth on them by now, as well as bloom and fruit set. I've hardly seen any red tomatoes yet, other than cherry tomatoes, but that is mostly due to the cool temps.

There are quite a few diseases that tomatoes can be affected by. Blight, wilt, leaf spots, and others can cause problems throughout the season. Properly identifying the disease is the first step in controlling it.

Leaf spots, including tomato leaf spot, and tomato leaf speck, are recognizable by their namesake – spots on the leaves, stems, and possibly fruit. Blemishes caused by leaf speck are small and black – usually no bigger than the tip of a pencil. Lesions caused by leaf spot will be larger, and look like the area was water soaked. The area might become corky, or hard to touch. Neither of these diseases causes internal rotting of the fruit, so you can still harvest and eat the tomatoes. The biggest issue with leaf spot and speck is when the plant drops so many diseased leaves, that it can no longer support itself, or fruit production. Plants need their leaves to photosynthesize sunlight for their energy source, so if there are no leaves, the plant has no energy! Another thing to remember with these bacterial diseases, is that infected leaves that drop off the plant, can infect other tomato plants next year. Remove and burn (or at least don't compost) diseased plants and leaves, and always try to rotate your crops through different areas in your garden. That's not always the easiest thing to do if you have a small garden, but any effort is better than none. Mulching tomato plants will help as well, to keep contaminated soil from splashing up onto the leaves during rain or irrigating. If you utilize chemical for bacterial diseases, use a copper-based fungicide. These fungicides are not preventative – rather they will protect leaves that do not have the disease.

There are two types of blight – early blight and late blight. Early blight of tomatoes is usually seen when bloom set occurs. Like bacterial leaf spot diseases, the first symptoms noticed are large brown spots with concentric rings, often on the stems or lower leaves. These brown spots will often be accompanied by yellow halos or edges. Late blight starts out much the same, but later in the season and when temperatures are cool and wet. Late blight is different from other diseases because it is unable to overwinter in the soil alone. Infected fruits of tomato, peppers, or potato tubers are the main cause for seeing a recurrence of the disease year after year. Remove infected plant parts each year and rotate crops when possible. A fungicide labeled for blight is the best bet in controlling the spread of blight.

Wilt, namely fusarium and verticillium wilt, are another issue you may encounter if you garden for any length of time. Wilts are caused by fungus, but different ones than the diseases mentioned above. When the disease spores enter the new plants, the cells that transport water and nutrients throughout the plant become plugged. This causes wilting of the plant when there is plenty of water available. Eventually the plant will die from lack of water and nutrients. Unfortunately, the fungal spores of wilts can stay in the soil for many years. There is no cure for fusarium or verticillium wilt – a fungicide will not help! Your best bet in avoiding these issues are to look for tomato varieties that are resistant – they will be labeled V (for Verticillium) and F (for Fusarium). These disease resistance designations are usually shown in seed catalogues or on plant tags.

There may be many things working against us in the vegetable garden – disease, weather, insect pests, or even the occasional (or frequent) rabbit. It's always worth the effort though, and if you get to the point of giving up, it's just time to try something else!

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