

## Tomato Troubles

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As one of the most popular vegetables grown, Extension receives many questions about tomato troubles.

The most common this year has been about curled leaves. And now questions about tomatoes not setting fruit or the bottoms of fruits turning brown are rolling in.

Tomato leaf curling is usually due to physiological leaf roll, herbicide drift, or a virus disease.

With leaf roll, older leaves near the bottom of the plant curl upward and roll inward. Leaves might seem thicker, but are otherwise normal in size, shape and color.

Leaf roll is usually a response to stressful environmental conditions like hot, windy weather; or injury to roots from hoeing or tillage.

Tomato plants will continue to grow and set fruit. To reduce leaf roll, maintain a consistently moist soil, use mulch, avoid over-fertilizing with nitrogen and prevent root damage.

With herbicide injury, symptoms can include a downward rolling or twisting of leaves, stems that are split, thickened, or twisted, abnormal looking veins, and yellowing of leaves. On plants that survive, new growth should be normal. However, the fruit from these plants may not be safe to eat.

Tomatoes are very sensitive to herbicides like 2,4-D and will show the most injury. But with herbicide drift, other plants in or near the garden will also show some type of leaf distortion even if it is not as severe as on tomatoes.

To help avoid herbicide injury, read and follow label directions, avoid application on windy or hot days, and protect sensitive crops.

There are a number of virus diseases that affect tomatoes and some cause symptoms similar to herbicide injury. Depending on the virus, symptoms can include yellowing, mottling, stunted growth, smaller leaves, thicker leaves, and leaf roll.

With a virus, no other plants in the garden or nearby should be affected. And on virus infected plants, new growth will continue to be affected. As there is no treatment for plant viruses, remove and destroy infected plants, nearby weeds that may harbor the virus, and disinfect garden tools.

Tomato flowers fail when conditions are hot and windy leading to reduced fruit set until conditions moderate. This occurs when night temperatures are above 75 degrees Fahrenheit and/or day temperatures are much above 90 degrees. Some varieties are more prone to flower failure, but plants should eventually set fruit.

If the bottom of tomato fruits turn brown, this is blossom-end rot. It is due to a lack of calcium in the fruit that causes tissue to break down. Rarely is it due to a lack of calcium in the soil or in the plant. It rarely helps to apply calcium to soil or to spray it on plants.

What happens with early fruits is calcium is being used by leaves, especially if too much nitrogen was applied; or the plant may not be efficiently moving calcium into the fruit. This will occur if soil is dry or conditions are hot and windy.

To help reduce blossom-end rot, keep soil uniformly moist, mulch plants, and avoid applying too much nitrogen. Some varieties of vegetables are more susceptible. Keep track of varieties and avoid growing those that repeatedly have this issue.