Post Rock Answers

By Cassie Thiessen June 27, 2025

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Blossom End Rot of Tomatoes

If you are a gardener in Kansas, chances are you have heard of, or seen, blossom-end rot. This condition is most common in tomatoes and shows up as sunken, brown, leathery patches on the bottom of the fruit. It can also cause a problem in squash, peppers, and watermelon crops. You might be surprised to learn that this is not a disease, but actually a physiological disorder caused by a lack of calcium in the developing fruit. This does not necessarily mean that your garden's soil is lacking calcium. Most Kansas soils are derived from limestone, which is partially made up of calcium. So, just what is the reason your tomatoes are rotting? There are actually a number of possible reasons, let's look at some of them.

1. Heavy fertilization, especially with ammonium forms of nitrogen, interferes with calcium absorption. When you over fertilizer, the plant generates more top growth than root growth. Though tomatoes need to be fertilized to yield well, too much nitrogen can result in large plants with little to no fruit.
2. Gardening practices, especially weeding, that disrupt the plant roots can also encourage blossom-end rot. This could be tilling or hoeing the soil too deeply. Mulching helps because it keeps the soil surface cooler and therefore provides a better environment for root growth.
3. Tomato tops often outgrow the root system during cooler spring weather. As long as it stays cool, the root system can keep up. When it turns hot and dry, the plant has a problem, and water — with the calcium it carries — goes to the leaves and the fruit is

bypassed. The plant responds with new root growth and the condition corrects itself after a couple of weeks.

4. Avoid inconsistent watering. You want to keep the soil moist, but not water logged. Mulching is a good idea to help retain moisture levels overtime, in the garden.

You may need a soil test to determine if your soil has adequate calcium levels. If your soil has sufficient calcium, it will not benefit from an addition of calcium. If your soil is deficient in this nutrient, add 1 pound of gypsum per 100 square feet. Gypsum is calcium sulfate and will not affect soil pH. Though calcium raises pH, sulfate lowers pH, and the two will cancel each other out. An application of gypsum will not cause any harm to your soil, even if the amendment was not needed.

Gardeners may think that spraying the plant with calcium will be the trick to clear up blossom-end rot. However, the fruit's waxy surface doesn't allow absorption of the externally-applied calcium, and since calcium needs to be taken up by the roots, a foliar application will not be effective.

Unfortunately, there are years that you can do everything right and still have blossom end rot. If this is the case, remember that blossom-end rot is a temporary condition, and plants should come out of it in a couple of weeks. Vegetable plants will benefit from picking off the affected fruits, to encourage new, healthy, fruit formation. It is a good idea to keep garden records, you may find that certain tomato varieties are less susceptible to blossom-end rot than others.

If you have any garden questions this summer, reach out to your local K-State Extension Office.

Post Rock Extension District of K-State Research and Extension serves Jewell, Lincoln, Mitchell, Osborne, and Smith counties. Cassie may be contacted at cthiessen@ksu.edu or by calling Beloit (785-738-3597).