

Diagnosing and Correcting Tomato Blossom End Rot

May 31, 2012

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As tomatoes are (hopefully) growing larger in your garden, I thought it might be good to write about a common problem that is observed in tomatoes, peppers, and a few other plants. Blossom end rot (BER) is not a disease, but rather an issue related to nutrient and water management. The major issue is related to calcium. Calcium is well known for being a component in limestone (Calcium carbonate) and is also known as being important to strong bones in humans. However, calcium is just as important for building strong cell walls and cell membranes in plants. When calcium is deficient or unavailable to a plant, cell formation during early fruiting will be hampered and these cell walls and membranes will collapse, leaving dark, sunken pits at the blossom end of fruit.

Sometimes it is hard to determine whether a tomato plant is suffering from BER or from some other disease problem. Here are four questions to help determine and correct the problem if it is BER:

1) Is the problem disease or nutrient related?

There are a few other diseases or problems that resemble BER including fruit anthracnose and sunscald. However there are two helpful points to help decide if it's BER: BER is uniformly dark brown and black and will occur on only the lower fruit sidewall or on the blossom end of small and developing fruit. It will never be found on the stem side of fruit.

2) Is calcium fertilization adequate?

Have you applied lime or gypsum in your tomato beds or had a soil test done recently? If not, you are at risk of having BER problems in your tomatoes. Lime helps provide calcium while also raising pH to prevent other nutrient deficiencies. Gypsum also contains calcium and will help provide needed calcium. If you had a soil test completed and the graph shows that calcium levels are low, you should be expecting issues to arise unless other calcium has been added.

3) Is nitrogen and potassium fertilizer excessive?

Most people might not realize it but you can sometimes cause nutrient deficiencies by having nutrient excesses! In the instance of calcium in tomatoes, having large amounts of ammonium nitrogen or potassium in the soil will out-compete calcium for plant uptake through the roots. You will notice if too much nitrogen has been added because tomatoes will show a large amount of vegetative growth with very few fruit being produced. When this happens, whatever calcium is available will be used for development of the new leaf and stem tissue with very little being transported to the fruit where it is more wanted. If you notice or suspect this might be a problem, start cutting back on these two nutrients in your fertilizer program.

4) Is irrigation adequate?

Having large fluctuations in soil moisture can have an effect on calcium levels in tomato plants and fruit. Efforts should be made to add mulch around plants to maintain adequate moisture and adhere to deep timely irrigation once or twice a week depending on rainfall events.

So if you've gone through these questions and you believe you might be dealing with BER, what should you do about it? Some may think that available foliar calcium sprays might do the trick. In the short-term, this might help alleviate the problem but this approach ignores the issue that calcium is a nutrient that is taken up by the plant through water movement from the roots through the xylem tissue. Foliar sprays are much less effective and most times will not allow for calcium transport to the fruit where it is needed. Application of small amounts of lime, gypsum, or even Epsom salts around the plants and watering this in will be the quickest way to help correct the calcium deficiency that is causing blossom end rot.