

Plant Pathology Fact Sheet

Blossom End Rot

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Blossom end rot is a physiological disorder (non-parasitic disease) caused by a lack of calcium (Ca) in the distal ends of developing fruit. Calcium is an essential part of the chemical “glue” that binds cells together within the fruit. When fruits are enlarging rapidly, sufficient amounts of Ca fail to reach the end of the fruit and cells then come apart. This is because Ca is not a very mobile element, so any disruption in uptake of Ca can result in a deficiency of Ca in developing fruit.

Early-season factors can limit availability of Ca as well, as soils tend to be cooler and there are fewer roots on younger plants. For these reasons, blossom end rot is more common on the first few fruit clusters each season. Blossom end rot occurs commonly on tomato, but it may also affect eggplant, peppers, and many cucurbits.

Symptoms

Blossom end rot begins as a small, water soaked spot on the blossom end (i.e. opposite the stem) of the developing fruit. The spot develops into a dark brown, leathery area that may affect half the fruit. The surface of the spot shrinks and



becomes flattened or sunken. Later, secondary fungi may invade the affected area resulting in further decay of the fruit.

Management

- **ADEQUATE CALCIUM**

A soil test should be run to determine if the soil is low in Ca. If Ca is needed, it can be applied as lime prior to planting. Soils in KY are rarely deficient in Ca.

Several foliar sprays of calcium-containing fertilizers can be applied when the problem first begins to develop. A number of products are marketed – see labels for rates and application instructions. Calcium sprays

may help, although evidence suggests that these types of treatments have little impact in most cases. There is no substitute for maintaining proper calcium levels in the soil.

- **ADEQUATE WATER SUPPLY**

Maintaining an even moisture supply is the most important way to control blossom end rot. Water supply plays a critical part in the uptake and distribution of calcium within the plant. Irrigate plants as needed and use a mulch to conserve soil moisture. Irrigate on a consistent basis; don't allow plants to become stressed from too much or too little water. When watering, avoid wetting foliage as much as possible as this could favor the development of fungal and

bacterial diseases. Trickle or drip irrigation is an excellent means of delivering water to plants without the risk of wetting leaves or splashing soil onto foliage (which can lead to disease problems as well).

- **NUTRIENT BALANCE**

Excessive amounts of ammonium tend to depress the uptake of calcium by plants. The use of urea or fertilizers high in ammonium (NH_4) should be avoided in favor of those high in nitrate (NO_3). Calcium nitrate is an excellent nitrogen fertilizer, although it is more expensive than other nitrogen sources.

(Revised January 2008)