

PLANT DISEASE CONTROL NOTES

EXTENSION DIVISION • VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

VEGETABLE DISEASES

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BLOSSOM-END ROT OF TOMATOES

Control Series 84

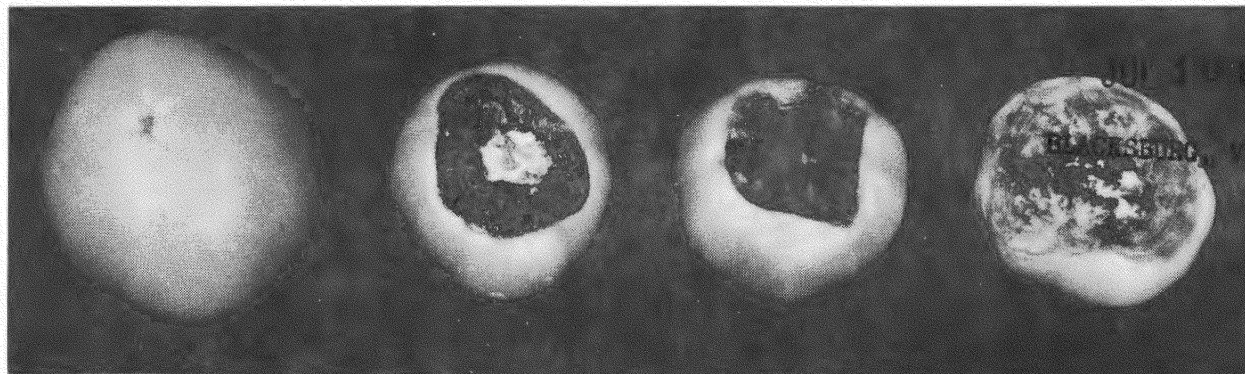
*Robert Pristou and R. C. Lambe**

Blossom-end rot is an abiotic disease of tomato fruits affecting both greenhouse and field grown plants. Losses from blossom-end rot vary from negligible to severe. The disease is not limited to any particular region and occurs wherever conditions favor its development. It occurs most commonly when plants are grown under unfavorable conditions and is usually more severe on staked tomatoes. Blossom-end rot occurs more frequently when plants grown under favorable conditions early in the season are subjected to long periods of drought during the early stages of fruit development. Although blossom-end rot is more common under prolonged conditions of drought, it also occurs after periods of unusually heavy rainfall.

Calcium deficiency has been shown to be a contributing factor to the occurrence of blossom-end rot. Failure of sufficient calcium to reach the blossom end of the fruit causes the cells in this area to die. All the factors which contribute to the occurrence are not known; however, it has been shown that pathogenic organisms are not involved. However, it is common for secondary fungi and bacteria to attack fruit affected with blossom-end rot.

SYMPTOMS: The first evidence of injury consists of a brown discoloration near the blossom end of the fruit. These spots enlarge and darken until they cover 1/3 to 1/2 the surface in severe cases. As the spots increase in size; the tissue becomes shrunken and the area becomes flattened or concave. The skin of affected fruit becomes black and leathery in appearance. There is no soft rot of the fruit unless the spots are invaded by secondary organisms. Fruits affected by blossom-end rot grow slowly and often ripen prematurely. Under certain conditions the outward symptoms may be suppressed almost entirely while the inner tissue near the blossom end is completely discolored and collapsed. This disease is most frequently observed on fruit that is 1/2 to 2/3 mature.

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Healthy fruit on left. Secondary fungi invade the weakened tissue. The tissue surface is dry and shrunken with a dry, leathery appearance.

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CONTROL:

1. In the greenhouse and garden, this disease can be prevented by maintaining a uniform supply of soil moisture.
2. Avoid the use of excessive amounts of ammonia or nitrated nitrogen and highly soluble potassium salts.
3. Do not subject plants to sudden and severe hardening before transplanting.
4. Cultivate field plants to a shallow depth so that the roots are not injured.
5. Light applications of fertilizers high in superphosphate will aid in reducing the injury.
6. Avoid setting plants in the field too early when the soil is still too cold for growth.
7. Apply calcium chloride as a spray if the soil is deficient for calcium and blossom-end rot begins to develop. Use 4 teaspoons of 96% calcium chloride to 1 gal. of water. Sprays should be at weekly intervals until 3 or 4 applications have been made. Prolonged applications of calcium chloride may cause marginal leaf burn.