



## BUCKEYE ROT OF TOMATO

Buckeye fruit rot of tomato is reported in all parts of the world with high relative humidity, abundant soil moisture, and warm weather. In the United States, the disease is most common in the southeastern and south central areas. Buckeye rot of tomato is caused by three species of *Phytophthora*: *P. Nicotianae* vsar. *parasitica*, *P. capsici*, and *P. deechleri*.

### SYMPTOMS

Brown spots appear on green and ripe fruit (Figure 1), often at the side of contacting with soil and blossom end. Either green or ripe fruit may be infected through the uninjured skin. As the spot enlarges, the surface of the lesion develop a pattern of concentric rings of narrow dark brown and wide light brown bands (Figure 2). The lesions remain firm and smooth, although the internal rotted tissue turns mushy. The margins of the lesions are smooth but not sharply defined. Initially, the infected fruit remains firm, but eventually decay progresses rapidly. Lesions of buckeye rot resemble those of late blight, except that the former remain firm and smooth, whereas late blight lesions become rough and are slightly sunken at the margins. Buckeye rot lesions may cover a small part or more of the fruit.



Figure 1. Buckeye rot of tomato fruit, caused by a *Phytophthora* sp. (Photo courtesy AVRDC-The World Vegetable Center).

### DISEASE CYCLES

*Phytophthora* spp. are soil-borne pathogens and infect many solanaceous crops. The disease is most common during periods of prolonged warm, wet weather. *Phytophthora* pathogens are spread by surface water and spattering rains. Excess soil moisture and soil temperatures of 64-86°F (18 to 30°C) [with an optimum of 81°F (27°C)] are necessary for the development of widespread losses. Rot is usually limited to fruit in contact with the soil; infection also occurs in association with soil residue where mud containing inoculum has been splashed onto the fruit.

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## DISEASE MANAGEMENT

Buckeye rot of tomato can be managed by planting resistant cultivars; avoiding poorly drained heavy, and compacted soils; growing plants on raised beds; using drip irrigation; avoiding irrigation of field with water containing runoff from other affected fields; removing diseased fruit or diseased plants from the field; avoiding dumping culls or diseased fruit onto or near production fields; using straw mulch to reduce soil splash; staking plants to keep fruit off the soil surface; harvesting fruit as soon as possible; keeping harvested fruit dry and cool; and using effective fungicides to control the disease. For current recommendations on fungicide control of the disease, refer to the current edition of publication number C1373, "Midwest Vegetable Production Guide for Commercial Growers"

([www.btny.purdue.edu/pubs/id/id-56/](http://www.btny.purdue.edu/pubs/id/id-56/)). This publication is available from ITCS, University of Illinois, 1917 S. Wright St., Champaign, IL 61820; or call 1-800-345-6087.

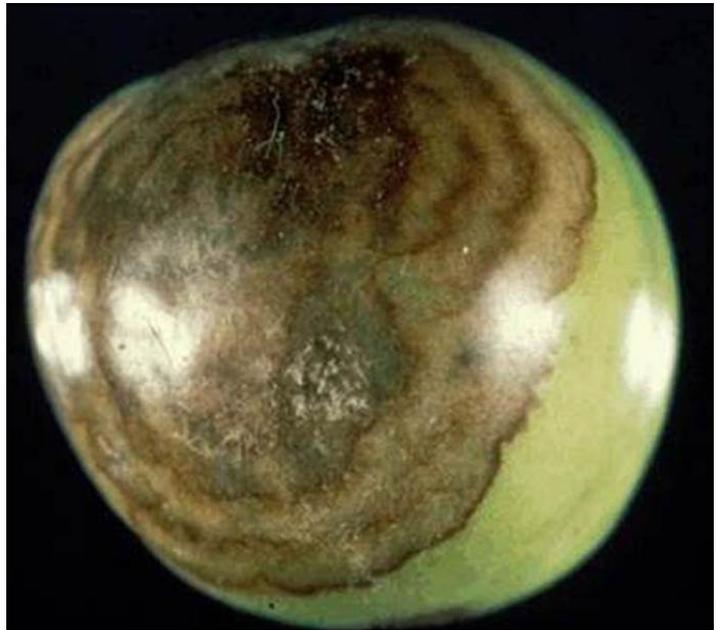


Figure 2. Brown concentric rings of buckeye rot on a tomato fruit.