

# Rain Check on Tomato Fruit

By *Anthony P. Keinath, Vegetable Pathologist, Clemson University, Charleston, South Carolina*

---

Severe “rain check” was observed on mature green and breaker tomato fruit in Charleston County this week. Over half of the fruit in one field were damaged. Damage on individual fruit affected up to 20% of the surface.



Typical, classic symptoms of “numerous tiny concentric cracks,” as described in the *Compendium of Tomato Diseases* (APS Press), were present on the shoulders of fruit. However, in this severe case, the cracks extended  $\frac{1}{4}$  to  $\frac{1}{3}$  of the way down the side of the fruit.

Rain check, as the name implies, is caused, at least in part, by rain. In a 2001 study in Michigan, protecting fruit from falling rain with rain shelters reduced rain check from 49% on unprotected fruit to 26% on protected fruit. (<http://www.msue.msu.edu/swmrec/Publications/Annualreports/2001%20Annual%20Report/veggies/tomato%20shoulder%20check.PDF>).

Rain check is most severe when heavy rains follow a dry period. This was exactly what happened in Charleston County during the past month. Rainfall between August 1 and 11 was only 0.64 inch, until Tropical Storm Bonnie and Hurricane Charley brought 5.3

inches of rain over 5 days.

Exactly what rain does to fruit that results in rain check is not clear. It is thought that fruit grow slower than normal during dry periods, and then grow rapidly during periods of heavy rain. This uneven growth cracks the epidermis (skin) of the fruit, resulting in the scars known as rain check. This physiological response may explain why protected fruit in the Michigan study still had some rain check.

Different tomato cultivars show different amounts of rain check. However, no information is available on which cultivars grown currently are most tolerant.

August 2004