

## **Development of non-invasive inoculation methods of tomato fruit with *Geotrichum candidum* for the purpose of improving post-harvest disease management strategies**

Kathryn Fiedler and Steve Rideout, Virginia Tech - Eastern Shore AREC, Painter, VA. [fiedler@vt.edu](mailto:fiedler@vt.edu)

*Geotrichum candidum* is the causal agent of sour rot in tomato and other fresh produce. This disease is a limiting factor of tomato production on the Eastern Shore of Virginia and can cause major losses in the field and especially during post-harvest handling. Infections by *G. candidum* are most prevalent during periods of wet harvest conditions or abrupt temperature changes and if improper post-harvest handling procedures are employed. There are currently no in-field treatments targeted to prevent sour rot infections so post-harvest treatments are used to prevent further losses. Currently, the methodology utilized for screening materials on harvested tomato fruits is invasive and involves severe wounding to inoculate with *G. candidum*. This practice does not accurately reflect natural fruit infections and response to post-harvest treatments may differ under these artificial methods. This compelled us to develop a method of infection without wounding. Bartz (2000) showed that tomatoes cooled with *Rhizopus* water suspensions developed infection, though the majority of studies focus on bacterial cells entering tomatoes and there is a lack of work on internalizing fungal pathogens. As a result, a vacuum pressure method of internalizing *G. candidum* spores was developed to internalize spores into tomato fruit to accurately imitate infected fruit for further management studies.

Bartz, J.A., Eayre, C.G., Mahovic, M.J., Concelmo, D.E., Brechy, J.K., and Sargent, S.A. 2001. Chlorine concentration and the inoculation of tomato fruit in packinghouse dump tanks. *Plant Dis.* 85: 885-889.