VAPOR HEAT AND FORCED HOT AIR AS A QUARANTINE TREATMENT

Dean A. Komm*
Center for Plant Health Science and Technology (CPHST)
USDA, APHIS, PPQ, S&T
1730 Varsity Drive, Suite 300, Raleigh, NC 27606

Vapor Heat (VH) and Forced Hot Air (FHA) treatments use heated air to warm fruit to temperatures that are lethal to target pests, primarily fruit flies. Generally, VH treatments differ from FHA only in the relative humidity of the air in the treatment chamber; higher humidity levels may preserve fruit quality. VH and FHA treatments are environmentally-friendly processes for insect pest sterilization and are commonly used as substitutes for methyl bromide for quarantine treatment of fruits and vegetables.

The USDA has thirteen VH and FHA quarantine treatments. These can be used to treat sixteen commodities and six genera of insects from Hawaii and many countries. USDA's guidelines for conducting research on VH and FHA treatments: "USDA APHIS Guidelines for Vapor Heat and High Temperature Forced Air Treatment Research Protocol to Control Insects "can be requested from the author. Any research protocol must be approved by CPHST before starting the research.

PPQ Treatment Manual chapters, T103, T106, 3-5, and 6-7, outline PPQ requirements for performing VH and FHA treatments. The following changes were recently made to chapters 3-5 and 6-7:

- Reduced the required number of portable sensors used during certification
- Combined the paragraphs for portable and permanent temperature sensors
- Permitted use of permanent sensors during certification
- Defined events and operating procedures that would lead to treatment failure.

The presentation will include details of VH and FHA treatments, quarantine research protocols for VH and FHA, and current changes in the USDA Treatment Manual.