## Penetration and Aeration of Boxes and Packages

Plastic wrappings such as cellophane, films, and shrink wrap, and papers that are waxed, laminated, or waterproofed are not readily permeable and must be perforated, removed, or opened before fumigation. Approved packaging materials may be layered as long as perforations allow adequate MB penetration.



Inform prospective importers that all packaging used in USDA quarantine fumigations must comply with these Manual specifications or be approved by CPHST TQAU.

USDA-APHIS-PPQ-CPHST Treatment Quality Assurance Unit 1730 Varsity Drive, Suite 400 Raleigh, NC 27606 919-855-7450

The following is a partial list of approved packaging materials:

- Dry cloth
- Dry, non-waxed or non-painted cardboard
- Dry, non-waxed or non-painted non-glossy paper
- ◆ Dry, woven fabrics and plastics
- Perforated plastics with evenly distributed holes on all sides and 0.93 percent open area of surface, for example:
  - ❖ Holes that are 3/16-inch in diameter every 3 square inches
  - ❖ Holes that are 1/4-inch in diameter every 4 square inches
  - 49+ pinholes per square inch
- Plastic clamshells
  - Evenly distributed holes on all sides and 0.93 percent open area of surface
  - Holes on top and bottom must not be blocked when clamshells are stacked (i.e. clamshells must have recesses or ridges to prevent blockage)
- ◆ Seed packets (from Thompson & Morgan (UK) Ltd.)
- ◆ Wooden boxes (lids removed if tightly sealed)