

**Title** Tomato fruit losses in hazard simulation test and the effects of crop variety and packaging method

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### **Abstract**

Tomato varieties CLN2123A and CLN2498E from AVRDC and local check, Perfect 89 from Syngenta and FM1080 from RIFAV, were evaluated for fruit resistance to physical damage that could be inflicted due to hazards during postharvest handling. Freshly harvested mature-green and breaker fruits of each variety were packed to capacity in carton box or grid-polystyrene crate (P. crate) with and without paper shreds as cushioning material. The packs were then subjected to handling hazard simulation test by allowing each container to fall freely at a 1.5-meter height which was done for three times. Extent of fruit damage was determined right after the test for visible symptoms such as cracks, cuts and bruises, and after three days of holding at ambient for physical injury-induced quality loss such as localized discoloration and softening. Fruit damage was found to be higher in carton box than in P. crate. Providing paper shreds reduced fruit damage in both types of container by about 8-27% depending on crop variety. CLN2498E and Perfect 89 fruits consistently showed much lower damage in all packaging methods due to their higher firmness than CLN2123A and FM1080 fruits. P. crate with paper shreds was the most effective packaging, reducing damage by about 21-23% in CLN2123A and FM1080 fruits and by 46-49% in CLN2498E and Perfect 89 fruits relative to the use of carton box.