

Abstract:

The objective of the present study was to determine the effects of different kinds of transport packaging on changes in postharvest quality of tomatoes. The experiments comprised 4 different types of packaging units characterised by air permeabilities (openings in the bottom and in the side walls) between 3 and 25%. The climatic conditions (air temperature, air humidity, flow conditions) on the way from the producer to the consumer were simulated in 5 phases under laboratory conditions. The evaluation of the results was carried out considering transpiration and respiration behaviour of the fruits. The flow conditions close to the produce surfaces, which strongly affect the transpiration behaviour, were determined using a new at ATB developed method. The respiration intensity as a measure for changes in internal compounds was recorded by means of infrared gas sensors. The higher air permeability of the plastic containers had a positive effect on the shelf life of the tomatoes. Initially higher water loss was compensated during the postharvest period by somewhat higher transpiration resistances subsequently. The higher resistances (transpiration and respiration) influenced changes in quality determining substances and microbial activity in a positive manner, so that the limits of marketability were reached later and keeping quality increased.