

Title Use of Carbon Dioxide as a Tracer Gas for Determining In-package Airflow Distribution
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Abstract

A methodology was developed to characterize the relative rates of airflow through ventilated packages containing horticultural produce. The technique relies on measurement of the time for CO₂ injected in the incoming airflow to reach sampling points throughout the package. This is made practicable by use of a constant flow gas analyser. Data analysis procedures, including means for their graphical representation, are described, and example results are given for two pack types. Measured data were applied in a mathematical model for predicting cooling of fruit in the packs. The in-pack time–temperature predictions matched measured data thereby indicating that the method for characterization of airflow distribution had not been a significant source of error.