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**Ron Porat**

*ARO, the Volcani Institute, Israel*

**High-throughput phenotyping of postharvest storage performance of navel oranges for implementation of intelligent logistic management systems**

Fruit and vegetables are usually stored according to the First In First Out (FIFO) method, thus the marketing decisions are based on storage duration alone. The objective of the current study was to examine the effects of various pre-harvest and postharvest factors on the quality of late-season 'Rustenburg' navel oranges in order to develop shelf-life prediction models that may allow the implementation of the more efficient First Expired First Out (FEFO) logistic method, that is based on the potential shelf life of each particular batch of produce. The experiments were conducted with 12,000 navel oranges (~4 tons) harvested from six different orchards and treated in a commercial citrus packinghouse. The pre-harvest factors included different harvesting periods and yields, and the postharvest factors included different storage temperatures, humidity's and durations. Fruit quality evaluations were conducted at harvest and at weekly intervals during a 20 week prolonged storage period, and included measurements of fruit weight loss, firmness, color, decay and peel damage, TSS, acidity, vitamin C, flavor acceptance, ethanol accumulation, and overall acceptance scores. The achieved results served as a large database for development of accurate shelf-life prediction models. In the future, we intend to adopt these models in order to develop a novel marketing decision support system for intelligent logistic management of oranges.

**Biography**

Dr. Ron Porat is a researcher at the Dept. of Postharvest Science, ARO, The Volcani Institute, Israel. He previously served as the Head of the Dept. of Postharvest Science, and currently serves as the Head of the Institute of Postharvest and Food Sciences, ARO, the Volcani Institute. Dr. Ron Porat is an expert on postharvest physiology and quality of fruit and vegetables, and his main research interest is in improving quality and reducing postharvest losses of fruit and vegetables. His research involves usage of packagings, coatings, enhancement of chilling stress tolerance, improvement of flavor perception and development of storage systems.