

# Discrimination of maturity and storage life for 'Mopan' persimmon by electronic nose technique

J. Li, Peng Zhang, Y. Xue, S. Chen, Ping Zhang

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## Abstract

Over the last few years, electronic nose (E-nose) technology has enhanced the possibility of exploiting information on aroma to assess fruit ripening stage and storage life. The objective of this study was to evaluate the capacity of E-nose for monitoring the changes in volatile production occurring at different ripeness stages and storage life for 'Mopan' persimmon, using a specific electronic nose device with 10 different metal oxide sensors (portable E-nose, PEN 3). Principal Component Analysis (PCA) and Linear Discriminant Analysis (LDA) were used to investigate whether the E-nose was able to distinguish among the different ripeness stages (physiology-ripe, full-ripe and over-ripe) and storage stages. The obtained results proved that E-nose could distinguish among the ripeness states and storage states of 'Mopan' persimmon. The E-nose was able to detect the differences in volatile profile of 'Mopan' persimmon better when using LDA. On the other hand, the separation of controlled freezing point storage and common cold storage for 'Mopan' persimmon at 45 d was achieved by using both PCA and LDA. Some sensors in E-nose have a very important influence on the current recognition pattern of E-nose. A subset of only a few sensors in E-nose can be chosen to explain all the variance and the current result could be used in further studies to optimize the number of sensors.