Post-harvesting Mangga Wani Mango Ripeness identification system

Abstract

For the inquiry of determining fruit quality, a question arises if it can be done by means of electronics device. Henceforth the study of post harvesting identi?cation prototype system of mango for reliable measurement and correct classi?cation of fruit ripeness was initiated. The prototype system consists of a set of gas sensors, microcontroller and a display unit. The sensors were used to rapidly and consistently evaluate complex volatile gaseous mixtures namely alcohol, ammonia, and combustible gases to determine the ripeness of mango. Based on the computation and conditional branching method, the identi?cation system is able to classify the mango sample into three indicators of ripeness stated as unripe, ripe or overripe. Through the strength of sensors signal within the speci?c ripeness branch, it is also able to detect the degree of ripeness of fruit from the scale of 0.0 to 2.0 (0.0 represents unripe, 1.0 represents ripe, 2.0 represents overripe). The analysis of the gas sensors responses toward mango aroma shows that all sensors display slow responses yet able to achieve steady and reliable results. Results show that the identi?cation system is able to classify the mangoes in three di?erent ripening stages with 72.9% accuracy at 30 sets of experiment set and 7 training set. The system is only programmed to determine the ripeness of one type of mango Mangga Wani and no other fruits were experimented using the system.