

Title Electrical conductivity evaluation of aril breakdown of longan fruit
Authors S.G. Su, X.W. Duan and Y.M. Jiang
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Abstract

Longan mainly grown in South-east Asia is highly prized fruit in the international market for its white, translucent aril and attractive yellow-brown skin. The fruit is highly perishable and has a short life. Aril breakdown with no apparent symptoms of pericarp browning and decay is a major factor limiting the storage life and marketability of longan fruit. Experiments were conducted to investigate changes in electrical conductivity of intact longan fruit and then test if the electrical conductivity can be used as an index of the aril breakdown. Longan fruit of three major cultivars, Shixia, Chuliang and Wuyan, in Guangdong were stored at 25°C and 80-90% relative humidity and then used for evaluation of aril breakdown every 2 days. 'Chuliang' fruit exhibited the highest rate of the aril breakdown during storage, followed by 'Wuyan' and 'Shixia'. Four various soaking times (0.5, 1, 2 and 3 min) were used to comparatively measure electrical conductivity. The electrical conductivity of intact longan fruit during storage, increased gradually with the occurrence of the aril breakdown. Soaking time with a range of 1-2 min can well present the electrical conductivity of intact longan fruit in relation to the aril breakdown. For cv. Shixia, the electrical conductivity values with soaking times of 1 and 2 min were apparently associated with the aril breakdown indexes, with their correlation coefficients being 0.9717 and 0.9849, respectively. Thus, application of electrical conductivity could exhibit potential for quantitatively evaluating the degrees of the aril breakdown of longan fruit during storage.