

Minimizing the Postharvest Losses of Avocado (*Persia americana*) by Determining the Maturity Indices

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The avocado (*Persia americana*) fruit is a climacteric fruit which exhibits high postharvest respiration and limited shelf life. It is difficult to determine the proper maturity stage of avocados by observing the fruits externally. Identification of proper maturity level can minimize the postharvest loss in avocados and ensure better quality in commercial purchasing. The aim of this study was to minimize the postharvest losses in avocado at the retail chain pack-house by determining the maturity indices and to identify the maturity stage of avocados for commercial purpose. Avocado variety Pollock fruits were purchased from selected suppliers in Matale and Kandy areas. The fruits were categorized and scaled based on the maturity/ripening stage by manual pressing. A maturation scales (1-4) of avocados was used: 1-raw, 2-moderately ripen, 3-ripen and 4-over ripen. Fruits were analyzed for physiochemical parameters: dry matter content (DMC), electrical conductivity (EC), fat content (FC), density and total soluble solid (TSS). Results showed an increasing trend in both DMC and EC related to avocado maturity and there was positive correlation between EC and DMC of avocado pulp ($r=0.8503$), which is expressed by regression equation $y = 98.741x + 321.33$. DMC and FC also had a high positive correlation ($r=0.9086$) and there was no any strong correlation between both avocado density ($r=0.0759$) and TSS (0.2896) with DMC. Therefore, DMC, EC and FC can be used as maturity indices of Pollock avocado fruits in commercial purchasing which at the range of (18-21%) DMC, (2100-2400 $\mu\text{Sicm-1}$) EC and (6.9-7.9%) FC. Hence, the postharvest loss of avocado variety Pollock can be minimized by the use of maturity indices of DMC, EC and FC.

Keywords: Avocado, Maturity indices, Postharvest losses, Physiochemical parameters, Climacteric fruit