

## **The Clay Pot Cooler: Zero Energy and Cost-Effective Storage Method for Postharvest Storage of Leafy Vegetables**

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The zero-energy clay pot coolers are an eco-friendly system with low construction costs. This technology is based on the principles of a passive evaporative cooling mechanism. Clay pot coolers have been shown to effectively increase the shelf-life of many fresh commodities. The present study was conducted to evaluate the effectiveness of the evaporative clay pot coolers in preserving the postharvest quality of four selected leafy vegetables including, kankun (*Ipomoea aquatica*), gotukola (*Centella asiatica*), lettuce (*Lactuca sativa*) and thampala (*Amaranthus* spp.). Freshly harvested leafy vegetables were separated into bundles weighing about 200 g and stored under three different storage conditions, *i.e.*, room temperature storage, refrigerated storage, and clay pot cooler storage, for seven days. The average temperatures and relative humidity in room temperature storage, refrigerated storage, and clay pot cooler storage were 27.7 °C and 76.1%, 7.1 °C and 58.2%, and 25.6 °C and 93.6%, respectively. Average cooling efficiency of clay pot coolers was 66.7%. The physiological weight losses of leafy vegetables were significantly reduced during clay pot cooler storage. At the end of the storage period, chlorophyll content, soluble solids content, color changes, and the visual quality of leafy vegetables were significantly maintained in clay pot cooler storage compared to room temperature storage. Based on the results of this study, it can be concluded that the clay pot cooler is a better alternative storage method to preserve the quality of leafy vegetables during their storage.

**Keywords:** Clay pot cooler, Leafy vegetables, Quality, Shelf-life

*We acknowledge the research assistance provided by the Department of Agricultural Engineering, Faculty of Agriculture, University of Peradeniya. Further, the financial assistance received from the AHEAD/ELTA/ELSE Department Proposal to purchase the required laboratory and field equipment is greatly appreciated*

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