

EFFECT OF LOW COST EVAPORATIVE COOL CHAMBER ON THE SHELF LIFE AND QUALITY OF *Amaranthus* sp.

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ABSTRACT

Postharvest losses and shelf life are the major problem in marketing of leafy vegetable *Amaranthus* in Jaffna peninsula, Sri Lanka. A lowcost evaporative cool chamber with the capacity of 50kg of vegetables was constructed to reduce this problem. The aim of this study is to compare the storage period of freshly harvested *Amaranthus* whole plant kept inside the cool chamber and at ambient environment. Initially maximum and minimum temperatures and relative humidity inside and outside the cool chamber were recorded. Then the loss of weight, rotting percentage, shedding percentage; ascorbic acid content, microbial count and sensory characters of the *Amaranthus* kept under both conditions were evaluated daily. The sensory characters like colour, texture, shedding, rotting and overall acceptability of all the samples were evaluated using a hedonic scale. Maximum and minimum temperature inside the cool chamber was lower than ambient values by 3.3 to 6.3°C and by 3.7 to 5.7°C respectively. The average relative humidity inside the cool chamber was 13.0 to 23.0% higher than the ambient value. Weight loss, rotting, shedding percentage, microbial count and ascorbic acid content of *Amaranthus* were significantly lower in cool chamber than at ambient ($p < 0.05$). The sensory characters of *Amaranthus* were significantly higher in the crop kept in cool chamber than at ambient ($p < 0.05$). The microbial counts were also low in stored product than ambient was within the acceptable limits for three days. The shelf life of *Amaranthus* kept in cool chamber was 3 days and this was only half a day for the samples kept at ambient.

Keywords: *Amaranthus*, Low cost evaporative cool chamber, Ambient, Shelf life