

Field heat removal by hydro cooling on storage life of Willard mango

Perera A.S.P.D.A., Champa W.A.H. and Prasanna P.H.P. (2010) Effect of field heat removal by hydrocooling on storage life of Willard mango. Sri Lankan J. Agric. Sci. 47: 94 – 107.

The experiment was conducted to find out the effect of field heat removal by hydro cooling in prolonging storage life of mango variety Willard. The experiment was conducted in two steps. The best hydro cooling temperature was determined by hydro cooling temperature by hydro cooling of fruits 10 ± 1 to $14 \pm 1^\circ\text{C}$ and compared with fruits washed in water at ambient temperature (28.1°C) as the control. The water used for experiments was treated with CaCl (6%w/w) and chlorine (200ppm). The temperature of fruit pulp was recorded at five minutes intervals to determine the half cooling time. Treated fruits were packed in a crate stored inside an evaporative cooling device 25°C (95-100%RH) for storage study. Physiological weight losses, firmness peel and flesh colour, TA, pH, TSS and disease frequency were measured at three day interval and sensory evaluation was conducted after seven days of storage period. The best hydro cooling temperature was $10 \pm 1^\circ\text{C}$ which delayed ripening. Mangoes hydro cooled $10 \pm 1^\circ\text{C}$ were stored at 12°C and $28-30^\circ\text{C}$ in combination with RH range 65-75% and 65-85% respectively. Quality evaluation was determined by using physico-chemical parameters and visual quality in seven days intervals for period of 21 days and sensory evaluations were conducted after 5 and 21 days of storage period. The results revealed that the half cooling time of Willard mango variety hydro cooled to $10 \pm 1^\circ\text{C}$, $14 \pm 1^\circ\text{C}$ and water at ambient temperature (28.1°C) was 5.5 ± 1.3 , 12.8 ± 1.25 , 3.83 ± 0.49 min respectively. Ripening delayed by 21 days when stored at 12°C compared to fruits stored under ambient conditions.