ABSTRACT

Mango fruit is valuable in Kenyadue to its nutritive and economic value. However, at least 40% to 45% of the fruit is lost during postharvest handling due to inadequate storage facilities. This study aimed at investigating the effect of combination of near infrared reflection (NIR) and evaporative cooling (EC) on quality of mangoes. Freshly mature Apple and Kentmangoes were selected, cleaned and stored in NIR store (S_{NR}). The shelf-lives and quality attributes namely physiological weight, colour and firmness were evaluated on daily basis against similar fruits stored in an equivalent non-NIR store (S_{NNR}). Storage under room conditions (R_C) was used as control experiment. Digital scale, Minolta colour difference meter and penetrometer were used to measure the physiological weight, colour and firmness, respectively. The results showed significant difference (P<0.05) in the shelf-lives and physiological weight losses for the fruits stored in S_{NR}, S_{NNR} and R_C. Except for the colour of the flesh for Kent, the NIR did not have any significant effect (P>0.05) on the colour of the peel or flesh of the Apple. The NIR had no significant effect (P>0.05) on the firmness of the peel or flesh for Apple except forKent. This study showed that the combination of NIR and EC has a potential of improving the shelf-life and quality of mangoes. This technology can provide an applicable solution to storage challenges facing subsistence mango farmers leading to reduced postharvest losses hence improved food security and standard of living.