EFFECT OF STAGE OF MATURITY AT HARVEST AND ARTIFICIAL RIPENING ON POSTHARVEST QUALITY OF "RED LADY" PAPAYA

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ABSTRACT

Papaya (*Carica papaya* L.,) is one of the major tropical fruit crop. Papaya is highly perishable and it should handle very carefully since it is having an easily damageable soft skin. The highest percentage of postharvest loss is found in papaya (46 %) compared to banana and pineapple (20 – 30 %). Red Lady papaya is an introduced variety which is having red, hard and thick flesh. To minimize postharvest losses, farmers harvest immature fruits and allow for natural ripening. It causes poor peel color and flesh color development and high postharvest losses during marketing. To overcome this problem, identification of correct maturity stage to harvest and method to ripe the Red Lady papaya were investigated from this study. Red Lady papaya was harvested at four different maturity stages namely color break, 10 % yellow, 20 % yellow and 30 % yellow and ripen naturally and artificially by using 0.01 ppm ethrel. Quality parameters of the peel and flesh color, pH, TA, TSS, time taken to natural disease development and percentage of weight loss were measured. *Fusarium* conidial suspension was artificially inoculated to the fruits and disease development, disease sevierity and time taken to disease development were measured for artificially and naturally ripen fruits harvested at different maturity stages. Non - Parametric data were analyzed by using Friedman test. Parametric data were analyzed by using two way ANOVA, mean separation was done using General Liner Model at $p \leq 0.05$ level and MINITAB 14.1 statistical software was used. All the data were taken at table ripe stage. There was a significant difference between four maturity stages and both ripening methods. Highest peel color, flesh color and TSS were given by artificially ripen Red Lady papaya harvested at 30 % yellow stage and minimum values recorded at naturally ripen fruits harvested at color break stage. Minimum TA, time taken to natural disease development, *Fusarium* disease development, disease sevierity, percentage of weight loss and time taken to ripe were recorded at artificially ripen harvested at 30 % yellow stage and maximum values recorded at naturally ripen harvested at color break stage. According to the above results 30 % yellow maturity stage is more suitable for artificial ripening to minimize the postharvest losses and to increas the peel and flesh color development of Red Lady papaya.