

Pre-harvest Treatment of mango (*Mangifera indica*) var. TJC and var. Karthakolombaan with Enhanced Freshness Formulation (EFF)

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Introduction

Pre-harvest treatment methods are practiced in commercial mango plantations for disease control, induction of flowering and plant growth regulation etc. However, limited information is available on methods adopted to retain fruits on trees for extending the harvesting season. This novel approach uses pre-harvest spray treatments of hexanal incorporated Enhanced Freshness Formulation (EFF) which has proved effective in reducing the membrane degradation by the inhibition of Phospholipase D enzyme (University of Guelph, Canada).

Methodology

The spray trials were conducted at Ellawala Horticulture Mango Farm, Galkiriyagama. Mango trees suitable for the trial were selected and tagged from the same block of land/field but far enough from each other so that the treatments would not interfere. The field experiment was designed as 3 trees per treatment. The trees were sprayed with 2% EFF till dripping. The spraying pattern was modified according to fruit variety and fruit setting time. Experiments were carried out for both TJC and Karthakolomban (KK) mango varieties in 2 & 3 time frequency.



PREHARVEST SPRAY FOR TJC

S⁰: Fruits sprayed 3 times with 2% EFF 20, 40, & 60 days before harvest.

S: Fruits sprayed 2 times with 2% EFF 20 & 40 days before harvest.

(Note: TJC – Fruit setting to Harvesting 100-120 days)

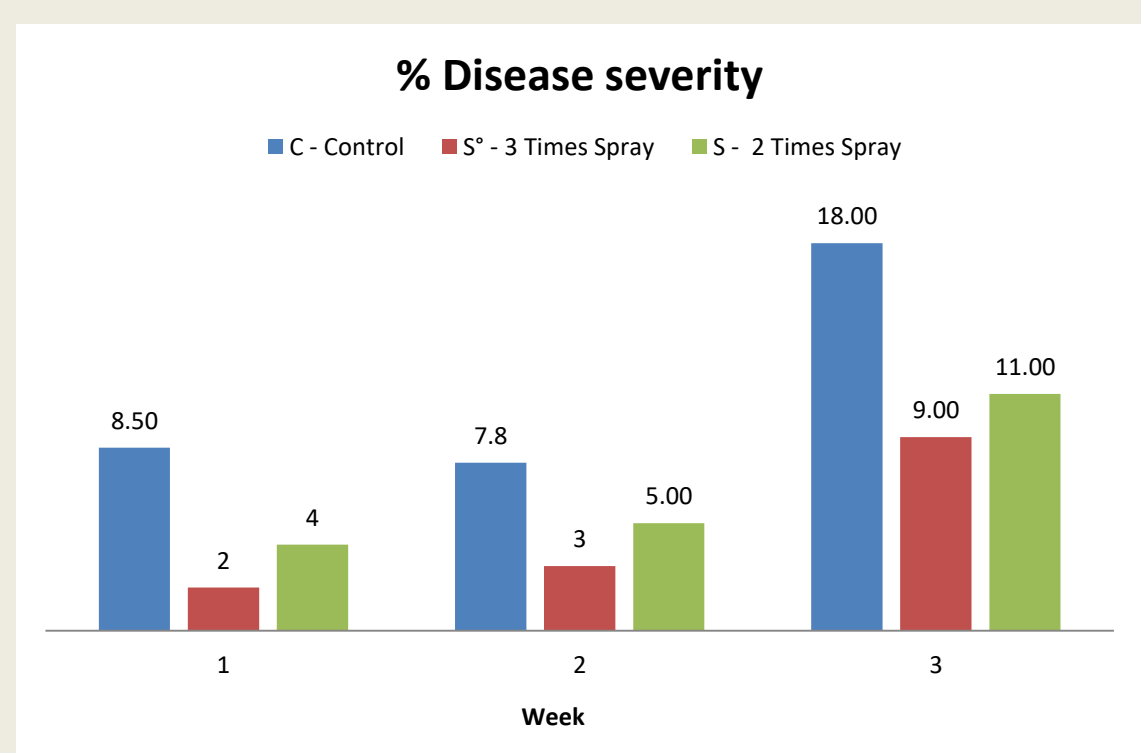
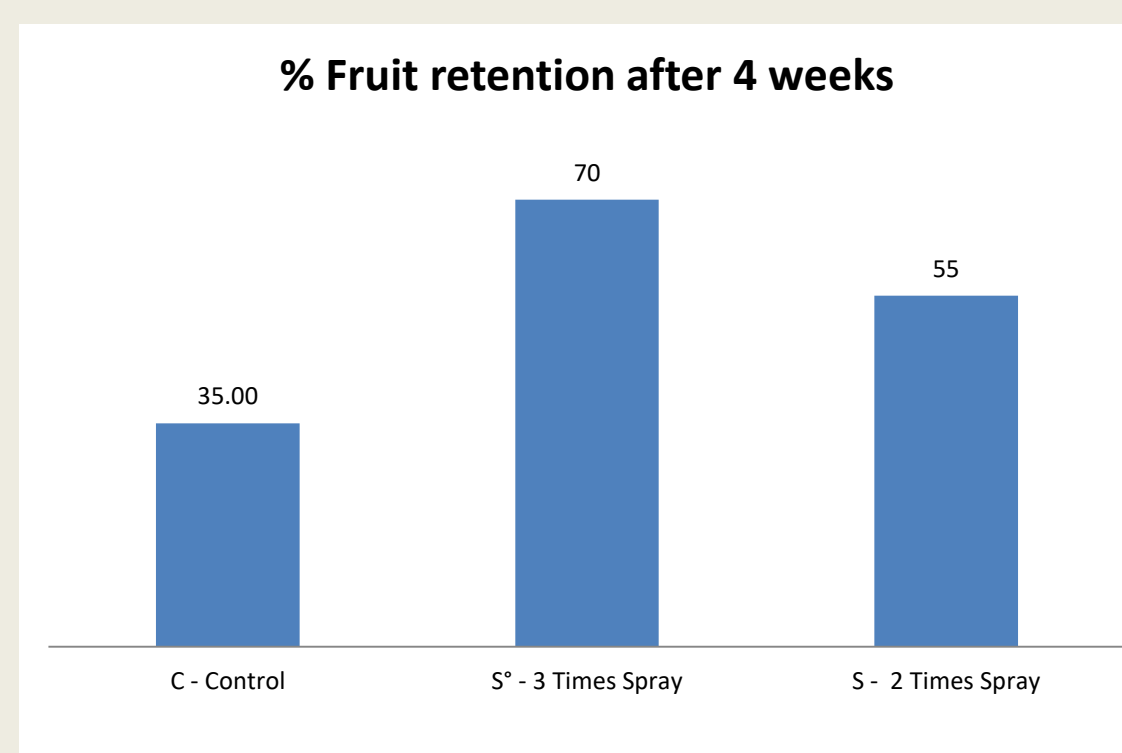
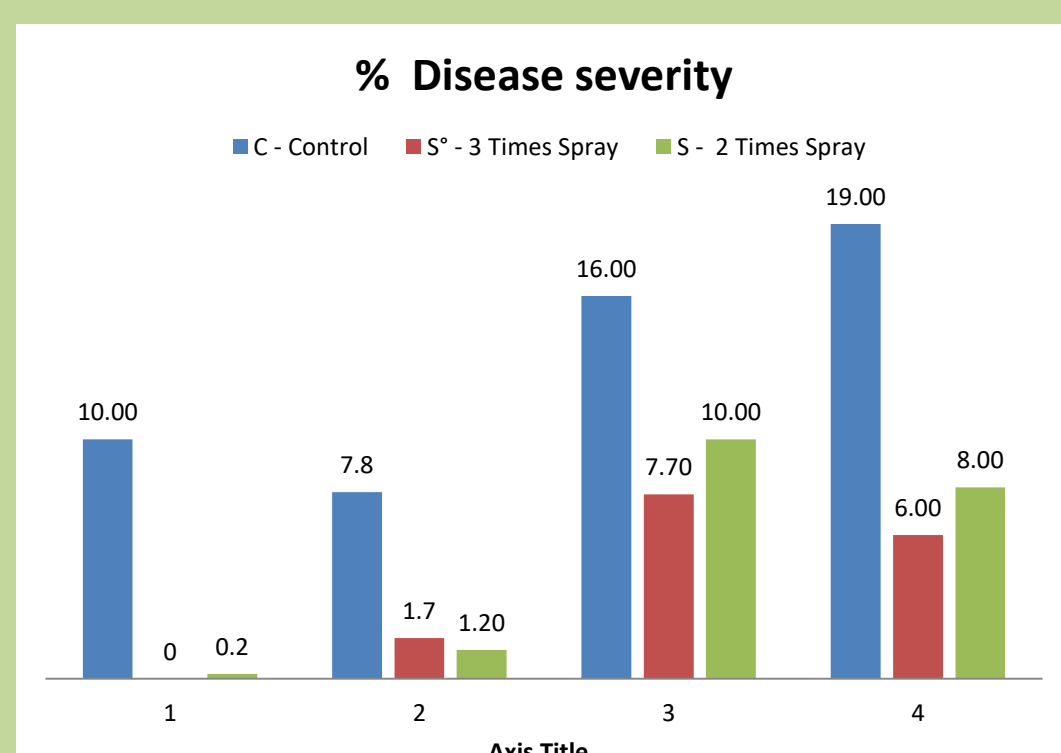
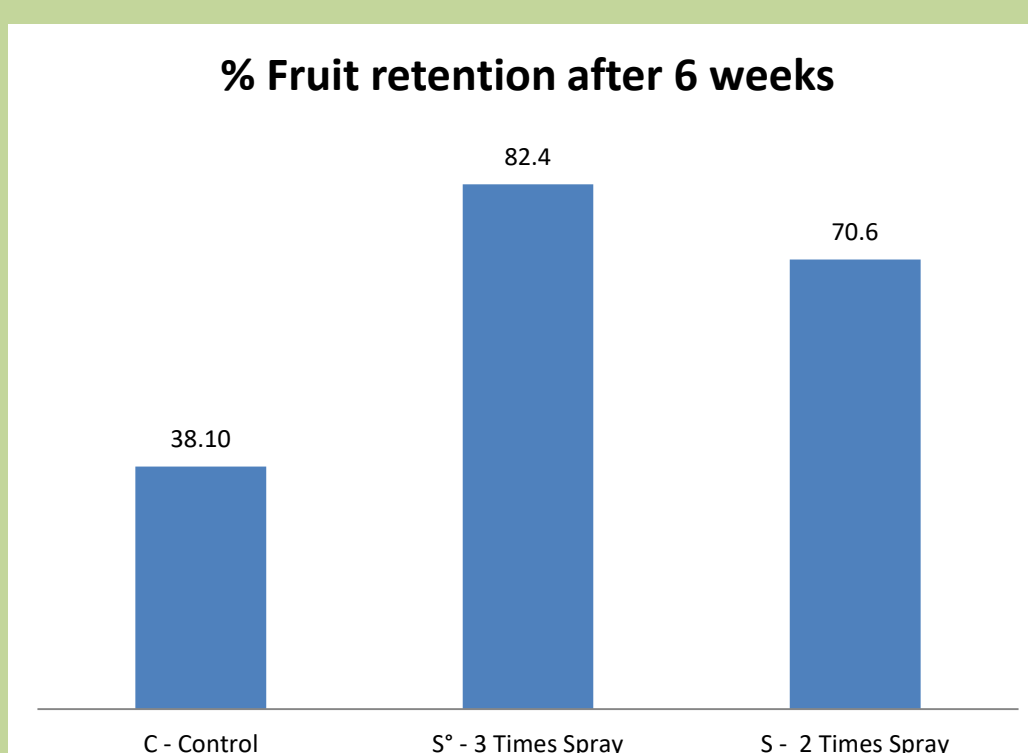
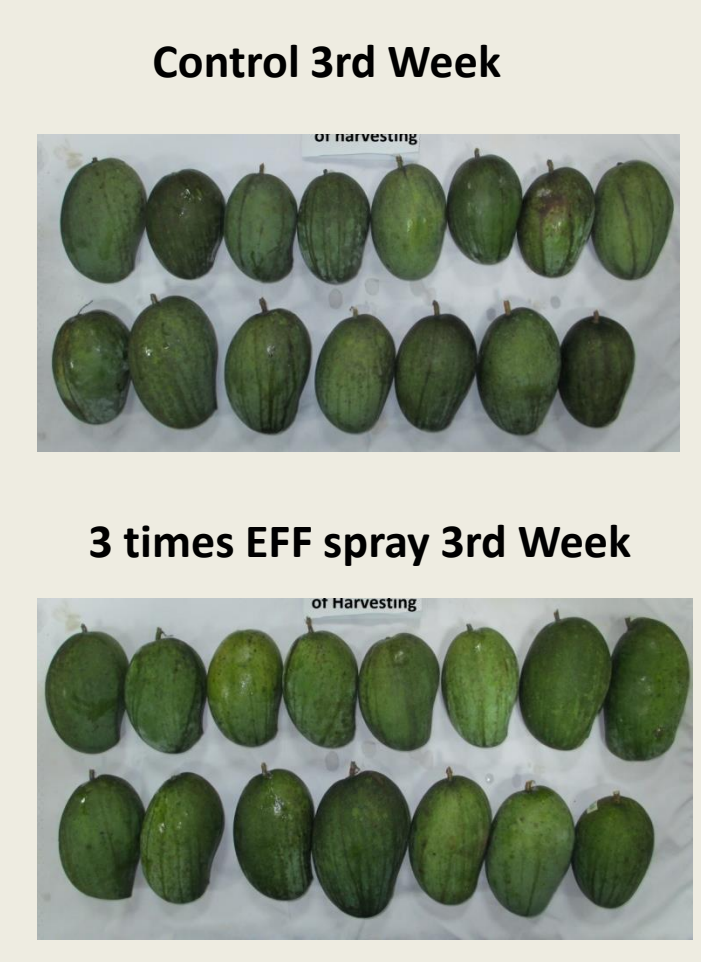
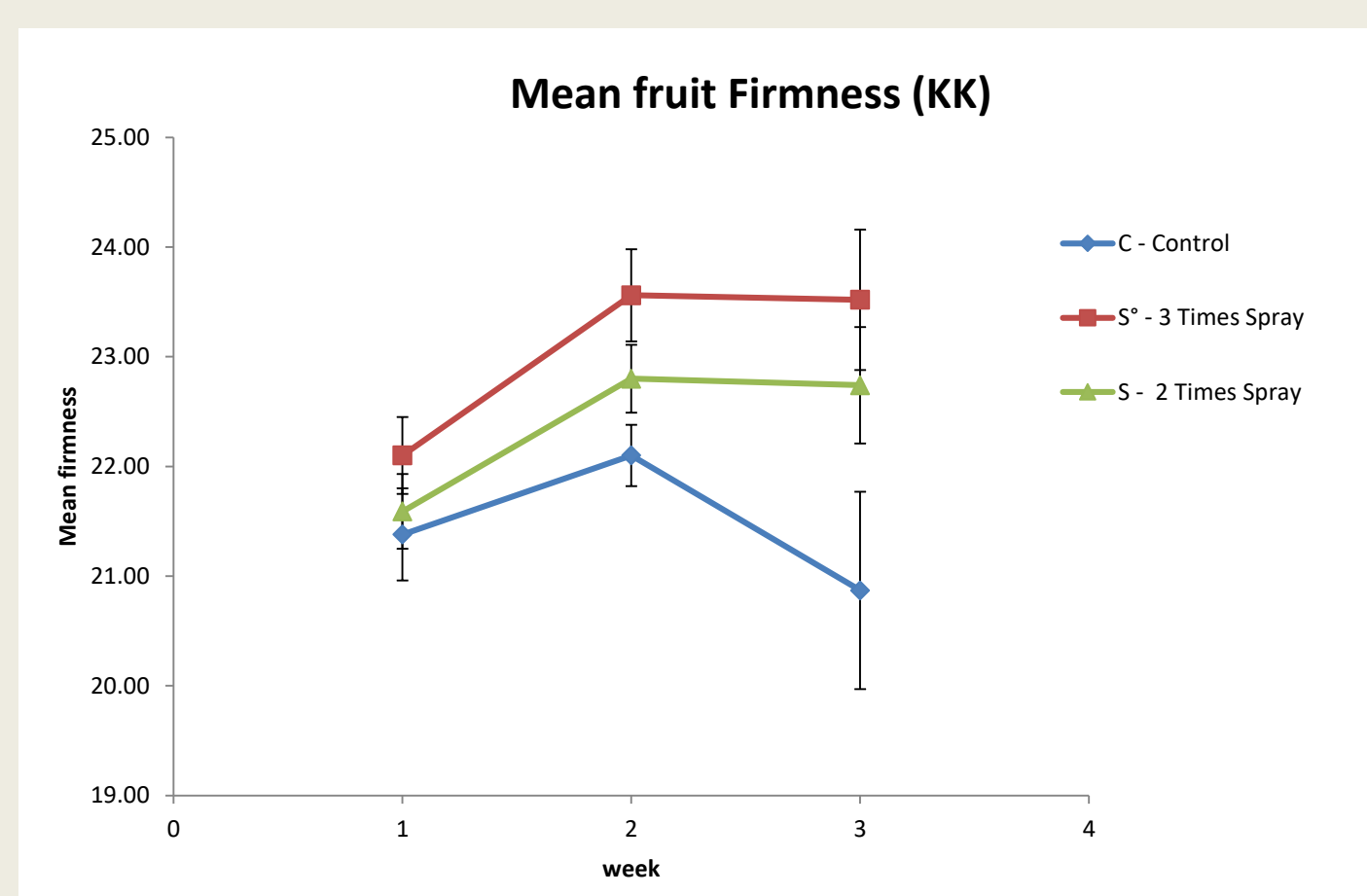
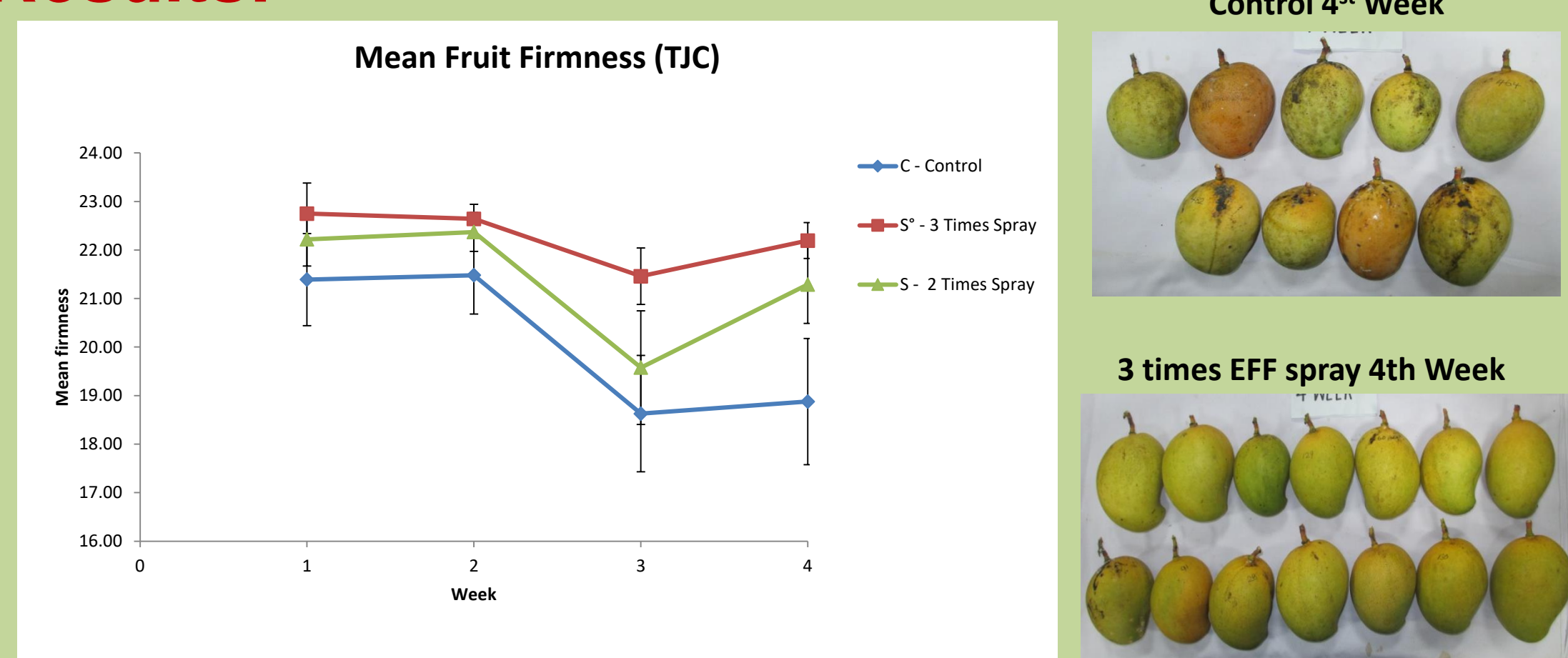
PREHARVEST SPRAY FOR KK

S⁰: Fruits sprayed 3 times with 2% EFF; 15, 30 & 45 days before harvest.

S: Fruits sprayed 2 times with 2% EFF, 15, 30 day before harvest.

(Note: KK – Fruit setting to Harvesting 80-90 days)

Results:

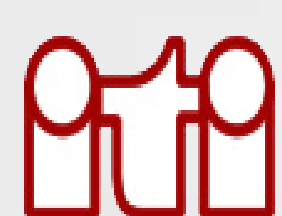


* No significance were observed With respect to pH, TSS, acidity, flesh & peel color for both TJC & KK varieties of mangoes for 7th day to 28th day harvesting period comparing to Control fruits.

Conclusion

The fruits sprayed with EFF were able to retain consistent firmness throughout the harvesting period of 4 weeks. EFF has proven to be effective in maintaining the fruit skin firmness of TJC mango with increased number of spraying times. Harvesting season of KK variety of mango and TJC variety of mango could be extended up to 4 weeks and 6 weeks respectively using 3 time EFF spray treatment.

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