

Title Hot water treatment affects ripening quality and storage life of mango (*Mangifera indica* L.)

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Abstract

Keeping in view hot water treatment (HWT) protocols of importing *cv. Sindhri* countries like Iran and China, research trials were conducted in collaboration with industry in which mangoes *cv. Sindhri* were subjected to HWT at 45 degree C-75min and 48 degree C-60min along with control (wash only) to determine its effect on fruits ripening behaviour, shelf life and quality. A fruit coating, Fresh Seal P (2%) was also applied in combination with HWT at 48 degree C-60min. After HWT application, fruits were ripened (without storage) at ambient temperature or were stored at 13 plus minus 2 degree C and 85 plus minus 5% RH. Stored fruits were removed after 7, 14 and 21 days and were ripened at ambient temperature (24 plus minus 1 degree C, 68-70% RH). HWT effects on physical and biochemical characteristics were evaluated. Fruit subjected to HWT at 45 degree C-75min and naturally ripened (without storage), showed non-significant difference for various quality parameters as compared to control (wash only) while maintaining the shelf life of fruits (six days). Application of HWT at 48 degree C-60min decreased the ripening period i.e. three days. While, non-significant differences among treatments during storage showed that HWT does not affect the post-storage quality of fruit. Among different treatments, fruit subjected to HWT at 45 degree C-75min produced better results as compared to HWT at 48 degree C-60min. TC contents were found highest in washed only fruits (62.78 mug/g) followed by HWT at 45 degree C-75min. (59.39 mug/g). Fruits subjected to higher temperature during HWT developed more yellow and uniform colour. Rest of the treatment results were non-significant.