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## **Postharvest Hot Water Treatment (HWT) suppressed the fruit rot and enhanced the quality of papaya fruit cultivar “Red lady” during cold storage**

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**P**apaya (*Carica papaya*) fruit has climacteric, rapid ripening and perishable nature; which makes it susceptible to postharvest fruit rotting resulting in less shelf life and severe postharvest losses. Hot water treatment of horticultural commodities prior to storage has potential to reduce the decay incidence. This experiment was carried out to investigate the effectiveness of hot water treatment on papaya fruit for minimizing the rotting and increasing the storage life. For this purpose, mature unripe papaya fruit were treated with hot water at different temperatures (50°C, 52°C, 54°C) for 5 minutes and stored at 12 °C temperature and 85-90% RH for 28 days. Different attributes including weight loss, firmness, fruit decay, total soluble solids, titratable acidity, ripening index, ascorbic acid, total phenolics, total antioxidants and the activities of antioxidative enzymes were evaluated on fortnightly interval. After completion of storage period, less fruit weight loss (4.63 %) and decay (5.1%); higher firmness (12.92 N) was recorded in papaya fruit treated with 54 °C as compared to the control. While, the minimum total soluble solids (6.91 Brix), maximum titratable acidity (0.056%) was observed in HWT 52°C treatment. Similarly, ascorbic

acid (33.33 mg/100g), total phenolic contents (34.75), total antioxidants (47.50), and antioxidative enzyme activities were also maximum in case of papaya fruit treated with HWT 52°C. It was shown by the present study, that papaya fruit treated with HWT 52°C preserve the quality of fruit throughout storage however HWT 54°C treated papaya fruit showed less decaying. Overall, papaya fruit treatment with HWT @ 52-54°C proved successful for suppressing the fruit rot and increasing the shelf life.

**Keywords:** Papaya; Fruit Rotting; Total Antioxidants; Total Phenolic Contents; Catalase; Superoxide Dismutase; Peroxidase.

### **Biography**

Aliya Hanif was currently working as an IPFP Fellow in Plant Breeding and Genetics Division at Nuclear Institute for Agriculture and Biology, Pakistan Atomic Energy Commission, Faisalabad. Her major expertise includes Plant production, Plant nutrition, stress physiology, postharvest physiology, and physical, physiological, and Biochemical profiling of Horticultural commodities.

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