Pre-storage exogenous application of boric acid extends storability and maintains quality of pear fruits

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Abstract

Present studies were carried out to investigate the potential of boric acid to extend storage the life of pear (*Pyrus pyrifolia* L.) cv. 'Patharnakh' fruits. Pear fruits were dipped in aqueous solutions of different concentrations (0- water dip, 1–3%) of boric acid for 5 min and thereafter stored at 0–1 °C, 90–95% RH for 70 days. Compared with control, boric acid 3% treatment retarded the degradation of fruit colour, titratable acidity (TA) and soluble solids content (SSC) and maintained higher fruit firmness by suppressing the activity of cell wall degrading enzymes like pectin methyl estarase (PME) and cellulase. Alongwith this boric acid 3% treated fruits also retained the higher total phenolic content (TPC) by retardation of polyphenol oxidase (PPO) activity than control. At the end of storage, all boric acid treatment exhibited significantly higher sensory quality than control. Furthermore, analysis of correlations and regressions showed that many quality attributes were interdependent. It can be summarized that postharvest dip treatment of boric acid (3%) was most effective to extend the storage life of 'Patharnakh' pear fruit.