

Postharvest management of citrus fruit in south Asian countries

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Acta Horticulturae 1065: 1669-1676. 2015.

Abstract

South Asian countries including India, Pakistan, Bangladesh, Nepal, Bhutan and Sri Lanka produce about 12 million tonnes of citrus fruits, contributing to roughly 12.0% of world production. Citrus is among the top three fruits in the region. With a population of 1597 million, the per capita /annum citrus fruit availability is 7.67 kg. Mandarin and sweet orange are the major citrus fruits constituting 84%, followed by acid lime, lemon and other citrus (16%). Postharvest management is mostly on conventional lines. In north-west India and Pakistan, Kinnow (King × Willowleaf hybrid) is sorted, washed, waxed and packed in modern packing houses. Harvesting is done by clippers for Kinnow, by snapping for ‘Nagpur’ mandarin (*Citrus reticulata* Blanco) and by bamboo harvesters for ‘Khasi’ mandarin (*Citrus reticulata* Blanco). Total losses from farm to retail level in the region are 25-35% and vary with season and commodity. Acid lime losses increase with the onset of monsoon. Wooden boxes are used for mandarins. Oranges and acid limes are packed in jute bags. Bamboo containers ‘doko’ are used in Nepal, Bhutan and North-East Hill (NEH) region of India for ‘Khasi’ mandarin. Transportation of loose fruit in trucks is common. Refrigerated storage warehouses and modern packinghouses are being established. Citrus fruits are sold in supermarkets. Modified atmosphere packaging increased shelf life of mandarins up to 3 weeks. The use of evaporative cool chambers (1.5-8 tonnes capacity and very low energy consumption) extended the storage life of Nagpur mandarin, Mosambi orange (*Citrus sinensis* Osbeck), acid lime (*Citrus aurantifolia* Swingle), Kinnow and grapefruit (*Citrus paradise* Macf.) up to 21, 40, 30, 60 and 77 days in respect to 10,14, 5, 14, and 27 days at ambient condition, respectively. Cellar stores are used in Nepal and Bhutan. The export of Kinnow from Pakistan is increasing. India exported nearly 55260 tonnes of citrus fruits in 2010. The value chain and postharvest overview in south Asia including postharvest research, conventional and innovative handling, storage structures, modern infrastructure and future challenges and prospects are discussed in this review paper.