

**Title** Shelf life extension and quality improvement of pomegranate fruits using combination of chemicals, hot water and packaging

**Author** Farid Moradinezhad, Mehdi khayyat, Hoda Saeb, Marzieh Mohammadrezai, Mehdi Jahani

**Citation** Abstracts of 7<sup>th</sup> International Postharvest Symposium 2012 (IPS2012). 25-29 June, 2012. Putra World Trade Centre (PWTC), Kuala Lumpur, Malaysia. 238 pages.

**Keywords** *Punica granatum*; salicylic acid; calcium chloride; hot water

### Abstract

The present research was carried out to examine the effect of packaging and different chemical treatments on fruit quality and shelf life of pomegranate fruits cv. Shishe Kab. Fruits were immersed in hot water (50°C) for 3 minutes and then dipped in salicylic acid (1 or 2 mMol/l) or calcium chloride (% 1 or % 2) or combinations of both for 3 minutes at 20°C. Thereafter, fruits were divided into three lots based on packaging, includes no packaging, polyethylene bag with four holes (3 mm diameter) and seledon before stored at  $4 \pm 1^\circ\text{C}$ . Quality parameters and shelf life were assessed after 24 weeks. Treated fruits with salicylic acid alone or in combination with calcium chloride had higher shelflife and lower weight loss compared to the control. However, combination of chemical treatments and packaging was more effective in shelflife extension. The highest shelf life was observed in treated fruit with salicylic acid alone (% 75) or in combination with calcium chloride (% 50) as they had marketable quality after 24 weeks, while control fruits were decayed at week 19. In general, fruits that were packed in plastic bags or covered with seledon had lower weight loss compared with non-wrapped fruit regardless of the treatment. The lowest weight loss was in treated fruits that were packed in polyethylene bags (% 1.2), followed covered fruits by seledon (% 2.5) whereas it was high in non-wrapped fruits (% 9). The results showed that combinations of hot water + salicylic acid or hot water + salicylic acid + calcium chloride treatment is more effective in shelf life extension and quality improvement of pomegranate fruits when they were packed in polyethylene bags or covered with seledon.