

Title Diverse postharvest responses of tomato fruits at different maturity stage to hot water treatment

Author S. Kalantari, M. Hatami, M. Delshad

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

Keywords tomato; chilling injury

Abstract

Sensitivity of tomato fruit to chilling injury limits storage and marketability of stored fruits. As a recommended postharvest treatment, effect of hot water treatment (HWT) on reducing chilling injury as well as quality traits' variation of tomato fruits during storage life were investigated. Tomato fruits were harvested at three ripening stages; mature green, pink, and red. They were treated by hot water at 45 °C for 15 min then were placed in one of three storage temperature conditions including 5 °C, 13 °C and a simulated condition (SC) of the time between harvest and consumption by consumer. Quality analyses were carried out at the beginning and every ten days of storage as well as after final three days placing at room temperature as shelflife evaluation. Fruit color, lycopene, weight loss, titratable acidity (TA), total soluble solids (TSS), firmness and chilling injury (CI) were measured and evaluated during the experiment. HWT had a significant effect on reduction of CI in mature green tomatoes but it had slight or no effect in pink and red fruits. HWT caused delay in surface color development to some extends and resulted in reducing weight loss but its effect on titratable acidity (TA), total soluble solids (TSS) and firmness wasn't significant. This study generally confirms that effect of HWT on postharvest behavior of tomato fruits is noticeable; of course it affects different maturity stages oftomato differently. Ifreduction of CI be considered it seems contrast to mature green tomatoes, HWT is an unnecessary treatment for pink and red fruits.