

Title Intermittent warming interactions on the ripening of green mature tomatoes
Author P. Biswas, A.R. East, E.W. Hewett and J.A. Heyes
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Abstract

Intermittent warming (IW) is a useful postharvest technique for reducing chilling injury in fruit such as stonefruit, citrus, apples, mangoes and bell peppers. Despite positive results, IW is rarely practised commercially because of the practical difficulties associated with periodically warming large volumes of fresh produce. A deeper understanding of the mechanisms by which IW exerts its beneficial effects may allow us to identify novel techniques that will harness the benefits of IW without the logistical problems. Previous studies of IW on breaker 'Durinta' tomatoes resulted in improved colour and flavour and a lower firmness and pitting at the completion of storage and after subsequent shelf life. Factors which may influence the efficacy of IW include fruit maturity and composition, magnitude, length and timing of the heating period during cold storage and rate of temperature change during warming and cooling. This study investigated changes in tomato fruit maturity on fruit physiology (ethylene production and respiration rate) and quality (colour, stiffness, incidence of chilling injury) in response to IW using a regime of 6 d at 8°C and 1 d at 20°C.