

**Title** Low temperature conditioning to alleviate chilling injury of mango (*Mangifera indica* L. cv Carabao) fruits

**Author** A. J. D. Rodeo, and E. B. Esguerra

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**Keyword** chilling injury; mango fruit; low temperature

### **Abstract**

Green mature 'Carabao' mango fruits were subjected to different low temperature conditioning treatments of 10°C and/of 13°C for three days prior to storage at 7°C for four weeks.

Low temperature conditioning treatments alleviated chilling injury (CI) symptoms in 'Carabao' mango fruits storage at 7°C for four weeks. Fruit which were conditioned for three days at 13°C and those conditioned for six days, that is, three days at 13°C then three days at 10°C, exhibited reduced severity of lenticels spotting, one of the symptoms of CI in this study. Moreover, conditioning treatments of 13°C or 10°C for three days reduced the severity of peel discoloration and prevented the development of vascular browning.

An abrupt increase in respiration rate was observed in non-conditioned fruits held at 7°C for one day after transfer to a higher temperature. These fruits incurred higher CI symptoms, the manifestation of which coincided with a burst of ethylene production as compared to the relatively low ethylene production of conditioned fruits.

Normal ripening occurred in cold-stored when transferred to 25°C as shown by the decrease in firmness, increase in peel color, increase in total soluble solids content and decrease in titratable acidity. Fruit conditioned at 10°C for three days prior to storage at 7°C were of good quality until the 4<sup>th</sup> week of storage and were highly preferred by the sensory panelists.