

**Title** Supply chain improvement is limited by facilities and knowledge  
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### **Abstract**

For improvement to occur in supply chains, three elements are critical—motivation, knowledge and capacity. Businesses must "want to", know "how to", and have the "means to" improve. This paper presents a case to show how the lack of facilities to maintain product quality throughout the supply chain (capacity) and poor knowledge in how to manage facilities is limiting the improvement of domestic and export mango supply chains. Mango is a climacteric fruit and the rate of respiration is affected by the temperature and atmosphere of the surrounding air. Temperature, humidity, and ethylene and carbon dioxide levels must be managed effectively during transport, storage and ripening. Temperatures above and below the optimum levels affect softening, loss of acidity, and skin degreening and appearance. Controlling ripening with ethylene is essential to achieve consistent ripening. A build up of carbon dioxide during ripening from rapidly respiring fruit reduces degreening and softening and can lead to off odours and flavours and skin damage. Monitoring of domestic and export supply chains during the 2006/07 season found a lack of facilities for ripening and storage, particularly in wholesale and retail centres in Australian, Singapore, Hong Kong and China. Facilities for controlled ripening with ethylene were limited and knowledge in how to manage the ripening process for Australian mango cultivars was low. Commercial monitoring of fruit temperatures and atmosphere in the facilities by the operators was also generally low. We found that ripening and storage conditions were often different to expectations. For example, carbon dioxide levels up to 5.3% were detected. Knowledge and management can be improved through training but investment is required to improve facilities.