

**Title** Reduction of woolliness in 'Douradão' peaches treated with ethylene and 1-methylcyclopropene

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### **Abstract**

Peaches (*Prunus persica*) deteriorate easily at room temperature, making necessary the use of cold storage to reduce postharvest losses of fruit. However, the low temperature can promote physiological disorders associated with the cold, which limit the storability and peaches acceptance by the consumer. In 'Douradao' peaches, the woolliness is the main physiological disorder caused by cold, promoting dryness in the pulp, mealy appearance, juiciness and flavor loss. This study aimed to verify the efficiency of ethylene and 1-methylcyclopropene (1-MCP) in reducing woolliness and maintenance of postharvest quality of 'Douradão' peaches. The following treatments were applied; fruit (control); ethylene + 1-MCP before cold storage; ethylene before cold storage + 1-MCP after 30 days of cold storage; ethylene after 15 days of cold storage + 1-MCP after 30 days of cold storage; and ethylene before cold storage + ethylene after 15 days of cold storage + 1-MCP after 30 days of cold storage. The fruit were stored at 1°C for 30 days followed by 3 days at 22°C (simulated marketing). The woolliness was reduced in fruit treated with ethylene + 1-MCP before cold storage and ethylene before cold storage + 1-MCP after 30 days of cold storage. There was no significant difference between treatments for decay and were around 15%. Respiratory rate remained low and constant in fruit of all treatments during cold storage. During exposure to room temperature (22°C), respiratory rate was significantly higher in control fruit if compared to treated fruit. The firmness was lower in treatments where ethylene was applied after 15 days of cold storage. Ethylene associated with 1-MCP has potential to reduce woolliness and maintenance of quality of 'Douradão' peaches during cold storage.