

**Title** Woolliness and leatheriness in late peach cultivars under thermal conditioning and cold storage

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### **Abstract**

The purpose of this research was to study the control of physiological damages, such as woolliness and leatheriness, in late peach cultivars during cold storage. The research was carried out over the course of two years, using yellow pulp peaches ('Fordagrande', 'Maciel' and 'Peach') and white pulp peaches ('Chimarrita', 'Marli' and 'Chiripá'). The fruits, harvested at the -green stage, were acquired from a rural property located at Arroio dos Ratos/RS/Brazil. All the fruits were exposed to temperatures of 20°C and 75 ± 3% of U.R., in a B.O.D., for 0,24 and 48 h. The fruits were then kept in a cold chamber at 0 ± 0.5 and 92 ± 3% of R.H., for 28 d. The analyses, done from 4 to 6 h after the removal of the fruits from the cold chamber, were conducted at harvest time (day 1 - initial stage), after one day of thermal treatment, and at 7, 14,21 and 28 d as well as two days r each one of these days (7+2, 14+2, 21+2 and 28+2 d). The yellow pulp cultivars, regardless of delayed storage, did not sent any woolliness or leatheriness. The white pulp fruits, not submitted to delayed storage, developed either one or the other physiologic disturbances. Due to their low level of pulp firmness, control 'Chimarrita' and 'Marli' peaches, were classified as woolly. Control 'Chiripá' peaches, with pulp firmness over 30 N, presented leathery skin. High pectinmethylesterase enzymatic activity was verified in those fruits with woolliness. polygalacturonase activity was similar in both woolly and normal maturing fruits. Regarding the fruits which were found to be leathery, they had a high pectinmethylesterase enzyme activity and a low polygalacturonase enzyme activity as compared to woolly and/or normal fruits. Delayed storage for 48 h, in all cultivars, regardless of cultivar type and pulp color, provided advanced ripening. Nevertheless, delayed storage for 24 h was effective in the control of woolliness and firmness retention of white pulp cultivars.