

**Title** Inhibition of pulp browning and quality maintenance of late peach cultivars under thermal conditioning and later cold storage

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### **Abstract**

This study aimed at identifying the effect of delayed storage in the preservation of the quality, as well as the control of pulp browning during cold storage of late peaches. The research was conducted over two years (2002/03 and 2003/04), using yellow pulp peaches ('Maciel', 'Flordagrande' and 'Peach') and white pulp peaches ('Chimarrita', 'Marli' and 'Chiripá'). The fruits, harvested at mature-green stage, were acquired from a rural property located at Arroio dos Ratos/RS/Brazil. All the cultivars 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 °C and 92 ± 3% of R.H., for 28 d. The fruits were evaluated regarding: enzymatic activity of polyphenol oxidase (PPO), content of phenol, rotten occurrence, soluble solids and level of titratable acidity. The analyses, upon four and six hours after removal of the fruits from the cold chamber, were carried out at harvest period (day 1 - initial stage), after one day of thermal treatment and, on 7, 14, 21 and 28 d and after two days of each day, that is 7+2, 14+2, 21+2 and 28+2 d). After 28 d of cold storage plus 2 d under no controlled temperature and humidity, the yellow pulp cultivars, regardless of delayed storage, did not present any symptom of internal browning. At the same time, at the end of the experiment, these fruits also showed the appropriate qualities for commercialization and/or later consumption. When not submitted to delayed storage, after 14 d of cold storage plus 2 d out of the cold chamber, the white pulp fruits already presented some pulp browning. High activity of polyphenol oxidase was verified in the fruits with pulp browning. Phenol content was also higher in those fruits. From the results observed in the analyses of soluble solids, titratable acidity and rotten development, we can assume that these fruits were had an advanced ripening. Also, the delayed storage of white pulp fruits, for 48 h, provided advances in maturing. The same behavior was observed in yellow pulp fruits. Nevertheless, delayed storage for 24 h was effective in controlling pulp browning and for quality maintenance of the white pulp peaches cultivars.