

PHYSICO-CHEMICAL CHARACTERISTICS AND POLYPHENOL OXIDASE ENZYME ACTIVITY OF 'ESMERALDA' PEACHES DURING COLD STORAGE

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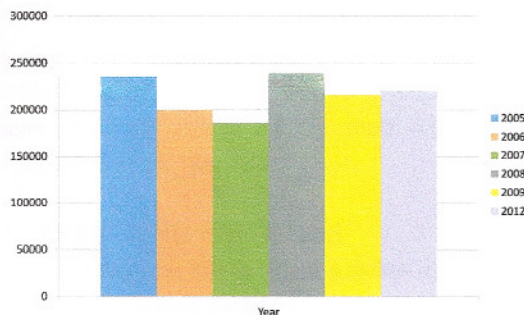
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1. INTRODUCTION

Brazil in 2010, had a production of 220,739 tons (Figure 1) and a planted area of 20,194 ha of peach trees (FAO, 2010).

Figure 1. Production of peaches and nectarines from 2005 to 2010.



Source: FAO, 2010.

Cold storage of peaches allows to prolong shelf life and regulate their commerce, but its post-harvest quality may be affected if not done properly. The objective of this study was to investigate the physico-chemical changes as well as the enzyme activity of polyphenol oxidase (PPO) during refrigerated storage of 'Esmeralda' peaches.

2. MATERIAL AND METHODS

'Esmeralda' peaches from Pelotas – RS were used in this work. The fruits were stored at 1 °C for 10, 20 and 30 days and left for 3 days at 25 °C. In each period the following analysis were performed: pH, total soluble solids (TSS), titratable acidity (TA), weight loss (WL) and PPO activity. After analysis of variance, means were compared by the Least Significant Difference (LSD) test ($P < 0.05$).

3. RESULTS AND DISCUSSION

TSS did not differ significantly among fruits stored at different periods. pH values were statistically different for the three storage periods, with higher values at 30 days, being 3.91. TA and WL did not differ statistically between samples of 10 and 20 days of storage. At 30 days, TA presented the lowest value (0.69 % citric acid), whereas WL was higher (16.09%). PPO activity showed no statistical difference in these periods, but there was a tendency to increase with longer storage.

Table 1. Values of TSS, pH, TA, WL and PPO activity in 'Esmeralda' peaches after 10, 20 and 30 days at 1 °C plus 3 days at 25 °C.

Dependent Variable	Storage period		
	10 + 3 days	20 + 3 days	30 + 3 days
TSS (° Brix)	11.97 A	12.30 A	13.00 A
pH	3.69 B	3.56 C	3.91 A
TA (% citric acid)	0.79 A	0.82 A	0.69 B
WL (%)	8.48 B	10.95 B	16.09 A
PPO activity	0.0025 A	0.0032 A	0.0061 A

Means followed by the same letter in line do not differ statistically ($P \leq 0,05$) by the test LSD.

4. CONCLUSION

It can be concluded that 'Esmeralda' peaches stored for 20 days have still quality for consumption.