

Title 'Marron Glacé' quality affected by storage conditions of the nut
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Abstract

Chestnuts conventionally stored, lose quality by dehydration, hardening and/or mold development, affecting its processing suitability for "marrón glacé" (candied nut). In this research, quality of "marrón glacé" prepared with fresh nuts stored during eight months at 0°C and 95% RH, under six different conditions were evaluated: Controlled Atmosphere with three gas concentrations: 0.03%CO₂/21%O₂ (CA/C), 10%CO₂/5%O₂ (CA/10-5) and 20%CO₂/5%O₂ (CA/20-5); Modified Atmosphere in two types of bags: Cryovac BK and BB4 and 800 gr plastic net bag in conventional storage. Every two months, "marrón glacé" was prepared by nut peeling, cheesecloth wrapping, blanching, 5 min boiling in 35°B syrup, immersion in syrup for two days, boiling in 70°B syrup, immersion in syrup for two days, draining and packing. Texture, pH, soluble solids and water activity were measured; sensory quality and acceptability were evaluated by a trained panel. Soluble solids increased in all treatments from 61.0 to 66.5°B, being the highest one, the treatment CA/10-5. Reducing sugars of the nuts showed the same tendency during the eighth months of storage. Control nuts stored in net bags showed an increased hardening of the pulp, lowering its quality; opposite, treatment CA/10-5 was able to keep suitable quality texture until the end of the storage period. Texture difference was also detected by the panel. Treatments that showed the best product quality at the end of the storage period were CA/10-5 followed by Cryovac BB4 bags (impermeable to gas and water vapor). Results allowed "marrón glacé" processing during eight months after fruit harvest without altering the quality of end product.