

Title Preliminary characterization of Portuguese pear cultivars after cold storage
Authors C.J.O. Ribeiro, J.T. Cavalheiro, A.S.A. Santos, O. Meireles, D. Ponteira
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Abstract

Six Portuguese regional pear (*Pyrus communis* L.) cultivars ('Fim de Século', 'Pêra Marmelo', 'Pérola Amarela', 'Perlica', 'Sem Nome' and '72') are being studied for their post-harvest behaviour and consumer acceptance. The main objectives of this study were the characterization of some of their physical-chemical parameters (weight, size, colour, firmness, total soluble solids and pH) that influence fruit quality and the best conditions for their cold storage. Pears were submitted to normal air and controlled atmosphere (2% O₂:2% CO₂) storage during 3 months, at 1°C and 90% relative humidity. Fruit weight varied between 136 ('Pêra Marmelo') and 222 g ('Sem Nome'). Maximum equatorial diameter was registered on the 'Sem Nome' and 'Perlica' cultivars (76.0 and 74.3 mm, respectively), while 'Pêra Marmelo' fruits were the thinnest (64.7 mm). 'Pérola Amarela' fruits were the longest ones (96.4 mm) and fruits from cultivar '72' were the shortest (60.5 mm). CIELab colour system allowed us to conclude that L* and b* values were lower on 'Pérola Amarela' and '72' pears and the lowest a* value occurred in 'Pérola Amarela' fruits, also. Pulp firmness was higher in 'Pérola Amarela' fruits than in pears from all of the other cultivars under study. A high level of refractometric index (15.3% Brix) was recorded in 'Fim de Século' fruits, moderate (13.2% Brix) in 'Pérola Amarela' fruits and the lowest soluble solids (9.1% Brix) were observed in pears from cultivar '72'. The most acidic fruits were from 'Pérola Amarela' cultivar (pH = 3.98) while fruits from 'Sem Nome', 'Fim de Século' and 'Perlica' cultivars presented pH higher than 4.60. Weight loss was 50% lower in fruits stored in CA than in NA storage. 'Pérola Amarela' cultivar seems to be of high quality showing an attractive external aspect and promising storage behaviour.