



Organised by
Ege University Engineering Faculty
Food Engineering Department



INTERNATIONAL FOOD CONGRESS
Novel Approaches in Food Industry

NAFI 2014

26 - 29 MAY 2014

PINE BAY HOLIDAY RESORT, KUSADASI / TURKEY

ABSTRACT BOOK



Influence of Storage Conditions and Type of Package on Some Properties of Walnuts

Raquel P. F. Guiné^{1,2*}, Cátia F. F. Almeida¹, Paula M. R. Correia^{1,2}

¹ Dep. Indústrias Alimentares – Escola Superior Agrária de Viseu, Viseu, Portugal

² CI&DETS – Instituto Politécnico de Viseu, Viseu, Portugal

raquelguine@esav.ipv.pt

Abstract

The quality of dehydrated products is a concern because, due to their very low moisture content, they tend to rehydrate quite easily, thus compromising the chemical, enzymatic or microbial stabilities, as well as the nutritional and sensorial properties. Having this in mind, this study was undertaken to evaluate the effects of storage in walnuts, under certain conditions of temperature, relative humidity and different types of packaging. The fruit samples used were original from Chile, Portugal, Romania and United States. The storage of the walnuts lasted for 90 days, and the conditions tested were: room temperature; a stove at 30 and 50 °C without control over relative humidity of the air; refrigeration and freezing. The two types of plastic package tested were low density polyethylene (LDPE) and linear low density polyethylene (LLDPE). The water activity was measured by a hygrometer; moisture content by oven drying until constant weight and colour with a colorimeter. From the results obtained it was concluded that the samples from the different origins are different with respect to moisture content, water activity and colour, regardless of the storage conditions and type of package. Furthermore, it was verified that to assure the good preservation of the walnuts the storage at 50 °C should be avoided, since it caused an extensive dehydration of the product and a high change in colour in comparison to the unstored samples. Finally, regarding the type of package, it was observed that the use of plastic bags did not really improve the products characteristic in relation to the unpacked samples.

Keywords: Colour, walnut, moisture content, water activity