

# 2020 HKCBEES AMSTERDAM CONFERENCE ABSTRACT



**ICBFS  
2020**

**2020 11th International Conference on  
Biotechnology and Food Science**

Amsterdam, Netherlands  
March 13-15, 2020

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March 13-15 | Amsterdam, Netherlands



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**M2007**

**Session 2)**

**Presentation 4 (16:45-17:00)**

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Hazelnut Storage at Controlled Conditions with different packaging materials

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*Abstract*—The nutritional and organoleptic quality of hazelnuts can be greatly influenced by storage conditions. The aim of this study was to evaluate the effect of vacuum packaging and raffia bags on the physicochemical characteristics of hazelnuts, both in shelled and unshelled (kernel) fruits when stored under controlled conditions of temperature (25°C) and relative humidity (65%), simulating the average annual conditions of a tropical country. The following properties were evaluated: moisture, water activity ( $a_w$ ), color and fat oxidative stability, both in the initial sample and also after 6 and 12 months of storage. After 6 months, the gradual degradation of the shelled and without shell (kernel) hazelnuts stored in the raffia bags was clear and they were completely damaged at the end of 12 months of storage. There was a decrease in the initial values of water activity and moisture content (being 0.76 and 8.1% respectively) in the first 6 months of storage. The  $a_w$  varied significantly after 6 months, between 0.60 and 0.71 in the samples packed in raffia. The moisture of vacuum packed fruits decreased from 6 to 12 months, reaching values between 4.3% and 4.8%. As far as color is concerned, there were generally no significant variations in the  $L^*$ ,  $a^*$  and  $b^*$  coordinates during storage in the hazelnut shell or kernel. Fat stability decreased over the shelf life, with a marked decrease in the first 6 months for hazelnuts in raffia bags and after 6 months for vacuum packed ones, with vacuum packed hazelnuts showing higher oxidative stability. From this study it can be concluded that vacuum packaging allows the best preservation of hazelnuts, with color being the least affected property. Both packaging and length of storage influence the quality of the hazelnuts.