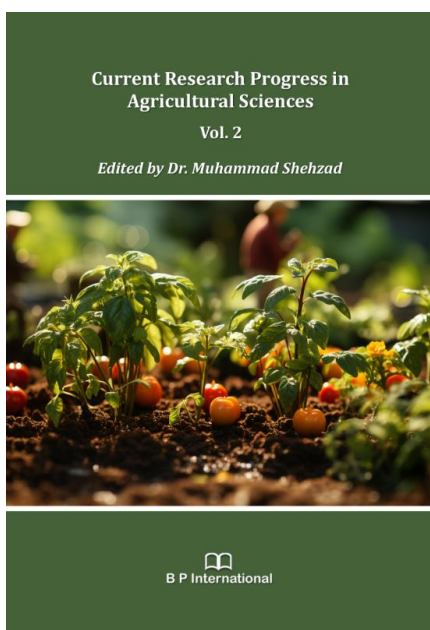


Physicochemical Analysis of Seven Hazelnut Varieties Cultivated in Portugal



Ana Cristina Ferrão Raquel P. F. Guiné; Elsa Ramalhosa ;
Hugo Martins; Roberto Gonçalves; Paula M. R. Correia

Current Research Progress in Agricultural Sciences Vol. 2, 8
July 2024 , Page 111-131

<https://doi.org/10.9734/bpi/crpas/v2/404>

Published: 2024-07-08

Abstract

The present work intended to analyse several physical and chemical properties of different hazelnut varieties grown in Portugal, namely Tonda de Giffoni, Grada de Viseu, Segorbe, Longa de Espanha, Butler, Gunslebert, and Negreta. Hazelnuts are a good source of proteins, monounsaturated fatty acids (mainly oleic acid), carbohydrates, fibre, minerals, vitamins (such as vitamin E), phytosterols, and also phenolic antioxidants. In general, the results revealed statistically significant differences between the varieties under study. The Grada de Viseu's kernels were found to be heavier, but the Gunslebert's had heavier-shelled fruits and more elongated hazelnuts. Gunslebert had a tougher core, Segorbe was more fracture-resistant, and Grada de Viseu had a harder shell. Fat was the more representative component for all varieties and in some cases, the values of moisture and water activity were over the recommended amount (≥ 0.62). The results also established the expected ranges for each colour parameter in the shell, hilum, skin, and kernel, with Butler exhibiting a clearer shell and Tonda de Giffoni exhibiting a clearer hilum and skin. In contrast, Negreta exhibited a clearer kernel. As for texture, Grada de Viseu had a harder shell while Gunslebert had a harder core. Tonda de Giffoni was the variety with the highest induction time, indicating the highest oxidation stability. Moreover, discriminant analysis revealed that the variables more important to distinguish the varieties were protein ($\lambda = 0.007$) and water activity ($\lambda = 0.010$). The results of this study help to better understand the differences between some hazelnut varieties that are cultivated in Portugal, which gives important hints for all players in the hazelnut sector.

Keywords: Chemical properties; hazelnuts; physical properties; specific extinction coefficients

Internet Link:

[Physicochemical Analysis of Seven Hazelnut Varieties Cultivated in Portugal | Current Research Progress in Agricultural Sciences Vol. 2 \(bookpi.org\)](https://doi.org/10.9734/bpi/crpas/v2/404)