

PHYSICO-CHEMICAL, FRESHNESS (PYROPHEOPHYTIN A), AND SENSORY CHARACTERIZATION OF VIRGIN OLIVE OILS FROM VARIOUS REGIONS OF MOROCCO

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Abstract. This study aims to determine the physico-chemical, freshness, and sensory properties of eighteen samples of virgin olive oil collected from five different areas of Morocco during the period of 2020-2021. The findings revealed that all the samples studied met the International Olive Council's standards of extra virgin olive oils, which have their free acidity within the range of 0.12–0.62%, and peroxide values ranged from 6.2 to 13.6 meq O₂/kg. Pyropheophytin A (PPP), an index of freshness, varied between 2.77% and 37.26%, with two oils being over the 17% threshold, possibly indicating thermal stress or long storage times. A considerable variation in phenolic compounds (267–392 mg/kg), pigments, tocopherols, and fatty acid profile among cultivars and geographic origin was found. Oleic acid was a common constituent in all oil samples (60.2%–73.1%), hence showing the nutritional status of the oils. When looking at the sensory analysis of the oils, almost all the samples were classified as extra virgin olive oil, while others had problems like rancid taste and fusty aroma. These findings show the diversity of virgin olive oils from Morocco and support PPP as a freshness index.

Keywords: Virgin olive oil, pyropheophytin A, physicochemical characterization, sensory analysis.