Anatomical features, fatty acid profile and tocopherol content of the Tunisian *Cakile maritima* subsp. *maritima* Scop. Fruit

Sondes Stambouli-Essassi*1, Faiza Mejri2, Manel Dhoueibi1, Yassine Mrabet2, Fethia Harzallah-Skhiri3, Karim Hosni2

1 Laboratory of Bioresources, Biotechnology and Climate Change, Faculty of Sciences of Tunis, University of Tunis El Manar, Manar II, 1060 Tunis, Tunisia
2 Laboratory of Natural Substances, National Institute for Research and Physicochemical Analysis, Technological Center of Sidi Thabet, 2020 Tunis, Tunisia
3 Laboratory of Bioresources: Integrative Biology and Valorization (LR14-ES06), High Institute of Biotechnology of Monastir, University of Monastir, Tahar Haddad Street, 5000 Monastir, Tunisia

Corresponding author, e-mail: sondesessassi@topnet.tn; Phone: 00 216 22 572 106

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1 ABSTRACT

This study reported for the first time anatomical features, fatty acid composition and tocopherol content for the fruits of *Cakile maritima* subsp. *maritima* Scop. collected from two sites located at the coastal part of North Tunisia (Bizerte and Soliman). Anatomical investigations characterized the indehiscent siliqua of Soliman population. Transverse sections through fresh fruit show a large number of prismatic crystals located at the three first layers of the mesocarp, which parenchyma was characterized by the presence of large amounts of starch grains and solitary oil drops. A particular anatomical structure is identified at the valves junction. The endocarp is a thin tissue composed of 2-3 layers of small lignified wall cells and one layer of tangentially elongated and thin cells surrounding the seed. Moreover, the fruit oil from both populations are characterized by their richness in unsaturated fatty acids, particularly monounsaturated ones. The major identified fatty acids with GC/MS analysis of fatty acid methyl esters for Bizerte and Soliman populations are oleic (20.20 ± 1.42 and 23.9 ± 2.87%, respectively), erucic (20.82 ± 1.60 and 22.04 ± 2.65%, respectively) and linoleic (24.09 ± 2.47 and 21.34 ± 2.76%, respectively) acids. Besides, analysis of tocopherols allowed the identification of two isoforms (α- and γ-tocopherols). The α-tocopherol was found as the prominent one in the two fruit oils and was most important in Soliman population than in Bizerte one (31.13 ± 2.45 mg/kg against 28.88 ± 2.21 mg/kg).