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FATTY ACID COMPOSITION, STEROL, TOCOPHEROL AND AMINOACID CONTENTS OF TRIGONELLA CARIENSIS BOISS.

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ABSTRACT

The genus Trigonella L. (Leguminosae) includes about 135 species distributed from the Mediterranean regions, Southeastern Europe, Western Asia, North and South Africa (1,2). Trigonella foenum-graecum L. is the most widely used species in Trigonella genus and it is an annual herbaceous plant commonly called fenugreek; its seeds are used as food crops in India, to supplement wheat and maize flour for bread making in Egypt, and as one of the staple foods in Yemen. It is credited with many medicinal properties and is one of the oldest medicinal plants used in many Asian and African countries. Its seeds have been used as a carminative, tonic, aphrodisiac in Ayurvedic, Chinese and Unani systems of medicine. It was known that the plant contain flavonoids, alkaloids, saponins, fixed oil, polysaccharides, minerals and proteins. The seeds used in many traditional systems as aromatic, carminative, galactogogue, antibacterial, antidiabetic, hypocholesterolemic, diuretic and analgesic agent (1-3). In Turkey, the genus Trigonella represented by 54 taxa (4,5). T. cariensis is one of these taxa, which grows West and Soth West Anatolia, Greece and East Mediterranean area. T. foenum-graecum has been extensively studied but there is little information about other species of the genus in the literature (6,7). T. cariensis Boiss. have not been studied phytochemically. The aim of the present study was to determine fatty acid compositions, sterol, tocopherol and aminoacid contents of T. cariensis. The seeds contain 2.01±0.12 g/100 g fixed oil. Linoleic acid (43.74±0.24 %) and α-linolenic acid (18.38±0.45 %) along with palmitic acid (14.16±0.38 %) were the main fatty acids. The total sterol content was 2247.09±0.06 mg/100 g, which consisted mainly of β-sitosterol (62.65±1.53 %). α-tocopherol (233.54±0.47 mg/100 g) was the dominant tocopherol. L-Glutamic acid (5801±0.32 mg/100 g) was the main aminoacid. The results of the present study revealed that this species is important source of essential fatty acids, tocopherols and aminoacids. The oil rich in polyunsaturated fatty acids which play an important role in human health. Further studies are needed to evaluation of the plant in food industry and in health. "This study was supported by the Research Fund of Mersin University in Turkey with Project Number: 2016-1-AP2-1412" References 1. Evans, W. C., Trease and Evans Pharmacognosy. 15th. Ed., UK: University of Nottingham, 2002, 26. 2. Bown, D., Encyclopedia of Herbs&Their Uses. First Ed., London: Darling Kindersley Limited, 2002, 393. 3. Srinivasan, K., Fenugreek (Trigonella foenum-graecum): A review of health beneficial physiological effects. Food Reviews International 2006, 22, 203-224. 4. Huber-Morath A. Trigonella L. In Davis PH (ed.) Flora of Turkey and the East Aegean Islands. Edinburgh University Pres., 1970; 3: 452–482. 5. Gokturk, R. S., A new subspecies Trigonella coerulescens (Fabaceae), from Turkey, Ann. Bot. Fenn. 2009, 46, 62-64. 6. Uras-Gungor S. S.; Guzel, S.; Ilcim, A.; Kokdil, G., Total Phenolic and Flavonoid Content, Mineral Composition and Antioxidant Potential of Trigonella monspeliaca. Turk J Pharm Sci 2014, 11(3), 255-262. 7. Uras Gungor S. S.; Ilcim, A.; Kokdil, G., A Comparison of Diosgenin,

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Phenolics, Fatty Acid Profiles and Mineral Contents with Free Radical Scavenging Activity of Trigonella L. Species from Section Cylindricae. Rec. Nat. Prod. 2017, 11(1), 17-30.

KEYWORDS

Trigonella cariensis; fatty acid; sterol; tocopherol; aminoacid