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POLYPHENOL AND PROTEIN CONTENT IN WILD THYME DUST EXTRACTS WITH NATURAL DEEP EUTECTIC SOLVENTS

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dust, NADES, polyphenol, protein, Thymus serpyllum L.

Natural deep eutectic solvents (NADESs) are a green and nontoxic alternative to potentially toxic organic extraction mediums. Wild thyme (Thymus serpyllum L.) contains a wide range of bioactive compounds that have an important role in its antioxidant, antimicrobial, carminative, expectorant, analgesic, stimulant, diaphoretic, antispasmodic, diuretic, and anti-inflammatory effects. The aim of this study was to evaluate wild thyme dust in terms of polyphenol and protein content. Wild thyme dust was from the Institute for Medicinal Plants Research "Dr Josif Pančić", Pančevo, Serbia. The extraction was performed at room temperature in the incubator shaker KS 4000i control (IKA, Germany) using four different NADESs (citric acid/glucose, citric acid/saccharose, malic acid/glucose, and malic acid/sacharose with 50% of water) and a solvent-to-solid ratio of 30:1 mL/g for 75 min. Total polyphenol and protein content were measured employing spectrophotometric methods. Polyphenol concentration varied from 28.6 to 45.1 mg gallic acid equivalent/g of plant material, while protein content was in a range of 21.4 to 25.5 mg of albumin equivalent/g of plant material. In both measured parameters, the efficiency of the employed NADESs follows the trend: citric acid/saccharose≥citric acid/glucose>malic acid/sacharose≥malic acid/glucose. Wild thyme dust extract prepared using citric acid/saccharose in comparison to other tested NADESs was favored as a potential ingredient in foods, functional foods, dietetic supplements, or pharmaceuticals.

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