University of Thi-Qar Journal of agricultural research

Thi-Qar Journal of agricultural research

ISSN Onlin:2708-9347, ISSN Print: 2708-9339 Volume 13, Issue 2 (2024) PP 667-678

https://jam.utq.edu.iq/index.php/main *https://doi.org/10.54174/utjagr.v13i1.323*

Estimating the mineral content and analyzing the chemical composition and active groups of basil seeds (*Ocimum basilicum*), studying their antioxidant and incorporating them into healthy diets.

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Abstract

The chemical composition of basil seeds (*Ocimum basilicum*) was determined, chemical analyzes showed that the percentage content of moisture, ash, protein, fat, and carbohydrates on a dry weight basis was 22.5, 2.57, 3.15, 0.364 and 71.416 % respectively. The concentrations of the mineral elements represented by zinc, lead, cadmium, nickel, and copper were 28.3, 0.822, 0.0615, 3.643, 19.5 ppm respectively. The significant tests for the aqueous extract showed that it's contain the active compounds represented by carbohydrates, saponins, tannins, flavonoids, alkaloids, phenols and glycosides which gave a positive result. As for the antioxidant activity, it was estimated by (2, 2 diphenyl-1-picrylhydrazyl) method. The ability of the extract to capture free radicals increased with increasing concentration reaching the lowest value70.3% at a concentration of 50 mg/ ml, and the highest value 90.5% at a concentration 200 mg/ml as compared to the standard substance (butyl hydroxyl toluene), its effectiveness was 95.4. The reducing power increased with increasing concentration, at a concentration of 200 mg/ml it gave an effectiveness of 83.2% compared to ascorbic acid, which had an effectiveness of 85.4%. It was used in food applications as a thickening material in the jam industry using different ratios of 0.5, 1, 1.5 and 2 g. It was noted that the best concentration is Adding 2 gm.

I. Introduction:

Basil seed is the general term used to refer to the seeds of some types of

herbaceous plants (basil). Generally, these seeds are small in size and black in color, with a light nutty flavor and a jelly-like texture when soaked in water (Sekar *et al*., 2009).

Basil seeds contain many important nutritional elements. It contains 10, 33 and 43.9 gm of protein, fat and carbohydrates respectively, which gives it excellent nutritional properties. In addition, it is rich in plant compounds, including flavonoids and polyphenols, as they are important antioxidants that reduce cell damage. It also has anti-inflammatory and anti-cancer properties and it is a source of omega-3 fatty acids. A tablespoon of basil seeds which is equivalent to 13 gm can cover most or all of the body's daily need for omega-3 which the body needs to produce energy. In addition, contributing to reducing the risk of some diseases such as heart disease and type 2 diabetes. It can be used as a thickening agent. Basil seeds contain fibers including pectin which is widely used in the food industry, as it has no flavor and therefore can be used to thicken foodstuffs such as ice cream, salad dressing, low-fat whipped cream, and jelly without affecting their flavor, in addition to It is used as a substitute for fats in yogurt, mayonnaise and it is also considered a source of fiber (Gajula *et al*., 2009).