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Nutrient composition of different chickpea varieties as affected by processing methods

PRIYANKA THAPLIYAL, SALIL SEHGAL AND ASHA KAWATRA

World wide legumes are mainly grown on large area for their edible seeds and thus are called grain legumes. In present investigation five varieties of chickpea were studied for changes in the nutritional composition after soaking, dehulling and pressure cooking. The results revealed that the moisture content of all five chickpea varieties varied from 7.13 to 8.93, protein 20.24 to 22.60, fiber 2.57 to 5.33, ash 3.09 to 3.35 and fat 2.63 to 4.58 per cent. While studying the effect of soaking, it was observed that moisture, protein, fiber, ash and fat ranged from 34.28 to 38.91, 18.08 to 21.92, 2.36 to 4.80, 2.81 to 3.08 and 2.10 to 4.67 per cent, respectively. Significant (P=0.05) increase in moisture content was observed whereas protein, fiber, ash and fat content reduced significantly (P=0.05) after soaking in all varieties. The value of moisture, protein, fiber, ash and fat ranged from 29.87 to 34.66, 21.85 to 24.71, 1.92 to 4.19, 2.51 to 3.08 and 2.82 to 5.5 per cent in dehulled chickpea respectively. Significant increase in moisture , protein and fat whereas significant reduction in fiber and ash content was observed after dehulling in chickpea. In pressure cooked chickpea varieties the moisture, protein, fiber, ash and fat content ranged from 57.47 to 62.23, 18.96 to 21.58, 2.98 to 5.64, 2.03 to 3.11 and 2.42 to 4.98 per cent, respectively. While studying the effect of pressure cooking, it was observed that moisture, and fiber, content increased significantly (P=0.05) whereas protein, ash and fat content decreased significantly (P=0.05) by this process. Highest content of moisture, protein, fiber, ash and fat was observed in H07-3, HC-1, C-235, H-208 and HC-5 varieties, respectively. All the processing techniques especially pressure cooking is recommended for use.

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INTRODUCTION

Legumes are cultivated throughout the world and contribute a good source of several important nutrients. Dry legumes constitute one of the richest and least expensive sources of supplementary protein for a major section of human population, especially in under developed and developing nations. Legume proteins are rich source of essential amino acids, which are deficient in cereals. Chickpea (*Cicer arietinum*) is a legume and a native of Mediterranean region. The name 'Cicer' is derived from Greek word 'kikus' that means force or strength. Chickpea is a good source of carbohydrate, protein minerals and trace elements and its protein quality is similar to or better than other legumes such as pigeonpea, black gram and green gram (Williams and Singh,1987). The present study was undertaken to study the varietal differences in chickpea when different processing treatments *viz.*, soaking, dehulling and pressure cooking were applied to them. Soaking could be one of the process to improve nutritional absorption, as anti-nutritional factors are eliminated with the discarded soaking solution. Cooking generally inactivates heat sensitive factors such as trypsin and chymotrypsin inhibitors and volatile compounds.

METHODOLOGY

Five varieties of chickpea, namely HC-1, HC-5, H07-3, H-208 and C-235, were procured in a single lot from the Pulse section, Department of Plant Breeding, College of Agriculture, CCS Haryana Agricultural University, Hisar in September 2010.

MEMBERS OF RESEARCH FORUM

Address for correspondence :

PRIYANKA THAPLIYAL, Department of Foods and Nutrition, C.C.S. Haryana Agricultural University, HISAR (HARYANA) INDIA

E-mail: p.thapliyal2000@gmail.com

Associate Authors :

SALIL SEHGAL AND ASHA KAWATRA, Department of Foods and Nutrition, C.C.S. Haryana Agricultural University, HISAR (HARYANA) INDIA