

Title Moisture absorption in kabuli type chickpea during soaking and cooking
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Citation 2005 ASAE Annual International Meeting, Tampa Convention Center, Tampa, Florida, 17-20 July
2005, Paper Number 056160, 11 p.
Keywords Moisture diffusivity; diffusion coefficient; soaking; cooking

Abstract

Understanding water absorption in legumes during soaking is of practical importance since it governs the subsequent operations and quality of the final product. It is essential to understand the water absorption characteristics of kabuli chickpea at different temperatures. Soaking is the first step in processing chickpea and is considered necessary to achieve desired palatability and digestibility and to reduce cooking time, but its long duration has been and continues to be a major drawback. Experimental trials were conducted at different cooking temperatures to determine the moisture diffusion during cooking of chickpea. Chickpea samples of initial moisture content 9.86% wb (unsoaked) and 55.97% wb (soaked) were cooked at temperatures ranging from 70 to 98.7°C. The water diffusion coefficients were determined experimentally and the values ranged from 1.37×10^{-11} to 5.51×10^{-10} m²/s. Moisture diffusivity was also simulated based on constant parameters and the closeness between the simulated and experimental results was determined. In this paper, the results obtained for moisture movement in chickpea will be presented along with the optimum cooking and soaking time and the maximum percentage of moisture it can absorb when subjected to soaking and cooking at different temperatures for kabuli type chickpea.