

Effect of Osmotic Dehydration on Quality of Green Chili Powder

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Green chili (*Capsicum annuum* L.) is commercially grown as a spice crop. Rapid changes in post-harvest quality and the price fluctuation are the main problems facing green chili industry in Sri Lanka. In this study, concentration of chlorophyll a, b and total chlorophyll, moisture content, water solubility, rehydration time, ascorbic acid content (2, 6-dichlorophenol-indophenol method), total phenolic content (Folin-Ciocalteu method), total antioxidant activity (DPPH method), total plate count and yeast and mold count of osmotic (5% NaCl) and non-osmotic dehydrated green chili powder samples (Variety MI 2) were investigated. To investigate the consumer preference, a sensory evaluation was done. Low moisture (4.00%), higher total antioxidants concentration (4.26×10^{-4} kg L⁻¹), ascorbic acid concentration (9.04×10^{-4} kg L⁻¹), rehydration time (8.25 s) and low total plate count were observed in osmotic dehydrated green chili powder when compared with the non-osmotic samples. Best green color with high chlorophyll a (2.39×10^{-6} kg L⁻¹), b (4.50×10^{-6} kg L⁻¹) and total chlorophyll (6.88×10^{-6} kg L⁻¹), high water solubility index (3.94%), total phenolic content (1.52×10^{-4} kg kg⁻¹) and low yeast and mold count were exhibited in non-osmotic dehydrated green chili powder samples. There was significant difference between osmotic and non-osmotic samples of all above parameters except the ascorbic acid content. In the sensory evaluation, non-osmotic samples obtained the higher ranks for color, taste, aroma, texture and mouth feel. The osmotic dehydrated product obtained the highest score for overall acceptability. However, the osmotic dehydration technique is the most favorable for commercial level green chili powder production due to their good physicochemical and nutritional characteristics.

Keywords: Green chili powder, Osmotic dehydration