



THE RELATIONSHIP BETWEEN THE NUTRIENT CONTENT OF POTATOES AND THE STRUCTURE STABILITY, COLOR CHANGES, OF THEIR FREEZE-DRIED PRODUCTS

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ABSTRACT

The aim of this study was to determine the nutritional values related to structural stability during the storage of freeze-dried potato cubes and investigate the color changes that occur during cooking, freeze-drying, and rehydration. Significant relationships detected between the protein content and various color values of the raw and cooked potatoes, as well as the change in color values after rehydration. Significant relationship detected between protein content, L* and b* values in the raw sample, b* values in cooked potatoes, and L*(negative) and b* values after rehydration, as well as the (negative) change in L* between cooked and rehydrated potatoes. Significant relationship was between the amount of starch in the raw sample, L* after freeze-drying (positive), and the L* change between cooked and rehydrated potatoes (positive). The study on structural stability found a significant correlation between the protein content and the amount of unbroken, whole freeze-dried potato parts. Significant correlation was observed between the raw L* and cooked L* value changes in relation to the structural stability. Significant relationship was measured between the amount of protein calculated in dry matter and the structural stability of freeze-dried cooked potatoes.

Keywords: potato, freeze-dried, colorimetria, structure analysis, food quality

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