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Abstract

The Enzymatic browning is a chemical process which occurs in some fruits (bananas, pears, apricots, grapes) and vegetables (mushrooms, lettuce, potatoes). It is one of the largest causes of quality loss during post-harvest handling and processing of fruits and vegetables. Enzymatic browning reduces the visual quality and can cause undesirable changes in flavour and nutrient loss. The fruit quality depends on size, color, shape and type of skin defects according to the international marketing standard. However, the color of the fruit surface is the first quality parameter for consumers. Color analysis is one of the important and extensively used techniques for detecting physical and chemical characteristics of fruits. These features are utilized for defining the shelf-life, promotion systems, mode of transportation and storage technique. The aim of this study was to detect enzymatic browning of banana by using color analysis in the conditions of room temperature and cold storage depending on time. Ripened bananas with black spots were used in the experiments. Color measurements were performed by using X-Rite Ci60 colormeter which is based on Lab measurement system. Colormeter was calibrated with a white reflective plate before the measurements. Lab color space was selected for extracting information from banana surface. Histogram analysis was utilized on different color channel. The research results indicated that color analysis can easily be used to determine enzymatic browning on bananas. Enzymatic browning rate of the cold stored bananas was lower than the bananas kept at room temperature.

Keywords: *Enzymatic browning, Color analysis, Banana, Room temperature, Cold storage.*