MATHEMATICAL ANALYSIS OF COLOUR PARAMETERS

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Abstract

Recently time there is a growing interest in pasta made from durum semolina, because these pastas don't contain egg. Therefore the colour characteristics of the semolina are dominant in the visual colour of products. The colour changes of dry pastas made of different semolina during storage was investigated. The relationship between the β-carotene content and colour characteristics of semolina was evaluated too. The pastas were made from seven types durum semolina. The six months storage experiment was carried out two different ways: in natural light, and in dark. Colour measurements were performed with a Minolta CR colour measuring instrument. The CIELab colour system was used for colour characterization. The colour characteristics of dry pastas were measured twice a month. During six month the colour coordinates (L* lightness, a* redness and b* yellowness coordinates) of pasta products didn't change significantly in the light-protected storage condition. The values of ΔE^*_{ab} colour difference calculated between colours coordinated measured first and colour coordinates measured during storage were less than 2 unit, so the changed of the colour did not perceptible. In the case of natural light exposed samples the values of ΔE^*_{ab} colour difference calculated between colours coordinated measured first and colour coordinates measured during storage were commonly higher than 3 unit since the 56th day of storage

The changing of the colour parameters indicated that the pastas became darker and less yellow.
Significant linear relationship was established between the β-carotene content and b* yellowness coordinate of semolina.

Key words: colour measurement, durum pasta, semolina