

Effects of natural pigments from flowers and leaves in non-heat-treated foods

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Abstract. The objective of this study is to investigate the addition of natural pigments extracted from flowers and leaves in food products. The following three non-thermally treated food products were used for the experimental study: nougat, cream cheese and butter. Flowers of *Viola odorata*, *Viola tricolor*, *Syringa vulgaris*, *Cucurbita maxima*, *Ranunculus bulbosus*, leaves of *Taraxacum officinale*, *Beta vulgaris* and petals of *Rosa* sp. were used to obtain red, green, blue and yellow pigments. Powdered pigments were added to three products marked N (nougat), C (cream cheese), and B (butter), at different concentrations: 0.5, 1.0 and 1.5% per 100 g of product. Chlorophyll (Chl) content in green leaves and total monomeric anthocyanin (TMA) content in flowers were determined. The pH, color and textural quality of nougat, cream cheese and butter were obtained. The highest amount of chlorophyll (0.587 mg/g) was found in dandelion leaves, while the highest total monomeric anthocyanin (TMA) content (5.978 mg cyanidin-3-glucoside /g fresh weight) was determined in *Rosa* petals. The pH of all nougat samples increased with the addition of pigments, while the pH of butter samples increased when blue and red pigments (1 and 1.5%) were added and decreased when yellow and green pigments were incorporated in butter samples. The lightness decreased with increasing pigment concentration for all samples. The addition of color pigments to the butter samples decreased the hardness of the samples. The nougat samples hardness decreased with increasing concentration of yellow, red and blue pigments, while addition of yellow and green pigments decreased the hardness of cheese cream samples.

Keywords: anthocyanins; chlorophylls; food colors; pigments; texture.

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