UNUSUAL PH – BEHAVIOR OF SAFFLOWER EXTRACTS

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Abstract: *The isolation of yellow and red dyes obtained from the Safflower plant (Carthamus tinctorius L.) in an aqueous solution at different pH values was investigated. Safflower petals were extracted with water to remove the yellow pigment, and the red pigment was extracted from the petals with acidic and alkaline solutions. It turned out that the isolation of pigment occurred in a very wide range of pH (from 3 to 7). This feature, unusual for other natural dyes, is an advantage, because enables the use of Safflower dye in a wide range of food products, so as meat, fermented and unfermented milk, bakery and others.*

Keywords: *safflower, carthamin, extraction, functional food products*

Introduction

Safflower is inhabitant of arid region and represents an herbaceous plant with sharply expressed external properties. Carthamin is natural red pigment, obtained from Safflower's petals [1]. This water-soluble pigment known as Natural Red 26, is traditionally used as a dye for hair and tissues. This natural dye is new for food industry of Moldova, because of recent investigations of acclimatization of Safflower [2]. Cartamine molecule is composed from two chalcone residues, which conjugated bonds causes manifestation of red color. Poliphenolic nature of carthamin provide its biological activity [3].

1. Experimental and conclusions.

Aqueous extracts of Safflower petals with different pH were investigated. Conditions of temperature, time of extraction and stirring velocity being the same. A red pigment was separated in a wide range of pH, from 3.7 to pH = 7.5. Such behavior of the dye is unusual in itself, since natural dyes are obtained in acids or vice versa, in alkalis. In our opinion, the formation of a slightly soluble form of this natural dye in a neutral pH range can be used in the development of food products with functional properties (Figure 1).

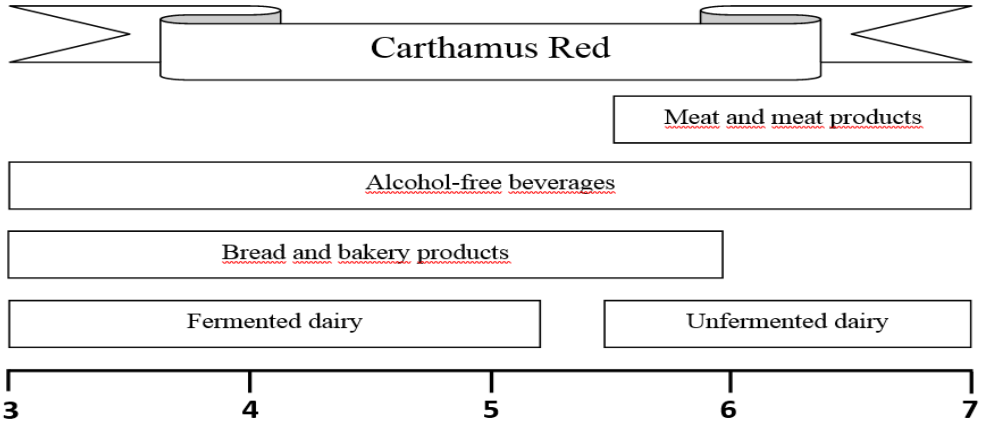

Figure 1. Perspectives of Cartamine use in products with different pH value

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