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FEATURES OF THE USE OF VALUABLE NATURAL FOOD DYES IN THE FOOD INDUSTRY

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ОСОБЕННОСТИ ПРИМЕНЕНИЯ ЦЕННЫХ НАТУРАЛЬНЫХ ПИЩЕВЫХ КРАСИТЕЛЕЙ В ПИЩЕВОЙ ПРОМЫШЛЕННОСТИ

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ABSTRACT

The article presents scientific information on the possibility of obtaining food dyes from natural food dyes in a modern way and the use of these dyes in the food industry.

АННОТАЦИЯ

В статье представлены научные сведения о возможности получения пищевых красителей из натуральных пищевых красителей современным способом и использования этих красителей в пищевой промышленности.

Keywords: curcumin, natural food coloring, anthocyanins, sugar cane, beets, sugar.
Ключевые слова: куркумин, натуральный пищевой краситель, антоцианы, сахарный тростник, свекла, сахар.

Quinone dyes. Permitted dyes in this group include hacarmine, alkanine and curcumin. Alkanin (alkanet) is a red-brown dye (E103) obtained from the root of the alkane plant. This paint color was not widely used due to insufficient durability.

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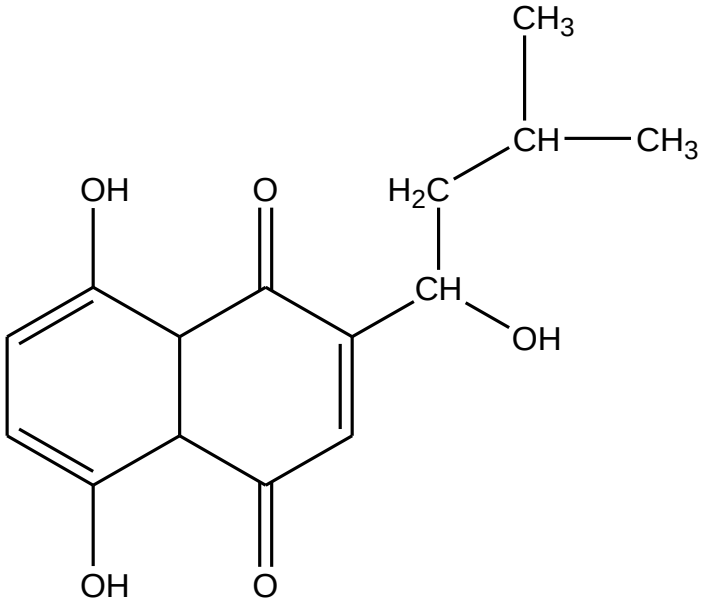
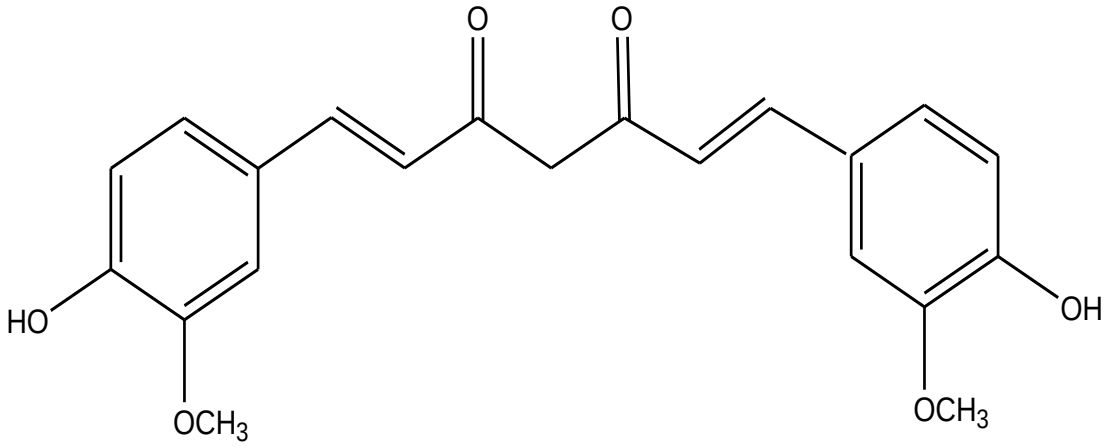
Alkanin is a derivative of 1,4-naphthoquinone.



Alkanin

Curcumin is a yellow dye (E100) that does not dissolve in water, therefore it is used in the form of an alcohol solution. It is obtained from a plant of the fig family - turmeric. The permissible daily dose is 2.5 mg per kg of body weight. Another representative of this group is turmeric (E100) - turmeric root powder. The permissible daily dose is 0.1 mg per kg of body weight. Carmine is a red dye derived from anthraquinone.



Curcumin

As a yellow dye, vitamin B2 (riboflavin) is used in its own form or in the form of the sodium salt of orthophosphate, riboflavin-5. Quinone dyes not allowed in our country include alizarin, kermes and anthocyanin dyes (E163). A feature of natural anthocyanins is that their color changes depending on the pH of the environment, temperature, exposure to light, their structure, reactivity, and other factors. For example, in an environment with a pH of 1.5-2.0 (acidic medium), they give their typical red color, which changes to red and dark red at a pH of 3.4-5.0. In an alkaline environment (pH 8.0), the color remains blue or blue-green, at pH 9.0 - green, and an increase in pH to 10 leads to a yellow tint. Anthocyanin dyes can form complexes with various metals. In the presence of magnesium and calcium salts, a blue color is formed, and in the presence of potassium salts, a red, dark red color is formed [2-3].

Along with anthocyanins, other representatives of this group are enoboyac, which is obtained in the form of a dark red liquid from the pulp of red grapes and blackberries (fruits of the coral tree). Enocolor (E163) is a mixture of anthocyanins, catechins and other substances released from black grapes during pressing [4]. The release form is a dark red liquid. The color of the product after staining depends on the pH of the medium. It provides an analogue of the color of the product in an acidic environment, and in a neutral and slightly alkaline it gives a blue tint. In this regard, organic acids are used to create the necessary. Yellow and pink-red pigments of anthocyanin nature are currently isolated from a wide range of plants: blackberry (E163III), black elderberry, red currant, cranberry and cranberry [5].

Sugar color (E150) is obtained by caramelization of sugar in the form of a dark brown aqueous solution.

According to the technology, various types of sugar syrup are produced: sugar syrup I (E 150 a, caramel I), sugar syrup II (E 150 b, caramel II), sugar syrup III (E 150 s, caramel III), sugar syrup IV (E 150 e, caramel IV), they are used in the production of drinks, bread, confectionery and culinary products.

Recently, interest in natural food colorings has increased significantly, which contain biologically active, flavoring and flavoring substances that give finished products not only an attractive appearance, but also a natural aroma, taste and texture. also provides additional nutritional value.

Beetroot is used for dark red food coloring, sweet and sour pomegranate flavor, and velvety foliage. A number of dyes are produced from the yellow part of the wood, the pods of maclura, mulberry, sumpi and pomegranate, which by their chemical nature belong to polyphenolic compounds. They are yellow dispersed powders, highly soluble in water and alcohol, and can be used in the production of confectionery and soft drinks.

In a word, the search for dyes of zoological origin is being actively conducted. The use of marine products is considered promising. In some coastal countries, as mentioned above, a red dye is used, obtained from red crab.

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