

DEFINITION OF NATURAL AND ARTIFICIAL FOOD COLORANTS IN FRUIT JUICES

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Abstract:

To read and analyze the literature on the topic. To experimentally determine whether the colors in fruit juices are natural or artificial. To analyze the results and draw conclusions.

Keywords: juices, lifestyle, colourants, internal charge.

Introduction

The need for healthy and wholesome foods is particularly increasing at a time when many people are choosing a healthier lifestyle. Such products include fruit juices. The relevant question here is: Are the juices you buy always healthy? Is it not harmful if it is healthy? Because the artificial colours used in juices can sometimes cause various allergic reactions to the body. To find the answers to these questions, we began to determine the presence of natural dyes in fruit juices on sale.

In recent years, there are more and more supporters of a healthy lifestyle in our country. Following the rules of healthy eating is probably no less popular than going to the gym. A glass of natural juice or nectar along with muesli is today the most popular Breakfast among people trying to lead a healthy lifestyle. It is no exaggeration to say that of all modern products, juices have the purest reputation. Natural juices from vegetables and fruits have an amazing purifying and regenerating power, have naturally structured water, colourants, internal charge, essential oils, organic acids, alkalis, vitamins, trace elements, phytoncides. Vegetables and fruits are very important in our diet and therefore in our health. They are not only a source of vitamins and mineral salts but also contain fibre, organic acids, pectin compounds, aromatics and essential oils. They contain a large amount of vitamins C, b, E and A. In addition, they have useful properties for the treatment and prevention of many diseases.

Used method

The method for determining natural or artificial dyes in juices is as follows: change its pH environment by adding an alkaline solution (ammonia or soda) that is larger than the juice volume. When the medium changes, the red juices become dark blue. Yellow, orange and green juices should be boiled after adding an alkaline solution in which the natural dyes

(carotene, carotenoids, chlorophyll) are broken down and the yellow and orange juices are discoloured. The green colour changes to dark green or brown. If synthetic dyes are added to the juice, its colour does not change even when the environment changes.

Carotenoids are yellow and orange pigments synthesized by certain bacteria, fungi, and higher plants. There are carotenoids of both cyclic and acyclic structure, and the number and position of double bonds in carotenoid molecules determine their colour (more than 150 types of carotenoids are known). There is no benzene core, there are many double bonds that cause instability and rapid destruction of carotenoids.

Chlorophyll is a green plant pigment similar in structure to carotenoids. It is involved in the process of photosynthesis and is mainly found in green leaves and stems. Like carotenoids, it has a large number of multiple (double) bonds in the composition of molecules. Unstable, destroyed even with a slight increase in temperature.

For the experiment 4 juices prepared in a factory with different names were chosen. 2 of them are cherries, the rest are orange and peach juices. Natural fruit juices were also compressed for comparison.

1. During the study, it was proved that fresh juices contain natural pigments -100%.
2. Using the method described above, we found that anthocyanins are found in 80% of the studied juices.
3. Carotenoids are found in 80% of juices.

Recommendations:

1. The appearance of the juice is not yet the basis for its purchase, because the bright and beautiful color indicates that synthetic dyes have been added to the juice.
2. Always read the labels carefully, compare the information on the front side with the composition: these data often do not match.
3. According to my findings, in the production of the subject companies contain no artificial dyes. We recommend them for constant use.
4. It is more useful and safer for health to use freshly squeezed natural juices. No matter how hard manufacturers try, their products will never compare with what nature gives us.
5. The simple method described In this paper can be used at home to determine the dyes in juices and juice-containing products (yoghurts, purees, etc.)

Result

Color changes in the experiment are shown in table 1:

Table 1.

juice color, 4 ml	10% solution of nahco ₃	boiling	natural juice	market juice
dark red	8 ml	-	blue	blue
dark red	8 ml	-	blue	dark red
yellow	8 ml	boiled	colorless	yellow
light brown	8 ml	boiled	colorless	light brown

Conclusion

It was found that not all juices sold contain natural dyes. It is recommended to be careful when eating them, especially for children it is better to drink prepared juices from fresh fruit at home than from sale.

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