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РОЗДІЛ 7

ТОВАРОЗНАВСТВО Й ЕКСПЕРТИЗА ТОВАРІВ

НТБ ОНАХТ

One of the most common is contamination with nitrites, which get into the product as a result of the use of chemical fertilizers. In the human body, nitrates get with vegetables and fruits about 85%, with water-10%, with meat, milk -5%. Accumulation of these in foods leads to poisoning, genetic disorders and other diseases. To reduce nitrates, products must be subjected to cooking, salting, canning, heat treatment, but not only nitrates, but also useful substances such as vitamins and minerals are lost, so scientists recommend denitrifying bacteria or treating solutions of ascorbic acid.

Radioactive contamination is the cause of internal human exposure and the increase in radionuclides in the human body through food or water. Therefore, for prevention, you need to eat food that are rich in minerals such as Ca, K, vitamins A, E, C and dietary fiber. The radionuclide is reduced by technological and cooking procedure.

Pesticides are substances that get into food from the environment. To avoid poisoning with pesticides, it was established the deadlines for slaughtering animals and harvesting after the treatment with pesticides were established. To remove pesticides from the product, evaporation and drying are used, but the effect is insignificant, as the boiling point, melting point is much greater than that used for cooking. It is known that during processing, dyes, preservatives, stabilizers are added to the product, so if contaminants of products are added to them, this will intensify the negative effect on the body. Therefore, for the safety of consumers, it is necessary to conduct research for the presence of excess impurities. The environment is the main cause of food contamination, but there are several other reasons that have a dangerous effect.

In our modern world there are new technologies associated with harsh processing conditions for raw materials or semi-products, and toxic compounds appear. In addition, unchecked nutritional supplements are widely used, and sometimes prohibited supplements are used that have a significant dose of toxic substances that have the ability to accumulate in the body and lead to difficult treat diseases.

So, there are many different factors that affect the safety of food. In order to protect yourself from dangerous products you need carefully read the composition of the product, do not use products that cause you to doubt the safety and reduce the use of food additives.

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APPLICATION OF LACCASES IN HAIR DYES

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Hair dye is a cosmetic agent for changing the color of hair for a specific time [1].

There are several compositions for steady coloring of hair, which are basically a set of two parts: a solution of dye and a solution of the developer. Usually these are synthetic chemical reagents that damage the hair, accumulate in it and can cause the appearance of allergic reactions [2].

The composition of paints includes organic dyes of various chemical groups and structures that penetrate the cortex of the hair and are fixed on keratin by reaction of salts with a carboxy or amino group, depending on the structure of the dye. The created complex with colored chemical compound provides the hair a long dyeing effect. In paints, mainly oxide dyes are used - benzene derivatives: o- and p-diamines, o- and p-aminophenols, heterocyclic compounds. Additionally, m-diamines, m-aminophenols, resorcinol, hydroquinone, etc. are

used, which, when used together with oxidizing agents, allow the hair to provide the required color. As oxidants are used: hydrogen peroxide and urea, persulfates and perborates of sodium, potassium, ammonium. In addition, this group includes hair lighteners, which, due to the content of oxidants, destroy the structure of melanin hair pigment and discolorize or lighten the hair [1]. Finished paints may include various additives commonly used in coloring compositions such as anionic, cationic, nonionic, amphoteric, surfactants or mixtures thereof, polymers, thickeners, antioxidants, enzymes (oxidoreductase, peroxidase), complexing agents, flavors, buffers, dispersants, film formers, vitamins, preservatives, filtering and maturing components [3].

Depending on the duration of the dyeing effect, the paints are divided into short-term (shade), semi-permanent (semi-permanent) and permanent (permmetnye). The latter are due to the fixation of oxidized dyes and must satisfy certain requirements: they should not have toxicological defects, allow them to receive shades of the desired intensity and have good resistance to external factors (light, bad weather, washing, permanent waving, sweating, friction).

Dyes should also have the ability to paint gray hair and be as selective as possible, that is, to allow for slight differences in coloration along the keratin fiber, which may in fact be destroyed to varying degrees between the root and the ends.

Oxidation of dyes is usually carried out in alkaline media in the presence of hydrogen peroxide, but this pH is associated with significant hair loss, as well as its discoloration, which is not always desirable [3]. Therefore, an outbreak of such a situation is the laceration (EC 1.10.3.2) - an enzyme that catalyzes the oxidation of biphenols, aminophenols, polyphenols, polyamines, as well as some inorganic ions with the simultaneous restoration of molecular oxygen to water [4].

Laccases is an oxidase enzyme that creates mesh bonds between the carboxylic acid groups of keratin and the major amino groups in the cuticle of the hair. The enzymes of laccases additionally align the damaged disulfide bonds, strengthening hair fibers, gives the hair strength and flexibility, stimulating the processes of regeneration of skin cells [5].

It forms an active center, enclosed in liposomes (hollow lipid cells that dissolve and release active substances gradually, in the depths of hair). Laccases contains cysteine, which reacts with a chemical (free oxygen is used) and oxidizes, restoring the structure of keratin hair fibers.

After using the composition for hair dyeing containing laccase, a cationic or amphoteric substantive polymer, a fixative dye under oxidation provides uniform, intensive and chromatic coloring, resistant to aggressive actions and factors, hair is not destroyed when using a paint with hydrogen peroxide, the substitute of which is the enzyme. The peculiarity of such a composition is that it should not contain gaseous oxygen, in order to avoid the premature oxidation of dyes [3].

As mentioned in the beginning of the article, it is phenols that form the basis of hair dye. Fungus are plant, animal, fungal (yeast, mold, mushroom) or bacterial origin, and the producer organisms can be single-celled or multicellular. Preferably, fungal ointments are used, obtained in certain cases by biotechnology [4]. Producers are the following families of microorganisms: *Scytalidium*, *Polyporus pinsitus*, *Myceliophthora thermophila*, *Rhizoctonia solani*, *Pyricularia orizae*, *Trametes versicolor*, *Fomes fomentarius*, *Chaetomium thermophile*, *Neurospora crassa*, *Coriolus versicol*, *Botrytus cinerea*, *Rigidoporus lignosus*, *Phellinus noxius*, *Pleurotus ostreatus*, *Aspergillus nidulans*, *Podosporea anserina*, *Agaricus bisporus*, *Ganoderma lucidum*, *Glomerella cingulata*, *Lactarius piperatus*, *Russula delica*, *Heterobasidion annosum*, *Thelephora terrestris*, *Cladosporium cladosporioides*, *Cerrena unicolor*,

Coriolus hirsutus, *Ceriporiopsis subvermispora*, *Coprinus cinereus*, *Panaeolus papilionaceus*, *Panaeolus sphinctrinus*, *Schizophyllum commune*, *Dichomitium squalens* [3].

The authors of the patent [3] developed a technology where the substrate is seringaldazine, a reducing agent – N-acetylcysteine, and laccase – an oxidizer that does not inhibit the coloring process, provides shades of better color and intensity that are highly resistant to perspiration, light and shampooing. The pH of the finished paints is chosen in such a way that enzymatic activity is not worsened. Typically, the pH value is approximately 4 to 11, more often than 6 to 9. The activity of the cookie is determined by the degree of oxidation of 1 mmol substrate per minute in aerobic conditions at pH 5.5 and at a temperature of 30°C.

In the light of the foregoing, we can conclude that the use of hair dyes in hair dyes is effective. This product is non-toxic, provides different shades and intensities that are highly resistant to perspiration, light and shampooing. strengthens hair fiber, gives the hair durability and flexibility, stimulating the processes of regeneration of skin cells. Laccasa can use as a substrate a wide range of organic substances of the phenolic structure at pH from 4 to 11, more often from 6 to 9.

Supervisor – Ph.D., Assoc. Prof. Krasinko V.O.

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INFLUENCE OF YEAST GENERATION ON BEER FLAVOR PROFILE

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The use of yeast generation of higher number for beer wort fermentation causes the changes in the rate and duration of fermentation, physicochemical and organoleptic characteristics of the beer quality. By-products and secondary fermentation products play a decisive role in forming the taste and aroma of beer. These include higher alcohols, esters, aldehydes

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