

## PROBLEMS OF MICROBIOLOGICAL CONTROL OF PERFUMERY AND COSMETICS

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**Introduction.** With the intensive development of the production of perfumes and cosmetics, the growth of the range of new types of perfumes and cosmetics on the Ukrainian market and the ability to influence the health of large groups of the population, control of microbiological safety becomes extremely important. Cosmetics can be contaminated with microorganisms both during production and during their use. The sources of their contamination can be raw materials, production facilities, equipment, packaging materials, personnel, storage conditions, method of application, etc. The most common source of microflora is the raw material that gets further into the finished product. Timely detection and effective elimination of problems on the basis of microbiological control allows the manufacturer to avoid economic (unusable products, penalties, etc.), image losses and ultimately the loss of the market (3).

**The aim of the study.** Analyze the regulatory documentation for the assessment of microbiological safety of perfumes and cosmetics in Ukraine, its compliance with modern requirements.

**Research methods.** Analytical - assessment of regulatory documents to determine the microbiological purity of perfumes and cosmetics, their compliance with modern requirements; bacteriological - assessment of bacterial contamination of cosmetics; mycological - assessment of fungal cosmetics.

**The main results.** Microbiological safety indicators of products of the cosmetic industry are based on the absence or limitation of the permissible level of pathogenic, potentially pathogenic for human health and sanitary-indicative microorganisms, which must guarantee product safety under the conditions of use in accordance with the purpose during the warranty period of storage. Microbiological tests of perfumery and cosmetic products are carried out to control the overall level of MAFAM contamination (mesophilic aerobic and facultative anaerobic microorganisms), the number of fungi of the genus *Candida* and molds, the absence of certain groups of microorganisms - bacteria of the family *Enterobacteriaceae*, *Aerobacteriaceae* product or portion of the product (1). The same indicators were previously determined according to the requirements of DSTU for certain types of perfumes and cosmetics, namely: liquid perfumes (colognes, scented waters, eau de toilette, perfumes, cosmetic creams for skin and face, hands and body (except for children's creams) ), baby creams, foot cream, toothpastes, tooth powders, tooth elixirs and mouthwashes (ethyl alcohol content less than 40%), coloring agents (paints, tinting shampoo), hair color restorers, soap liquid toiletries, shampoos, hair styling preparations, hair strengthening preparations, hair care preparations and others, shaving and aftershave creams, aftershaves and lotions (excluding lotions containing less than 40 degrees of ethyl alcohol), sticks and powders shaving soaps, make-up for eyebrows, eyelashes and eyelids, make-up, gums, varnishes, nail

enamels and nail polish removers, lipsticks and contour pencils, powders and cream powders (except for compact and powdered ones), blush, cosmetic glycerols, vaseline (except lotions all contain > 40% ethyl alcohol), deodorants, bath fragrances, various fragrances, sunscreens and sunscreens, insect and fly repellents (except products containing less than 40 degrees of ethyl alcohol) Microbiological tests of perfumery and cosmetics were carried out according to their types according to: DSTU 3032-95 "Shampoos and foaming agents. Method of accounting for yeast content and detection of *Candida albicans*"; DSTU 4773: 2007 "Cosmetic products for makeup powder and compact. General technical conditions "; DSTU 4774: 2007 "Cosmetic products for makeup on a fat-wax basis. General technical conditions "; DSTU 4766: 2007 "Cosmetic masks. General technical conditions "; DSTU 4765: 2007 "Cosmetic creams. General technical conditions "; DSTU 8183: 2015 "Perfume and cosmetics. Security requirements "; DSTU 4315: 2004 "Cosmetics for cleansing the skin and hair. General technical conditions ". The purpose of microbiological control is also to assess the effectiveness of preservatives in cosmetics, to determine the resistance of the product to microbial contamination, as well as to confirm the claimed antimicrobial action of the tool. In general, the purpose of microbiological testing is to assess their quality and microbiological safety.

But the previous normative documentation, in particular issued in 1999 DSanPiN 2.2.9.027-99 did not cover all types of perfumes and cosmetics that are currently available to consumers. Thus, injectable forms of cosmetics, tattoo inks, etc., which are not on the list of existing regulations, are particularly dangerous from the point of view of microbial contamination. Such products are in contact with the internal environment of the body and, in the case of microbial contamination, can pose a serious health risk and therefore must be checked for "sterility" and "apyrogenicity" determination of which according to DSanPiN 2.2.9.027-99 was not provided. The classification of perfumes and cosmetics provided for three groups: ampoule cosmetics, which must be sterile; children's and eye cosmetics for which MAFAM should not exceed 100 CFU / g (cm<sup>3</sup>), yeast, yeast and mold fungi, bacteria of the family Enterobacteriaceae, *S. aureus* and *P. aeruginosa* must be absent in 1 g (cm<sup>3</sup>); other cosmetics for which MAFAM should be no more than 1000 CFU / g (cm<sup>3</sup>), yeast, yeast and mold fungi - no more than 100 CFU / g (cm<sup>3</sup>), bacteria of the family Enterobacteriaceae, *S. aureus* and *P. aeruginosa* should be absent in 1 g (cm<sup>3</sup>).

But this classification has drawbacks, because it does not allocate a separate group of intimate hygiene products that can be a potential source of yeast-like fungi of the genus *Candida* - the causative agents of candidiasis, and thus pose a biological hazard to users. There are some differences in the above regulations on the methodological features of the conditions of cultivation of microorganisms (temperature and incubation of crops), unclear course of work to identify certain types of microorganisms, the results of which conclude the presence of a particular species of microorganism, for example. For some types of cosmetics there is no method for determining the effectiveness of preservatives. There are some differences in the above regulations on the methodological features of the conditions of cultivation of microorganisms (temperature and incubation of crops), unclear course of work to identify certain types of microorganisms, the results of which conclude the

presence of a particular species of microorganism, for example. For some types of cosmetics there is no method for determining the effectiveness of preservatives.

**Conclusions.** Regulatory documentation should be revised, supplemented with new indicators; criteria and methods for assessing the presence or absence of antimicrobial activity of drugs with the claimed antimicrobial activity should be defined. To assess the microbiological safety of perfumes and cosmetics requires a new unified regulatory and methodological document with unified terminology and clearly defined methods for determining safety indicators. For microbiological standardization it would be expedient to distribute products not by types, but by the way of their use and purpose similar to modern requirements for microbiological purity of finished drugs according to the State Pharmacopoeia of Ukraine (2).

#### **List of references**

1. DSanPiN 2.2.9.027-99 "State sanitary rules and safety standards for perfume and cosmetics industry"

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