

## RELEVANCE OF COSMETICS BASED ON IRIS

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**Introduction.** In our time cosmetics on plant basis become all more popular. Cosmetics for skin are the specially developed chemical medicines which apply to cleaning and protection of skin against an adverse effect of factors of the external environment, to her maintenance in good shape. Cosmetics for care of skin are divided on clearing, toning, feeding, moistening, protective, regenerating. Irises are an insufficiently known plant that has a row of advantages and features, one of that is ability to regenerate cell that prevents aging of skin. Iris (*I. germanica*, *I. pallida*, *I. florentina*) has gained great attention from the cosmetic and perfume industries due to their violet-like smell caused by irone-type compounds. Besides, *Irises* were reported to have various biological properties, including potent antiulcer, anticancer, antioxidant, piscicidal activities and other.

In the Crimea and Moldova cultivated irises and obtained from them the essential oil even the fifties. But production of oil does not exceed 30 kg/year. Technology was not justified and oil have ceased receive. An essential oil of iris rhizomes known as “*Orris butter*” consisting of myristic acid, with irone, ionone, methyl myristate. Isoflavonoids include irisolidone, irigenin and iridin. In volatile oil, chief constituents are *cis- $\alpha$ -* and *cis- $\gamma$ -irones*.

Sixteen species of Iris genus inhabit the Ukraine. Some of them are promising for obtaining essential oils. Essential oil of the *I. pallida*, *I. halophila*, *I. graminea*, ect. of Ukraine populations was not previously studied, so it was very interesting to obtain essential oil and to study its component composition.

**Materials and methods.** We have studied the component composition of essential oil of the leaves and rhizomes of irises of Ukraine flora by chromatography-mass spectrometry method. Irises species harvested from the collections of botanical gardens of V. N. Karazin Kharkiv National University (Kharkiv, Ukraine; 2015). Essential oil was produced by steam distillation. The study was conducted on an Agilent Technologies 6890N chromatograph with 5973 mass-spectrometric detector. Constituents were identified using NIST05 and Wiley2007 mass-spectra libraries in combination with AMDIS and NIST programs for identification.

**Results and discussion.** Mostly as basis of cosmetic composition plant oils are used. Medicinal properties of irises rhizomes are caused by their chemical composition: they contain essential oil, that is used in perfumery, cosmetology, medicine; ascorbic acid, sugar, flavonoids, carotenoids, fat oils, tannins and glycosides.

Leaves of iris contains the vitamin C, which protects cells from a senilism, operating as an antioxidant, improves protective forces of organism. In a cosmetology use *I. florentina*, *I. pallida* and *I. germanica*. Irises promotes smoothing of skin, gives softness and velvet; prevents emergence of wrinkles; effectively fights against undesirable pigmentation. Properties of *Iris florentina* find application in production of cosmetics such as Nuxe, Sisley, Babor, Guerlain, Clarins, Lierac Regulance, Swiss.

Essential oil of the rhizomes of *I. florentina*, *I. pallida* and *I. germanica* use in aromatherapy in mixtures for a supervision upon a skin. Rhizomes of *I. japonica* accelerate healing of wounds. Essential oil of *I. germanica* contains more than 140 substances. The most significant of them: stearopten, eleopten, geraniol, benzaldehyde, linalool, ketones, irones, methylsalicylate, salicylic, olein acids.

Aromatherapy recommends using of iris oil for bronchial inflammation, coughing, as well as in mixtures for the care of the skin. Essential oil of iris normalize function of the brain, has a detoxifying, diuretic, expectorant, strengthens the immune system. It returns the resiliency of skin, stimulates the height of hair, improves a health and original appearance of hair. Irises oil has the expressed antiseptic and regenerating action, is immunomodulator.

The essential oil of *Irises* of Ukraine included terpenoids, their oxygenated derivatives (alcohols, ketones, aldehydes, esters), aromatic compounds, and triterpenoids. Triterpenoid squalene is distinguished from components according to contents: *I. pseudacorus* – in leaves 26% and in rhizome 21%; in leaves of *I. halophila* (22.84%); slightly less than in the leaves of *I. germanica* (17.01%) and *I. versicolor* (16.17%); in leaves of *I. graminea* (5.95%), *I. pallida* (6.12%) and *I. hungarica* (16.08%); the least content in the rhizomes of *I. hungarica* (0.96%) and *I. pallida* (0.69%), etc. Essential oils presented with terpenoid and aromatic compounds have antimicrobial, antioxidant and calming action

Squalene shows antimicrobial, moistening, immunostimulatory to the action; stimulates penetration of components deeply in an epidermis that creates a powerful positive effect; it is neutral and there are not contra-indications to application. Besides, in among components of irises oil sesquiterpenoids (geranylacetone, farnesylacetone, hexahydrofarnesylacetone, ect.) have been identified, are known exhibit an antimicrobial and cytotoxic activity. Fatty acids (palmitic, myristic, caprylic, lauric, ect.) their esters have antioxidant, antifungal, anti-inflammatory and immunomodulatory properties.

**Conclusion:** chemical composition of essential oil of irises gives an opportunity to apply them as a part of the antioxidant, anti-inflammatory, moisturizing cosmetics. Thus, the conducted analysis of the market of cosmetics, rich component structure, give good prerequisites for development new the phytocosmetic of means for skin, with regenerating, calming actions.