

PRODUCTION OF HYDROLATE IN UZBEKISTAN FROM LOCAL RAW MATERIALS

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Abstract

The article provides for the development of recipes for the production of hydrolates in Uzbekistan using local raw materials

Keywords: hydrolate, gel, essential oils, surface tension, wetting.

Introduction

Hydrolates are products obtained by steam distillation of water through plant material. When water vapors pass through plant material, they are saturated with valuable water-soluble components contained in plants: essential oils, acids, bioflavonoids, vitamins [1-4]. Hydrolates can be used to prepare cosmetic masks for skin and hair, creams, tonics and scrubs can be prepared on their basis; up to 50-70% hydrolate can be added to shampoos, this will significantly soften the effect of detergent surfactants and give the hair shine [5].

New soft-acting products containing essential oils are promising ingredients of cosmetics, as they contain many useful additives and have the properties of perfume compositions [6-9].

At the same time, it is necessary to take a differentiated approach to the selection of hydrolates for specific cosmetic compositions. The study of the properties and composition of hydrolates is an urgent task. The purpose of this work is to study the colloidal-chemical properties of a number of hydrolates with the subsequent development of formulations of cosmetics based on them.

In terms of its beneficial properties, the hydrolat can be compared with the use of the essential oil of the same name, only it has a milder effect.

The pH level of the hydrolate is $\text{pH} < 7$. Therefore, on the one hand, the hydrolate inhibits the development of harmful microorganisms on the surface of the skin and, on the other hand, helps to maintain the natural microflora that performs the protective function of the body. [2]

The term hydrolate refers to condensed vapor that has passed through the plant material. But other names are also used:

- flower water (not quite an accurate name, since many hydrosols are not obtained from flowers)

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- aromatic water (although some of the hydrolats smell quite unpleasant)
 - hydrosol (in general, this term refers to an aqueous solution in which water is a dispersion medium, so this name can be considered not entirely accurate)
 - essential water (as hydrolates were historically called, they are obtained as a by-product of the distillation process, when essential oils are extracted from plants. This is how essential water of citrus, lavender, mint is obtained. [3])

Hydrolates "flower waters" appeared on the market quite recently: in the nineties of the twentieth century. This does not mean that we were completely unfamiliar with hydrosols: the same rose water has been used for centuries in cosmetology and personal care, but most of those that are available to us now appeared only twenty years ago, because industry was not engaged in the distillation of vegetable raw materials for flower water. -History of hydrosols. [four]

In urban conditions, the skin is more susceptible to rapid loss of moisture and, as a result, early fading. The cosmetic industry offers a variety of care and moisturizing products: creams, milk, and multi-component tonics. But 100% natural products in this variety can only be called thermal water and hydrolat.

It doesn't matter what kind of skin you have: dry, mixed or oily, in urban conditions it is always dehydrated - in winter due to the air "dried" by frost on the street and indoor heating, in summer due to the increased work of the skin glands and dust, which, settling on the skin, additionally draws moisture.

The widespread thermal water, unfortunately, does not save the situation: the water molecule is rather large, it is not able to penetrate the layers of dead cells on the surface of the skin, which provide mechanical protection for the body (epidermal barrier). Water is absorbed into these dead cells, they are saturated with moisture, swell, and it seems to us that the skin has become softer and practically does not peel off.

However, in the subcutaneous layer, which is as severely dehydrated as the surface, no moisture is added from this. And water is the carrier of all the nutrients necessary for the production of new cells. As a result, cells are produced more slowly and of lower "quality", skin renewal slows down, and now we see that the complexion has become duller, the skin is thinner and more sensitive.

Hydrosols are excellent moisturizers. The hydrolate contains essential oil molecules. And essential oils have wonderful abilities:

- they penetrate deeply through the dense upper layer of the skin, reaching the subcutaneous layers,
- an essential oil molecule attaches a water molecule to itself and "drags" it behind it inside our body.

7 ways to use hydrolate:

- skin toning. In the daily care system, the product is used to wipe the face after removing makeup and washing. Hydrolat as a tonic is also used before the scrubbing

procedure or applying a mask - it facilitates the penetration of beneficial substances deep into the skin.

-moisturizing the face. In hot weather or in a room with central heating, the skin is regularly sprayed with hydrosol. This restores the water balance of the epidermis and helps to saturate it with useful components.

-care for the area around the eyes. Lotions from cotton pads soaked in floral water help fight dark circles, bags and redness of the eyelids.

-relief of itching from insect bites. A cotton compress soaked in chamomile, rosemary or lemon balm hydrolate is applied to the sore spot.

-treatment of the skin after depilation or tanning. To relieve discomfort and avoid inflammation, spray the affected areas with flower water obtained from tea tree, mint, hyssop, rosemary.

-improving the condition of the hair. This tool gives the hair shine, accelerates its growth, helps get rid of dandruff. It can be added to shampoo and conditioner, massaged with it, or sprayed onto wet or dry hair. The best hydrolats for hair are from sage, lavender, chamomile, nettle, burdock.

-rinsing the mouth. Mint, hyssop, calendula, tea tree distillate perfectly freshens breath, reduces inflammation, and has a bactericidal effect.

Experimental part:

Lavender hydrolat is the water left after the distillation of the essential oil, the water is soft, enriched with useful substances, a very small dose of essential oil - 0.1%.

Such water softens, moisturizes, relieves inflammation, peeling, redness, removes irritation, promotes tissue regeneration, that is, it can help, for example, with sunburn of the skin, with chapping in the cold season.

This truly living water can be diluted with your creams to saturate them with moisture. This water can be used to care for small children, treating inflamed skin with diaper rash, sometimes lavender water is added to baths for bathing babies.

Chamomile hydrosol (distillate) is an excellent disinfectant to eliminate redness, allergic and inflammatory skin reactions, as well as a component of the aqueous phase for the manufacture of antibacterial home cosmetics, including children's, an excellent tonic for any skin type.

The spectrum of action of chamomile hydrosol is very wide. Chamomile has a softening and soothing effect on all skin types, especially sensitive, prone to irritation and allergic reactions. Suitable for the care of thin skin of the eyelids and is used for compresses for inflammation and eye fatigue.

In winter, chamomile water will have a calming effect on dry and chapped skin, protect and enhance regeneration processes.

Таблица 4. Составляющие гидролата и эфирного масла ромашки аптечной

Component	Hydrolat,%	Essential oil,%
bisabolol oxide A	75.1	30.6
bisabolol oxide И	6.0	3.3
4-methylangelicin	6.0	-
bisabolene oxide	2.4	10.7
β -farnesene	-	25.4
cis-en-in-bicycloether	-	10.3
chamazulene	-	5.6
germakrene D	-	4.5
Total Quantity of Defined Components	89.5	90.4

Basil hydrolat is a 100% distillate obtained by the traditional steam method from the leaves of *Ocimum basilicum*. Fragrant water is available in the form of tonic and spray. This remedy is recommended primarily for combination and oily skin, to narrow pores and fight acne. But basil hydrosol has many other useful properties:

Cosmetic use: Improves the appearance of the skin, improves its tone, has a pronounced anti-inflammatory effect. Quickly heals and restores tissues. Improves the condition of the hair.

Therapeutic use: Regulates the autonomic nervous system, calms, effective in stress, reduces headaches, helps with spasms of the diaphragm and digestive tract, effective in improving digestion, stimulates peristalsis, reduces spasms of the digestive tract, helps with flatulence, useful in colitis. various hydrolates

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