



PHARMACOLOGICAL ACTION OF THE COMPONENTS OF CHAMOMILE PHARMACY AND ITS USE IN COSMETICS

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Article history:	Abstract:
Received: October 6 th 2022 Accepted: November 6 th 2022 Published: December 14 th 2022	Chamomile is a well-known medicinal plant. Ancient medicine believed that ingestion of chamomile broth opens blockages of the body, strengthens the brain, nerves, increases libido, is an antidote to all poisons, drives sweat, milk, urine, menstruation, stops the development of a runny nose, treats eye diseases and ear winds. Chamomile decoction treats suffocation, jaundice, fatigue, liver pain, abdominal pain, anus, uterus, dissolves tumors in these organs. Chamomile cleanses the body of harmful matter, treats mucous and bile fever. If you sit in a bath of chamomile decoction, the fetus will drive out, menstruation, crush kidney stones. In the form of a bandage, chamomile flowers treat skin itching, lacrimation. If chewing chamomile flowers is useful for inflammation of the oral mucosa. Chamomile flower powder, when injected into the eyes, treats their diseases.

Keywords: medicinal plant, chamomile, treatment, pharmacy, cosmetic, patient, medicine.

It is known that chamomile flowers are rich in biologically active substances and are a significant medicinal source of raw materials. That is why pharmaceutical and cosmetic products of various types obtained from chamomile extracts have been widely used in medicine and cosmetology practice in recent years. The use of chamomile pharmacy as a medicinal plant dates back to ancient times. The name "chamomile" (chamomile) is derived from the Greek words "chamai" (chamai) (earthy) and "melon" (melon, i.e. apple), because the smell of this plant resembles apple. In Spain, it is called manzanilla (bullseye). The ancient Egyptians considered this plant a sacred gift from the sun god, sent to treat fever and sunburn. Since the VI century, chamomile has been used to treat insomnia, back pain, neuralgia, rheumatism, skin diseases, headache. Chamomile was considered and continues to be considered a universal remedy for the treatment of many ailments, and in terms of popularity of use, it can probably compete with aspirin. This explains why chamomile is mentioned in the pharmacopoeias of 26 countries. Application of chamomile a large number of publications devoted to the pharmacological properties of this plant as such or its individual components.

Fumigation with chamomile is useful for colds. Chamomile is very popular in modern folk medicine. In the countries of Central Asia, chamomile tea is recommended for diseases of the liver and biliary tract, as an analgesic, diaphoretic, diuretic, anticonvulsant. It is recommended for constipation. In Russian folk medicine chamomile is used as an analgesic, diuretic,

antiseptic. Externally, chamomile napars with salt (200 gr. per 10 l.) in the form of baths are used in the treatment of gout. Pads filled with chamomile and elder flowers are applied to the diseased joints and muscles. Inside, chamomile tea is advised for flatulence, convulsions, as a choleric, soothing agent. A decoction of chamomile washes the hair with dandruff. Scientific studies of chamomile have revealed its antioxidant, bactericidal, antidepressant, anti-inflammatory, antidiabetic, antitumor, hepatoprotective and antidiabetic properties. The main properties of chamomile are associated with its essential oils. It should be noted that the essential oil of fragrant chamomile differs from chamomile pharmacy in the absence of hamazulene. Chamomile essential oil has pronounced antioxidant properties. Alcohol extract of chamomile flowers has pronounced antidiabetic properties. Taking chamomile extracts reduces the absorption of glucose in the intestine and can be used as a functional drink against obesity, hyperglycemia, hyperlipidemia. Alcoholic chamomile extract has a pronounced neuroprotective, anticonvulsant effect. Chamomile infusion significantly reduced withdrawal symptoms in morphine addiction.

The medicinal properties of chamomile pharmacy are known to doctors of almost all specialties. Infusions, decoctions, chamomile tea are used in the treatment of various diseases. Such a wide scope of its application is due to its biological composition, components found in the plant. First of all, it is worth highlighting:

- ascorbic acid;
- beta-carotene;



- matricin;
- selenium, potassium, zinc and copper;
- caprylic, salicylic, isovaleric acids;
- gums;
- quercetin;
- flavonoids;
- nicotinic acid;
- polysaccharides;
- tannins;
- essential oil.

Chamomile flowers of the pharmacy *Chamomilla recutita* have long been used in medical practice as an anti-inflammatory, antiseptic and analgesic: for sore throats, tonsillitis, etc. inflammatory processes; wound healing agent - in dentistry, gynecology; choleric, antimicrobial, soothing, hyposensitizing, antiviral, anti-toxic agent for diseases of the stomach, intestines, liver, with increased gas formation; acts excitingly on the central nervous system, strengthens and quickens breathing, dilates the vessels of the brain. In folk medicine, chamomile is used to treat various allergic reactions as lotions. Chamomile oil is used in aromatherapy. This effect is somewhat similar to that of drugs used in medicine, but there are no side effects. For example, the wound-healing effect of the drug "Kamillosan" is comparable to that of hydrocortisone derivatives. Chamomile, due to its pronounced therapeutic effect, could not fail to find wide application in the cosmetic industry. In particular, due to its ability to eliminate irritation, as well as its deodorizing and bactericidal action, it is increasingly used in various products, it is preferred when creating products for cleansing and skin care (in particular, intended for children), in sunscreen compositions, as well as in preparations applied after shaving. Chamomile extract is used to lighten hair, in scalp care products. Moreover, there is evidence that chamomile has anti-aging activity. The fact that chamomile has a fragrant smell, even more advantageously emphasizes its therapeutic effect. Due to its pleasant smell, it finds application in aromatherapy, and chamomile essential oil serves to give flavor to herbal liqueurs. Let us now turn to the physiologically active components of the German chamomile. The main substances here are (-)- α -bisabolol, bisabolol oxides and hamazulene. In the 70s and 80s, they became the subject of extensive research. Almost odorless, optically active bisabolol shows pronounced anti-inflammatory activity in experiments on paw edema in rats, has a pronounced bactericidal effect. Bisabololoxides and hamazulene also have an anti-inflammatory effect, although weaker than that of the most active substance of this class - α -bisabolol. The same applies to synthetic bisabolol. Since natural

chamomile essential oil is a very expensive product, many attempts have been made to introduce its individual, affordable and effective ingredients supplied at reasonable prices. In this regard, the main ingredient is bisabolol.

Currently, racemic bisabolol is synthesized on a large scale with low costs from intermediates used in the production of vitamins. However, it is less effective than the levorotatory form contained in natural essential oil. This form is also called levomenol, distilled from the essential oil of a Brazilian shrub called "candeia", and currently it is she who dominates the market. Bisabolol is used as part of cosmetics for various purposes:

- for sensitive skin;
- for the skin care of infants;
- for sun protection;
- for the treatment of sunburn;
- for depilation;
- as part of toothpastes and mouthwash;
- for lip care;

– in feminine hygiene products. Its content in the final product varies from 0.05 to 0.5%. Azulenes are known to play an important role in the treatment of stomach ulcers. They are less suitable for external use because they are sensitive to air and easily lose their activity and color. The flavonoids apigenin, luteolin and quercetin contained in the aqueous extract also contribute to the anti-inflammatory effect of chamomile, and in addition, absorb UV light and suppress the activity of free radicals. The latter is also characteristic of umbelliferon. Properties of chamomile *Chamomilla* belongs to the Asteraceae or compound-colored family. Although there are a number of species known only by the name of chamomile, only three of them are used as plants useful for humans. The most popular is *Chamomilla recutita* or *Matricaria* (medicinal chamomile), also known as pharmacy chamomile, German chamomile, Hungarian chamomile, false or wild chamomile. This is the same daisy that is familiar to everyone by its white and yellow colors. In its wild state, it is found almost all over Europe, and it is cultivated in most European countries and the USA. Another well-known type of chamomile is *Anthemis nobilis*, known to everyone as Roman or English chamomile. As a medicinal plant, it is cultivated in England, Belgium, France and the USA. Let's turn, first of all, to the pharmacy chamomile - the best studied and most commonly used species. In particular, its flowers contain a number of lipophilic, as well as polar pharmacologically active ingredients, which are isolated in various ways. Lipophilic ingredients are concentrated in the essential oil, which is obtained as a result of steam distillation from fresh or dried flowers and



partially from stems (yield from 0.3 to 1.5%). The most important component of the essential oil, which accounts for up to 50%, is (-)- α -bisabolol, followed by bisabolol oxides A, B and C, bisabolonoxides, hamazulene, then spiroether and trans- β -farnesene. Rarer ingredients are represented by cardinene, nerolidol, pachulene, caryophyllene oxide, farnesol, furfural, umbelliferon methyl ester (herniarin), spatulenol and myrcene. The essential oil of chamomile pharmacy is a very viscous liquid, color from dark blue to bluish-green, with a characteristic smell: balsamic, honey, partly floral, reminiscent of apple. For this reason, the oil finds application in perfumery, in particular for giving chypre notes. The blue color is explained by the presence of hamazulene, which itself is not a component of chamomile, but is formed from matricine during distillation with water vapor. Water-alcohol extraction produces extracts that, in addition to essential oil, also contain polar components such as apigenin, luteolin and quercetin, coumarins such as umbelliferon, as well as antemincic acid (bitter glucoside), choline, tannin and polysaccharides. In the final stages, the flowers are treated with oils to obtain oil extracts, which have basically the same composition as the distillate obtained by steam distillation. The above also applies to extracts obtained using carbon dioxide in a supercritical state. However, the simplest extraction method is brewing dried flowers to produce chamomile tea. Research methods Extraction of raw materials In the composition of chamomile there are various classes of compounds. Therefore, in order to quantify the composition of extractive substances, the extraction method with various solvents was used. The following extractants were used for the preparation of extracts: water-glycerin, water-alcohol with various hydromodules, oil.

Medicinal properties of chamomile pharmacy

The therapeutic effects of pharmacy chamomile are wide, chamomile-based drugs are used both internally and topically. So, chamomile:

- has a pronounced soothing, sedative effect, due to which it helps to cope with increased anxiety and stress, is part of the therapeutic fees for the correction of depression;
- helps to normalize the heart rate, protects the heart from external influences;
- helps in normalizing blood circulation, stimulating brain activity;
- regulates the digestive system, helps to reduce gas formation and bubbling;
- protects the mucous membranes of the body, stimulates tissue healing, has an antiseptic effect;

- helps in strengthening the walls of the arteries, thus preventing the development of atherosclerosis;
- has an anti-allergic effect.

In addition, chamomile contains natural antispasmodic and analgesic components.

The highest dry matter content is determined in oil extracts, and there is practically no difference between extracts with a different ratio of raw materials and solvent. The extraction process was weakest with the use of alcohol as a solvent, while the change in the hydromodule also did not affect the degree of extraction. The maximum amount of flavonoids from chamomile pharmacy is extracted when using oil as a solvent. More polar solvents have less extractive ability with respect to flavonoids. The largest amount of gernerin and umbelliferone is found in chamomile oil extracts and in water-alcohol chamomile extract 1:2, glycerin extracts showed the worst result. Thus, it can be concluded that the largest number of substances exhibiting pharmacological action is in chamomile oil extract (2) and in water-alcohol chamomile extract (water: alcohol = 1:2). For further use in cosmetic products in the case of biologically active substances of chamomile, where the active substance is bisabolol, its maximum is determined in oil extracts (1:10) and in water-alcohol extract 1:2. Conclusion For use in cosmetics according to the results of research, the most optimal extract is the oil extract of chamomile pharmacy in the ratio of raw materials: oil = 1:10. At this stage, work is underway to study the pharmacological properties of chamomile pharmacy in the formulation of therapeutic cosmetic cream and study its pharmacological properties.

Although chamomile pharmacy is generally a very safe plant, there are some contraindications to its reception, as well as a number of side effects that you need to know about before starting therapy. So, chamomile is prohibited to use in the presence of:

- individual intolerance to certain of its components and allergies to the plant;
- chronic kidney damage;
- exacerbations of peptic ulcer of both the duodenum and stomach;
- diarrhea;
- serious mental disorders.

The use of decoctions, teas or infusions with chamomile in too large quantities can threaten the development of side effects. These include nausea with vomiting attacks, a sharp increase in blood pressure, as well as allergies with the development of a rash or bronchial spasm, swelling of the throat.



All the biological properties of chamomile, when preparing and using various types of herbal tea with it, can help with various pathologies. These include:

- various skin pathologies, including inflammatory processes, various small wounds, superficial burns, dermatitis, allergies, infections;
- lesions of the biliary system, including problems with bile stagnation;
- various processes in the urinary system, bladder, ureters or kidneys;
- inflammatory lesions of internal organs, colds, infections;
- gastritis and intestinal problems (flatulence, cramps);
- bronchial asthma, cough in various pathologies, including respiratory pathologies and lesions of the respiratory system;
- migraine, various infe headaches;
- oral problems, gum inflammation, dental problems;
- anxiety, sleep problems, depression.

Combined preparations "Alarom", "Azokan", "Romazulan" and others have been created on the basis of chamomile. Chamomile is very widely used in cosmetics.

Chamomile also has immunomodulatory properties. Due to the fact that chamomile preparations prevent the release of histamine, they have a pronounced anti-allergic effect.

Local application of water infusions of chamomile has a therapeutic effect in atopic dermatitis.

Due to its antioxidant and inhibiting properties of u-glutamyl transferase, chamomile protects the kidneys from the damaging effects of cisplatin.

In general, chamomile is a safe remedy. You just need to be careful when taking warfarin at the same time with chamomile. A case is described when simultaneous administration of warfarin and chamomile led to profuse bleeding.

REFERENCES:

1. Bolotina A. Y. Dictionary of medicinal plants. M.: Russo, 1999. - 370 p.
2. Abdullahzadeh M., Matourypour P., Naji S.A. Investigation effect of oral chamomilla on sleep quality in elderly people inlsfahan: A randomized control trial - J. Educ. Health. Promot. 2017, Jun 5, 6, 53. doi: 10.4103/jehp.jehp_109_15.
3. Farxodjonova N. F. Modernization and integration: social-philosophical analysis //Роль науки в формировании современной виртуальной реальности. – 2019. – С. 10-12.
4. Voitkevich S. A. Medicinal plants and essential oils. M.: Food industry, 2002. - 172 p.
5. Zamyatina N. G. Medicinal plants. M.: ABF, 1998. - 216 p.
6. Nodira F., Egamberdi R. DISTINCTIVE FEATURES OF YOUTH SPIRITUALITY IN THE DEVELOPMENT OF SOCIETY //E Conference Zone. – 2022. – С. 46-50.
7. Puchkova T. V. Encyclopedia of ingredients for cosmetics and perfumes. Moscow: School of Cosmetic Chemists, 2015- - 408 p.
8. Farxodjonova N. F. Modernization and globalization as historical stages of human integration //Теория и практика современной науки. – 2018. – №. 3. – С. 16-19.
9. Cemek M., Yilmaz E., Buyukokuroglu M.E. Protective effect of Matricaria chamomilla on ethanol-induced acute gastric mucosal injury in rats - Pharm. Biol. 2010, Jul., 48(7), 757-763.
10. Zargaran A., Borhani-Haghighi A., Salehi-Marzijarani M., Faridi P., Daneshamouz S., Azadi A., Sadeghpour H., Sakhteman A., Mohagheghzadeh A. Evaluation of the effect of topical chamomile (Matricaria chamomilla L.) oleogelas pain relief in migraine without aura: a randomized, double-blind, placebo-controlled, crossover study -Neurol. Sci. 2018, May 28. doi: 10.1007/s10072-018-3415-1