

Journal of Healthy Nutrition and Dietetics

In issue



Melissa



Poppy



Tutsan



Tomatoes

Detailed description of
useful, healing and danger-
ous properties

Application in oriental, folk
and official medicine

Use in cooking and cosme-
tology

Types and growing condi-
tions

Procurement and storage
rules

Table of contents

<i>Tkacheva N., Eliseeva T. M elissa (Melissa officinalis)</i>	2
<i>Tkacheva N., Eliseeva T. Poppy (Papáver)</i>	11
<i>Tkacheva N., Eliseeva T. Tutsan (Hypericum)</i>	21
<i>Tkacheva N., Eliseeva T. Tomatoes (Solánum lycopersicum)</i>	31



Melissa (lat. *Melissa officinalis*)

Eliseeva Tatyana, editor-in-chief of the project EdaPlus.info

Tkacheva Natalia, phytotherapist, nutritionist

Email: eliseeva.t@edaplust.info, tkacheva.n@edaplust.info

Abstract. The article discusses the main properties of lemon balm and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The chemical composition and nutritional value of the plant are indicated, the use of lemon balm in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of lemon balm on the human body under certain medical conditions and diseases are analyzed separately. The scientific foundations of diets with its application are considered.

Keywords: lemon balm , beneficial properties, potentially dangerous effects, side effects, beneficial properties, contraindications, diets

Beneficial features

Chemical composition and presence of nutrients

trace elements	mg/kg dry weight ^[four]
Iron	178
Manganese	171
Zinc	54.9
Copper	7.86
Nickel	3.45
Chromium	1.05
cobalt, lead and cadmium	less than 0.1

What exactly is used and in what form

Leaves and apical shoots of lemon balm are used in the preparation of infusions, decoctions, tinctures, water vapors , extracts. Raw materials are used both in fresh and dried form. Externally, lemon balm is used to prepare baths, rinses, poultices, lotions, compresses. Melissa essential oil is widely used for the manufacture of medicinal products and in aromatherapy.

Medicinal properties

Lemon balm leaves contain volatile oils (terpenes citral , citronelal , geraniol , linolol), tannins, bitterness, triterpenes (represented by ursulic and oleanic acids), as well as organic acids, including caffeic and chlorogenic .

Melissa is a good sedative, antispasmodic, laxative, antiemetic; enhances the secretory function of the stomach and stimulates the motility of the biliary tract. ^[6]

Melissa leaf extract has a powerful sedative effect. Melissa stimulates the activity of the digestive system, and is credited with antiviral and anti-inflammatory effects. Melissa is used as a bacteriostatic , as an effective remedy for nervous overexcitation, with vegetovascular dystonia, sleep disorders, with a broken heart rhythm, with pressure surges due to emotional overstrain; with malfunctions in digestion, autonomic neurosis, gastritis and colitis caused by an emotional factor. ^[7]

In official medicine

For sale in pharmacies, melissa tincture and " *Melissa officinalis herb* " are produced. Also, along with other natural ingredients, lemon balm is part of such sedative drugs as *Novo- Passit* , *Persen* .

In folk medicine

- With tachycardia, gastrointestinal disorders, insomnia, neurasthenia, vegetovascular dystonia, stress conditions, an infusion is recommended: a tablespoon of lemon balm leaves is infused for 10 minutes in 400 ml of boiling water. Drink half a glass up to 3 three times a day. The effect of the plant on the body is explained by the fact that the volatile oil reduces the sensitivity of the central nervous system. The alcoholic tincture of lemon balm works more effectively in such cases. The bacteriostatic and antiviral properties of lemon balm are due to the high content of tannins. ^[6]
- As a sedative, an infusion is recommended: 3 teaspoons of lemon balm leaves to infuse for a quarter of an hour in 200 ml of boiling water, drink in small sips, warmed up, before going to bed. ^[7]
- With nausea, toxicosis in pregnant women (if there are no medical contraindications), sleep problems, neuroses, dizziness, anemia, "lazy" intestines, skin rashes and painful menstruation, it is recommended to take an infusion: 2 tablespoons of shoots-tops of lemon balm and its leaves insist 2 hours in 400 ml of boiling water. Strained infusion is drunk three times a day, 100 ml shortly before meals.
- Melissa oil can help with diseases of the uterus and menstrual irregularities. Infuse 2 tablespoons of fresh lemon balm leaves for at least 5 days in 200 ml of vegetable oil, strain and store in a tightly closed refrigerator. The oil is taken 1-2 times a day, 15 drops.
- With atherosclerosis and high blood pressure, a collection is useful: lemon balm grass (4 tablespoons), rue grass and creeping thyme (3 tablespoons each) are infused in boiling water for about 2 hours. For 200 ml of water, take a tablespoon of herbal collection. The infusion must be drunk during the day.
- For nausea and vomiting in pregnant women (and with the permission of a doctor), a collection of lemon balm (4 tablespoons of chopped grass), peppermint leaves and chamomile flowers (3 tablespoons each) is advised. 4 tablespoons of a mixture of these herbs insist half an hour on a liter of boiling water. Drink 200 ml of infusion daily.
- With a rapid heartbeat against the background of progressive neurosis, a collection is prescribed: lemon balm leaves, yarrow grass, Tutsanand valerian root (a teaspoon in total). Infusion of herbs is kept for 3 hours in 400 ml of boiling water. Drink half a cup once a day. ^[eight]

- For amenorrhea, mix one part of lemon balm leaves, rosemary, cherry or cherry stalks and 5 parts of pepper grass. Pour a tablespoon of this collection into 200 ml of water, boil and boil for 5 minutes over low heat. Cool the broth, strain. Take 100 ml, cold, daily in the morning and evening.
- In case of alcoholism, an infusion of lemon balm is prescribed: a tablespoon of dry, crushed leaves of lemon balm is steamed in 400 ml of boiling water. Infuse for half an hour in warmth, then filter. The infusion should be drunk during the day, in small sips, you can add lemon. Relieves the symptoms of prolonged alcohol intoxication by the systematic intake of an infusion from the collection of herbs in equal proportions: lemon balm, thyme, peppermint.
- In chronic alcoholism, a collection is prepared: dry, crushed lemon balm leaves, peppermint grass, thyme, St. juniper (1 part each). 3 tablespoons of the herbal mixture is brewed in 300 ml of boiling water, infused for half an hour, filtered. Drink infusion of 2 tablespoons 8 to 10 times a day. Reception should be carried out within 2 months. Then, after a break, continue the course of treatment.

How to prepare tincture of lemon balm yourself?

- **Tincture**

Grind 25 g of dry lemon balm leaves, pour 0.2 liters of vodka and keep in a dark place at room temperature for 14 days, shaking the infusion from time to time. Strain after holding. It can be taken both internally and externally - for rubbing and massage procedures.

- Extract from fresh lemon balm

Fill a glass bottle with fresh (washed and dried) lemon balm leaves. Pour the herbal mass with vegetable oil so that the leaves are completely covered. When bubbles appear, the bottle must be shaken so that the air rises to the top. Cover the bottle with a lid and leave in a place without access to light. After a month, strain the resulting oil infusion. The resulting liquid is used as an extract from lemon balm. To increase the concentration of essential oil, you need to repeat the process on the basis of an already prepared oil extract and a new portion of fresh lemon balm. ^[5]

Externally:

- In case of physical exhaustion, poor metabolism, a bath is prescribed as a general tonic: mix lemon balm herb, oregano, wormwood, yarrow, mint, calamus root and pine buds (take 20 g of each component). Brew herbal collection in a liter of water, let it brew, strain and add to a full bathroom. Take a bath for no more than a quarter of an hour, at a water temperature of 38.
- For burns, poorly healing wounds, crushed fresh leaves (or dry, steamed in boiling water) of lemon balm are applied in a thin layer of clean gauze to damaged skin.
- For bedsores, it is recommended to wash with a chilled decoction (boil 3-4 tablespoons of herbal raw materials in 0.5 liters of water).
- With hemorrhoids, constipation, a microclyster from fresh juice of lemon balm leaves and boiled water is useful. For 1 glass of warm water, take a teaspoon of lemon balm juice. ^[9]
- For neuralgia, bruises, rheumatism, poultices are advised: 2 tablespoons of crushed lemon balm leaves are laid out in a gauze "pocket", dipped in boiling water, and then, tolerably hot, applied to the inflamed area, wrapped over with a warm scarf or scarf.
- For rinsing the mouth (in the presence of wounds, sores, inflammation, sore gums), use a warm infusion: 2 tablespoons of lemon balm herb are steamed with 200 ml of boiling water, insisted for at least 60 minutes. ^[eight]
- With sinusitis, steam inhalations with infusion of lemon balm help, which are done every hour (inhalation duration is 5 minutes). Cotton wool soaked in a hot infusion of lemon balm is

injected into the nose, from time to time warming the cotton wool in a warm infusion. This method eliminates the pain of sinusitis, acts as an antiseptic, accelerates the healing of inflamed tissues, inhibits the growth of microbes. Also useful for sinusitis are turundas in the nose, soaked in 25% tincture of lemon balm on vodka. ^[5]

Does lemon balm help with neurosis? Traditional medicine claims that a bath is useful for vegetative neurosis: prepare a decoction (75 g of lemon balm herb and peppermint leaves and 30 g of chamomile inflorescences boil in 3 liters of water for 5 minutes), mix it with bath water. ^[7]

in oriental medicine

Avicenna was one of the first representatives of medical science, who pointed out the importance of lemon balm in the treatment of depression and melancholy.

In scientific research

The study of the medicinal properties of lemon balm dates back centuries. The healing value of the plant was mentioned by Dioscorides , Pliny, Paracelsus.

The 17th-century English writer and horticulturist John Evelyn wrote of lemon balm: "*Melissa has a beneficial effect on brain activity, it strengthens memory and relieves melancholy.*" *Melissa, infused with wine, "... normalizes cardiac activity and restores psychological, emotional balance "*. ^[ten]

Representatives of modern science are improving the system of medical knowledge about this useful plant.

The properties of the essential oil of lemon balm, which grows in the northern regions of India, were studied by R.S. Verma , R. K. Paladia , A. Chohan . ^[eleven]

The composition of the essential oil of lemon balm is covered in the scientific work of K. Seidler-Lozikovskaya , R. Zavirskaya-Wojtasiak , E. Voytovich and J. Bosyanovsky . ^[12]

Melissa officinalis is the subject of a major scientific study by Iranian scientists (H. Moradahi , E. Sarksyani , H. Bibak , B. Naseri and others) ^[13]

In the article by Alekseeva A.V. neurotropic preparations based on the herb *melissa officinalis* are analyzed , the possibilities of using melissa infusion in the practice of pediatricians are substantiated. ^[fourteen]

The use of lemon balm preparations in the treatment of school-age children diagnosed with non-ulcer dyspepsia was analyzed in the work of Alekseeva A.V. and Mazur L.I. ^[fifteen]

Pharmacognostic research on the standardization of new drugs based on the herb *Melissa officinalis* is the topic of the dissertation of Boltabekova Z.V. ^[16]

The potential of using funds based on raw materials from lemon balm in pediatrics is revealed in the study of Alekseeva A.V., Mazur L.I., Kurkina V.A. ^[17]

In the Bulletin of Ethnopharmacology (2006), the Portuguese researcher A. Ferreira provided data on the possibility of using lemon balm in the treatment of Alzheimer's disease (with an already developing disease and for its prevention). ^[eighteen]

In cooking

The characteristic and pleasant lemon smell of lemon balm made it a familiar and popular component, without which the preparation of many culinary masterpieces is indispensable: pastries, desserts, original sauces and marinades, drinks.

- Melissa sauce

To prepare the sauce, you will need: 2 cups of fresh lemon balm leaves, half a cup of olive oil, 3-4 cloves of garlic. Grind all ingredients in a blender to a paste. Serve with chicken or grilled fish, or as a sauce for pasta.

- Melissa cookies

You will need: 2 tablespoons finely chopped lemon balm leaves, 1 teaspoon lemon juice, a cup of softened butter, 2/3 cups sugar, 1 egg, 2 and 1/3 cups flour, a teaspoon of salt, fresh lemon balm leaves for decorating the finished cookies. Grind the crushed lemon balm leaves with lemon juice. Beat butter with sugar. In the oil mixture, while stirring, gradually add the grated lemon balm, egg, flour and salt. Knead the dough, shape into a ball, cover with cling film and refrigerate for at least 2 hours until firm. Preheat the oven to 180 degrees, roll out the dough, cut out thin cookies using molds and bake until golden brown for 8-10 minutes.

- Melissa tea

To make tea you will need: a quarter cup of fresh lemon balm leaves (and the same amount of fresh mint leaves), a teaspoon of dried or fresh lavender flowers, 3 small orange peels, 2 cups of water. Pour boiling water over all the ingredients, steam the tea in a large teapot and leave for at least 10 minutes. Strain and serve chilled.

- Candied melissa leaves

Beat the egg with a little water until white. Dip each lemon balm leaf into the whipped mass, and then roll in granulated sugar. Spread the leaves on a roasting pan lined with baking paper and dry in the oven at 90 degrees for 20-30 minutes. The treat should be slightly golden, but not brown.

- Melissa liqueur

1.5 cups of sugar, a quarter cup of water, 2 cups of tightly packed young stems and leaves of lemon balm, 1 liter of vodka or brandy. Pour sugar into water, bring to a boil and keep on low heat until the sugar is completely dissolved. Put stems and leaves of lemon balm in deep glassware, pour warm syrup over lemon balm, add alcohol (vodka or brandy). Mix all ingredients thoroughly, cover, and keep in a dry, dark place for at least a month. Shake periodically. At the end of the aging period, strain and bottle. Melissa liqueur is served with seafood or poultry, added to meat sauces. The drink goes well with desserts, fruits.

- Melissa honey

To get such a spicy and fragrant honey, you will need: 1.5 cups of honey, a quarter cup of crushed fresh lemon balm leaves, tightly packed in a cup, 2 tablespoons of lemon juice, one strip of lemon peel, 10 allspice seeds, 10 cloves. Heat the honey in a water bath, pour the ingredients into a dry glass bowl and pour over everything on top of not very hot melted honey. Mix well, cover and keep at room

temperature for 2 days. Then reheat honey with spices and strain into a separate jar. Store this honey in the refrigerator and eat within 3 weeks.

- Melissa wine

Ingredients:

1. lemon balm leaves (in an amount equal to a filled two-liter container);
2. 2 large oranges (you will need juice and peel);
3. 400 g light raisins;
4. 1 lemon (juice and peel);
5. 1 kg of sugar;
6. 1 teaspoon wine yeast nutritional supplement
7. 1 teaspoon of tartaric acid;
8. 1 teaspoon pectin enzyme;
9. packaging of wine yeast;
10. disulfite tablets (as a preservative and antioxidant in the wine making process).

Separate the lemon balm leaves from the stems, rinse in cold water, dry, put in a clean container and pour 2 liters of boiling water. Add one tablet of potassium disulphite, cover with a tight-fitting lid and infuse for 2 days.

Drain the resulting liquid into a sterilized wine ladle, add juice and peel from lemon and oranges, washed and crushed raisins, tartaric acid, wine yeast, nutritional supplement and pectin enzyme. Leave to ferment for 4 days under a tight-fitting lid, stirring twice a day.

After fermentation, strain into a bottle, add sugar, mix and keep for at least 3 months. The taste of wine improves with an aging period of six months. Lemon balm wine can be served both as an aperitif and with main courses.

In cosmetology

Due to the complex of its properties, including antibacterial ones, lemon balm can be effectively used in the manufacture of home cosmetics. Melissa leaves are suitable for making facial tonics, hair rinses, lotions, ointments, lip balms, facial cleansing with a steam bath.

- Melissa face tonic

You will need: 225 g of lemon balm distillate, 0.5 teaspoon of glycerin or liquid honey. Mix everything thoroughly and use a cotton pad to wipe your face. Store tonic in the refrigerator.

- Melissa lip balm

Melt 28 g of beeswax in a ladle, add 1 cup of lemon balm oil extract. Stir slowly and thoroughly until smooth, pour into small jars. Apply to lips as needed.

Other uses

From the leaves of lemon balm, you can make many useful things in everyday life.

Aromatic wax with lemon balm

Heat up 10 g of beeswax to the consistency of soft plasticine, combine the wax with lemon balm essential oil (10 g), knead the mass well with your hands. Keep the wax with lemon balm in a closed bottle, use it as a natural air fragrance if necessary. ^[5]

- Pillow for sleep with Melissa

Melissa for insomnia is considered one of the most effective remedies. It is noteworthy that this fragrant plant returns sleep in the truest sense: with the help of an ordinary sleeping pillow. To make an unusual pillow, take dried lemon balm leaves, catnip, chamomile, hops and lavender in equal parts. Mix all herbs gently. Add 6 cloves and a teaspoon of crushed cinnamon sticks to the collection. Fill the sachet with a cup of the herbal mixture, and place the carefully sealed sachet into your sleeping pillow. Before use, you must make sure that there is no allergy to any of the components of the herbal collection.

Melissa has long been used as a natural repellent. Pounded lemon balm leaves were rubbed on the skin to repel insects.

In the UK, since the time of Queen Victoria, lemon balm has been used to wipe furniture, the surface of which, after polishing with lemon balm leaves, is shiny and smooth.

It is useful to treat a room where a sick person is located with lemon balm essential oil: dropping a few drops into an aroma lamp or spraying water to which essential oil has been added. This procedure kills germs, disinfects the air. ^[5]

Dangerous properties of lemon balm and contraindications

Possessing a sedative effect, lemon balm herb should be used with caution when driving.

Being a sedative, lemon balm can enhance the effect of tranquilizers and other sedatives, so taking them and lemon balm at the same time is highly undesirable. Contraindicated simultaneous use of the drug " **Valium** " and lemon balm herb. Melissa during pregnancy is allowed if there are no contraindications in a particular case and the period, method and doses of taking preparations from lemon balm are recommended by the doctor and agreed with him.

The components of lemon balm help to reduce the production of thyroid hormones, so the herb is contraindicated in hypothyroidism, characterized by reduced production of thyroid hormones.

Botanical description

This is a perennial herb representing the *Lamiaceae* (*Lamiaceae*) family.

origin of name

this popular essential oil plant is called *lemon mint*, *lemongrass*, *bee*, *honey*, *swarm*. The official name of the genus in Latin - " **Melissa** " - is a borrowing from the Greek language and is translated as " **bee** ".

Kinds

In botany, there are 5 types of lemon balm:

1. **Melissa officinalis** is a common representative of the flora, which grows both in the wild and is cultivated in many countries of the globe. A plant with invaluable medicinal value, a wonderful honey plant. There is a wide variety of bred lemon balm cultivars, subspecies and varieties;
2. **Melissa axillaris** - a species that is found in China, Indochina, the Himalayas, Java and Sumatra;
3. **Melissa flava** is the habitat of this species Tibet, Nepal, Bhutan, eastern India;
4. **Melissa yunnanensis** - grows in Tibet, Yunnan;
5. **Melissa bicornis** .^[one]

Melissa officinalis is a perennial herb, from 30-50 cm to 1.2-1.5 m high. The rhizome is branched, the stem of the plant is straight, tetrahedral, with numerous branches, pubescent with glandular hairs. The leaf arrangement is opposite. The leaves of the lower tier are cordate-ovate, on long petioles; leaves of the middle tier - serrated and oblong, smaller than the lower ones, on short petioles; upper leaves without petiole, pubescent on both sides, bluish-green below, dark green above. Small white or pinkish flowers are collected in a false whorl. The fruits are nuts. The flowering period of lemon balm is July - September.

In the natural environment, the plant can be found among shrubs, on forest edges, near weedy places. Along with this, lemon balm is cultivated by man at a variety of objects: from the botanical garden to beekeeping farms and scientific stations.^[2]

Growing conditions

Melissa grows well on hills, which are characterized by sufficient illumination and inaccessibility to northern winds. Cultivation is successful on loose soils generously flavored with humus. Loamy, sandy soils are suitable. *Melissa* does not tolerate heavy, acidified and clayey soil.

Melissa propagation methods: *seed* and *vegetative* (bush division, etc.). Seeds are sown in soil loosened to a depth of 0.3 m. Sprouted crops must be thinned out. The recommended row spacing is 0.6 m, and between individual bushes it should be about 0.3 m.

Melissa is also propagated by dividing bushes that are at least 2 or 3 years old, or by cuttings. The latter method is very convenient in the areas of the first year, since they are abundantly covered with creeping stems of lemon balm. But such a transplant is recommended to be done as rarely as possible, so that by the end of the warm summer period the plant has time to take root well and does not suffer from the cold in winter.

Lemon balm crops must be carefully cleaned of weeds and loosened between rows. During the growing season, organic and mineral fertilizers (phosphorus, potassium) are applied. The term of fruitful operation of the site for lemon balm is approximately 5-6 years, subject to proper care of the plants.^[3]

Harvest leaves and apical shoots of lemon balm begin shortly before the flowering of the plant or at its very beginning. The collection of raw materials is best done in a calm and sunny time. If lemon balm is collected in two stages, the interval between the first and second collection should be at least a month. Dry the grass in the shade in the open air, in a ventilated attic or in a dryer. Ready raw materials are stored in well-ventilated and dry rooms. The shelf life of lemon balm is one year.^[2]

Growing at home

How to grow lemon balm at home? In the summer, it is most practical to grow lemon balm on the balcony, where there is a lot of sunlight and no drafts. Seeds germinate at a positive temperature (about 10 degrees), an adult plant feels best at 20-25 degrees. In spring and summer, it is more convenient to keep lemon balm on the balcony, and bring it into the room with the beginning of autumn.

For planting indoors, a grown young bush with developed shoots is needed. The diameter of the pot must be at least 0.2 m. If the pot is larger, it must be filled one quarter with crushed bricks or medium-sized stones. Requirements for the height of the pot: the main part of the melissa root system reaches a depth of up to 0.2 m, and if the pot is much higher, the excess earth masses will turn sour during watering, which negatively affects the plant. Top dressing of lemon balm with a mixture of fertilizers is recommended to be done once a month, it is also necessary to intensively fertilize the soil in a pot in the spring, and in the fall the use of fertilizers should be suspended.

Watering daily in the summer, in the cold season - once every 3 days. It is necessary to water in such a way that the water protrudes onto the pallet. This water must be drained, since lemon balm does not tolerate stagnant water (as well as overdried soil).

In winter, it is recommended to pluck individual leaves and even small stems from the bush.

Seeds begin to ripen on the lower inflorescences, they are harvested by hand, shaking into a box or bag. The collection of seed material is repeated as the fruits ripen on the whorls. ^[four]

Literature

1. Wikipedia, [source](#)
2. Reference book on preparations of medicinal plants / D. S. Ivashin, Z. F. Katina, I. Z. Rybachuk et al. - 6th ed., isp. and additional - K.: Harvest, 1989. - 288 p.: ill.
3. Mamchur F. I., Gladun Ya. D. Medicinal plants in the garden. - K. Harvest, 1985. - 112 p., ill.
4. The most needed book on indoor plants / ed. L. S. Koneva. - Minsk: Harvest, 2013. - 320 p.: ill.
5. Healing Melissa. Nikolai Dannikov - Eksmo: 2013
6. Karhut V.V. Living Pharmacy - K. Health, 1992. - 312 p., ill., 2, arch. ill.
7. Medicinal plants: encyclopedic reference book / ed. A. M. Grodzinsky. - K.: Olimp, 1992. - 544 p.: ill.
8. Plants replace medicines (advice of modern herbal medicine and traditional medicine on the use of medicinal plants in home practice). - N. NIMP "Harvest", 1992. - 186 p.
9. Nosal I. M. From plant to man. - K.: Veselka, 1993. - 606 p.
10. Balm, [source](#)
11. Evaluation of essential oil quality of lemon balm (*Melissa officinalis* L.) grown in two locations of northern India, [source](#)
12. Essential oil content and its composition in herb of lemon balm (*Melissa officinalis* L.), [source](#)
13. *Melissa officinalis* L., a valuable medicine plant: A review\\ Journal of Medicinal Plant Research Vol. 4(25), pp.2753-2759, 29 December Special Review, 2010.
14. MELISSA HERB PERSPECTIVE SOURCE OF IMPORT SUBSTITUTION NEUROTROPIC DRUGS, [source](#)
15. PROSPECTS FOR THE USE OF MELISSA IN PEDIATRIC PRACTICE, [source](#)
16. Pharmacognostic study on the standardization of new drugs based on the herb *Melissa officinalis* (*Melissa officinalis* L.), [source](#)
17. MELISSA OFFICINAL: PERSPECTIVES FOR USE IN PEDIATRIC PRACTICE. A.V. Alekseeva, L.I. Mazur, V.A. Kurkin. // Medicines in pediatrics, 2010
18. Lemon Balm: An Herb Society of America Guide, 2007.

[An extended HTML version of the article](#) is available on the website edaplust.info.

Melissa - useful properties, composition and contraindications

Eliseeva Tatyana, editor-in-chief of the project EdaPlus.info

Tkacheva Natalia, phytotherapist, nutritionist

E-mail: eliseeva.t@edaplust.info, tkacheva.n@edaplust.info

Received 01/27/18

Abstract. The article discusses the main properties of lemon balm and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The chemical composition and nutritional value of the plant are indicated, the use of lemon balm in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of lemon balm on the human body under certain medical conditions and diseases are analyzed separately. Considered scientific basics diets With her application.



Poppy (lat. Papáver)

Eliseeva Tatyana, editor-in-chief of the project EdaPlus.info

Tkacheva Natalia, phytotherapist, nutritionist

Email: eliseeva.t@edaplust.info, tkacheva.n@edaplust.info

Abstract. The article discusses the main properties of poppy and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The chemical composition and nutritional value of the plant are indicated, the use of poppy in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of poppy on the human body under certain medical conditions and diseases are analyzed separately. The scientific foundations of diets with its use are considered.

Keywords: poppy, beneficial properties, potentially dangerous effects, side effects, beneficial properties, contraindications, diets

Beneficial features

Chemical composition and presence of nutrients

Table 1. Chemical composition of seeds poppy (according to [Food+](#)).

Main substances (g / 100 g):	Poppy seeds ^[5]
Water	5.95
Carbohydrates	28.13
Sugar	2.99
Alimentary fiber	19.5
Squirrels	17.99
Fats	41.56
Calories (kcal)	525
Minerals (mg/100 g):	
Calcium	1438
Phosphorus	870
Potassium	719
Magnesium	347
Sodium	26
Iron	9.76
Zinc	7.9
Vitamins (mg/100 g):	
Vitamin E	1.77
Vitamin C	one
Niacin	0.896
Thiamine	0.854
Vitamin B-6	0.247
Riboflavin	0.1

What exactly is used and in what form

For medicinal purposes, petals and boxes of self-seed poppy are used. From the petals prepare infusions, decoctions on water, honey and milk, syrup. Vegetable oil is obtained from poppy seeds. Poppy oil is used in the pharmaceutical, food, soap and cosmetic industries. Fruit-boxes of another species - sleeping pills - are used in the medical industry as a source of alkaloids (morphine, codeine and papaverine).

Medicinal properties

poppy flowers contain an average of 0.05% alkaloids (coptisine , readin , reaginene , methylstylophine chloride , glaucine), vitamin C, anthocyanins, mucus, pectin, resinous substances, as well as salts of iron and magnesium. Poppy heads contain alkaloids (coptisine , readin , sanguinarine , papaverrubins), vitamin E, fatty acids (palmitic, stearic, linoleic).

Petals contain gums, dyes, organic acids.

Wild poppy (self-seed) has a calming effect on the central nervous system, has mild hypnotic and analgesic properties, promotes sputum discharge, has an enveloping, softening effect, has a hemostatic and diaphoretic effect. **Infusion of poppy petals** is used for coughs, bronchitis, tracheitis, in the treatment of sleep disorders, with tachycardia, to eliminate the symptoms of dysentery and diarrhea, with involuntary urinary incontinence. **Topical treatment** includes the use of poppy petals in a powdered state (to stop bleeding) or as a lotion. **A decoction of poppy heads** is used to treat acute cough, palpitations, irregular and scanty menstruation. **The antitumor properties of self-seed poppy** are important for modern medicine . Japanese researchers have found that poppy seed extract is active

in the fight against tumors. In addition to Japan, poppy is used in the treatment of cancer in a number of countries: Chile, Egypt, Morocco. Poppy is used by specialists in these countries for cancer of the abdominal organs, for sarcoma, condyloma and external, external forms of cancer. ^[four]

Soporific poppy (opium) contains 26 alkaloids of isoquinoline structure, the amount of which in dry poppy heads is 1-2.5%. The alkaloids morphine, codeine and papaverine have practical applications. Poppy also contains triterpene alcohol cyclolaudenol, meconine, beta-sitosterol and organic acids (chelidonic, oxycinchonic, coffee, vanillic, meconic, etc.).

- **The alkaloids** contained in the sleeping pill determine the purpose of the plant's use in medicine. Morphine is a group of narcotic analgesics. It is responsible for blocking pain impulses directed to the cerebral cortex, suppresses the functioning of the cough, vomiting and respiratory centers, slows down the motor functions and excretory activity of the entire digestive system, enhances the effect of sleeping pills and narcotic drugs, local anesthetics, causes a state of euphoria.
- **Morphine** is used as an analgesic for injuries, for preoperative and postoperative analgesia, for pain caused by pathologies of internal organs (malignant neoplasms, myocardial infarction, inflammatory processes of various etymologies, colic in the kidneys), for insomnia against the background of constant pain syndrome. More rare cases of morphine use are for shortness of breath associated with acute heart failure, with a debilitating cough. Morphine will be used during X-ray diagnostics: when examining the gallbladder, duodenum, stomach. Long-term and repeated use of morphine causes addiction (morphinism), which entails irreversible damage to the psyche and various internal diseases. Side effects of morphine treatment - nausea, vomiting, constipation, disorders of the gastrointestinal tract and disruptions in the heart rhythm - are eliminated by the appointment of anticholinergic drugs (a single dose of atropine, metacin).
- **Codeine** also belongs to narcotic analgesics, but its properties to eliminate pain are less pronounced. In a therapeutic dosage, it does not overwhelmingly affect cardiac activity, the work of the gastrointestinal tract and the respiratory system. Along with this, in comparison with morphine, codeine has a much brighter property to suppress the excitability of the cough center, which determines the value of codeine in the treatment of cough. In combination with non-narcotic painkillers (analgin, amidopyrine), caffeine and phenobarbital, codeine is used for headaches and neuralgia.
- **Papaverine** belongs to the group of myotropic antispasmodics. It reduces the tone and relaxes the muscles, has a calming effect on the nervous system. This explains the appointment of papaverine for hypertension, angina pectoris, migraine, pylorospasm, cholecystitis, colitis, spasmodic condition of the urinary tract and bronchi. ^[four]

In official medicine

Codeine is part of the preparations "Codterpin" and "Cough Tablets", which suppress cough and contribute to better sputum discharge. Codeine is also a component of Bechterew's medicine, which has a sedative effect.

Papaverine is part of the Andipal, Bepasal, Dipasalin, Kelatrin, Keliverin, Lupaverin, Nikoverin, Palyufin, Papazol, Pafilin, Teoverin tablets, "Tepafillin".

Morphine hydrochloride, Omnopon, codeine phosphate, papaverine hydrochloride function in the official application. ^[four]

In folk medicine

- When coughing, an infusion or decoction of the petals of the poppy is recommended. The infusion is prepared as follows: a tablespoon of chopped poppy petals is steamed in 200 ml of hot water. Drink 0.25 cup three times a day. Poppy decoction is easy to prepare: 1.5 tablespoons of self-seeded poppy petals are boiled for 2 minutes in 200 ml of water. Take one or two spoons from 2 to 5 times a day.
- To relieve coughing fits, it is also recommended to collect: 5 g of wild poppy petals (self-seeding poppy) and 10 g of saxifrage femur root. Steam the mixture in 400 ml of boiling water, insist overnight and start taking it in the morning, drink throughout the day, sip every hour.
- To facilitate the discharge of sputum when coughing, the following composition is useful: wild poppy petals, mullein and mallow flowers, lungwort herbs (3 tablespoons in total) mixed with linden and black elderberry flowers, coltsfoot leaves, buckwheat flowers (take only 2 spoons). 4 tablespoons of this collection should be insisted overnight in a liter of boiling water. Take a small amount every hour during the day. When using such a collection, bed rest is prescribed, since the herbs from the list act diaphoretic.
- Such an herbal mixture is also characterized by a similar expectorant effect: take 3 tablespoons of wild poppy petals and forest mallow flowers, two tablespoons of Veronica officinalis and podbela herbs. 4 tablespoons of the resulting collection are steamed in a liter of boiling water, left overnight, in the daytime take a tablespoon every hour or 0.5 cups four times a day.
- Crushed dried poppy heads are used as an analgesic. Two tablespoons of crushed dry heads of self-seed poppy are boiled in 200 ml of water for at least 2 minutes. Then let it brew and take a tablespoon up to three times a day. ^[6]
- For insomnia, 10 g of powdered poppy petals are boiled in 200 ml of water or milk. Take a tablespoon 30 minutes before bedtime. Poppy decoction with honey is also prepared: take 2 teaspoons of honey for 200 ml of water, add 2 teaspoons of poppy petals powder, boil for 5 minutes. Take a teaspoon three times a day. ^[7]
- When coughing in children, poppy syrup is useful: 50 g of poppy petals (self-seeding) pour 400 ml of boiling water. Add 1 g of citric (can be tartaric) acid. Let it brew for 4 hours. Then strain, dissolve 650 g of sugar in the strained infusion and then cook like a syrup. Children take a teaspoon 5 times a day. ^[four]

Externally:

In case of gout, rub poppy leaves with sleeping pills with salt, apply to the inflamed area, wrap with a warm cloth. The method helps to relieve pain. ^[eight]

Powdered poppy petals are sprinkled on bleeding wounds.

in oriental medicine

In the encyclopedic work The Canon of Medicine, the poppy was described by Avicenna under the name Afion . Avicenna mentions both the beneficial properties of the plant and the possible negative effect of its influence on the human body. Opium, extracted from the sleeping pill poppy, is credited with analgesic, gastrointestinal effects. The most famous physician of antiquity recommended poppy for coughs, respiratory disorders, neuromuscular disorders and even sexual dysfunction. Also in the "Canon" the status of the plant as poisonous is emphasized. ^[9]

In scientific research

In antiquity, Galen argued that opium is “the *strongest of narcotic drugs that can suppress consciousness and cause deep sleep; the effect is increased if it is poured with boiling water and used by soaking a suppository of a small piece of wool, or rubbed on the forehead and inhaled through the nostrils* . Pliny the Elder mentioned that poppy seed pills, taken with milk, have a hypnotic effect. ^[ten]

In modern science, poppy and its properties are of no less interest to researchers.

Anatomical and morphological features of two types of poppy: opium and field are analyzed in the article by Semenova E.F., Cheburaeva A.N., Vilkova I.A. and others ^[11]

The ability of the poppy to accumulate arsenic in the roots and leaves due to absorption from the soil is highlighted in the scientific work of Solodukhina M.A. ^[12]

The use of poppy in medicine is the subject of research in the scientific work of J. A. Duke. ^[13]

The study of proteins in the composition of sleeping pill poppy seeds is the topic of scientific research by H. Srinivas and M.S. Narasinga Rao. ^[fourteen]

The therapeutic effect of the use of opium poppy in Ayurvedic medicine was studied by Dayyanandan Mani. ^[fifteen]

A. Marculescu and D. Bobit investigated morphine as a constituent of the soporific poppy. ^[16]

In cooking

- Honey with poppy and lemon

To get such an original taste of honey, you will need: a tablespoon of confectionery poppy, 2/3 cup of liquid honey, 1/3 of freshly squeezed lemon juice and the zest of one lemon, a teaspoon of vanilla extract, a pinch of salt. Heat the poppy seeds in a pan until they start to crackle. Add honey, lemon juice and zest, bring to a boil. Remove from heat and stir in vanilla extract and salt. ^[17]

- Tandai

This is a traditional Indian drink, which is often prepared during the famous festival of colors, Holi. Tandai is an incredible tasting milkshake with spices, nuts and poppy seeds. Ingredients needed to make spiced milk: 1/3 cup raw almonds, 3 tablespoons melon seeds, 2 tablespoons poppy seeds, 2 tablespoons raw cashew halves, 1.5 tablespoons pistachios, 4 cups milk, 1.5 cups sugar, teaspoon a spoonful of fennel, 10 black peppercorns, 10 green pods (boxes) of cardamom, one cinnamon stick (chopped), a few strands of saffron, 20 rose petals and more petals for serving, a quarter teaspoon of grated nutmeg, if desired - 220 g of gin (or similar in strength and composition of an alcoholic beverage).

Mix nuts (almonds, cashews, pistachios) and seeds, and pour 2 cups of water for an hour. Then peel the nuts from the husk, drain the resulting liquid and squeeze.

Heat milk, add sugar and saffron. Keep on fire until the sugar is completely dissolved. Heat the fennel, black pepper, cardamom and cinnamon in a skillet until intensely fragrant, then cool slightly. In a blender, prepare a pasty mass of warmed spices, nuts, rose petals and a tablespoon of prepared milk with saffron. Combine the resulting puree with milk, mix, beat, and then strain through a fine sieve, carefully rubbing the smallest hard lumps. Cool milk drink, add gin and pour into glasses, garnish with grated nutmeg and rose petals. ^[eighteen]

- Honey cookies with poppy seeds

You will need: 3 cups flour, a quarter cup of confectionery poppy seeds, 2 teaspoons baking powder, a teaspoon of salt, ¾ cup sugar, 8 tablespoons of softened butter, 2 eggs, a teaspoon of vanilla extract, a

cup of honey. Mix flour, baking powder, poppy seeds and salt. Beat sugar, butter and vanilla extract. Continuing to beat, beat in the eggs one at a time. Pour in the flour mixture. Form the dough. Roll out and cut out cookies using cookie cutters. Bake at 175 degrees until golden brown, about 12-15 minutes. Warm up the honey with a little water and pour the honey over the biscuits. Then bake for another 10 minutes. ^[19]

In cosmetology

On the basis or with the addition of an extract component from seeds, petals, poppy leaves, a number of cosmetic products are created: masks, lotions, creams. Due to the presence of valuable and essential acids in poppy, the plant has a calming, antioxidant, softening, relaxing effect on the skin. At home, you can also prepare an effective body scrub with poppy seeds. To prepare the scrub, you need to mix poppy seeds, sea salt and vegetable oil (5:2:3). Add a few drops of orange essential oil to the mixture, and gently rubbing the skin with a ready-made scrub, rinse thoroughly with warm water.

Lotion on poppy petals: 2 tablespoons of poppy petals insist 60 minutes in a glass of boiling water. Strain the cooled infusion and use as a rubbing lotion for dry skin and wrinkles. ^[four]

Other uses

Poppy oil is valued as a quality auxiliary material in painting. Artists use it to dilute oil paints. The oil is characterized by an average degree of drying of the applied pattern. Poppy oil extract is convenient for working with a light palette, white shades, because over time it does not turn yellow on the canvas. Poppy seed oil is resistant to sunlight and helps keep base tones clear and transparent.

A pigment extracted from the dried petals of the wild poppy is used as a dye in winemaking.

From the history of opium

A remedy extracted from the sleeping pills poppy was known to the ancient Sumerians. But officially, the first written mention of opium is found in the works of Theophrastus (in the 3rd century BC). The word "*opium*" comes from the Greek "*juice*" (meaning milky poppy juice). It is believed that Europe owes Paracelsus the popularization of the remedy. By the middle of the 16th century, the use of opium among European healers was widely practiced. In 1680, the eminent English physician Thomas Sydenham wrote: "*Among the remedies that Almighty God sent to man to alleviate his suffering, none is as universal and effective as opium.*" In 1804, the German pharmacist F. Serturmer discovered morphine, a separate alkaloid that is an integral part of opium. The discovery of morphine is also attributed to the French chemist J.-F. Derosne. This was followed by the discovery of codeine (French chemist J. Robiquet, 1832) and papaverine (G. Merck, 1848). In the 19th century, the use of opium alkaloids alone became common in practical medicine. ^[twenty]

Dangerous properties of poppy and contraindications

It is important to remember that wild poppy (field poppy or self-seeding poppy) is a poisonous plant. An overdose of products based on this plant is life-threatening.

As for poppy sleeping pills and the alkaloids contained in it, you should know that narcotic analgesics (morphine in particular) are contraindicated in case of general exhaustion of the body, insufficient respiratory activity, heart rhythm disturbances, with an affected liver, as well as for the elderly and children under 2 years of age. ^[four]

Botanical description

It is a herbaceous plant, a member of the Poppy family.

origin of name

Folk tradition has christened it *machkom*, *machina*, *fire flower*. The name of the poppy in Latin - ***Papaver*** - has an obscure origin. According to one version, the Latin name of the plant was originally associated with a word that imitates the sound of popping a box with ripe seeds (“*pap*”).

Kinds

More than 50 poppy species are described in botany, including:

1. **Poppy self-seed** - the distribution area of this species is extremely wide. Wild (field) poppy grows in North Africa, the Caucasus, in the European region, in the western part of Asia, Pakistan. It has medicinal and decorative value, refers to poisonous plants;
2. **Sleeping pill poppy (opium)** - this species is cultivated in many countries of the world. It is found in the wild in the south of Europe, in North Africa, on the islands of Cyprus, Madeira. It is used in medicine, is a source of a narcotic and belongs to the poisonous representatives of the flora. Good honey plant. In the system of this species, several subspecies are distinguished;
3. **Oriental poppy** - found in Turkey, Iran, the Caucasus, in the western part of Asia. Gardeners have bred a significant number of varieties of this ornamental plant;
4. **Polar poppy** - grows in the Arctic zone, in Iceland, Norway, Sweden, on the Novaya Zemlya archipelago, on the Faroe Islands, in the polar regions of the Urals, Yakutia, Alaska, in the Arctic part of Canada, on the Taimyr Peninsula. Three subspecies are distinguished within the species. The polar poppy belongs to the endangered plants. Listed by the International Union for Conservation of Nature in the Red List;
5. **Hollow stem poppy** - common in Mongolia, China, Altai, eastern Siberia, in the Arctic part of North America. The species is divided into two subspecies, there are also numerous varieties. In horticulture, several varieties of this species have been bred;
6. **Poppy Lapland** - grows in the central part of the Kola Peninsula, in northern Norway. It occurs, according to some sources, in Canada, Alaska, in the northern regions of Russia. A rare species, listed in the Red Book of Russia;
7. **Atlantic poppy** is endemic to Italy and southern France. Cultivated for decorative purpose;
8. **Alpine poppy** - grows in the Alps and the Pyrenees. Grown as an ornamental plant. It takes root well in room conditions, grows in a pot. ^[one]

Poppy-seed (*wild poppy*) is an annual (occasionally biennial) plant, 0.2 to 0.9 m high. The root system is taproot, the root is elongated, lies at a considerable depth. Stem single, straight, cylindrical, branched towards the top. All parts of the plant are covered with numerous villi. The leaf arrangement is alternate, the leaves are dissected into sharp-toothed lobes. Flowers with large scarlet petals, painted black at the very base. The fruit is a box. The flowering period of poppies is from May to June. Seeds ripen in summer.

Wild poppy grows in fields, along roadsides, in weedy places, often found among winter crops, on the outskirts of forest belts. ^[2]

Growing conditions

Decorative, garden poppies are sown in the spring, when the soil softens and warms up. The plant is unpretentious to the type of soil, takes root in any soil. Seeds well withstand adverse temperature conditions. Even poppy seeds planted in frost can survive and then sprout at lower temperatures. Caring for poppies is pretty simple. If there is no sweltering heat in summer, then poppy does not need

additional watering. Poppies should be watered no more than once a week, but at the same time very plentiful (i.e. one-time watering is rare, but plentiful). Excessive, excessively frequent moistening is harmful for poppies: fungal diseases appear, the roots begin to rot. Basic recommendations for care: fertilizing the soil with fertilizers, loosening the soil, thinning seedlings, pruning old, dried stems. Poppies are propagated by seeds, although a vegetative method of propagation is also possible: cuttings and division of the rhizome. ^[3]

In the medicinal industry, the petals and heads of the self-seeded poppy are harvested. The petals are harvested during flowering, dried immediately, without delay, avoiding direct sunlight, as this leads to discoloration of the raw material. Petals are cut off in sunny, dry weather from a fully opened flower, dried in the shade, spread out in a very thin layer. Poppy heads are harvested at the stage of incomplete ripening, in July, when they acquire a straw-yellow hue. Drying takes place in the shade or in a room with good ventilation. Artificial drying of poppy is also possible: the optimum temperature for drying the petals is up to 35 degrees, poppy heads - up to 70. Raw materials are stored in a sufficiently ventilated dry room.

For the manufacture of medicines, boxes of oil varieties of sleeping pills are used, while preserving the remains of the upper part of the stem (up to 10 cm long) during collection. Poppy capsules of hypnotic poppy are harvested at the stage of complete ripening, when they acquire a yellow-brown color, when squeezed in the hand they easily break, and when shaken, the sound of poppy seeds spilling is heard. The threshed boxes are dried in the open air, scattered in a thin layer on a tarpaulin. Stored in a separate room as a toxic substance, in the group of potent substances. Shelf life up to 3 years. ^[2,4]

Power circuit

There are known cases of poisoning of cattle, horses, sheep with poppy seeds, which accidentally fell into fodder preparations.

Literature

1. Wikipedia, [source](#)
2. Reference book on preparations of medicinal plants / D. S. Ivashin, Z. F. Katina, I. Z. Rybachuk et al. - 6th ed., isp. and additional - K.: Harvest, 1989. - 288 p.: ill.
3. Poppy flower, [source](#)
4. Medicinal plants: encyclopedic reference book / ed. A. M. Grodzinsky. - K.: Olimp, 1992. - 544 p.: ill.
5. Spices, poppy seed, [source](#)
6. Nosal I. M. From plant to man. - K.: Veselka, 1993. - 606 p.
7. Karhut V. V. Medicines around us. - K.: Health, 1993. - 232 p.
8. Dannikov N. Healing herbs for gout, healing herbs for gout. Eksmo, 2013 - 580 p.
9. Medicinal aspects of opium as described in Avicenna's Canon of Medicine, [source](#)
10. Studies on the Morphine Content of Papaver somniferum, sourced from Roum. Biotechnol. Lett., Vol. 6, No. 5, 2001, pp. 403-409
11. ANATOMOMORPHOLOGICAL FEATURES OF SLEEPING POPPY PAPAVER SOMNIFERUMX. AND SELF-SEEDING POPPIES P. RHOEASY, [source](#)
12. BIOGEOCHEMICAL FEATURES OF ARSENIC BEHAVIOR IN THE SOIL-POPPY SYSTEM (PAPAVER NUDICAULE L.) IN ANTHROPOGENIC LANDSCAPES OF THE TRANS-BAIKAL TERRITORY, [source](#)
13. Utilization of Papaver, [source](#)
14. Studies on the proteins of poppy seed, [source](#)
15. Scientific basis of therapeutic uses of opium poppy (Papaver somniferum) in Ayurved, [source](#)
16. Studies on the Morphine Content of Papaver somniferum, [source](#)

17. Lemon Poppy Seed Honey , [source](#)
18. Thandai , [source](#)
19. Poppy seed honey cookies , [source](#)
20. Pharmacodynamic Basis of Herbal Medicine, Second Edition. Manuchair Ebadi . - CRC Press, 2006 . - 699 r .

[An extended HTML version of the article](#) is available on the website edaplus.info.

Poppy - useful properties, composition and contraindications

Eliseeva Tatyana, editor-in-chief of the project EdaPlus.info

Tkacheva Natalia, phytotherapist, nutritionist

E-mail: eliseeva.t@edaplus.info, tkacheva.n@edaplus.info

Received 02/15/18

Abstract. The article discusses the main properties of poppy and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The chemical composition and nutritional value of the plant are indicated, the use of poppy in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of poppy on the human body under certain medical conditions and diseases are analyzed separately. Considered scientific basics diets With his application.



Tutsan (lat. Hypericum)

Eliseeva Tatyana, editor-in-chief of the project EdaPlus.info

Tkacheva Natalia, phytotherapist, nutritionist

Email: eliseeva.t@edaplus.info, tkacheva.n@edaplus.info

Abstract. The article discusses the main properties of Tutsan and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The chemical composition and nutritional value of the plant are indicated, the use of Tutsan in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of Tutsan on the human body under certain medical conditions and diseases are analyzed separately. The scientific foundations of diets with its use are considered.

Key words: Tutsan, beneficial properties, potentially dangerous effects, side effects, beneficial properties, contraindications, diets

Beneficial features

Chemical composition and presence of nutrients

Main substances (g / 100 g):	Fresh feijoa [1]
Water	83.28
Carbohydrates	15.21
Sugar	8.2
Alimentary fiber	6.4
Squirrels	0.71
Fats	0.42
Calories (kcal)	61
Minerals (mg/100 g):	
Potassium	172
Calcium	17
Phosphorus	19
Magnesium	9
Sodium	3
Iron	0.14
Zinc	0.06
Manganese	0.084
Copper	0.036
Vitamins (mg/100 g):	
Vitamin C	32.9
Vitamin PP	0.295
Vitamin E	0.16
Vitamin B6	0.067
Vitamin B2	0.018
Vitamin B1	0.006

What exactly is used and in what form

Tutsan serves as the basis for the preparation of tinctures, decoctions, infusions, extracts, prescribed both for internal use and externally. Tutsan is part of a variety of herbal preparations. Useful tea with St. John's wort. The grass of the plant is also a source of imanin and a component of many ointments. John's wort is popular in homeopathy. Tutsan oil is successfully used in the treatment of burns and wounds in the form of oil compresses.

Medicinal properties

Hypericum perforatum (common) contains flavonoids (hyperoside , rutin, quercetin , quercitrin , isoquercitrin), volatile oils, which include terpenes, sesquiterpenes (azulene), naphthodianthrones (hypericin , pseudohypericin , hyperin or hypericin , close to hematoporphyrin , sensitive to solar light; it is a kind of catalyst for certain intracellular reactions, a regulator of vital processes, affects biochemical processes in organs affected by malignant tumors, increases skin sensitivity to ultraviolet rays), isovaleric acid esters (have a calming effect), tannins, bacteriostatic resinous substances, ceryl alcohol, nicotinic acid, antibiotic, carotene and ascorbic acid. ^[5]

Tutsanis used in the treatment of diseases of the digestive system. Preparations from Tutsan reduce intestinal spasms, dilate blood vessels, improve the functioning of the gastric glands, stimulate blood circulation, relieve inflammation in the mucous membranes of the digestive tract, act as an astringent and bacteriostatic, relieve spasms in the biliary tract.

Tutsanis effective for biliary dyskinesia, bile stasis, hepatitis, cholecystitis, is prescribed in the initial stages of cholelithiasis, hypoacid gastritis (gastritis with low acidity), flatulence, acute and chronic colitis, intestinal upset and hemorrhoids. At the initial stage of nephrolithiasis, Tutsanis used as a diuretic and is prescribed for reduced filtration capacity of the kidneys. Tutsan tincture is used for helminthic invasions (with enterobiasis, hymenolepiasis). Plant-based preparations strengthen capillaries, improve venous circulation. It is advisable to prescribe Tutsan for violations of the peripheral circulation, with a tendency to congestion in the bloodstream. The photosensitizing properties of the plant and the presence of hypericin among its components are used in the treatment of a disease such as vitiligo. Tutsanis prescribed for disorders of the nervous system, enuresis in children, migraine and neurodystonia. The external use of Tutsanis explained by its astringent, bacteriostatic and anti-inflammatory properties. Tutsan oil is effective for burns, gingivitis, face pityriasis, leg ulcers and wound healing. In dentistry, a tincture or infusion of the herbal part of Tutsanis used for rinsing the mouth, for treating inflamed gums, and for stomatitis. Tutsan in gynecology is used as a herbal infusion for douching in case of inflammation of the vagina, and Tutsan oil has a positive effect in the treatment of cervical erosion.

Traditional medicine also uses Tutsan in the treatment of polyarthritis, sciatica, gout, pulmonary tuberculosis, mastopathy, boils. ^[6]

In official medicine

- **hypericum herb;**
- **Tutsan tincture;**
- **imanin**, an antibacterial drug in powdered form. A 1% solution of imanin is used to treat infected wounds, skin cracks, burns, mastitis, boils, phlegmon, acute rhinitis, laryngitis, sinusitis, purulent otitis media. Imanin does not affect fungal infections;
- **Novoimanin**, a one-percent alcohol solution-antibiotic. Apply a 0.1% solution in distilled water, isotonic sodium chloride solution, 0.25% anesthesin solution or 10% glucose solution for dental diseases, for inhalation - with abscessing pneumonia, pneumothorax; with purulent otitis media, sinusitis, a 0.01-0.1% solution in distilled water is used. Prepare the solution immediately before the procedure;
- **peflavit**, is prescribed for capillary toxicosis, acute glomerulonephritis, atherosclerosis. ^[5]

In folk medicine

- With hypoacid gastritis (with low acidity), as well as to increase the influx of bile and diuresis, St. Drink in small sips of 100 ml 1-2 times a day after meals. ^[5]
- Tutsan tea is useful for intestinal disorders: in a glass of boiling water for 10 minutes, insist a tablespoon of flowers and leaves of St. John's wort. Drink 2 glasses after meals throughout the day. The course of treatment is long. Increasing the dose to 3-4 glasses per day is prescribed for chronic diarrhea.
- For liver diseases (with concomitant constipation), a tablespoon of a mixture of St. John's wort, cumin and buckthorn bark at a ratio of 2:3:2 is poured into 200 ml of water, boiled for about 10 minutes and drunk at least 5 glasses a day. ^[7]
- For lower back pain and general weakness caused by hard physical labor, a recipe is recommended: 2 tablespoons of St. Drink the drug throughout the day. ^[eight]

- With mental overstrain, nervous exhaustion, sleep disturbances, a remedy is useful: from 200 ml of boiling water and one tablespoon of a mixture of St. Tutsanin this mixture strengthens and regenerates nerves, treats insomnia and neuroses. It is an excellent remedy for mental fatigue and functional exhaustion of the nervous system.
- Tutsanhelps with worms: prepare an infusion at the rate of 15 g of Tutsanper 100 ml of boiling water. Take 90-150 ml three times daily for 3 days (children from one to seven years old), on the last day of admission, give a laxative salt, and carry out such treatment in a cycle, in three stages, at intervals of 10 days. ^[6]

Externally:

- Tutsanoil is used to heal wounds from frostbite of the 2nd and 3rd degrees, for burns, to lubricate cracks in the nipples.
- Based on Tutsanoil, a balm is made that heals abrasions, cuts and is useful for pain in muscles and joints. To prepare the product, you need: half a cup of St. St. John's wort, ginger oil extracts mix, add beeswax. In a water bath, heat the mixture of herbal oils and wax until it is completely dissolved. Add vitamin E, rosehip seed oil, lavender and ginger essential oils to a homogeneous, heated mass. Stir quickly and thoroughly and pour the finished balm into jars until the wax begins to harden. Store the balm tightly closed, in a dry, dark and cool place. The shelf life of such a drug is from 2 to 3 years.
- To treat purulent wounds and rinse the mouth to strengthen the gums, steam is used : a handful of Tutsanflowers are steamed in 0.5 liters of boiling water. A clean, disinfected cloth is soaked in a cooled steam and applied to wounds. ^[7]
- Tutsanwith vitiligo: the affected areas are smeared with the juice of fresh Tutsanand after a quarter of an hour they are exposed to the sun's rays. The duration of the first insolation is no more than 30 minutes. During the period of such treatment, 30-50 drops of freshly squeezed Tutsanj juice (from leaves and flowers) are also taken orally 2-3 times a day, washed down with water. It is necessary to be in the sun, arranging short sessions with breaks. The course of such treatment of vitiligo is about 60 days, with a break of 3 days after every 3 weeks. ^[eight]

in oriental medicine

Avicenna recommended Tutsanas an excellent remedy for healing wounds of various origins; practiced it as an analgesic for inflammation of the sciatic nerve, a diuretic and used in the treatment of malignant ulcerative formations.

In the recipes of traditional healers of Uzbekistan, Tutsanis used as a specific agent in the treatment of oncological diseases of the liver and stomach.

Tutsanhas long been used in Chinese traditional medicine.

In scientific research

One of the pioneers in herbalism , British botanist and pharmacist Nicholas Culpeper , described Tutsanas a "sunny", "fiery" plant.

In his famous herbalist (" The complete Herbal ", 1653) Culpeper wrote: Tutsanis "an effective plant used in the treatment of wounds. Drinking a decoction of wine heals internal bruises and pains. Tutsanointment heals blisters on the skin, promotes the resorption of tumors, tightens the edges of wounds and heals them. A decoction of herbs, flowers and seeds of Tutsanon wine helps with vomiting, hemoptysis, treats those who have been bitten or stung by any poisonous creature, has a diuretic property. Tutsanseed powder, dissolved in a small amount of broth, disperses bile ... A

decoction of leaves and seeds in a warm form, taken on the eve of an attack of malaria, facilitates the course of the disease. Tutsan seeds are recommended ... for patients with epilepsy, paralysis and those who suffer from pain in the sacrum. ^[9]

Modern studies of the medicinal properties of Tutsan are thorough and continuously replenish the system of knowledge about medicinal herbs.

The significance of Tutsanin medicine and its medicinal potential were studied by K. M. Klemov , E. Bartlow , J. Crawford and others. ^[ten]

The interaction of Tutsan with individual medications and the possible negative consequences of their simultaneous administration is the topic of scientific research by S. Soleimani , R. Bahramsoltani , R. Raimi . ^[eleven]

A. Oliveira , C. Piño , B. Sarmento and A. Diaz presented the results of the analysis of the neuroprotective effects of St. John's wort, and its individual components. ^[12]

The large-scale scientific work of P. Bongiorno and P. Lo Guidice is aimed at studying the effect of drugs based on Tutsanin the treatment of depressive conditions. ^[13]

The study of the neurotropic activity of modern dosage forms made from herbal raw materials of Tutsan is the topic of the scientific work of Kurkin V., Dubischev A., Pravdivtseva O. and Zimina L. ^[14]

hypericin from the herb of Tutsan is highlighted in the study of Rudometova N., Nikiforova T., Kim I. ^[15]

In cooking

Herb and flowers of Tutsan in dried and fresh form are used as a seasoning for dishes (especially from fish), for the preparation of various drinks, as a spice that gives food a slightly bitter, tart and balsamic note.

- Salad of beets and St. John's wort

To prepare the salad you will need: 4 small, well-washed raw beets , 2 apples, juice of one lemon, freshly ground black pepper and coriander seeds, half a cup of finely chopped parsley, half a cup of Tutsan flowers. Grate peeled beets and apples. Put in a bowl, season with lemon juice. Grind and add black pepper and coriander. Sprinkle salad with parsley and Tutsan flowers.

- Tutsan baked potatoes

Required ingredients: 8 medium-sized potatoes, 4 tablespoons softened butter, sea salt and pepper to taste, 2 garlic cloves, minced, 2-4 teaspoons grated nutmeg, 200 ml cream, 200 ml milk, a cup of Tutsan flowers disassembled into petals and separated from the sepals.

Peel potatoes, cut into thin circles. Lubricate the baking dish with oil, sprinkle with crushed garlic, lay out the potatoes, salt, pepper, sprinkle with grated nutmeg and Tutsan petals, season the potato slices with the remaining oil. Whisk milk and cream and pour over potatoes. Bake at 180 degrees until potatoes are tender and golden brown, about an hour and a half.

- Avocado stuffed with St. John's wort

Ingredients: 2 large ripe avocados, lemon juice, canned sardines (one jar), one small onion, finely chopped, a cup of minced Tutsanflowers, sepals removed, salt and black pepper.

Cut the avocado in half, separate from the stone, carefully remove the pulp from each half and mash with a fork or puree in a blender. Sprinkle generously the pureed mass with lemon juice, mix with the sardines, finely chopped onion, sea salt, pepper, and St. John's wort, mashed to a homogeneous state. Fill the empty halves of the avocado with the resulting "minced meat", sprinkle with lemon juice again and decorate the stuffed avocados with Tutsanflowers. Serve on lettuce leaves. ^[16]

In cosmetology

The healing properties of Tutsanare actively used both for the creation of professional cosmetics for the care of the skin of the face, body, hair, and in recipes for home cosmetics. Tutsanis part of creams, lotions, masks, shampoos and hair rinses. Tutsanhelps with problematic and oily skin, is used to strengthen hair, in a comprehensive fight against dandruff. Most skincare products from Tutsanare based on oil, which can also be prepared at home.

How to prepare Tutsanoil? 20 g of fresh inflorescences of Tutsaninsist on sunflower oil (200 ml) for two weeks, then strain. Tutsanoil works great in nourishing hair masks, helps with dry scalp and hair loss. ^[6]

Other uses

The drug " *Novoimanin* ", created on the basis of St. John's wort, is used in agriculture in the fight against bacterioses that affect vegetable crops. Also " *Novoimanin* " is used when tobacco plantations are affected by the so-called tobacco mosaic virus.

In industry, from the leaves and flowers of Tutsan(sometimes from the whole plant), dyes of yellow, brown, golden and red shades are obtained. ^[3]

Dangerous properties of Tutsanand contraindications

It is important to remember that the combination of Tutsanwith certain medications can cause significant harm to health, since the simultaneous use of Tutsanand a specific medication leads to failures in the absorption of certain medications.

Tutsanreduces the body's susceptibility to the action of anticoagulants and thereby reduces the effectiveness of their administration. Tutsanalso reduces the effectiveness of oral contraceptives (cases of unplanned pregnancies have been recorded). Simultaneous administration of Tutsanwith synthetic antidepressants and a number of other medicines is unacceptable.

With individual intolerance to the components of the plant, a person may develop an acute allergic reaction and conditions may occur, accompanied by redness, allergic rashes, shortness of breath and swelling.

Long-term use of Tutsanin excessive doses can cause bitterness in the mouth, constipation, not improvement, but a decrease in appetite and a feeling of heaviness in the liver. According to doctors, patients suffering from hypertension should take Tutsanexclusively as part of herbal preparations, that is, in combination with other herbs that balance its effect on the body, since Tutsanincreases blood pressure. ^[eight]

Botanical description

It is a perennial herb from the Tutsanfamily.

origin of name

Folk tradition knows the plant as: *Tutsan*, *bloodweed*, *svetoyanskoe potion*, *hare's blood*. The Latin generic name of Tutsan- **Hypericum** - has several interpretations. One version of the origin of the word is that Tutsanwas attributed a magical property to resist unclean forces, evil spirits, and explains the name as a fusion of two meanings: **hyper** ("above") and **eikon** ("image", "ghost"). " *Tutsan*", in turn, is either a distorted " *dzherembay* ", which means " **healer of wounds** " (as the nomadic peoples called the medicinal herb) or is associated with the fact that certain substances in the composition of St. John's wort, when eaten by livestock during grazing, increased the sensitivity of animals to sunlight and provoked self-harm in them when trying to comb the affected areas.

Kinds

Botanists know 458 species representing the genus St. John's wort, the most studied and common of which are the following:

1. **Tutsanor perforated** - grows throughout Eurasia, in northern Africa, on the islands (Azores, Canaries), the plant has taken root in New Zealand, on the Japanese islands, in North America, Australia. One of the oldest and most popular medicinal plants, a productive honey plant. It is used in the food, alcoholic beverage industry and as a natural dye;
2. **Tutsanis** found in Asia, Africa, and European countries. Used to create hedges, in combination with other plants. Common in landscaping;
3. **Tutsancalyx** - grows in Greece, Turkey and Bulgaria. Successfully adapted to growing on the Australian mainland and the lands of New Zealand. In European countries, it is cultivated as an ornamental plant in the system of park and garden culture;
4. **Tutsanis** common in Kamchatka, the Kuril Islands and Sakhalin. Also found on the Japanese islands of Honshu and Hokkaido. It has a decorative value. The species has found application in the cooking of local peoples: the grass of the plant is used to make tea, young shoots are eaten;
5. **Tutsantrihedral** - found in the southern European region, in Tunisia, Cyprus and Malta, in Turkey, in the north of the Sinai Peninsula, in Israel and Jordan. The plant is popular in oriental medicine;
6. **John's wort drawn** - the habitat of the species covers China, Mongolia, Korea, the Asian region of Russia. The species has medicinal properties, as part of the herb plant anthrachion hypericin and tannins. Folk healers use the plant in the practice of treating headaches, dizziness, bleeding, neuralgic lesions, eclampsia, mastitis, with attacks of rheumatism;
7. **Tutsan**- the species represents the flora of Europe, belongs to medicinal plants;
8. **Tutsan**- found in Europe, in the Caucasus. It is under protection in Lithuania, in Belarus it is listed in the Red Book. The flowers of the plant are used for the preparation of medicinal raw materials;
9. **Tutsan**- grows in Greece, Turkey, Syria, the Balkans. Grown as an ornamental culture;
10. **Tutsanis** a plant with powerful medicinal potential, widely used in folk medical practice. Source of dye in industry. It grows in northern Africa, in Central Asia, in the Crimea, on the Greek islands and in Spain;
11. **Tutsanis** endemic to the Arabian region and the Mediterranean. In Israel, the species is listed in the Red Book. It has long been used by folk healers of the Middle East;
12. **Tutsanrough** - grows in Central Asia, the Middle East, Altai. Medicinal plant and natural dye.

[one]

Tutsan(common) is a perennial plant, grass from 0.3 to 1 m high. The rhizome is poorly developed and slightly branched. Stems growing annually, dihedral, diverging into numerous branches upwards. The leaf arrangement is opposite, the leaves are sessile, smooth, oval or elongated, covered with many translucent spots - "holes". The flowers are bright, rich yellow, collected in corymbose panicles. The flowering period is summer. The fruit is a box, with small brown seeds, begins to ripen with the beginning of autumn. ^[2]

Tutsangrows near field roads, in thickets and thickets, in glades, in a forest belt, on slopes, meadows.

Growing conditions

Well-lit areas are suitable for planting. Before sowing, the soil is cleared of weeds and plowed, enriched with mineral and organic fertilizers (which makes it possible to increase the yield by an additional 20-30%). Peat compost and nitrogen, potash and phosphorus fertilizers are recommended as top dressing.

Sowing on the eve of the winter period is carried out without preliminary stratification, maintaining a distance between rows of 0.45 m and at the rate of 30-40 g of seed per 100 m² of area. If Tutsanis sown in the spring, the seeds are stratified by mixing with sand and keeping at low temperatures for at least 60 days. After the emergence of seedlings, it is necessary to weed and loosen the aisles. These procedures are repeated 3 or 4 more times during the summer, in the first year of plant cultivation. In subsequent years, the site is cleared of dead stems and the soil is plowed with a rake. ^[3]

Tutsanis harvested at the flowering stage, before immature fruits appear. The grass is mowed or cut with sickles, separating the apical parts of the plant at a height of 0.3 m. Bare leafless parts are not subject to collection. 30-45 days after the first cut, the vegetation period is completely repeated and flowering begins again. The plant is mowed again. The crop yield of the third year is much higher than that of the plantations of the second year. The grass is dried in well-ventilated rooms (or outdoors, provided there is no precipitation and in a shady place), scattered in a thin layer and systematically mixed. Tutsan can also be dried in bunches suspended in the shade. The readiness of raw materials is determined by the degree of fragility of the stems. Properly dried material has a faint but distinct balsamic aroma. Permissible storage period - up to 3 years.

Insufficiently experienced herbalists during the collection confuse Tutsan with **dyed gorse**, a representative of the legume family. This is a low shrub plant, the leaves are linear or lanceolate, the stems are bare or sparsely pubescent, yellow irregular flowers of the moth type are collected in long racemose inflorescences. The fruits are elongated beans with a slightly curved shape. ^[2]

Power circuit

Bumblebees and bees collect pollen from Tutsan flowers. Tutsan flies and beetles feed on pollen. The bright flowers of the plant also attract wasps and butterflies, the purpose of which is nectar, but it is the flowers of Tutsan that practically do not produce. *Strymon* butterfly caterpillars *melinus* feed on the seeds of St. John's wort, and caterpillars of *Nedra ramosula* - foliage.

Literature

1. Wikipedia, article "St. John's wort"
2. Reference book on preparations of medicinal plants / D. S. Ivashin, Z. F. Katina, I. Z. Rybachuk et al. - 6th ed., isp. and additional - K.: Harvest, 1989. - 288 p.: ill.
3. Mamchur F. I., Gladun Ya. D. Medicinal plants in the garden. - K. Harvest, 1985. - 112 p., ill.

4. Mineral Content of Some Medicinal Herbs. Gogoasa I, Jurca Violeta , Alda Liana Maria and others // Volume 17(4), 65-67, 2013, JOURNAL of Horticulture, Forestry and Biotechnology, [source](#)
5. Karhut V.V. Living Pharmacy - K. Health, 1992. - 312 p., ill., 2, arch . ill.
6. Medicinal plants: encyclopedic reference book / ed. A. M. Grodzinsky. – K.: Olimp, 1992. – 544 p.: ill.
7. Karhut V. V. Medicines around us. - K .: Health, 1993. - 232 p.
8. Nosal I. M. From plant to man. – K.: Veselka, 1993. – 606 p.
9. TUTSAN// The Project Gutenberg EBook of The Complete Herbal, by Nicholas Culpeper, [source](#)
10. Medical Attributes of Tutsan(Hypericum perforatum), [source](#)
11. Clinical risks of St John's Wort (Hypericum perforatum) co-administration, [source](#)
12. Neuroprotective Activity of Hypericum perforatum and Its Major Components, [source](#)
13. Hypericum for depression , [source](#)
14. STUDYING THE NEUROTROPIC ACTIVITY OF NEW MEDICINES FROM THE HERB St. John's Wort, [source](#)
15. STUDY OF THE EXTRACTION OF HYPERICIN FROM HUMAN WORK (HYPERICUM PERFORATUM L.), [source](#)
16. Edible & Medicinal Flowers. Margaret Roberts. New africa Books , 2000.

[An extended HTML version of the article](#) is available on the website edaplust.info.

Hypericum - useful properties, composition and contraindications

Eliseeva Tatyana, editor-in-chief of the project EdaPlus.info

Tkacheva Natalia, phytotherapist, nutritionist

E-mail: eliseeva.t@edaplust.info, tkacheva.n@edaplust.info

Received 03/27/18

Abstract. The article discusses the main properties of Tutsan and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The chemical composition and nutritional value of the plant are indicated, the use of Tutsan in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of Tutsan on the human body under certain medical conditions and diseases are analyzed separately. Considered scientific basics diets With his application.



Tomatoes (lat. *Solanum lycopersicum*)*Eliseeva Tatyana, editor-in-chief of the project EdaPlus.info**Tkacheva Natalia, phytotherapist, nutritionist**Email: eliseeva.t@edaplus.info, tkacheva.n@edaplus.info*

Abstract. The article discusses the main properties of tomato (tomato) and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The chemical composition and nutritional value of fruits are indicated, the use of tomato in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of tomato on the human body under certain medical conditions and diseases are analyzed separately. The scientific foundations of diets with its use are considered.

Keywords: tomato , tomato , beneficial properties, potentially dangerous effects, side effects, beneficial properties, contraindications, diets

Beneficial features**Chemical composition and presence of nutrients**Table 1. Chemical composition of red tomato (according to [Food+](#)).

Main substances (g / 100 g):	Raw red tomato ^[18]
Water	94.52
Carbohydrates	3.89
Squirrels	0.88
Fats	0.2
Calories (kcal)	eighteen
Minerals (mg/100 g):	
Potassium	237
Calcium	ten
Phosphorus	24
Magnesium	eleven
Sodium	5
Vitamins (mg/100 g):	
Vitamin C	13.7
Vitamin B4	6.7
Vitamin B3	0.594
Vitamin E	0.54
Vitamin B5	0.089

Medicinal properties

Tomato has in its composition a set of elements that have a beneficial effect on the cardiovascular system and help cleanse the body. Tomato is an important source of lycopene (a powerful antioxidant that has immunostimulatory and antitumor effects, slows down the aging of the body) and glutathione (a substance that protects cells from toxic free radicals) ^[16,17] . Thanks to these properties, tomato is an indispensable food in any balanced diet, as well as in a low-fat diet, anti-cancer diet, etc.

Lycopene is the component that makes tomatoes red. Accordingly, the “redder” the tomato, the more of this substance in it. This microelement has properties similar to beta-carotene (contained in carrots), namely, an anti-carcinogenic effect. Studies show that this flavonoid stimulates bone formation. It is recommended for people diagnosed with osteoporosis, menopause or brittle bones. Lycopene reduces the risk of certain types of cancer, such as prostate, stomach, bladder, and uterine cancer. It is found in fresh tomatoes, but it is especially abundant in tomatoes that have undergone heat treatment, as the cooking process helps to release lycopene and improve its absorption in the body ^[18,19].

Glutathione - has the properties of a powerful antioxidant, helps get rid of free radicals that provoke many diseases. A large amount of glutathione is found in the skin of many vegetables, so it is useful to eat a tomato also raw, in salads. This is a very important element that removes toxins, especially heavy metals (which, when accumulated, lead to a deterioration in the body's condition).

Scientific studies have shown that tomato and tomato sauce help reduce the risk of prostate cancer. This effect is observed due to the antioxidant properties of tomato. It is assumed that lycopene and glutathione attach to prostate tissues and thus reduce the risk of damage to its DNA.

Tomatoes are rich in potassium. This microelement takes part in the exchange of fluids in the body, and is also responsible for the health of the nervous system, heart and muscles. Potassium, like calcium, is abundant in tomatoes. Due to the presence of water and many minerals, tomato is recommended as a remedy for restoring the normal amount of fluids in the body during dehydration.

Vitamin A and vitamin C are considered important components that help cleanse the body - and they are rich in tomato. Vitamin A, first discovered in 1913, helps with cell growth, strengthens the immune system, and is essential for the eyes. Vitamin C is a powerful antioxidant, as it is involved in the process of free radicals release, not only those that come from outside, but also those that the body produces on its own. This vitamin has been proven to cleanse the body. In addition, it has a positive effect on the treatment of Alzheimer's disease and other dementias, as well as in diseases such as fibromyalgia and multiple sclerosis ^[18].

Tomatoes provide a significant reduction in blood pressure. During studies, after 8 weeks of daily intake of tomatoes (in the form of an extract - lycopene complex), the systolic pressure of patients fell by 10 units, and diastolic - by 4 units.

Lycopene has been seen to work as a natural sunscreen and protect against UV rays.

Tomato is a rich source of riboflavin, which helps ease migraine attacks. It is also beneficial for the nervous system as a whole.

Eating tomatoes helps increase protection against flu and colds, especially when drinking tomato juice.

Due to their high content of vitamin C, tomatoes have a beneficial effect on diabetes by helping to absorb insulin and glucose ^[24].

In traditional medicine

The main component contained in tomatoes, which draws attention to modern traditional medicine - **lycopene**. As mentioned, it is a powerful element that reduces the risk of developing certain types of cancer (prostate, breast), has a beneficial effect in the treatment of cancer of the lungs, stomach, esophagus, pancreas, bladder and cervix. In addition, studies have shown that lycopene reduces the oxidation of cholesterol and reduces the risk of heart disease. There is even some evidence that lycopene may reduce the risk of cataracts and sunburn.

But, despite all these extraordinary properties, there is one problem. A reduction model is used to isolate it from a tomato. New formulations containing lycopene are hitting the market at exorbitant prices. At the same time, there is evidence that these lipid supplements do not have the same effect as the product contained directly in the fetus. Lycopene is an extraordinary product in combination and interaction with other substances that we can get by eating directly tomato and tomato products ^[24].

In folk medicine

- Leaf decoction

In alternative medicine, dried or fresh tomato leaves are often used. It consists of vitamins, minerals, fiber, essential oil, phytoncides and organic acids. It is believed that infusions from it help in the treatment of rheumatism, fungal diseases, ulcers, sciatica. However, the tops also contain toxic substances with which one must be careful ^[21].

Leaves can be harvested at any time, both young and mature are suitable. It is necessary to thoroughly wash the tops, finely chop and dry. Leaves should be stored in cloth or paper bags for 12 months. Ready infusion can be stored for no more than two days. It can be used both externally - rubbing into painful areas of the body or in the form of compresses, and internally (only after prior consultation with a doctor). In addition, an infusion of tomato leaves can be added to a hot bath. The tops are used both independently and in combination with other herbs - celandine, burdock, calendula, oak bark, verbena, sage, sweet clover, drupe, birch buds, chamomile ^[20].

- Fetal use

Outwardly, tomato is used as a bactericidal agent for purulent wounds, in the form of gruel. For varicose veins, tomato slices are applied to problem areas, fixed with a bandage and held until a tingling sensation appears. Then the feet are washed with cold water. It is believed that such procedures should be carried out daily for a month ^[21].

With sluggish and dry facial skin, tomato is used as a cosmetic. In addition, tomato pulp can be used as a hair growth stimulant. Tomato can be used in creams and masks. Nourishing tomato cream with the addition of lanolin and oatmeal is suitable for all skin types. As one of the components of face masks, tomato can be used for dry, normal, oily, combination and aging skin. Also, tomato is used in body masks and peels. ^[22].

- Juice

Freshly squeezed tomato juice can be used for liver diseases (together with honey), loss of strength (adding chopped parsley, dill and salt), atherosclerosis, obesity, anemia, constipation. Tomato juice enhances the secretion of gastric juice and intestinal peristalsis, suppresses the action of unfavorable intestinal microflora.

in oriental medicine

In traditional oriental medicine, the tomato is of particular importance because it can be used both as a fruit and as a vegetable. One of the ancient Chinese dietary books describes the tomato as "*sweet and sour in taste, cold in nature*". The book also mentions that tomato is good for health, as it cools the body and reduces the "heat of the liver", thereby maintaining its balance and removing toxins. Therefore, a tomato is indispensable in the following cases:

- for people with high blood pressure, which in Chinese medicine is often thought to be caused by " *liver heat* ";
- for those who suffer from reduced appetite or indigestion, a feeling of a full stomach, discomfort in the abdomen or constipation. Cooked tomato is especially good for children with poor appetites;
- for people who drink alcohol. Tomato juice drunk before, during or after alcohol consumption helps the liver absorb it and quickly eliminate toxins from the liver and the body as a whole;
- The tomato is "cold" in nature, so it is more useful than ever on hot days and in summer. Chinese medicine has an understanding of the body and nature as one inseparable whole, therefore, in the heat, the body will especially suffer from external heat. Heat causes changes in the body and can lead to symptoms such as dry skin, thirst, dark urine, sweat, overheating of the body, emotional volatility, and insomnia. The cooling qualities of tomatoes help to ease these symptoms and avoid heat stroke. The tomato is a summer fruit and is especially suitable for consumption during the hot season ^[23] .

In scientific research

Despite the abundance of modern plant species and the already studied data on the beneficial properties of tomatoes, scientists continue to explore many aspects related to the tomato. So, for example, much attention is paid to artificial cultivation and genetic engineering to improve the taste properties of a plant, its resistance, the presence of nutrients, growth rate, and aroma.

An important place in research is also occupied by the study of the origin of the tomato and, in particular, some of its species. For example, genes responsible for the production of stem cells are being studied, studies that, as a result, can optimize the size of a fetus of any kind ^[26] . The difference between organically grown and large-scale agriculturally grown tomatoes is also being explored ^[25] .

In 2017, scientists in their work on assessing the biofilm -forming properties of the *Listeria bacterium monocytogenes* (the causative agent of a severe infectious disease), the tomato was one of the vegetables that was studied in three categories of interaction (deceleration or acceleration of growth, no effect). As a result of this study, it turned out that the strain that is present on the surface of a tomato (as well as daikon , apple and lettuce) stimulates the growth of the studied bacterium ^[38] .

In addition, it is worth noting that the tomato, as one of the most common products in the domestic diet, often becomes the object of research in economics, nutrition, innovative science, and agricultural sciences. For example, when analyzing the diversification of agricultural production, the cultivation of tomatoes is considered as one of the promising branches of agriculture. It is expected that the development of this industry has the potential to bring high income, tax benefits, lack of competition in the domestic market and a good harvest throughout the year when growing tomatoes in a greenhouse ^[39] .

Tomatoes are also mentioned in interdisciplinary research - for example, in work on the images of plants in artists' paintings as a resource for information on the history of agronomy. This study provides an example of paintings by L. E. Melendez (1772) and P. Lacroix (1864), which show how the tomato changed its shape as a result of selection towards smoother and less ribbed (for more convenient transportation and harvesting).

Thus, the tomato as a subject of comprehensive scientific research does not lose its relevance and importance ^[40] .

Weight regulation

Nutritionists value tomatoes primarily for their beneficial and medicinal properties. They include sugars (mainly fructose and glucose), mineral salts (iodine, potassium, phosphorus, boron, magnesium, sodium, manganese, calcium, iron, copper, zinc). Tomatoes are also rich in vitamins - A, B, B2, B6, C, E, K, P, beta-carotene. Tomatoes contain organic acids and a powerful antioxidant lycopene, which can protect against prostate and cervical cancer, stop tumor cell division and DNA mutation, and reduce the risk of developing cardiovascular diseases. Thermally processed tomatoes contain even more lycopene than raw tomatoes, which is why cooked tomatoes are often recommended by nutritionists.

Tomatoes regulate the functioning of the nervous system, have an anti-inflammatory and antibacterial effect, improve metabolism and digestion, help with asthenia and atherosclerosis, and are also a good diuretic for diseases of the kidneys and bladder ^[28].

Many organic acids are present in tomatoes, especially malic and citric acids. Salts of organic acids in the process of assimilation leave a significant reserve of alkaline mineral components in the body and thus contribute to the alkalization of the body and the prevention of acid shifts. Thus, tomatoes maintain the necessary acid-base balance in the body. The low content of purines in tomatoes is an important link in the structure of purine-free nutrition for the prevention of atherosclerosis. Tomatoes contain folic acid, which plays an important role in hematopoiesis, and also contributes to the formation of choline in the body, a substance that normalizes cholesterol metabolism. Thus, tomatoes can be widely used in the diet of mature and elderly people, as well as patients with impaired uric acid metabolism (gout) ^[27].

In cooking

Tomatoes are widely used in cooking. They are used as an ingredient in appetizers, first and second courses, salads - both raw and cooked. We have become completely familiar with salads with fresh tomatoes, tomato soups, sauces, pizza and pasta with tomato dressing. Tomatoes are successfully used for the preparation of various types of canned food. The fruits contain a significant amount of acid, which makes it possible in the manufacture of canned food to be limited to sterilizing them in boiling water. Depending on what taste the hostess wants to achieve, tomatoes can be pickled, salted, boiled sweet sauce, juice or compote. As a rule, sugar, salt, vinegar, citric acid and all kinds of spices are used in any kind of preservation ^[29]. With proper preparation, the product can be stored in a dark, cool place for several years. Preservation data is always a great addition to side dishes, meat, fish, salads and an independent snack. A well-known tomato product is ketchup, a spicy tomato sauce with seasonings.

Combination with other products

According to the rules of a healthy diet, it is not advisable to combine a tomato with starchy and cereal products. It is recommended to eat tomatoes with herbs and vegetables that do not contain starch. It is advised to take tomatoes with proteins and fats, thus improving their absorption. A healthy combination is tomato and avocado, as well as broccoli ^[34].

The usual combination of tomatoes and cucumbers is not as useful as it seems - the components of these vegetables, according to recent studies, mutually interfere with the absorption of each other's medicinal components ^[35].

Useful combinations are also considered tomatoes and liver, olive oil ^[37].

Beverages

The most famous tomato drink, as you might expect, is **tomato juice**. It is consumed both in its natural form and with the addition of salt, pepper, celery, Worcester sauce, lemon juice and lime. In addition, tomato juice is used as a component of several alcoholic cocktails. Tomatoes can be added to vegetable smoothies based on yogurt or kefir, and they can also be used to make compote with spices [36].

Dangerous properties of tomato and contraindications

Despite all the useful properties of tomatoes, there are several contraindications to their use:

- You need to be as careful as possible with the leaves of the plant bush, as they are poisonous.
- People who are prone to heartburn and high acidity should be wary of tomato fruits.
- Also, tomato can cause severe allergies.
- According to some studies, people with chronic kidney disease should eat tomatoes with caution due to their high potassium content.
- Tomatoes can exacerbate irritable bowel syndrome and diarrhea, and are also contraindicated in gallstone disease [41].
- It is not recommended to use store-bought tomato paste, as it contains preservatives that are harmful to the body.
- With hypertension, cardiovascular diseases, it is not recommended to use pickled and salted tomatoes, as they can provoke the appearance of stones in the bladder. In addition, kidney stones can appear with the regular use of canned tomato juice, as it contains starch.
- With pancreatitis and ulcers, moderate consumption of tomatoes is shown, as they can provoke an exacerbation.

origin of name

In France, the tomato was called the "apple of love" ("*pomme d'amour*"), as it was believed to have aphrodisiac properties.

Latin name for tomato, *Lycopersicum esculentum*, was introduced by the French botanist Joseph Pitton de Tournefort in the 17th century and meant "*wolf peach*". Round and juicy, the tomato fruit was mistakenly equated with belladonna berries and was considered poisonous - hence the name.

Tomato, in turn, comes from the Spanish **tomate** - a derivative of the ancient Aztec word **tomatl** [2].

The name tomato came to us from the Italian language, "*golden apple*" - *pomo d'oro*, since yellow varieties of the fruit were probably originally used in Europe [4].

Story

It is a vegetable of the nightshade family, originating from South America, and occupying a leading position in the world among vegetable crops [3].

In 1519, the conquistador Fernando Cortes first saw the bright red fruit in the gardens of Montezuma. Impressed, he brought tomato seeds to Europe, where they began to grow it as an ornamental plant.

The first country to start cultivating tomatoes was Italy [1]. From the point of view of botany, the fruits of a tomato are considered berries, but in everyday life and in the way they are used, they have long taken their position among vegetables [5].

Varieties

There are hundreds of varieties of tomatoes - small cherry tomatoes the size of grapes, huge " *Oxheart* " *tomatoes* weighing 600-800 grams, juicy for salads and meaty for pasta, *campari* and " *cream* " - these are just the most famous of the many varieties. The color of the fruit, in addition to red, can vary from white, orange, yellow, green to purple and chocolate ^[6,10].

Growing Features

The plant can be annual or perennial.

The annual bush reaches a height of 60-90 centimeters, at the tips of the branches instead of leaves there are buds. The fruits ripen, as a rule, all at once, and after ripening the plant dies.

The perennial tomato is a climbing plant that requires support with stakes or a cage. Such a tomato will bear fruit until it freezes. The fruit usually ripens later than the annual plant, but generally yields more. The flower is usually found on the main branches. The height reaches 1.5-3 meters, provided that the plant is constantly supported and climbs ^[8].

Tomato is a rather whimsical plant. He likes space, warmth (temperature about 25 degrees) and a lot of light. Seeds should be located at a sufficient distance from each other so that the branches can break through without interfering with each other ^[7,11]. Free air circulation is necessary for the full growth of the tomato, as well as warm soil. Sufficient moisture is also very important. The best time for planting is late spring and early summer, but seed preparation begins at the end of January by heating and processing. In the first half of February, the seeds are planted, and seedlings appear in March ^[12]. You can grow a tomato in the ground, in a greenhouse or in pots, upside down. The latter method is convenient where there is little space or infertile soil ^[9].

Selection and storage

Ripe tomatoes have a fairly rich flavor. If there is no smell, most likely the tomatoes were picked unripe. The stem should be small. When choosing tomatoes, you need to pay attention to the smoothness of the skin, the absence of cracks, spots and impact marks ^[14].

A fully ripe tomato is soft and springy, but you can only opt for it if it is consumed immediately. An overripe tomato is always good for sauces and soups. In healthy fruits, the skin is thin, and the flesh is plain.

If white thin veins are visible in the pulp, there are white spots in the core, and it is "plastic" to the touch, then there are nitrates in the tomato ^[13].

The storage conditions of a tomato directly depend on how ripe it is. Room temperature will speed up the ripening process. Therefore, if you want the tomato to ripen, feel free to leave it warm. Ripe tomatoes are best stored at around 12 degrees Celsius. At this temperature, the tomato will stop ripening, but will not lose its taste and useful properties ^[15].

Literature

1. Tomato History - The history of tomatoes as food, [source](#)
2. online Etymology Dictionary , [source](#)
3. Demidenko G. A. The use of nutrient soils in the cultivation of tomato seedlings.
4. Wikipedia , [source](#)
5. Wikipedia , [source](#)
6. Tomato Varieties and Types of Tomatoes, [source](#)

7. Top 10 Tomatoes Growing Tips , [source](#)
8. Growing Tomatoes , [source](#)
9. How to grow tomatoes [source](#)
10. Varieties of tomatoes, [source](#)
11. How to grow tomatoes - agricultural technology, [source](#)
12. Secrets of growing tomatoes. Encyclopedia of Technologies and Methods, Patlakh V.V. 1993-2007
13. 10 ways to tell at a glance if it's a chemical product or a natural [source](#)
14. How to Choose the Best Tomatoes, [source](#)
15. how to Store Tomatoes , [source](#)
16. Wikipedia , [source](#)
17. Lycopene . Reference book on the main components of dietary supplements. [source](#)
18. Medicinal and Edible Properties of Tomatoes, [source](#)
19. Tomatoes and Tomato Products as Medicine by Jade Teta , ND, CSCS; Keoni Teta ND, LAc CSCS; and Julie Sutton ND, LAc , CSCS, [source](#)
20. The use of tomato tops in the treatment of diseases, [source](#)
21. Tomato: medical use, [source](#)
22. How to use tomatoes in cosmetics: balms, masks, gels, [source](#)
23. Tomatoes and high blood pressure, [source](#)
24. Tomato-A Natural Medicine and Its Health Benefits. Debjit Bhowmik , P. Sampath Kumar, Shravan Paswan , Shweta Srivastava. Journal of Pharmacognosy and Phytochemistry . [source](#)
25. Organic tomatoes - even smaller, but more nutritious, [source](#)
26. Cold Spring Harbor Laboratory. "Team pinpoints genes that make plant stem cells, revealing the origin of beefsteak tomatoes." ScienceDaily . ScienceDaily , 25 May 2015. [source](#)
27. Petrovsky K.S. The ABC of Health. On rational human nutrition. People's University, Faculty of Natural Sciences. Publishing house "Knowledge", Moscow, 1982
28. Pervushina E. Garden pharmacy from A to Z. Natural vitamins St. Petersburg. : CJSC "TI house" Amphora ", 2015. - 62 p.
29. All about tomatoes. How to grow and maintain them yourself. Gardener's advice. Recipes for the hostess. Moscow, 1992.
30. Compatibility of products with a healthy diet, [source](#)
31. 8 Common Food Pairs You Shouldn't [Mix](#)
32. Drinks from tomatoes: juices, compotes, cocktails, [source](#)
33. 20 Foods That Will Benefit You Most When Eaten [Together](#)
34. Tomato Assassination of George Washington, [source](#)
35. 12 Foreign Food Idioms That'll Make You Feel Like a Global Foodie, [source](#)
36. 40 brilliant phrases that cannot be translated literally, [source](#)
37. 12 Serious Side Effects Of Tomatoes, [source](#)
38. Evaluation of the biofilm-forming properties of Listeria Monocytogenes in association with associated microflora isolated from plant surfaces. L. S. Buzoleva . [source](#)
39. Diversification of agricultural production. Moroz N. Yu., Marukha V. R. [source](#)
40. Images of plants in artists' paintings as a resource for information on the history of agronomy. Tsatsenko L. V., Savichenko D. L.

[An extended HTML version of the article](#) is available on the website edaplus.info.

Tomato - useful properties, composition and contraindications

Eliseeva Tatyana, editor-in-chief of the project EdaPlus.info

Tkacheva Natalia, phytotherapist, nutritionist

E-mail: eliseeva.t@edaplus.info, tkacheva.n@edaplus.info

Received 12/19/17

Abstract. The article discusses the main properties of tomato (tomato) and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The chemical composition and nutritional value of fruits are indicated, the use of tomato in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of tomato on the human body under certain medical conditions and diseases are analyzed separately. Considered scientific basics diets With his application.