



## Poppy (lat. Papáver )

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**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 <sup>[5]</sup>
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
<b>Vitamins (mg/100 g):</b>	
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. <sup>[four]</sup>

**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 , oxycinchoninic , 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 phenobarbitol, 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. <sup>[four]</sup>

### 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. <sup>[four]</sup>

### 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. <sup>[6]</sup>
- 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. <sup>[7]</sup>
- 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. <sup>[four]</sup>

### 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. <sup>[eight]</sup>

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. <sup>[9]</sup>

### 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. <sup>[ten]</sup>

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 <sup>[11]</sup>

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. <sup>[12]</sup>

The use of poppy in medicine is the subject of research in the scientific work of J. A. Duke. <sup>[13]</sup>

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 . <sup>[fourteen]</sup>

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

A. Marculescu and D. Bobit investigated morphine as a constituent of the soporific poppy. <sup>[16]</sup>

### **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. <sup>[17]</sup>

- 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. <sup>[eighteen]</sup>

- 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, 3/4 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. <sup>[19]</sup>

### **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. <sup>[four]</sup>

## 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. <sup>[twenty]</sup>

## 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 . <sup>[four]</sup>

## 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. <sup>[one]</sup>

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. <sup>[2]</sup>

## 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. <sup>[3]</sup>

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. <sup>[2,4]</sup>

## Power circuit

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

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

## Poppy - useful properties, composition and contraindications

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