



## Nettle (Latin: *Urtica* )

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**Abstract.** The article discusses the main properties of nettle 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 blanched leaves are indicated, the use of nettle in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of nettle on the human body under certain medical conditions and diseases are analyzed separately. The scientific foundations of diets with its application are considered.

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

## Useful properties of nettle

Table 1. Chemical composition of nettle leaves (according to [Food+](#)).

Basic substances	Blanched* nettle contains (per 100 g) <sup>[7]</sup> :
Water	87.67 G
Carbohydrates	10.25 G
Alimentary fiber	40.6 G
Squirrels	22.2 g
Fats	2.15 g
Calories (kcal)	42 G
<b>Minerals</b>	
Calcium	481 mg
Potassium	334 mg
Phosphorus	71 mg
Magnesium	57 mg
Iron	41 mg
Manganese	8.2 mg

Bor	4.3 mg
Sodium	4 mg
Titanium	2.7 mg
Copper	1.3 mg
Zinc	0.34 mg
Nickel	0.03 mg
<b>vitamins</b>	
Vitamin C	300 mg
Vitamin K	0.5 mg
Vitamin B <sub>3</sub>	0.388 mg
Vitamin B2	0.16 mg
Vitamin B6	0.103
Vitamin A	0.101
Thiamine	0.008

\* This is a short-term treatment of the plant with boiling water or steam in order to get rid of the burning sensation.

Nettle also contains phytoncides, sulfur, phenolic acids and tannins. In small quantities in the plant were found: folic acid, choline (vitamin B<sub>4</sub>), beta-carotene, vitamin H, iodine and vitamin E.

Essential oil, sirotonin , porphyrin , pantothenic and phenolcarboxylic acids, flavonoids , glisodurgicin , histamine were found in the **stems and leaves of nettle** .

**Nettle hairs are** filled with silicon, formic acid, and acetylcholine. **Nettle seeds** contain linoleic acid and vitamin C. The alkaloid nicotine was found **in the roots** .

A large amount of vitamin C explains the strong preventive and strengthening effect of this plant on the human body.

Vitamin K reduces inflammation, improves blood clotting. A large amount of B vitamins helps fight some diseases of the nervous system (Parkinson's disease, Alzheimer's, neurosis, etc. ) <sup>[12]</sup>

Calcium and phosphorus have a beneficial effect on the condition of bones and teeth. Potassium and magnesium are actively involved in the full functioning of the cardiovascular system.

A sufficiently high content of iron in nettle protects the body from iron deficiency anemia. Secretin promotes the formation of insulin, lowers blood sugar levels.

Nettle allows you to actively fight toxins and bacteria, as well as the effects of radiation and oxygen deficiency, thanks to organic acids, chlorophyll, and silicon. <sup>[eight]</sup>

### **What exactly is used and in what form?**

Most often, **nettle leaf is used for treatment** , which is harvested in May-June. Collect nettles with a growing moon, when the plant has a special power. The cut branches of the plant are dried for 2-3 hours, then the leaves are cut off.

Lay out in a well-ventilated area in a layer of 3 to 5 cm and dry. In dryers, the leaves are dried at a temperature of 40-50 °. The shelf life of raw materials is 2 years.

**Nettle roots are** harvested from late autumn to early spring, flowers - in June-July, seeds - in the second half of August - September. For nettle juice, young leaves and stems of nettles are used before flowering.

## Medicinal properties

Nettle has many medicinal properties. Among the main ones are: the ability to stop blood, diuretic and choleretic effects, removal of inflammatory processes, acceleration of the recovery of the mucous membranes of the digestive tract, normalization of menstruation, etc.

In the West, nettles are used to treat tumor diseases. It is also determined that nettle has an expectorant effect and relieves convulsions. <sup>[twenty]</sup>

Due to the high content of chlorophyll, nettle helps the work of the female genital organs and intestines, accelerates the regeneration of damaged areas of the body.

Some experiments have proven that nettle can normalize the level of hemoglobin in the blood, and also actively affects the metabolism of carbohydrates. <sup>[9]</sup>

**nettle seeds** have been prescribed to women for infertility. Nettle has also been used as a cure for impotence. To do this, its seeds are mixed with a banana and consumed daily until the libido is restored.

**Fresh leaf juice and nettle seeds** help to cope with osteomyelitis and digestive dysfunction, and are also used for an increased percentage of salts in the joints. Ulcers from varicose veins are wiped with fresh juice, diaper rash, affected areas of tissues are disinfected and healed. <sup>[2]</sup>

The diuretic properties of nettle are used for kidney stones, ascites, rheumatism. In the treatment of arthritis, osteochondrosis, bruises, sprains, fractures, **nettle oil is often used**.

**The leaves of the plant** are used in many medicines, as well as in vitamin teas, as a laxative or in tea for the stomach. <sup>[ten]</sup>

**nettle leaves are effective:**

- with uterine, gastric, pulmonary, hemorrhoidal bleeding;
- diarrhea and dysentery;
- pathologies of the stomach;
- boils;
- asthma and tuberculosis;
- with fever;
- with hair loss.

**Nettle roots** are an excellent remedy for severe coughs. Also, **a decoction of rhizomes** is used in the form of compresses for diseases of the skin, oral mucosa, tonsillitis.

**Infusion of nettle inflorescences** is used:

- with nettle fever;
- with oncological diseases;
- with rheumatism;
- to remove stones from the kidneys;
- as an expectorant or diuretic;
- with skin diseases.

**A decoction of the seeds** is used as an anthelmintic.

**Nettle juice** has a stimulating effect on metabolic processes, is used to improve the digestion of food, the functioning of the kidneys, pancreas, and effectively removes toxins. <sup>[11]</sup>

### In official medicine

" *Prostaforton* " and " *Bazoton* " - drugs of foreign production, created on the basis of nettle roots and rhizomes, have antitumor activity. " *Urtifilin* " is used to treat burns, is used to heal wounds.

An extract from the leaves of nettle is part of the choleretic drug " *Allochol* ". In addition, in pharmacies you can buy chopped nettles in packs and filter bags for making medicinal tea.

In medical practice, nettle leaves and stems are also used to stop hemorrhoidal, pulmonary and gastrointestinal bleeding. In official medicine, nettle is also used in the form of infusions and decoctions for diseases of the kidneys, stomach, and hypovitaminosis. <sup>[eleven]</sup>

Nettle is the most valuable raw material for the production of **chlorophyll** . It has been proven that chlorophyll enhances metabolic processes, tones the body, especially the heart, blood vessels and respiratory organs. Chlorophyll is part of the medicine for hepatitis. <sup>[9]</sup>

### In folk medicine

In folk medicine, almost all parts of the plant are used.

#### Leaves:

- to heal wounds - dry and grind to a powder, mix with pepper and vaseline in equal parts. Apply the composition twice a day.
- circulatory failure - 2 tbsp. l. leaves + a glass of boiling water, leave for 15 minutes. Drink a glass three times a day before meals.
- if often blood comes from the nose - 1 tbsp. l. + a glass of hot water. Boil 10 minutes, strain. Drink 1 tbsp . about 5 times a day.
- to get rid of gout and rheumatism - 1 tbsp. l. dry leaves + a glass of hot water, insist in a warm place, leave for an hour. Drink 1 tbsp. l. 4 times a day.
- to relieve pain - nettle leaves + buckthorn bark (in a ratio of 1 to 1). 8 gr. mixture + a liter of hot water, soak in a water bath for 10 minutes, leave for half an hour. Drink a glass 4 times a day.
- with constant constipation - nettle leaves + yarrow + buckthorn (1 x 1 x 2). Spoon collection pour 200 ml of hot water and cook for a minute, leave for half an hour. Drink 1 glass before bed for 14 days in a row.
- to get rid of hemorrhoids - nettle leaves + oregano + buckthorn (1 x 1 x 1). 1 tbsp . the mixture is brewed in one and a half glasses of hot water and heated for 5 minutes. Leave for 4 hours. Take half a glass three times a day ; <sup>[9]</sup>

#### Root:

- when coughing - cut into small pieces and boil them in sugar. Drink 10 gr. several times a day ; <sup>[9]</sup>
- with diarrhea, fever, pathologies of the gastrointestinal tract, menstrual irregularities - nettle tincture is used. For her, take 2 tbsp. l. nettle roots in crushed form and mixed with 0.5 l. vodka, then leave for a week. Drink 30 drops three times a day.
- with radiculitis, pain in the joints, furunculosis - tincture. For her, take 2 tbsp. l. crushed and mixed with 0.5 l. vodka, then leave for a week. Wipe painful or affected areas. <sup>[eight]</sup>

### **Fresh Juice:**

- nettle with painful and heavy periods - drink 10 gr. per day during menstruation;
- with cervical erosion - moisten a swab in nettle juice (at night for 2-3 weeks); <sup>[9]</sup>
- for boils, acne or other rashes - take 1 tbsp . per day until recovery. <sup>[eight]</sup>

### **flowers:**

- when coughing - a pinch + 2 tbsp. hot water, leave for 1 hour. Drink like tea. <sup>[eight]</sup>

### **Seeds:**

- with impotence - 1 tbsp. l. seeds are ground with a banana (take 1 tablespoon once a day);
- to prevent ectopic pregnancy - use 1-3 g of seeds in pure form once a day until the risk is excluded. <sup>[eleven]</sup>

### **in oriental medicine**

Information about the use of nettle in the countries of the East can be found in the Indo-Tibetan treatises " *Wai -durya- onbo* " and " *Dun -be* ". In Korean medicine, nettle leaves are used for severe uterine or stomach bleeding. They are also used to treat hemorrhoids, with an inflammatory process in the colon.

Externally applied to ulcers caused by trophic disorders in the tissues, as well as to wounds to accelerate regeneration and disinfection. Nettle is popular here as a cure for baldness. Nettle is also often used in Japan, Indonesia and China.

### **In scientific research**

The beneficial properties of nettle have been studied for a long time. Science knows the fundamental research of the plant by Professor Sokolov S.Ya. in 1969, a dissertation on the medicinal properties of this plant Soshnikova O.V. (2006). <sup>[twenty]</sup>

The antioxidant properties of nettles were revealed in a scientific paper by Rohit Bisht and his co-authors. In a study on rats, favorable factors for the influence of stinging nettle on Parkinson's disease were identified. <sup>[12]</sup>

A group of scientists from Pakistan, consisting of: Rachel Qayyum , Hafiza Misbah -ud-Din Qamar , Shamima Khan, Umme Salma , Taus Khana, Abdul Jabbar ) in September 2016 provided a scientific publication on the effect of stinging nettle on the treatment of hypertension. As a result of the study and the administration of nettle-based preparations to rats, relaxation of the vascular walls and a decrease in blood pressure in experimental animals were revealed. <sup>[13]</sup>

Also, a good result was given by the use of drugs based on nettle in Alzheimer's disease. <sup>[14,19]</sup>

Currently, the issue of practical application of nettle as a natural (vegetable) fiber is being studied by British professor Ray Harwood .

### **In culinary and dietetics**

The rich composition of nettle makes it an important component of the diet. Nettle contains a lot of protein, which makes it possible to rank it among the plants, which are called " *vegetable meat* ". <sup>[eight]</sup>

Nettle brings the greatest benefit in early spring. At this time, nettle leaves contain more vitamin C than currant or lemon fruits. Stinging nettle contains more vitamin A than carrots.

Young leaves of the plant are used for salads, cabbage soup, borscht. Sauces are prepared from nettle leaves, they are fermented, salted, casseroles, meatballs, fillings for pies, dumplings are made from them, all kinds of teas are prepared. Nettle is a part of some wines, liqueurs, beer.

The plant is widely used in dietetics as a means to help cleanse the body and reduce overall body weight. Nettle helps especially well if a person gains excess weight due to intestinal disorders, and is also prone to the accumulation of toxins and toxins. Fresh nettle salads help to normalize the work of the gastrointestinal tract.

Since nettle has a strong diuretic effect, with its help it is easy to remove excess fluid from the body, get rid of edema and extra pounds.

Nettle teas help reduce appetite. To do this, nettle flowers are dried and tea is brewed on their basis. <sup>[9]</sup> The calming effect of such teas is also important for the general condition of the body. The antimicrobial properties of nettle are used to extend the shelf life of foods. <sup>[eight]</sup>

### **In cosmetology**

Nettle decoction can be used to cleanse the skin of acne. Nettle decoctions are also used for furunculosis, rashes and other skin problems.

Nettle for hair is one of the most effective means of restoring and strengthening hair follicles.

### **Here are some folk remedies:**

- To stimulate hair growth and shine - crushed leaves (100 gr.) + half a glass of vinegar + half a glass of water. Boil for half an hour. Rub into skin. Use twice - thrice a week.
- With dandruff, baldness - prepare a nettle infusion (1 tbsp leaves + 1 cup boiling water, leave for 1.5 hours and strain). Use 1 time per week.
- Rinsing with nettle helps in the fight against early gray hair, seborrheic disease and other hair problems.

### **Other uses**

**In floriculture** , nettle infusion is used to fight aphids and to prevent powdery mildew.

Previously, this plant was actively used for the **weaving industry** . Nettle was used to make fiber, which was used for sewing sails, strong bags, sacks, etc. In the 19th century, the Khanty and Mansi made cloth from nettle and sewed clothes. In Japan, nettle cords were used to make samurai armor, clothing, and bowstrings were often made from this fiber.

Today, only in Yugoslavia, **large-scale industrial production** of nettle fabric - *cheviot* - has been preserved. <sup>[15]</sup> In the territory of the CIS countries, there are also a small number of small family-type enterprises engaged in the manufacture of insoles, belts, nettle scarves and other wardrobe items.

The plant is widely used in the **pharmaceutical, food and perfume industries**. <sup>[11]</sup> You can often find *Nettle strengthening shampoo in stores* .

**In animal husbandry** , nettles are added to pet and poultry feed. And it is prepared for vitamin flour, silage, briquettes, concentrates, granules, used as green fodder in a steamed form.

### **Unconventional Uses**

Since ancient times, nettles have been used as a talisman. It was believed that if a nettle rug was laid in front of the entrance to the house, evil would bypass this house. They believed that nettle leaves, hidden under the insoles in shoes, would save their owner from dark forces.

Nettle leaves, placed in the corner of the children's room, helped the baby cope with all fears, improved his sleep and health. Sprigs of nettles fumigated the room to remove the evil eye and spoilage. With a nettle broom they swept all the evil spirits out of the house.

It was believed that the nettle amulet was able to enhance the positive qualities of character - courage, initiative, honesty and stamina, to protect the life of a warrior. A dry nettle leaf was used as an amulet. The main thing is that the future owner of the amulet collects the leaves on his own.

### **Dangerous properties of nettle and contraindications**

When touching the stem, a person experiences burning and pain, thus, a chemical burn with nettles may occur. Usually discomfort passes quickly, but in some cases it can cause an allergic reaction.

Nettle sting usually poses no particular great danger to humans, except for the sting of the exotic nettle tree *Urtica ferox*.

### **Contraindications for use**

The main points when using nettle as a therapeutic drug is contraindicated:

- if a person has high blood clotting, eating nettle will lead to the formation of blood clots. <sup>[16]</sup> Therefore, the plant is contraindicated in varicose veins, thrombophlebitis, atherosclerosis;
- in case of renal and heart failure; <sup>[17]</sup>
- with individual intolerance and skin allergies. In this case, a nettle burn causes a lot of trouble and does not go away for a long time;
- during pregnancy (especially in recent months) - nettle can cause premature birth; <sup>[eight]</sup>
- with bleeding caused by polyps, cysts, tumors of the ovaries and uterus;
- with age spots on the skin and freckles (skin sensitivity to sunlight increases). <sup>[eighteen]</sup>

**Attention!** It is not recommended to collect nettles near roads and garbage dumps. The plant absorbs a large amount of harmful substances;

improper preparation of nettles is also dangerous. To be used raw, nettles must first be scalded with boiling water.

### **Botanical description**

It is a perennial herbaceous plant of the *Nettle family*. It is common in Europe and Asia, Africa and Australia, in North America. It can be found on the territory of the CIS countries, in India, China, Japan, in the USA and Great Britain. <sup>[one]</sup>

### **origin of name**

The people call nettle in a simple way: "zhiguchka", "zhigilivka", "zhaliva", "zhigalka". The opinion of linguists about the etymology of the word is not unambiguous. The former believe that the word "nettle" comes from the Old Slavonic "kopriva" or "kropiva".

It is assumed that this name has common roots with the Serbo-Croatian name *kröp* (boiling water) or the Polish *ukrop*, and means "feed for livestock treated with boiling water". Others are sure that there is a lexical connection with the word "koprina" here. <sup>[2]</sup> That is, it is a plant for the production of cloth.

A large amount of vitamins and nutrients makes nettle one of the most used plants in official and traditional medicine, dietetics and cosmetology.

## Kinds

To date, there are more than 50 varieties of nettle. On the territory of the CIS countries, the most common are:

**Stinging nettle** is a medicinal plant, with a large amount of vitamins and useful microelements. This is a perennial plant with a height of 1.5–1.7 m. The stem and leaves are covered with sharp but brittle needles containing formic acid. That is why touching it is often accompanied by burns.

**Stinging nettle (monoecious)** in its useful properties and appearance is similar to the dioecious variety. However, it grows no more than 50 cm high, and besides, it is an annual.

**Laminaria** - white nettle or "deaf" is common on the edges of the forest zone. Unlike the previous species, the lamb has very attractive white flowers and is an excellent honey plant. This type of nettle does not have stinging needles. Dried nettle flowers are used to make medicinal teas, as a medicine in the treatment of allergies and gastrointestinal diseases.

**Hemp nettle** usually grows in the steppe zone in the form of large thickets. This variety has dissected carved leaves, has burning hairs. It is considered a weed and grows along roadsides. Plant height from 1.5 to 2.4 meters. The stem and root of hemp nettle are used for the prevention and treatment of malignant neoplasms. <sup>[3]</sup>

**Nettle Kiev** in appearance resembles nettle dioecious. Its height, unlike the dioecious, does not exceed 1.2 meters. Outside of Ukraine, it grows in Western and Eastern Europe, as well as in Palestine. It is listed in the Red Books of the Voronezh and Lipetsk regions of the Russian Federation, as well as the Republic of Belarus. Nettle Kyiv is strictly protected by the relevant environmental safety authorities in countries such as Hungary, the Czech Republic. <sup>[four]</sup>

Despite the fairly wide distribution, *stinging nettle* is listed in the Red Books of regional significance, for example, the Voronezh and Lipetsk regions of the Russian Federation. Nettle is strictly protected by the relevant environmental safety authorities in such countries as Belarus, Hungary, Czech Republic. <sup>[four]</sup>

The appearance of the plant is approximately the same. If you describe nettle from the point of view of botany, you get the following characteristic:

**Stem** : erect with furrows and hairs; length - from 15 to 35 cm.

**The leaves** are dark green in color, teardrop-shaped leaf with teeth, 2 to 10 cm long;

**Flowers** are solitary or in the form of inflorescences; staminate or pistillate. Usually the plant has 6 to 12 stamens and a lower ovary.

**The fruit** may look like a nut or a box containing nettle seeds. <sup>[5]</sup>

There are annual and perennial types of nettle, monoecious and dioecious, medicinal and weedy, safe and even life-threatening ( *Australian nettle* ).

## Growing conditions

In order to grow nettle, it is necessary to provide it with optimal conditions, the main of which are:

- Fertile soil - not heavy, medium moisture soil, without sand and clay.



- Shady area, as the plant grows best in the absence of sunlight.
- The pH of the soil should be around 5.6.

For the rapid growth of the plant, it is recommended to immerse the nettle seeds in the soil by 1.5 cm. The sowing period is late autumn or early spring, since the planted seeds give their first shoots in a month, when the air temperature is at least +8 ° C.

It is important to sprinkle the sown surface with fertilizer: peat or humus.

It is desirable to maintain optimal soil moisture until the first sunrises .<sup>[6]</sup> When thickening , seedlings should be thinned out so that young plants are 5 cm apart. For normal growth and development of the plant, the soil must be kept moist. But don't let it get too wet. Otherwise, root rot is possible .

### Power circuit

Nettle lovers are common diurnal urticating butterflies ( *Aglais urticae* ) from the *Nymphalidae* family . They feed mainly on the shoots of the young plant.

Caterpillars of the peacock butterfly also prefer nettles to all other plants. The most common grasshoppers are also happy to eat nettles.

In the British Isles, nettle seeds have been found in fallow deer ( *Dama dama* ) and magpies ( *Pica pica* ). The parasitic plant *European dodder* also feeds on the sap of this plant.

### Literature:

1. Wikipedia, en.wikipedia.org\ wiki \Nettle
2. Wiktionary , ru.wiktionary.org\ wiki \nettle
3. Types of nettle: stinging, deaf and others, <http://herbaldoc.ru/krapiva/vidy-krapivy-zhguchaya-gluxaya.html>
4. Kiev nettle, ru.wikipedia.org\ wiki \ Kiev nettle
5. Stinging Nettle, en.wikipedia.org\ wiki \ Stinging Nettle
6. Nettle cultivation, mir-ovosey.ru\ vyrashhivanie-krapivy \
7. National Nutrient Database for Standard Reference Release 28, ndb.nal.usda.gov\ ndb \foods\show\8432
8. Lavrenova G.V. Lavrenov V. Encyclopedia of medicinal plants. Volume 1
9. Grodzinsky A.M. « Likarski roslini »
10. Useful and medicinal properties nettle , inmoment.ru\beauty\health-body\useful-properties-products-k7.html
11. Stinging nettle, <http://100trav.su/lekarstvennye-rasteniya/krapiva-dvudomnaya.html>
12. Antioxidant-Rich Fraction of *Urtica dioica* Mediated Rescue of Striatal Mito-Oxidative Damage in MPTP-Induced Behavioral. dx.doi.org\10.1007\s12035-016-0084-z
13. Mechanisms underlying the antihypertensive properties of *Urtica dioica* , ncbi.nlm.nih.gov\ pmc \articles\PMC5009491\
14. Avicenna J Biotechnol Med. 2016 Jul -Sep; 8(3): 120-125.
15. Weaving, <http://steb-clair.narod.ru/tkach.html>
16. Nettle and its beneficial properties, <http://notefood.ru/pitanie/obshhie-voprosy/krapiva-poleznue-svoistva.html>
17. The benefits and harms of nettle tea for the human body, <http://krapyva.ru/journal/item/32>
18. Akhmetov R.B. " Overcome the Grass"
19. Neuroprotective Effects of Herbal Extract on Rat Model of Sporadic Alzheimer's Disease, ncbi.nlm.nih.gov\ pmc \articles\ pmid \27563424\
20. Cyberleninka , cyberleninka.ru

An extended HTML version of the article is available on the site [edaplust.info](http://edaplust.info).

**Nettle - useful properties, composition and contraindications**

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