

Medicinal properties of nuts imported to Russia  
T.L. Kiseleva, A.A. Karpeev, Yu.A. Smirnova, V.P. Safonov, E.V. Tsvetaeva, L.I.  
Kogan, I. L. Blinkov, M.A. Dronova  
(Federal Scientific Clinical Experimental Center of Traditional  
methods of diagnostics and treatment of Roszdrav, Moscow)

#### SUMMARY

The article summarizes information about the fruits of some plants growing in tropical and subtropical climates, called in everyday life "nuts". The correct use of these fruits in nutrition can provide real help in the treatment of patients with various diseases, as well as avoid complications from their use. For each plant - peanuts, peanuts (*Arachis hypogaea* L.), seed chestnuts (*Castanea sativa* Mill.), Nutmeg (*Myristica fragrans* Houtt.) And real pistachios (*Pistacia vera* L.) - information on the chemical composition and main species is provided. actions of biologically active substances contained in its fruits, ways of use for food and medical purposes and possible contraindications and restrictions on their use.

Key words: peanuts, peanuts, sowing chestnut, nutmeg,real pistachio, nuts.

In the previous publication (Traditional Medicine No. 4, 2008), materials were presented on the therapeutic use of nuts and seeds - the fruits of walnut, oil and some other plants growing and cultivated on the territory of Russia. This article focuses on the so-called "nuts" that grow in tropical and subtropical climates. We will provide brief information about the fruits that are imported into Russia as food products and spices. Interest in nuts is on the rise - and not just because of their nutritional value. They are an effective therapeutic and prophylactic agent. Information about the possibility of their safe use in dietary and medical nutrition is rather limited, although their correct use can provide real help in the treatment of patients with various diseases.

Most nuts are sources of physiologically active compounds such as polymonounsaturated fatty acids, phytosterols, free amino acids, minerals and vitamins. Nuts are one of the best food sources of vitamin E - a natural antioxidant, antihypoxant, a universal protector of cell membranes from free radical damage and an effective immunomodulator. With regular consumption of foods rich in this vitamin, the condition of the skin and mucous membranes improves, fatigue develops more slowly during physical and mental stress, and nervousness and irritability decrease. Vitamin E also affects reproductive function: with its shortage, there are, among other things, male and female infertility, miscarriages in early pregnancy. Daily

the need for this vitamin (10 mg%) is satisfied by a small amount of nuts.

There are some features of the use of nuts in nutrition, associated with the specific composition of the groups of biologically active substances accumulating in them. Nuts contain some biogenic amines, such as tyramine, which can cause spasm of cerebral vessels. Therefore, excessive consumption of these fruits can lead to headaches. The recommended number of them is no more than one handful (on average, from 5-6 to 10-15 pieces, depending on the size of the nuts) daily. Nuts are rich in protein, so people with hypersensitivity may experience allergic reactions after eating them.

Roasted and salted nuts are not suitable for medicinal purposes. Salted nuts strongly stimulate the secretion of the digestive glands; Excess table salt disrupts water-salt metabolism, promotes fluid retention in the body and causes tissue edema. The use of salted nuts is contraindicated in hypertension, atherosclerosis, heart failure, diseases with high acidity of gastric juice, cholecystitis, pancreatitis, pyelonephritis, during pregnancy.

Unshelled nuts retain their nutritional value for several years. Their shell is a natural barrier to the access of light, protects many biologically active substances (vitamins, unsaturated fatty acids, etc.) from oxidation. Nuts without shells have a much shorter shelf life, which ensures the safety of nutrients.

In fact, not all fruits of the plants mentioned in the article according to the botanical classification are nuts.<sup>[1]</sup>... In everyday life, nuts are called a much larger number of fruits. This is due, for example, to a similar appearance, method of consumption and nutritional value: for example, the beans of peanuts (*Arachis hypogaea* L., a plant of the legume family - Fabaceae), also called "peanuts", have a hard shell and an edible seed used in food like a nut. Most of the tropical and subtropical fruits similar to nuts (for example, peanuts, coconuts) came to Russia not directly from the countries of growth, but from European states, whose representatives once discovered the richest lands of the tropics for the Old World. In European countries, the fruits are called "nuts", which has already been simply translated into Russian.

Plants in this article, as usual, are arranged in alphabetical order. More complete information about each of the objects in terms of the botanical characteristics of plants, non-food ways of their use is presented by us in the monograph "The medicinal properties of food plants" (Moscow: Publishing house of FNCEC TMDL Roszdrav, 2008. - 533 p.).

#### PEANUTS (EARTH NUTS)

*Arachis hypogaea* L.

Dried and processed seeds are used as a food product and medicinal raw material (raw materials are unofficially in the Russian Federation). Peanut

the oil is approved for medical use on the territory of the Russian Federation [3]. Peanut seeds contain [2, 7, 8, 11, 14, 17]:

- 20-30% protein substances;
- 35-55% fatty oil, in which the content of triglycerides of oleic acid reaches 70%, and linoleic - 25% of the total amount of oil; up to 20% of saturated fatty acids (arachidic, palmitic, stearic) of the total amount of oil. In addition, it contains unsaturated hypogeic acid specific to this oil;

- carbohydrates: starch, sugars, fiber;
- vitamins: B1 (mainly in the peel of the seed), B2, C, carotenoids ( $\beta$ -carotene, lutein, flavoxanthin); E, pantothenic acid, biotin;
- vitamin-like compounds: choline, betaine;
- organic acids: ketoglutaric, methylene- $\alpha$ -ketoglutaric;
- purines;
- saponins.

Flavonoids were found in the fruit shell: flavone glucoside arachidoside, leucoanthocyanidins - leukocyanidin, leukodelphinidin.

The alkaloid arachine was isolated from the cake [8]. Peanuts are eaten in dried, fried, salted and candied form. Even a small amount of eaten nuts will make you feel full for a long time.



Rice. 1. Peanuts, peanuts (*Arachis hypogaea* L.); legume family - Fabaceae

The bulk of the cultivated seeds of the plant is used to prepare high-quality edible oil with a pleasant nutty flavor, not

inferior in culinary properties to olive. Refined peanut oil is used in medicine similarly to olive and almond oil, as well as suppository and ointment bases. The remaining cake is used to make a protein-enriched halva and an additive to flour. Seeds and cake are added to cheap varieties of chocolate and confectionery, and are used to produce artificial milk and other food products. Peanuts are also used for the preparation of a number of alcoholic beverages.

There are few scientifically substantiated data on the therapeutic use of peanut SEEDS [2, 4, 6, 8, 10, 14, 15, 19]. In an experiment, peanut flour extract causes a reduction in blood clotting time by 52%. Apparently, this explains the information about the effectiveness of peanut oil treatment for children suffering from hemorrhagic vasculitis (diseases manifested by hemorrhages). To some extent, this therapeutic effect is due to the content in the seed coat of a significant amount of flavonoids, helping to strengthen the walls of blood vessels. Peanut seeds rich in mono and polyunsaturated fatty acids. These compounds in the body are involved in the structural and functional organization of cell membranes, the biosynthesis of eicosanoids - mediators of metabolic reactions. The term "eicosanoids" includes prostaglandins, prostacyclins, thromboxanes, which are formed from polyunsaturated fatty acids under the action of various enzymes. Eicosanoids have an extremely broad spectrum of action: they dilate blood vessels, reduce blood pressure and blood clotting, prevent the development of bronchospasm, inflammatory and allergic reactions.

Prostaglandins are involved in the activity of the reproductive system, affect various endocrine glands, inflammation and allergic reactions, play an important role in the regulation of kidney function. Violation of the biosynthesis of prostaglandins can cause the development of severe pathological conditions.

As you know, the introduction of polyunsaturated fatty acids into the body with food significantly helps to reduce the level of cholesterol in the blood, normalize the state of blood vessels and, accordingly, reduce the risk of atherosclerosis, hypertension and other cardiovascular diseases, prevent thrombus formation, and cerebrovascular accident. The use of products containing these substances helps to strengthen the immune system, normalize the work of the endocrine glands (adrenal glands, gonads, etc.).

One of the functions of prostaglandins is to regulate the contractile function smooth muscles, including the muscles of the uterus. Therefore, in gynecological practice peanuts are recommended to consume a small amount of peanut seeds (20-25 g per day) in the last weeks of pregnancy to prevent weakness in labor.

In terms of traditional Chinese herbal medicine, peanuts are sweet and neutral. It "moisturizes" the lungs and harmonizes the stomach. Recommended for dry cough with little sputum, no

appetite and depletion of the body. An emulsion from seeds in folk medicine was prescribed orally for pain in the stomach and intestines.

Be sure to keep in mind that peanut seeds contain purines. This completely excludes its use by patients with gout. Eating peanuts increases the risk of oxalate in the urine and can (with continued use in food in large quantities) trigger the development of urolithiasis.

When stored for a long time, peanut seeds are often attacked by molds. The use of such peanuts in food is unacceptable: mold fungi, mainly of the genus *Aspergillus*, produce aflatoxins - poisonous substances that have a toxic effect on the liver, their carcinogenicity has also been proven.

SEED CHESTNUT (K. NOBLE, K. PRESENT, K.  
SWEET, K. EDIBLE)

*Castanea sativa* Mill.

Fresh and processed fruits of sowing chestnut are used as a food product and medicinal raw material; as remedies - fresh and dried leaves; the hard part of the fruit is a pluncheon (raw material is unofficial in the Russian Federation).

The fruits (seeds) of chestnut contain [4, 16, 20]:

- carbohydrates: starch, sugar;
- proteins;
- fatty oil, in its composition acids: oleic, linoleic, palmitic;
- organic acids: lactic, malic, citric;
- vitamins: C, B1, B2, PP, K, carotene;
- mineral substances.

Found in the leaves

● polyphenolic compounds: phenol carboxylic acids and their derivatives (dehydrodigallic, n-coumaric, coffee, gallic); tannins (3-16%); flavonoids (quercetin, isorhamnetin, myricetin, quercitrin, rutin, myricitrin; in the hydrolyzate - kaempferol);

- triterpenoids;
- coumarins: ellagic acid;
- aldehydes: hexene-2-al-1;
- vitamin K.

The bush is rich in tannins, including derivatives pyrogallol and pyrocatechol.

Chestnut seeds that have been stripped of the pericarp can be eaten fresh. However, they are more often eaten fried or boiled. Ground chestnuts can be used as a seasoning for various dishes.



Rice. 2. Sowing chestnut (*Castanea sativa* Mill.); beech family - Fagaceae

In the Mediterranean countries, chestnut seeds are widely used in the preparation of confectionery, fillings for sweets and ice cream, a surrogate for coffee, cocoa and chocolate. Chestnut flour is added to wheat flour for baking special types of bread [14, 16]. In central Russia, the FRUIT of chestnut began to appear on the market relatively recently, they are used as a food product.

In traditional medicine of the peoples of the Caucasus, the seeds of edible chestnut used as a diuretic. Boiled chestnuts were given to patients with dyspepsia. In traditional Chinese medicine, chestnuts are described as sweet and warm. Chestnut heals the spleen and nourishes the stomach, replenishes the kidneys and strengthens the ligaments, revitalizes the blood, and stops bleeding. The fruits of the plant are used for belching and diarrhea, aches and heaviness in the lower back and legs, vomiting with blood, blood in the feces, swelling and pain in trauma.

Unripe fruits contain a lot of vitamin C and are promising for its industrial production.

CHESTNUT LEAVES are approved for medicinal use in the USA and are included in the British Herbal Pharmacopoeia. Due to the presence of tannins and vitamin K, alcoholic and aqueous extracts from them have hemostatic and astringent properties. They are used for bleeding, severe coughing of various origin, respiratory diseases, in complex therapy

fever and malaria [4, 16, 20, 21]. A decoction of PLUSOK is used externally as an astringent.

Due to the high starch content in chestnut fruits, their use should be limited to overweight people.

Often, in everyday life, a horse chestnut is called a chestnut (*Aesculus hippocastanum* L.) due to similar fruits. This plant belongs to the horse chestnut family - Hippocastanaceae, its seeds are raw materials for production of venotonic drugs [3, 7, 11].

Horse chestnut fruit is a large ovate-oval 3-leaf capsule, covered with thorns, with one large shiny brown seed. Horse chestnut seeds are not used as food. In a number of CIS countries, horse chestnut is widely cultivated as an ornamental tree [14, 21].



Rice. 3. Horse chestnut (*Aesculus hippocastanum* L.); horse chestnut family - Hippocastanaceae

MUSKATE (MUSKATE, MUSKATNIK  
FRAGRANT)

*Myristica fragrans* Houtt.

Dried seeds and processed flowers are used as a food product and medicinal raw material (raw materials are unofficial in the Russian Federation).

Nutmeg seeds are rich in [1, 10, 12]:

- a fatty oil consisting mainly of myristic triglycerides acids; a poisonous, narcotic active substance was found in the fat (presumably it belongs to phenylpropane derivatives, it undergoes biotransformation in the body);

- essential oil, which contains up to 80% terpenes ( $\alpha$  and  $\beta$ -pinenes, camphene and others), 4-15% terpene alcohols (linalool, borneol, geraniol), phenylpropane derivatives (up to 12% myristicin, up to 3% safrole, etc.);

- with resins.

Muscat blossom (dried seedlings - arillus) contains an essentialbutter; fatty oil; amyloextrin.

Mostly used called nutmeg (*Nux moschata*)fragrant seed of a ripe fruit. Ground nutmeg is one of the classic ancient spices used as a seasoning for dishes, sauces, baked goods, sweets and drinks. It is added to food in very small quantities - less than 0.1 g per serving [13].

In tropical and subtropical countries, where the nutmeg tree grows, locals use flowers to make jelly or candied sweets, they make jam from the sour pulp of the fruit, make compotes, jellies and marinades.

In some countries, in modern medical practice, nutmeg is used as a means of stimulating appetite and gastric secretion, correcting the taste of drugs.

The seed has an astringent and anti-inflammatory effect, helps to stop diarrhea, eliminate spasms of the muscles of the gastrointestinaltract and thus reduces pain syndrome, including in acutegastroenterocolitis, peptic ulcer disease.

In Tibetan medicine, nutmeg is considered the best remedy forheart disease. It is recommended for patients with heart failure,ischemic heart disease, angina pectoris (when taken, it sharply decreasesintensity of pain and frequency of attacks). Given the expressedstimulating and tonic effect, in small doses nutmeg finds application as a stress-protective agent, in the complex treatment of neuroses, asthenic conditions, insomnia, impotence, degenerative diseases of the central nervous system (multiple sclerosis), blue dementia, post-traumatic encephalopathies. Therefore, nutmeg is considered a good geriatric remedy [1, 4, 10, 13].





Rice. 4. Nutmeg (*Myristica fragrans* Houtt.); family of muscat -  
Myristicaceae

Essential oil and scented seed balm, which is obtained by pressing (is a mixture of fatty, essential oils and pigments), are used in ointments and rubbing as a local irritant. Since when consumed internally, nutmeg, like many other spices, stimulates the secretion of digestive juices in the stomach and intestines, it should not be used for gastric ulcer and duodenal ulcer, hyperacid gastritis. Sometimes there is an individual intolerance to nutmeg.

#### REAL PISTACHIO (PISTACHIO TREE)

*Pistacia vera* L.

Dried seeds are used as a food product and medicinal raw material, for medicinal purposes - the resin of the trunks, galls (raw materials are unofficial in the Russian Federation).

Pistachio seeds contain [2, 5, 17, 20]:

- fatty oil, which mainly contains oleic glycerides, linoleic and other unsaturated fatty acids;
- proteins and free amino acids;
- carbohydrates: sugars, fiber;
- organic acids: acetic and others;
- polyphenolic compounds: tannins, flavonoids, anthocyanins;

- vitamins:  $\alpha$ -,  $\beta$ -,  $\gamma$ -,  $\delta$ -tocopherol;
- nitrogen-containing compound: pyrrole;
- heterocyclic oxygen-containing compounds: furfural, furfuryl alcohol;
- aldehydes;
- phytosterols: cholesterol, campesterol, stigmasterol, sitosterol;
- mineral substances.

Triterpenoids were found in the resin.

The galls developing along the edges of the leaves contain up to 30-50% tannins. Pistachios are eaten raw or roasted, often salted. Crushed seeds are added to pastries, ice cream, chocolate, some types of cheese and sausages. In the Caucasus, pickled and dried kernels are used as a seasoning for meat and fish dishes.

Oil is squeezed out of the seeds, which is not inferior in quality to olive oil. It is used in confectionery, sausage and pharmaceutical industries [14].



Rice. 5. Real pistachio (*Pistacia vera* L.); sumac family - Anacardiaceae

In modern practice [5, 9, 17, 18, 20] nutritious pistachio SEEDS are most often used at high physical exertion, as a general strengthening means- with overwork, chronic fatigue syndrome, the recovery period after infectious diseases, tuberculosis, anemias of various etiologies. Pistachio seeds are some of the best

concentrators of biologically available selenium and free amino acids, which normalize the activity of the cardiovascular system. Amino acids are also "building blocks" for the synthesis of specific tissue proteins, enzymes, peptide hormones and other physiologically active compounds.

The polyunsaturated fatty acids contained in seeds also play an important role in the body. Eating a moderate amount of pistachios in food has a hypocholesterolemic effect, helps to maintain the elasticity of blood vessels, and to reduce the risk of developing atherosclerosis and other pathologies of the heart and blood vessels. Unsaturated fatty acids are involved in the regulation of the activity of the endocrine glands, the immune system, etc., and normalize the metabolism in the body.

Pistachios are a popular remedy in Arabic medicine. It is believed that they have a stimulating, tonic central the nervous system by action, contribute to enhancing spermatogenesis and increasing potency.

The tannins contained in the seeds, when ingested, bind many toxic substances, including heavy metals, in the intestinal lumen. Therefore, pistachios have long been used for poisoning by poisonous plants and salts of heavy metals.

In folk medicine, pistachio seeds are used as an antispasmodica remedy for renal and hepatic colic, as well as a choleric agent.

Pistachio RESIN treat non-healing ulcers and wounds. To do this, the resin collected from the bark of the plant is melted with wax and butter (1: 4) and the resulting mixture is applied to the affected skin. GALLA pistachios ("buzguncha"), often formed at the edges of the leaves, are suitable for obtaining medicinal tannin. It is used for various inflammatory processes in the oral cavity, pharynx, larynx, for the treatment of burns, ulcers, cracks and bedsores.

Excessive consumption of pistachios in food can cause the development of toxic-allergic reaction.

On sunny days, the leaves and bark of the pistachio tree secrete essential oil and volatile aromatic components of the resin, which can cause severe poisoning, so pistachios are usually harvested at night. Due to the high calorie content of pistachios, overweight persons should limit the number of nuts at the rate of 3-5 pieces per day [17, 20].

#### LITERATURE

1. Barnaulov O.D., Pospelova M.L., Barnaulova S.O., Benhammadi A.S. Medicinal properties of spices. - SPb.: Publishing house of the Foundation of Russian Poetry, 2001. -- 240 p.
2. Great encyclopedia of medicinal plants. - M.: Publishing house "ANS", 2006. - 960 p.
3. State register of medicines. Official edition (by accessed 1 April 2008). - M., 2008. -- T. I. - 1398 p.

4. Gubanov I.A. Encyclopedia of the Nature of Russia. Food plants of Russia. - M.: ABF, 1996. -- 556 p.
5. Efremov A.P., Shreter A.I. Herbalist for men. - M.: Asadal, 1996. - 352 s.
6. Ilyina S. Twelve months. Encyclopedia of Traditional Medicine in 2 volumes. - K.: Logos, 1998. - T. 1. - 320 p.; T. 2. - 352 p.
7. Kurkin V.A. Pharmacognosy: A Textbook for Pharmaceutical Students Universities (faculties). 2nd ed., Rev. and add. - Samara: LLC "Etching"; GOUVPO "SamSMU Roszdrav", 2007. - 1239 p.
8. Medicinal properties of agricultural plants / Ed. Ph.D. M.I. Borisov. - Minsk: Urajay, 1974. -- 336 p.
9. Makhlayuk V.P. Medicinal plants in folk medicine. - Saratov: Privolzhskoe book publishing house, 1993. - 544 p.
10. Muravyova D.A. Tropical and subtropical medicinal plants. 2nd ed., Rev. and add. - M.: Medicine, 1983. -- 336 p.
11. Muravyova D.A., Samylina I.A., Yakovlev G.P. Pharmacognosy: Textbook. 4th ed., Rev. and add. - M.: Medicine, 2002. -- 656 p.
12. Novak B., Schultz B. Tropical fruits. Biology, application, growing and harvesting / Per. with him. - M.: BMM AO, 2002. -- 240 p.
13. Olentsova N.A. Spices. - Moscow: Zhigulsky Publishing House, 2002. -- 144 p.
14. Fruits of the Earth / Per. with him. and foreword. A.N. Sladkov. - M.: Mir, 1979. - 270 s.
15. Radzinsky V.E., Mikhailenko E.T., Zakharov K.A. Medicinal plants in obstetrics and gynecology: Handbook / Ed. V.E. Radzinsky. 6th ed., Rev. and add. - M.: LLC "Medical Information Agency", 2005. - 320 p.
  
16. Plant resources of the USSR: Flowering plants, their chemical composition, usage; Family Magnoliaceae - Limoniaceae. - L.: Nauka, 1984. -- 460 p.
17. Solovyova A. Nutcracker feat // Around the world. - 2002. - May. - WITH. 78-83.  
eighteen. Pistachio real. - Available across Internet:  
<http://www.santavita.com/pages/ fistashka / 2.html>.
19. Chikov P.S., Laptev Yu.P. Vitamin and medicinal plants. - M.: Kolos, 1976. -- 368 p.
20. Shepelev V.A. Healing properties of nuts. - Rostov-on-Don: Phoenix, 2002. - 128 p.
21. Encyclopedic Dictionary of Medicinal Plants and Products natural origin: Textbook / Ed. G.P. Yakovlev and K.F. Blinova. - SPb.: Special literature, 1999. -- 407 p.

---

Author's address

Prof., Doctor of Philosophy Kiseleva T.L.

---

Director of the Institute of Homeopathy and Naturotherapy FNCEC TMDL Roszdrav  
127206, Moscow, st. Vuchetich, house 12a  
kiselevaTL@yandex.ru

---

[1] Walnut (botan.) Is a dry, non-opening single-seeded fruit with a ligneous pericarp containing a kernel.

---

Medicinal properties of nuts imported to Russia / T.L. Kiseleva, A.A. Karpeev, Yu.A. Smirnova, V.P. Safonov, E.V. Tsvetaeva, L.I. Kogan, I. L. Blinkov, M.A. Dronova // Traditional medicine. - 2009. - No. 1 (16). - S.43-50.

[To favorites](#)