The medicinal properties of some garden plants of the celery familyT.L. Kiseleva, A.A. Karpeev, Yu.A. Smirnova, V.P. Safonov, E.V. Tsvetaeva, L.I. Kogan, I. L. Blinkov, M.A. Dronova

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SUMMARY

The article presents materials on the medicinal use of some plants of the celery (umbrella) family - Apiaceae (Umbelliferae), traditionally cultivated in central Russia. 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 - coriander seed (Coriandrum sativum L.), seed carrot (Daucus sativus (Hoffm.) Roehl.), Common caraway (Carum carvi L.) and odorous dill (Anethum graveolens L.) - information on the chemical composition and the main types of action of biologically active substances contained in its fruits, ways of use for food and medical purposes and possible contraindications and restrictions to their use.

Key words: food plants, medicinal plants, coriander,carrots, caraway seeds, dill, contraindications for use.

In a previous publication (Traditional medicine No. 1 (17), 2009), materials were presented on the medicinal use of some plants of the celery (umbrella) family - Apiaceae (Umbelliferae), which are extremely popular in our country and are widely grown on personal plots in the middle lane Russia or get on the table of Russians from the trading network. In this article, we continue this topic and provide information about some garden plants of the same family, in which any one part is used - underground (carrots), aboveground (dill, cilantro) or fruits (cilantro, cumin, dill).

All these plants have a specific smell, which is due to the accumulation of essential oils of complex composition in them. The seeds are used as spices for food, herbs (herbs) are often used as a component of salads, the roots are used to prepare an independent dish, but more often also in salads, first and second courses. All these plants can serve as an important component of medical nutrition. With their correct application, a very pronounced pharmacotherapeutic effect can be achieved in the treatment of various diseases.

We remind you that in central Russia, only umbrella plants specially grown (cultivated) in the fields or gardens can be used for food. Among the wild representatives of this family, there are quite poisonous ones (for example, spotted hemlock - Conium maculatum L.). Therefore, one should not collect outside cultivated areas, and even more so, eat unfamiliar plants, even with a very attractive aroma.

Plants are listed alphabetically. More complete information about

each of the objects in terms of the botanical characteristics of plants and non-food ways of their use is presented by us in the monograph "The medicinal properties of food plants" (Moscow: Publishing house FNECTMDL Roszdrav, 2008. - 533 p.).

SEEDING CORIANDER (KINZA, KISHNETS)

Coriandrum sativum L.

Fresh and dried coriander leaves are used as a food product and for medicinal purposes (raw material is unofficial in the Russian Federation). The dried fruits of coriander are approved for medical use in the territory of the Russian Federation as an appetite stimulant (bitterness) [9].

Ripe fruits contain [8, 9, 20, 23]:

- essential oil (0.7-1.4%), the main component of which is linalool (50-80 % by weight of oil), geraniol, geranyl acetate, borneol, acetic esters, pinene, camphene, myrcene, etc. are present;
- from 16 to 28% fatty oil (rich in unsaturated fatty acids);
- triterpenoids;
- the steroid compound corianndrol;
- sterols: sitosterol;
- polyphenolic compounds: phenol carboxylic acids and their derivatives; flavonoids; tannins; coumarins;
- vitamins: C;
- sugar;
- traces of alkaloids;
- minerals.

The herb (cilantro) and unripe fruits contain an essential oil of almost completely from aldehydes, mainly decyl, which has a pungent specific odor. As the seeds ripen, the content of aldehydes decreases to their almost complete disappearance, and in parallel, the amount of linalool rapidly increases, which gives the plant a pleasant spicy smell [20].

In addition, the leaves contain 1.2–2.6% protein; vitamins: C (46-100 mg%), B1 and B2, 3-10 mg% carotene, up to 145 mg% of substances with Rvitamin activity.

Rice. 1. Coriander seed (cilantro, kisnets) -Coriandrum sativum L., fam. celery (umbrella) - Apiaceae (Umbelliferae).

Vitamin-rich fresh young or dried coriander leaves are eaten in salads and seasonings. They have a strong specific odor.

The fruits of coriander as a spice are widely used both in home cooking and in the canning, confectionery, brewing and alcoholic beverage industries. Medicines, which include the FRUIT of coriander or its essential oil, improve digestion. They providesokogonnoe effect on the stomach and pancreas and have a carminative effect.

Essential oils of this plants render antispasmodic and, therefore, an analgesic effect with painful intestinal motility and spasms of internal organs. Since essential oils are converted into aqueous extracts in very limited quantities, it is better to use tincture (ie, water-alcohol extraction) to obtain antispasmodic and analgesic effects [5, 6, 25, 28].

In modern medical practice, coriander fruits are used as part of choleretic, laxative and anti-hemorrhoidal preparations [20].

Expressedantimicrobial propertiescoriander fruit, their antispasmodic and expectorant action due to the componentsessential oil, used in the treatment and prevention of acute respiratory diseases, bronchitis, tracheitis, pneumonia [5, 6, 13, 20, 22, 23, 28, 30]. If chronic bronchitis, bronchiectasis, stomatitis are accompanied by a foul odor, then the aromatic properties of coriander complement the antimicrobial [5].

In folk medicine, the fruit tincture is used in the form of drops as

sedative for increased nervous excitability; infusion of fruits -as an anticonvulsant [5].

Hot infusion of fruits gargle with tonsillitis, chronictonsillitis, oral cavity - with stomatitis. Powdered fruit sprinkle purulent wounds and trophic ulcers to speed up their healing [13, 22, 23, 30]. Essential oil from coriander fruits is an integral part of many medicines; it is also used for their aromatization and taste improvement [20].

Eating GREEN coriander, better known as cilantro, improves skin condition in psoriasis.

In Ayurvedic medicine, fresh juice from young coriander herbit is recommended to take orally (1 teaspoon 3 times a day) for allergies,hay fever and skin rashes, and externally - with itching and skin inflammation [15].

However, sometimes there are cases of individual intolerance to coriander: sometimes even the smell of the plant causes an allergic reaction.

Since all parts of the plant stimulate the secretory activity of the glands of the gastrointestinal tract, contraindications for regular consumption of its fresh herbs and fruits are hyperacid forms of gastritis,peptic ulcer and 12 duodenal ulcer.

According to some reports, in large quantities coriander has a depressing effect on cardiac activity, so it should be used with caution in ischemic heart disease, hypertension, after myocardial infarction. It is not recommended to use coriander in case of thrombosis, thrombophlebitis, as well as in hypotonic conditions resulting from severe illness [5, 16].

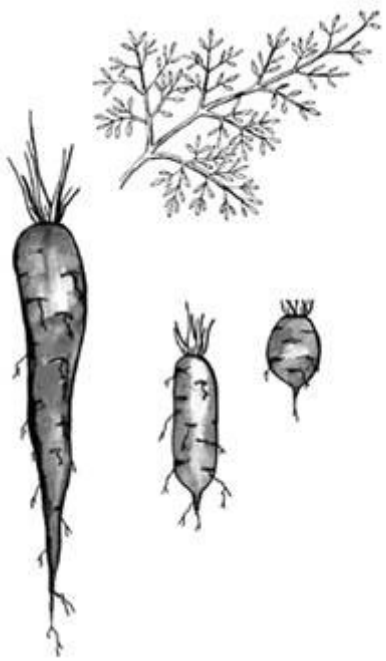
Sowing carrots

Daucus sativus (Hoffm.) Roehl.

(D. carota L. subsp. Sativus (Hoffm.) Arcang.)

Fresh, dried and processed root crops (roots), dried seeds of sowing carrots (raw materials are unofficially in the Russian Federation) are used as a food product and for medicinal purposes.

The composition of biologically active substances in the underground and aboveground organs of carrots is different [4, 14, 17, 23, 24, 30].



Rice. 2. Sowing carrot -Daucus sativus (Hoffm.) Roehl., Fam. celery (umbrella) - Apiaceae (Umbelliferae).

Carrot root vegetables contain:

- carbohydrates: 12% sugars (mainly sucrose, glucose, fructose), pectin substances, fiber, starch (0.2%);
- fats (0.2%);
- phospholipids: lecithin;
- proteins (up to 2.3%) and free amino acids;
- enzymes: amylase, protease, lipase, peroxidase, catalase, invertase;
- organic acids;
- vitamins: carotenoids (from 4 to 37 mg% depending on the place growth - α-, β and γ-carotenes, phytofluen, phytoene, lycopene, etc.), C (up to 20 mg%), B1 (0.12 mg%), B2 (0.07 mg%), B6 (0, 13 mg%), PP (1 mg%), folic acid (9 mg%), E, K;
- essential oil (0.01%);
- flavonoids;
- lignans;
- sterols;
- minerals: a lot of potassium (up to 240 mg%), calcium, phosphorus, magnesium; iron, cobalt, boron, chromium, copper, iodine (up to 3.8 mg%) and other micro and macro elements;

The seeds contain:

- fatty oil (up to 13%);
- up to 1.5% essential oil (it contains pinene, limonene, cineole, citral, citronellol, geranyl acetate, asarone, cymene, etc.);
- flavonoids;

- coumarins;
- sterols: daucosterol.

Root vegetables are used for food in raw and boiled form: they are a part of side dishes, salads, vinaigrettes, pilaf, sauces, seasonings; they are added to various canned foods (meat, fish, vegetables). Carrots are dried, fermented with cabbage, canned; candied fruits are prepared from it, fresh frozen semi-finished products and juices are made [10, 11, 17, 18, 26, 30]. The characteristic taste and smell of the root vegetable is due to the presence of carrot essential oil in it. As a multivitamin, carrots are used for the prevention and treatment of hypo- and avitaminosis, disordersvision, mainly associated with vitamin A deficiency [11, 19, 23, 29, 30].

Raw ROOT and carrot juice are recommended for regular use in baby food, as well as for pregnant women, nursing mothers, weakened patients [14, 24, 26]. Regular consumption of carrots or carrot juice (in moderation) strengthens the body, increasesnonspecific resistance to infectious diseasesand

adverse effects of the external environment (β-carotene significantly increases immunity), reduces the risk of atherosclerosis (antiatherogenic activity is associated with the antioxidant properties of substances contained in carrots) [19].

The daily requirement for vitamin A in an adult can be satisfied with about 20 g of raw root vegetables. There are more vitamins in its outer layers. There are fewer vitamins in yellow carrots than in orange ones.

Since provitamin A (carotene) is transformed in the body into vitamin A in the presence of vegetable fats, it is advisable to eat carrots in the form of salads, vinaigrettes, etc., seasoned with vegetable oil, and add a small amount of natural milk cream to carrot juice.

In folk medicine, root vegetables are included in the diet for cancer of variouslocalization. Topically applied compresses with grated carrots for breast cancer, skin. In the complex therapy of malignant neoplasms, carrot juice, as well as tops and plant seeds are widely used [1, 3, 10, 12, 17, 18, 21]. According to numerous data, the therapeutic and prophylactic anticarcinogenic effect of carrots is associated with a high content of carotenoids in it. The presence of conjugated double bonds in the molecule of these compounds determines their high reactivity when interacting with free radicals of various types, that is, carotenoids in the body play the role of antioxidants and can serve as radioprotective compounds. These properties of β-carotene have been confirmed experimentally and clinically.

Nutritionists recommend carrots to enhance intestinal motility (contains fiber) and as a mild laxative and non-flatulent remedy. It can be used in the diet for myocardial infarction, cholelithiasis.

Carrot juice is used as a diuretic, anti-inflammatory andbactericidal agent for diseases of the kidneys and urinary tract, includingincluding with pyelonephritis and urolithiasis. For the same indications infolk medicine take infusions of tops (sometimes mixed with parsley). Decoction

root vegetables with sugar are taken as an expectorant for coughing. Carrot juice, especially mixed with honey, is also effective for laryngitis, tracheitis and bronchitis.

At outward application roots possess anti-inflammatory and wound healing properties. Grated gruelcarrots are used in folk medicine for application to skin areas with burns, frostbite, ulcers. Rinse the mouth and throat with carrot juice in case of colds [4, 10, 11, 18, 22, 23, 30].

SEEDS of carrots contain daucosterol, which competes with cholesterol for receptors, restricts its reabsorption from the intestine and causes a pronounced decrease in its level in the blood. According to clinical studies, carrot seeds are used in a cholesterol-restricted diet.

The dry seed extract dilates the coronary arteries.

Tincture of seeds in wine or decoction of seeds in traditional medicine is known as an antihelminthic and laxative. OIL from seeds is used similarly to sea buckthorn.

However, it should be noted that with excessive consumption of carrots and, especially, carrot juice, hypercarotenemia is observed: yellowing of the palms, soles of the feet, however, even in such extreme cases, intoxication is not observed [11, 17, 19].

Also, carrots are not recommended for use in food with inflammation of the thinintestines (enteritis), exacerbation of gastric ulcer and duodenal ulcer, hyperacid gastritis, diarrhea.

Do not use carrot root vegetables, the top of which is above the ground and has a green color. They are believed to have a negative effect on the function of the cardiovascular system [11, 17, 19, 26, 30].

ORDINARY Cumin

Carum carvi L.

Dried caraway fruits are used as a food product and for medicinal purposes (permitted for medical use in Russia as a carminative agent) [9].

The fruits contain [5, 6, 16, 20, 27, 30]:

- essential oil (3-6% depending on the variety and area of cultivation), in its the composition is dominated by carvone (38–65%) and D-limonene (35–50%);
- fatty oil (14-22%);
- proteins (23%);
- polyphenolic compounds: flavonoids (quercetin, kaempferol); tannins; coumarins: umbelliferone, scopoletin;
- minerals.

Rice. 3. Common caraway -Carum carvi L., fam. celery (umbrella) - Apiaceae (Umbelliferae).

Caraway fruits are used as a spice for flavoring bakery products, cottage cheese, cheeses and sausages, in home cooking - for pickling cucumbers, cabbage; as spices they are added to soups, sauces, meat [5, 16, 26].

FRUITS of cumin are approved for medical use ascarminative and antispasmodic. They are appointed most often in training camps.with intestinal colic in children and adults, colitis with flatulence and constipation, as well as to enhance the secretory function of the digestive glands [2, 5-7, 16, 20, 27, 28, 30].

The essential oils of the plant irritate the taste buds, reflexively increase the peristalsis of the gastrointestinal tract, suppress the processes of putrefaction, fermentation in the intestine and, accordingly, the formation of gases. In case of flatulence, the infusion of cumin fruit is prescribed internally and (or) the essential oil of the fruit is rubbed into the skin of the abdomen. In the latter case, the effect occurs faster [7].

Infusion of caraway seeds has a calming effect on the nervous system, relieves spasm of peripheral vessels. It is advisable to use it in the composition complex therapy of disorders of the heart and central nervous system [5, 7].

In traditional medicine, cumin is known as an angioprotector andeffective metabolism corrector. As a therapeutic and prophylacticit can be used for atherosclerosis (especially cerebral vessels), hypertension, in pre-stroke and pre-infarction conditions. Biologically active substances of cumin fruits relieve spasms not only of the smooth muscles of the intestine, but also of the uterus, ureters, bronchi.

Essential oil of cumin is an almost universal saponification agent:

enhances the separation of bile, phlegm, urine, increases lactation in lactating women [6]. Therefore, the fruits are part of a large number of fees: choleretic, used for chronic cholecystitis, pancreatitis, cholelithiasis, hepatitis, as well as prescribed for diseases of the urinary tract and urolithiasis (does not irritate the renal parenchyma), to enhance lactation in nursing mothers.

When consumed inside the fruit of cumin, the essential oil is secreted, including number, and through the lungs, showingexpectorant, antimicrobial, anti-inflammatory effect. The purpose of the fruit is based on this property. caraway seeds for bronchitis, pneumonia, colds [5–7, 16, 20, 27, 28].

Cumin has an anthelmintic effect, it can be used to expel round and flatworms (in combination therapy) and to prevent the occurrence of helminthic invasions.

Essential oil of cumin, dissolved in vegetable oil, is prescribed externally for scabies.

You should know that cumin is not recommended to be eaten during pregnancy [5, 16, 26].

Dill odor

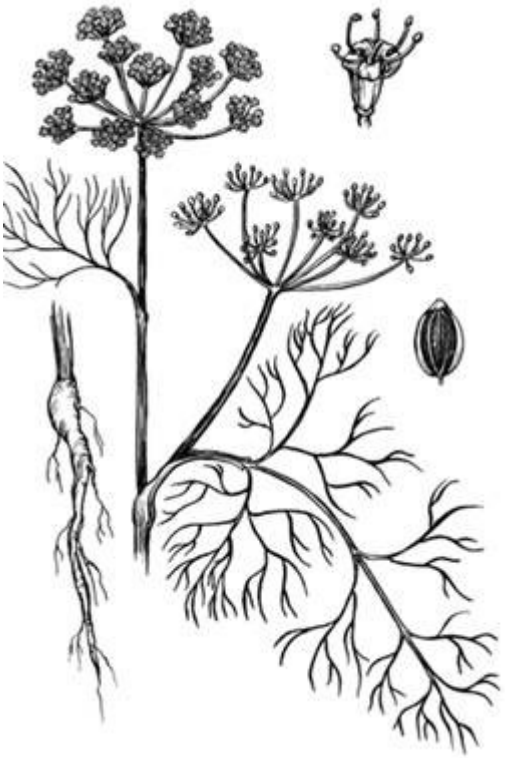
Anethum graveolens L.

Dried fruits of dill are used as a food product and for medicinal purposes (allowed for use in Russia as a carminative) [9], as well as fresh and dried plant grass (unofficial in the Russian Federation).

In all parts of the plant there is essential oil [5, 20, 22]: in its fruits up to 5%, in the grass - up to 1.5%. The oil is dominated by carvone. The fruits also contain: fatty oil (20%), which consists mainly of unsaturated fatty acids.

The leaves and young shoots contain:

- carbohydrates: 0.7-1.5% sugars;
- proteins (2–4%);
- vitamins: C (50-183 mg%), B1, B2, B9, PP, carotene (up to 4 mg%);
- polyphenolic compounds: flavonoids (quercetin, kaempferol, rutin, isoramnetin, etc.); hydroxycinnamic acids (chlorogenic - 2.5%);
- minerals: salts of potassium, calcium, phosphorus, iron, etc.



Rice. 4 Dill odorous -Anethum graveolens L., fam. celery (umbrella) - Apiaceae (Umbelliferae).

Dill is one of the most popular spice plants. For food purposes, fresh young shoots with leaves are often used, which are added to salads, first and second courses. The plant goes well with both vegetable and meat dishes; dill can be salted or stored frozen. Leaves and young stems are added when salting vegetables, canning, making pickles, in the alcoholic beverage industry [5, 16].

Dried dill is a spice in itself and is often incorporated into complex aromatic condiments. The fruits are used to flavor bakery products, marinades, tea, they are added to soups, to boiled and stewed fish.

FRESH Dill GREEN contains many vitamins and can serve as their source in the spring, when the body is experiencing vitamin deficiency. For the same reasons, it is useful to use dill in food for anemia and forprevention of respiratory diseases [5, 16, 22, 30].

In folk medicine, the infusion of the aerial part of the plant is used as expectorant, diuretic, mild laxative and antispasmodicfor spasm in the abdominal organs, and also as a sedative for insomnia and cramps. Fresh dill salads were recommended as early as the 19th century to treat cardiac asthma.

In official medicine, the FRUITS of dill are used, which containsignificantly more essential oil compared to herbs. This drug stimulates the appetite, improves the secretion of the digestive glands and digestion in general (especially with dyspepsia); applies as

carminative and antispasmodic for colic and spastic pain [5, 20].

Infusion of fruits is shown in children's practice for flatulence, fermentative dyspepsia, dysbiosis. For these and other diseases and symptoms, dill fruits can be used individually and as part of the collection. In combination with the fruits of fennel, anise, coriander, caraway, their effect is enhanced.

Biologically active substances of fruitsdetoxifying and antidiabetic properties. Infusion of fruitsprescribed for increasing intoxication in patients with diabetes mellitus, with impaired renal and liver function, with diseases of the central nervous system; in the complex therapy of autointoxication of cancer patients.

The presence of emollients, expectorant, secretolytic,antimicrobial and anti-inflammatory properties (mainly due toessential oil) allows them to be successfully used in acute respiratory diseases, bronchitis, bronchopneumonia, pulmonary tuberculosis, as well as bronchial asthma.

Both fruits and shoots with LEAVES of dill stimulate lactation in lactating women. Eating ALL PARTS of dill is positiveaffects the state of the cardiovascular system. Infusion of fruits (and infolk medicine - and infusion of herbs) are used in complex therapyhypertension of the I-II degree, in the recovery period after a stroke, with widespread atherosclerosis of the vessels, chronic coronary insufficiency and ischemic heart disease. During treatment, patients also note a decrease in the intensity and duration of headaches, a decrease in the frequency of hypertensive crises, pain in the heart. Improvement of the state in most cases is accompanied by an increase in mood, well-being and activity [5, 16, 22, 30].

With hypotension, dill seeds should be used with caution, because the biologically active substances contained in them cause vasodilation, while blood pressure is somewhat reduced. You should not eat a lot of dill during pregnancy [26].

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