



Dill (lat. Anethum)

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

Keywords: dill, benefit, harm, beneficial properties, contraindications

Beneficial features

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

Main substances (g / 100 g):	Fresh dill ^[1]
Water	85 .95
Carbohydrates	7.02
Squirrels	3.46
Alimentary fiber	2.1
Fats	1.12
Calories (kcal)	43
Minerals (mg/100 g):	
Potassium	738
Calcium	208
Phosphorus	66
Magnesium	55
Sodium	61
Iron	6.59
Manganese	1.264

Zinc	0.91
Copper	0.146
Vitamins (mg/100 g):	
Vitamin C	85
Vitamin PP	1.57
Vitamin B6	0.185
Vitamin B1	0.058
Vitamin B2	0.296
Vitamin A	2.32

Dill is known in the therapeutic literature as a rich source of flavonoids, phenolic compounds, saponins, cardiac glycosides and terpenes, as well as some vitamins and minerals.

The table below shows that dill leaves contain various vitamins, among which vitamin C stands out. According to this indicator, dill is 1.5-2 times ahead of citrus fruits (lemon, orange), entering the top 20 vegetable products containing ascorbic acid. Vitamin PP (nicotinic acid), B1 (thiamine), B2 (riboflavin), a number of flavonoids, and a complex of mineral salts were found in dill.

Dill fruits are 15-20% fatty oil with the inclusion of oleic, petroselinic, linoleic, palmitic acids. Also, the fruits of the plant contain a lot of essential oils (approximately 3.5%), consisting mainly of kavron, limonel and alpha-phellandrene.

However, the seeds and leaves of dill are not the same in terms of their quantitative (and, in part, qualitative) composition, which means that they exhibit different therapeutic effects. For example, the concentration of D-carvone in the essential oil of fruits is several times higher than in the essential oil of the herbal part (30-50% versus 15-16%, respectively). And the concentration of alpha-phellandrene, on the contrary, is higher in greens.

Other factors also have a significant impact on the chemical composition of dill: growth stages, cultivation area, genotype and environmental conditions. For example, American dill oil contains a very high amount of alpha-phellandrene, while carvone and limonene form the basis of Asian and European dill essential oil. ^[2]

Medicinal properties

Dill is used in traditional herbal medicine for the treatment and prevention of diseases of the digestive system and the genitourinary system, to eliminate breathing problems, to activate lactation, and also to lower cholesterol and glucose levels.

Recently, dill has been talked about as a possible anti-cancer, anti-inflammatory, antimicrobial product that can normalize stomach function by eliminating irritation and discomfort. Moreover, in addition to the long-known medicinal properties of the plant, new manifestations are being discovered, which in the future may make it possible to include dill preparations in official medical protocols:

- the anticonvulsant effect of the water-alcohol extract can be used in the fight against epilepsy ^[3],
- the estrogenic properties of herb extracts will make it possible to use them for the treatment of primary dysmenorrhea ^[4] and for the correction of menstrual irregularities,
- broad-spectrum antibacterial activity of crude extracts against *S. aureus* (*Staphylococcus aureus*), *E. Coli* (*E. coli*), *P. Aeruginosa* (*Pseudomonas aeruginosa*), *Salmonella typhii* and *S.*

Typhimurium (*Salmonella* species), *Shigella flexneri* (Flexner's *Shigella*)) has the potential to be used against a range of diseases from pneumonia to meningitis. ^[5]

There are studies showing that dill can reduce the incidence of diabetic complications. Experiments with essential oils, seed and leaf extracts in various diabetic models have shown significant reductions in triglycerides, glucose, total cholesterol, low and very low density lipoprotein cholesterol, and a concomitant increase in high density "good" cholesterol. ^[6]

It is assumed that the hypolipidemic effect of dill and its antidiabetic functions are provided by:

- inhibition of absorption of cholesterol in the intestine,
- increased fecal excretion,
- binding it to bile acids,
- increased production of bile acids in general.

In addition, rutin and quercetin (components of dill) may be responsible for lowering serum and liver cholesterol levels. Treatment of diabetic rats with aqueous and alcoholic dill extracts showed that they normalize lipid deposits in the liver, pancreas and heart. ^[7] And the use of carvone in laboratory therapy caused a decrease in the level of glycoproteins in plasma and stimulated insulin secretion. ^[eight]

The hypoglycemic and antioxidant activity of the components of dill also reduces the number of diabetic complications. The antioxidant manifestations of the plant here, apparently, are due to its phenolic proanthocyanidin and flavonoid components. Moreover, the extract of grass flowers has a greater antioxidant activity than the extract of seeds or leaves. It is believed that thanks to the dill extract, it is possible to provide greater protection of the gastric mucosa and prevent the occurrence of peptic ulcer. ^[9]

There are works considering the possibility of using plant concentrates for the prevention of Alzheimer's disease and the restoration of cognitive functions in old age. ^[10] Flower extracts and dill oil (topically) are tested for their ability to inhibit inflammation in burns and wounds. And an experiment with the use of aqueous extracts of the herb (1 ml three times a day) for five days showed effectiveness in the treatment of giardiasis (a parasitic lesion of the small intestine) in children. ^[eleven]

In medicine

Ayurveda researchers count more than fifty classic "old" preparations, which include dill or plant parts. The number of dill products produced by the modern pharmacological industry is much less. But among them you can find dill water, fruit extract, and essential oil.

- **"Dill water"**. The preparation consists of 1 part of essential oil of plant seeds and 1000 parts of purified water. It is intended to relieve spasm of the intestinal muscles and improve digestion. Water is especially effective in eliminating flatulence in children aged 2 weeks to 6 months. To do this, it is given 1 tablespoon three times a day, mixed in formula for feeding or breast milk.
- **Fruit extract "Anetin"**. An agent with an antispasmodic effect is prescribed for problems with the abdominal organs (chronic spastic colitis) and in case of chronic coronary insufficiency that occurs as a result of atherosclerotic processes in the coronary arteries. However, the drug is not intended to eliminate acute attacks of angina pectoris. The effect of Anetin comes slowly: when taken 0.1 g three times a day - for 0.5-1 week. Among the medicinal analogues of this plant extract are called Pastinacin and Daukarin obtained from carrot seeds.
- **Complex preparation "Solutan"**. The composition of this drug, intended for the treatment of bronchitis and bronchial asthma, includes dill oil.

- **Essential oil of dill.** The composition of the essential oil from different brands may vary, but almost all manufacturers recommend it for relieving the symptoms of acute catarrhal bronchitis, correcting digestive problems, normalizing painful menstruation, eliminating renal colic and gas formation disorders with recurrent discomfort in the upper abdomen (dyspepsia). In addition, it is positioned as a bile and diuretic.

In folk medicine

The concept of dill in folk medicine has evolved over time. In ancient times, it was believed that dill, both in the form of raw herbs and in the form of specially prepared concentrates (decoctions, infusions, oil extracts), was able to open organ blockages, dissolve internal tumors, eliminate pathological conditions associated with an increase in phlegm, save from poisoning (in combination with honey), relieve stomach weakness and restore bowel function. But since different parts of the plant in one or another preparation had, respectively, different pharmacological effects, the priorities in the use of "derivatives" of dill gradually began to stand out:

- The healing herb was included in the recipes for drugs for diseases of the liver and spleen, it was used to treat shortness of breath, drove urine, stimulated menstruation, and relieved hiccups. With crushed fresh grass, abscesses were "pulled out" (brought to maturity).
- Plant juice increased lactation, relieved ear pain (by instillation into the ear hole), treated sciatica, and provoked vomiting.
- Dill oil (externally) removed tumors of the extremities and "softened the members", used as a warming and soporific agent.
- A decoction of dill was used to treat the kidneys, intestines, bladder (including urolithiasis), stop nausea and "semen".
- The ash of the plant was applied to the affected areas to get rid of wounds, abrasions, hemorrhoidal cracks.
- Baths from dill decoction relieved the problems of the urogenital area: diseases of the testicles and uterus, the appearance of "winds" in the bladder and kidneys.
- Roasted seeds in the form of a powder were applied to wet wounds, and boiled in honey until thick, they were applied to the perineum to remove fecal stones.

A significant part of these ideas about the healing properties of dill have been preserved in modern folk medicine. Dill is still actively used for flatulence and digestive disorders, a diuretic effect is often used to relieve edema, kidney and bladder diseases. And the essential oil of the seeds is in demand for relieving spasms in the intestines and helping to eliminate colic.

Less common, but also quite widely practiced in folk medicine, is the treatment of dill for benign prostatic hyperplasia, mental disorders, diseases of the upper respiratory tract, and lactation disorders in nursing mothers. An ointment based on dill seeds is sometimes used to remove lice, and a decoction is used to relieve itching on the skin with allergies.

Decoctions, infusions and oil extracts

For the treatment of the above diseases in folk medicine, as a rule, decoctions and infusions of dill seeds are used. Here are examples of some of them:

- **"Tea" for lactation.** Dill seeds (1 tablespoon) are ground in a coffee grinder, poured with boiling water (1 liter) and put on a slow fire for 5 minutes. Before drinking, the drink is filtered and cooled. It is taken an hour before feeding the child 5-6 times a day. Alternatively, you can

make a "tea" from seeds (1 tsp), filled with boiling water (250 ml) and infused in this form for 2 hours - until cool.

- **Decoction of cystitis.** Seeds (2 tsp) are poured with water (250 ml) and boiled for 20 minutes over low heat. After straining, the decoction is drunk 5 times a day for a week as an auxiliary (to the main therapy) remedy.
- **Infusion of hypertension.** "Young" seeds (1 tsp) are poured with boiling water (300 ml) and infused for 3-4 hours. The infusion is taken as an additional means to reduce pressure after consultation with the doctor.

The greenery of the plant is also often used in the preparation of concentrates. For example, a **decoction of stones** is prepared from fresh dill grass (50 g) boiled in 250 ml of water for 5 minutes.

With the help of boiling and infusion at home, “ **dill water** ” is also prepared.

- *Method number 1.* Seeds (1 tsp) are poured with boiling water (200 ml), covered and infused for an hour. The infusion is taken after gauze filtering and cooling (under sterile conditions) to room temperature.
- *Method number 2.* Seeds (1 tsp) and water (200 ml) are placed in a water bath for half an hour, and then another 50 ml of boiled water is added to the strained and cooled infusion.

To obtain **dill oil** , you can also use different methods.

- *Method number 1.* Dill juice and olive oil, taken in equal proportions, are put on a slow fire until the water evaporates.
- *Method number 2.* Fresh dill greens are dipped in olive oil and kept in the sun until the grass loses its color. After filtering this portion of the infusion, the cycle is repeated with a new bunch of greens. Oil is considered ready for use after 3-5 repetitions.

in oriental medicine

The traditional Indian system of traditional medicine - Ayurveda - describes fennel seeds mainly as gastric (for abdominal discomfort, colic, indigestion, ulcers), wind and diuretic with ancient traditions of use. But in some sources, eye diseases, pain in the uterus, rheumatism are mentioned as indications for the use of dill. So, for example, in one classic work, a paste for external use from shatapushpa (dill), flaxseed and castor bean seeds, pounded with milk, and prescribed for rheumatic pains and swelling of the joints, is recommended. And in another work, dill is considered as a tonic, rejuvenating and intellect-stimulating herb.

There is evidence that dill has been used in Asian medicine for centuries to treat diabetes and cardiovascular disease. Dill fruits are still in demand in traditional Chinese medicine as a biologically active tool for monitoring the state of “dense” organs (heart, spleen, liver, kidneys, lungs) and the conduction system.

In scientific research

Among researchers, dill is a very popular object. Grass and essential oils of greens and seeds are constantly being studied for use in the treatment of cardiovascular diseases, diabetes, epilepsy, liver diseases (including carcinoma), fungal diseases, and some pathologies of the gastrointestinal tract. The therapeutic effect is not always equally pronounced, but very often dill concentrates, according to research results, look like promising raw materials for creating effective drugs for these diseases.

- **Specially selected doses of hydroalcoholic extract of dill leaves have a protective effect on the dentate gyrus of the hippocampus in mice with epilepsy.** ^[12]

In this experiment, 40 mice were divided into 4 equal groups. In three groups, mice received an extract of dill leaves in the amount of 250, 500, 750 mg/kg, respectively, for 21 days, and in the fourth (control) group - a phosphate-saline solution. As a result of the study of the excised hippocampus, it was found that mice in the group that received the extract in a volume of 500 mg/kg had a significantly larger number of healthy neuronal cells in the dentate gyrus than in animals from other groups. In addition, the number of caspase-3-positive cells, which play an important role in inflammatory processes, necrosis and programmed cell death, was significantly lower. At the same time, in all epileptic mice treated with dill extract, the number of healthy neuronal cells was higher than in animals from the control group.

- **Dill essential oil has demonstrated a pronounced antifungal effect against *Aspergillus flavus*.** ^[13]

The fungus *Aspergillus flavus* produces organic compounds (aflatoxins) that can cause damage to the kidneys and liver, allergic bronchopulmonary aspergillosis, and some other lung diseases. The study examined the effect of dill oil at different concentrations on the plasma membrane and mitochondria of the fungus, as a result of which a significant antifungal activity of the extract was recorded. The mechanism of antifungal action was due to the ability of dill oil to destroy the plasma membrane permeability barrier and the creation of mitochondrial dysfunction due to the accumulation of reactive oxygen species.

- **Dill essential oil demonstrates anti-cancer potential against the HepG2 cell line, human hepatocellular carcinoma.** ^[fourteen]

The HepG2 cell line is widely used for testing tissue engineering materials and research. In this work, we not only analyzed the effect of dill essential oil on HepG2 cells, but also identified the main anti-cancer components of the oil, as well as their optimal concentration, necessary to reduce the viability and inhibit the growth of malignant tumor cells after 24-hour exposure to oil concentrates. In the course of the work, 20 active components were identified in dill oil (mainly carvone, dillapol, dihydrocarvone-2 and dihydrocarvone-1) and the assumption was confirmed that dill essential oil causes cell cycle arrest (in the pre-G1 and G2 / M phases) and apoptosis carcinoma cells.

- **Scientists are also considering the possibility of using dill plant extract in contraceptives.**

A group of scientists conducted a series of studies spanning several years in which female laboratory rats were exposed to dill seed extract. First, scientists established the very fact of the influence of water and ethanol extracts on the reproductive function of females. Then we studied which fractions of the dill extract can cause infertility in animals. ^[15] And, finally, we tried to establish the mechanism of the infertility effect by tracking the changes that occur in the eggs of the experimental subjects.

In the last part of the study, an experiment was carried out with 59 adult female rats, which were divided into 3 groups: the first group received low doses of the extract for 10 days, the second - high doses, the third - control - did not receive the extract. As a result, it was concluded that an aqueous extract of dill seeds, both at low and high doses, increased the duration of the estrous cycle, progesterone concentration and caused infertility without any significant adverse effects on the developmental potential of the egg, without leading to its structural or chemical changes. ^[16]

Weight regulation

The effectiveness of an aqueous extract of dill seeds on the rate of weight loss was tested in a study on overweight laboratory rats. The scientists added the extract to the food of the animals for five weeks, and by the end of the experiment, they were significantly “leaner”. The researchers suggest that the effect was due to an increase in the levels of serotonin (5-HT), its metabolite (5-hydroxyindoleacetic acid) and tryptophan in the brain and plasma of experimental animals. And elevated levels of 5-HT made the subjects feel full faster, suppressing the desire to overeat, which ultimately led to weight loss. [17]

The calorie content of dill is very low - only 40-45 kcal / 100 g of fresh herbs - and it is readily added to various diet programs aimed at losing weight and drying, using, among other things, the diuretic properties of the herb. At the same time, the effect of getting rid of extra pounds is also created due to the fact that dill in the diet reduces the need for salt, which retains water in the body.

In cooking

After the 2018 FIFA World Cup held in Russia, English journalists, speaking about the culinary features of the cuisine of the host country, noted the excessive, in their opinion, the presence of dill in many dishes, due to which the taste of the main ingredients was lost behind the taste of bitter-spicy herbs. From the reasoning of the journalists, it followed that, although dill is known in Europe, it is not as popular as it is in the countries of the post-Soviet space, but it still does not use it there.

Meanwhile, the traditions of using dill greens as a spice in the European part of the continent were known even in the days of Ancient Greece. Then the fragrant herb was “inherited” by the Romans and, with the expansion of the Roman Empire, spread far to the north as early as the first millennium of our era.

Today, aromatic herb is used not only to give a spicy smell to various foods and dishes - pickled and pickled cucumbers and tomatoes, salads, sauces, soups, boiled and fried meat, fish. Dill also plays the role of a preservative in preparations, since it is able to protect products from mold, inhibit the growth of colonies of bacteria such as staphylococcus aureus, streptococcus, E. coli, and some representatives of the Pseudomonas genus. In Germany, due to the widespread use of dill in canning, it is even called “borage”.

During cooking, dill seeds reveal the aroma better during heat treatment, so they are placed at the beginning of the process, and fresh herbs are usually added at the end to preserve the smell. The recommended daily intake of dill grass is about 25-30 grams per day, and the maximum allowable is 80-100 grams.

Dill in the flowering or fruiting phases is considered an important component of sour vinegar. Dried leaves of the herb are sometimes added to tea for a savory flavor. And some manufacturers of fermented milk products have begun to produce kefir and sourdough with dill and cucumber flavors. They say that marketers focused this product, first of all, on men, counting on the fact that on a hangover morning he could replace the brine.

At the same time, dill is no less popular among the people - a drinking 38-40-degree tincture. For its preparation at home, plant umbrellas (inflorescences with seeds) are used. Freshly cut raw materials give the drink a weaker aroma and greenish color, while dried raw materials add a yellow tint and provide a richer taste and smell.

To prepare a tincture with a volume of 0.5 liters, you will need two dill umbrellas with seeds and stems. Lovers of sharp tastes additionally put garlic in a jar, lovers of soft ones - honey or sugar. The

tincture is kept closed in a warm and dark place from 4 to 7 days, although the exact time depends on the initial characteristics of the raw material.

In cosmetology

In cosmetics, dill is used mainly as an antiseptic agent and as an ingredient with a pronounced whitening effect.

In a recent study (2019), scientists tested the ability of dill extracts (and some other plants) to show skin whitening effects. Scientists became interested in dill due to its active biosynthesis of umbelliprenin, which had previously proven its potential in experimental skin whitening agents. The scientists were faced with the task of choosing the best solvent for the maximum yield of umbelliprenin (it turned out to be EtOH - ethyl alcohol), and finding the best proportion to demonstrate the effect on the cells of laboratory mice. The herbal extracts in this study proved to be as effective as the synthesized substance. ^[eighteen]

At home, you can also prepare a whitening mask with the addition of dill. To do this, you will need dill juice (2 tablespoons), cucumber pulp (2 tablespoons), and raw egg yolk (1 pc.). The components must be mixed and applied to the skin for a quarter of an hour. In combination with egg and lemon, dill is also used in tightening masks, and in combination with sour cream - in masks to eliminate fine wrinkles and moisturize the skin.

In the last decade, cosmetic ice from the seeds of the plant has become popular. First, dill seeds (20 g) are poured with boiling water (250 ml) and infused for 30 minutes. And then, in a cooled form, they are poured into ice molds and frozen in the freezer. With such ice cubes, to improve blood circulation and prevent acne, you can wipe your face both in the morning and in the evening.

In the cosmetic industry, seed and herb extracts are also used to prepare perfumery and cosmetic compositions that are introduced into creams, toilet waters, toothpastes, etc.

Dangerous properties of dill and contraindications

In ancient times, it was believed that you should not consume more than 25 grams of dill per day. Damage can be done to the bladder, kidneys, brain and reproductive function of a man (especially when eating fennel seeds). To avoid this, one should eat lemon, unripe grapes and honey with vinegar.

In modern official medicine, dill is not recommended for people with low blood pressure, urolithiasis and exacerbation of chronic urinary tract diseases.

Selection and storage

The quality of dill before buying can be determined by appearance, smell and touch.

1. **Outwardly, the stems and leaves of high-quality dill** are saturated green in color without yellowing, darkening, signs of self-warming and freezing. Dill in a bunch should be uniform in color, shape, and varietal affiliation without flower umbrellas (for store specimens). It is better that the stems are without creases, because the presence of mechanical damage reduces the shelf life. In addition, care must be taken to ensure that the grass inside the bundle is as fresh as the outside. The length of greenery should not exceed 25 cm (if you count from the end of the upper leaves to the neck of the root). If overgrown plants are found in a bunch, then their proportion cannot exceed 10%.

2. **The smell of high-quality dill** is clean, without foreign inclusions. If you rub a fresh leaf with your fingers, the smell will open more strongly. As a rule, in a garden plant it is more saturated than in a greenhouse grown in hydroponics. However, many other factors (from the dill variety to its age) can affect the intensity of the aroma, so the smell rating does not give an exhaustive picture.
3. **By touch**, you can determine the degree of lethargy-elasticity and moisture-dryness of the stem and / or leaves. The plant should be neither too wet nor too dry. Choose dill with elastic stems, but without signs of coarsening.

Fresh dill can be stored:

- up to 3 days at a temperature of 15-18°C and high (85-90%) relative humidity,
- up to 5 days at a temperature of 1-3°C and a humidity of 90-95%,
- up to a month - at a temperature of 0-3 ° C in hermetically sealed plastic bags.

Sometimes the shelf life at room temperature is slightly extended by placing the grass stalks in a glass of water, and the umbrellas under damp and regularly moistened gauze.

For preparations for the winter, dill is dried. Young grass, which has not yet thrown out tubes with a seed umbrella, is better suited for this. Such plants are harvested for drying in the morning after the dew has evaporated. It is not recommended to cut greens covered with dew or wet after rain for harvesting, since rotting processes can begin in it. For the same reason, they often don't wash their "tested" dill "for drying" after cutting, but it's better to rinse, shake off and blot with a paper towel when bought.

You can dry greens both in bunches and in crumbled form. In the first case, loosely connected bundles of 5-10 stems are hung with the leaves down, creating conditions for good ventilation and shading. In the second case, under similar conditions, the chopped grass is laid out in a thin layer on plates or pallets. Such blanks can be covered with gauze to protect dill from dust.

For a shorter period (up to 4 hours), dill can be dried in the oven on wax paper. In this case, it is better to open the oven door for air circulation, and set the temperature no higher than 40 ° C to preserve the beneficial properties of the plant. Turn the stems or stir in the chopped dill, preferably about every 30-40 minutes.

Modern people appreciate the beauty of dill much less than the ancients, but they know more about its beneficial and healing properties. Moreover, the scientific discoveries of recent years give a chance to use dill in the fight against very complex and intractable human diseases.

Literature

1. US National Nutrient Database, [source](#)
2. Bailer J., Aichinger T., Hackl G., de Hueber K., Dachler M. Essential oil content and composition in commercially available dill cultivars in comparison to caraway. *Industrial Crops and Products*. 2001;14(3):229–239. doi: 10.1016/s0926-6690(01)00088-7.
3. Rostampour M., Ghaffari A., Salehi P., Saadat F. Effects of Hydroalcoholic Extract of *Anethum Graveolens* Seed on Pentylenetetrazolinduced Seizure in Adult Male Mice - *Basic Clin. neurosci*. 2014, Summer, 5(3), 199-204.

4. Pattanittum P., Kunyanone N., Brown J., Sangkomkamhang US, Barnes J., Seyfoddin V., Marjoribanks J. Dietary supplements for dysmenorrhoea - Cochrane Database Syst. Rev. 2016, Mar 22, 3, doi: 10.1002/14651858.CD002124.pub2.
5. Arora DS, Kaur JG. Antibacterial activity of some Indian medicinal plants. J Nat Med. 2007;61: 313-7.
6. Jana S., Shekhawat G. Anethum graveolens: an Indian traditional medicinal herb and spice. Pharmacognosy Reviews. 2010;4(8):179–184. doi: 10.4103/0973-7847.70915.
7. Abbasi Oshaghi E., Arash Noori S., Ali R. Effects of walnut on lipid profile as well as the expression of sterol-regulatory element binding protein-1c (SREBP-1c) and peroxisome proliferator activated receptors α (PPAR α) in diabetic rat. Food and Nutrition Sciences. 2012;3(2):255–259.
8. Mishra N. Haematological and hypoglycemic potential Anethum graveolens seeds extract in normal and diabetic Swiss albino mice. veterinary world. 2013;6(8):502–507. doi: 10.5455/vetworld.2013.502-507.
9. Hosseinzadeh H, Karimi GR, Ameri M. Effects of Anethum graveolens L. seed extracts on experimental gastric models irritation in mice. BMC Pharmacol. 2002;2:21 . doi: 10.1186/1471-2210-2-21
10. Thukham-Mee W., Wattanathorn J. Evaluation of Safety and Protective Effect of Combined Extract of Cissampelos pareira and Anethum graveolens (PM52) against Age-Related Cognitive Impairment - Evid. Based complement. Alternat. Med. 2012, 2012. doi: 10.1155/2012/674101
11. Sahib AS, Mohammed IH, Sloo SA Antigiardial effect of Anethum graveolens aqueous extract in children - J. Intercult. Ethnopharmacol. 2014, Jul-Sep., 3(3), 109-112. doi:10.5455/jice.20140523104104
12. Rahim Golmohammadi, Fatemeh Sabaghzadeh and Mohammad Shafi Mojadadi. Effect of hydroalcoholic extract of Anethum graveolens leaves on the dentate gyrus of the hippocampus in the epileptic mice: a histopathological and immunohistochemical study. Res Pharm Sci. 2016 May-Jun; 11(3): 227–232.
13. Jun Tian, Xiaoquan Ban, Hong Zeng, Jingsheng He, Yuxin Chen and Youwei Wang. The Mechanism of Antifungal Action of Essential Oil from Dill (Anethum graveolens L.) on Aspergillus flavus. PLOS One. 2012; 7(1). doi:10.1371/journal.pone.0030147
14. Ebtesam S. Al-Sheddi, Nouf A. Al-Zaid, Mai M. Al-Oqail, Shaza M. Al-Massarani, Ali A. El-Gamal and Nida N. Farshori. Evaluation of cytotoxicity, cell cycle arrest and apoptosis induced by Anethum graveolens L. essential oil in human hepatocellular carcinoma cell line. Saudi Pharm J. 2019 Nov; 27(7): 1053–1060. doi:10.1016/j.jsps.2019.09.001
15. Monsefi Malihezaman, Masoudi Mojaba, Hosseini Elham, Gramifar Farnaz and Miri Ramin. Anti-Fertility Effects of Different Fractions of Anethum Graveolens L. Extracts on Female Rats. Afr J Tradit Complement Altern Med. 2012; 9(3): 336–341. doi:10.4314 / ajtcam.v9i3.6
16. Malihezaman Monsefi, Aazam Ghasemi, Sanaz Alaei and Elham Aliabadi. Effects of Anethum graveolens L. (dill) on Oocyte and Fertility of Adult Female Rats. J Reprod Infertil. 2015 Jan Mar; 16(1): 10–17.
17. Bano F., Ahmed A., Ahmed M., Parveen T. Anethum graveolens seeds aqueous extract stimulates whole brain 5-hydroxytryptamine metabolism and reduces feeding behavior and body weight in obese rats - Pak. J Pharm. sci. 2015, Jan. 28(1), 221-225.
18. Vito Alessandro Taddeo, Francesco Epifano, Francesca Preziuso, Serena Fiorito, Nicolas Caron, Arnaud Rives, Philippe de Medina, Marc Poirot, Sandrine Silvente-Poirot, and Salvatore Genovese. HPLC Analysis and Skin Whitening Effects of Umbelliprenin-containing Extracts of Anethum Graveolens, Pimpinella Anisum, and Ferulago Campestris. Molecules. Feb 2019; 24(3): 501. doi: 10.3390/molecules24030501

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Dill - useful properties, composition and contraindications

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