

Ant acid - description, benefits, effect on the body and the best sources

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Abstract. Due to its effectiveness and environmental friendliness, it is used in many areas of our lives.

It can be found in food products, cosmetics, food packaging paper, medicines, and animal feed.

In our body, this organic acid also performs a certain function and can bring invaluable health benefits.

Keywords: formic acid, general characteristics, daily requirement, digestibility, beneficial properties, signs of deficiency, signs of excess

Foods rich in formic acid:

- Strawberry [1]
- Raspberry [2]
- Apples [3]
- Soft drinks
- Nettle [4]
- The secret of bees and ants
- Apple cider vinegar [5]
- Canned fruit and fish
- Canned vegetables (pickled and pickled)
- Avocado [6]
- Wild yam
- Lychee
- Pitaya (dragon fruit)
- Quinoa
- Papaya
- Sugar cane

General characteristics of formic acid

Formic acid is a colorless, caustic, water-soluble substance. Widely distributed in nature. It is found in small quantities in many foods.

Formic acid significantly affects the taste and smell of food products and is added mainly to semi-finished fruit products. Formic acid is used primarily to preserve vegetables and fruits.

The preservative effect of formic acid has been known for more than a hundred years. For canning, aqueous solutions of acid and formates are used. True, it is used for canning only highly acidic foods. In a slightly acidic and neutral environment, formates do not have an antimicrobial effect.

Formic acid acts primarily against yeast [7] and some bacteria. Molds and lactic bacteria are resistant to formic acid.

It is used for disinfection, combating harmful (including disease-causing) organisms, removing scale, treating leather and textiles, and in many other areas of industry.

Today, formic acid (E236) and its salts (sodium formates E237 and calcium formates E238) are often used as salt substitutes (flavoring substances).

In Europe, formic acid is used primarily as a preservative for livestock feed. It is used to spray hay and thus stop the rotting process. The food retains its nutritional properties longer. Even in small quantities, formic acid has a strong bactericidal effect.

Daily requirement for formic acid

Formic acid is not a vital substance for our body, so the daily need for it has simply not been identified.

The permissible daily intake of formic acid is 3 mg.

The Food and Drug Administration (*FDA*) has approved the use of formic acid in synthetic food flavorings for human consumption.

The need for formic acid increases:

- for fungal diseases;
- bruises;
- osteochondrosis, radiculitis [8], lumbago;
- myalgia;
- varicose veins [9];
- polyarthritis;
- neuralgia;
- acne.

The need for formic acid is reduced:

If you are particularly sensitive to this substance.

Digestibility of formic acid

It is well absorbed by the liver and excreted in excrement. At high concentrations it has a diuretic effect.

The effect of formic acid on the human body and health

Formic acid has long been used as a medicine. In 1924, Dr. *Albrecht Reuter's* book "Formic acid as a medicine and its use for the sick" (" *Ameisensäure als Heilmittel und ihr Gebrauch am Krankenbett* ") was published in Germany. The author begins the book with an interesting saying from Paracelsus: "The smaller the doctor's belly, the more virtue the doctor has."

And he describes more than a dozen diseases that Dr. Reuther himself treated with formic acid. Among them are quite severe: arthritis [10], gout [11], kidney stones due to increased levels of uric acid, pulmonary tuberculosis [12], glands, bones and kidneys, asthma [13], stomach ulcers [14], nephritis, influenza [15], migraine [16] and hair loss.

For treatment, the doctor used homeopathic dosages of formic acid. Reuther also writes that he achieved success in treating cancer, but modern doctors doubt whether the author confused bone tuberculosis with cancer.

Formic acid, in the quantities in which it is naturally found in foods or added there as a preservative, is harmless.

Only at high concentrations can the corrosive effect of formic acid lead to disturbances in the body and damage health in the same way as sometimes when coming into contact with the protective secretion of some ants or with nettles.

Formic acid, like many other natural remedies, is an excellent stimulant. It does not have a direct effect, but acts indirectly. That is, it stimulates organ systems, the intercellular matrix, and connective tissues to reactions, thanks to which the body then heals.

Today, formic acid is part of ointments and is produced in the form of alcohol tinctures and other medicines. Often used to treat osteochondrosis.

Interaction with other elements

There is an assumption that formic acid, when interacting with hydrochloric acid of the stomach, forms harmful compounds. Such assumptions were first made by veterinarians. The fact is that calves, after consuming milk mixtures with formic acid, experienced liver dysfunction and peptic ulcers.

Factors influencing the content of formic acid in the body

In the human body, formic acid is produced in small quantities from methanol that we ingest, inhale, or produce.

Signs of excess formic acid in the body

Formic acid can be harmful to health if large amounts are inhaled, swallowed, or spilled on the skin. Can cause pulmonary edema, damage the cornea, kidneys, blood, and cause severe burns.

Excess formic acid leads to acidosis - the accumulation of negatively charged acid particles in the blood and other tissues of the body. Patients with this disorder have an odor of acetone from their mouth.

At high concentrations (as with ant bites, for example, or in contact with nettles [17]), local allergic reactions may occur.

No signs of formic acid deficiency were identified.

Formic acid for beauty and health

Formic acid is used in perfumery. Used in aerosol hair sprays. In cosmetics it is used as a water hardness regulator. Used in anti-acne products.

Formic acid is included in the list of cosmetic additives permitted in the European Union and the USA.

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