



## Serviceberry juice: scientific facts about the benefits, features of preparation and use

*Shelestun Anna*, nutritionist, dietitian

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail:* shelestun.n@edaplus.info, eliseeva.t@edaplus.info

**Abstract.** Serviceberry berries, similar in shape and color to blueberries, for which they are often confused, have not yet gained such popularity among us. And completely in vain! In addition to the fact that the plant itself is less demanding on soil and planting conditions, is frost-resistant and has a higher yield, its fruits contain much more vitamins and beneficial microelements than the same blueberries. By the way, from a botanical point of view, the serviceberry fruit is not a berry at all, but a fruit. After all, it belongs to the apple subfamily.

Ripe irgi fruits have an original sweetish nutty flavor (some varieties even have an almond flavor). Therefore, they are widely used in cooking - they are eaten fresh, and they are also used to prepare a variety of compotes, jams, marshmallows, marmalades, and jelly. The healing juice from serviceberry is especially valued among admirers of traditional medicine.

*Key words:* serviceberry, serviceberry juice , beneficial properties, contraindications, composition, calorie content

### Composition and calorie content

Serviceberry berries are not very juicy - their pulp contains only 80% water. In addition, they contain neither proteins nor fats. Carbohydrates are present in an amount of approximately 12 grams per 100 grams of pulp. But at the same time, the calorie content of the serviceberry fruit, and, accordingly, the juice, is quite low (45 kcal), which allows you to include fresh serviceberry fruit in a variety of dietary menus.

In addition, serviceberry berries are a valuable source of numerous health-promoting nutrients. In particular, they contain:

- Vitamin C. Ascorbic acid is a powerful antioxidant <sup>[1]</sup> - it protects cells from damage by free radicals and stops the aging process, improves immunity <sup>[2]</sup> and helps the body fight viruses and colds.
- Vitamin P, or rutin. Strengthens blood vessels and capillaries - prevents bleeding, normalizes blood pressure, including intraocular, has a powerful anti-allergic effect <sup>[3]</sup> - reduces the risks of developing food allergies and bronchial asthma.
- Carotene. The carotenoid helps protect the skin from the harmful effects of UV radiation and phytoaging, accelerates wound healing, prevents vision health and improves cognitive abilities. <sup>[4]</sup>

Also, serviceberry berries contain a high content of anthocyanins (much more than in strawberries, raspberries and sea buckthorn) <sup>[5]</sup> - they have antioxidant, anti-inflammatory, antidiabetic properties, improve the condition of cardiovascular and neurodegenerative diseases. <sup>[6]</sup> The pulp of the serviceberry also contains the valuable plant phytosterol beta-sitosterol - lowers the level of “bad” cholesterol in the blood and prevents the development of atherosclerosis, strengthens the immune system and helps the body fight viruses and colds, blocks the production of dihydrotestosterone, thereby preventing the growth of prostate cells and reducing the development of inflammatory processes in it. <sup>[7]</sup>

## **Top 7 beneficial properties of serviceberry juice**

### **1. Helpful in treating and preventing diabetes**

Research shows that traditional pharmaceutical drugs used to lower blood sugar and treat diabetes often have a number of side effects. Serviceberry juice, rich in anthocyanins, flavanols, and proanthocyanins, has a powerful antidiabetic effect and can be considered as an effective and safe natural analogue of medicines. <sup>[8]</sup>

### **2. Helps lower cholesterol levels**

Saskatoon juice, rich in flavonoids, helps reduce the amount of lipids in the blood - it shows good results in the treatment and prevention of dyslipidemia, which helps prevent the development of atherosclerotic plaques and, as a consequence, cardiovascular diseases (heart attacks, strokes, etc.). <sup>[9]</sup>

### **3. Promotes weight loss**

During the experiment, scientists found that long-term intake of serviceberry juice, rich in anthocyanins and flavonols, helps normalize weight and helps avoid obesity. <sup>[10]</sup>

### **4. Has positive dynamics in the treatment of liver steatosis**

Steatosis, or non-alcoholic fatty liver disease, can lead to the development of fibrosis and then cirrhosis. Research shows that drinking juice from serviceberry berries improves the condition of the organ and can be used as an adjuvant therapy in the treatment of this disease. <sup>[eleven]</sup>

### **5. Improves the functioning of the gastrointestinal tract**

Serviceberry berries are rich in fiber and also contain tannins. Dietary fiber helps create healthy intestinal microflora, improves bowel movements, and gently and effectively cleanses the body of toxins and waste. <sup>[12]</sup>

## **6. Has antimicrobial properties**

Serviceberry juice has antimicrobial properties and can be used in the treatment of stomatitis, tonsillitis, periodontal disease, and other diseases of the throat and oral cavity. <sup>[13]</sup>

## **7. Helps eliminate bleeding**

Weakened vessels and capillaries can cause bleeding gums, nosebleeds and anal bleeding in hemorrhoidal diseases. Supplementing your diet with vitamin P, or rutin, also found in serviceberry juice, helps effectively prevent this problem. <sup>[14]</sup>

## **Contraindications and features of using irgi juice**

Irga, as well as all its derivatives, are not classified as allergens. An allergic reaction can only occur if there is individual intolerance. Therefore, like any new product, fresh serviceberry should be introduced into the diet, especially of children, carefully, starting with minimal portions, carefully monitoring the body's reaction. If there are no negative reactions from the gastrointestinal tract, skin manifestations, etc., then you can gradually increase the dose to the standard one. The recommended daily serving of irgi juice is 50-100 ml of the drink three times a day between meals.

Considering that the serviceberry is not too juicy, in order to get the maximum amount of juice from it, it is recommended to give the berries a little "rest" before processing. After harvesting, they need to be thoroughly washed, sorted and scattered on a flat surface for 3-6 hours.

You can squeeze the juice from serviceberry berries manually by slightly steaming the fruits and then rubbing them through a sieve using a juicer or juicer. Irga has a sweet taste, to diversify it and give the drink additional sourness, you can add a little lemon juice, cherry, cranberry, red or black currant, and other sour fruits and berries.

The juice from serviceberry can be consumed immediately after preparation, or canned or frozen for long-term storage (the beneficial properties are preserved). For canning, freshly squeezed juice is pasteurized, then poured into pre-sterilized jars and sealed. Store in a cool, dark place. For freezing, the drink is poured into special containers or zip bags and placed in the freezer, where it can be stored without the risk of losing its beneficial properties throughout the year.

## **Expert commentary**

### **Tatyana Eliseeva, nutritionist, nutritionist**

Serviceberry juice is not only tasty, but also a very healthy drink, which should definitely be included in the family diet in the fall. To replenish the lack of vitamins and microminerals in the body, reduce the amount of cholesterol in the blood and thereby prevent the development of cardiovascular diseases, lose weight and get rid of frequent nosebleeds - all this can be done with a delicious fresh serviceberry berry, which you can easily prepare yourself!

## Literature

1. Carr, A. C., & Maggini, S. (2017). Vitamin C and immune function. *Nutrients*, 9(11), 1211. DOI: 10.3390/nu9111211
2. Eliseeva, T., & Mironenko, A. (2018). Vitamin C (ascorbic acid) description, benefits and where it is found. *Journal of Healthy Eating and Dietetics*, 2(4), 33-44.
3. Martini, G. A., & Engelkamp, H. (1952). Kapillarschäden durch Dysproteinämie und ihre Behandlung durch Rutin. *DMW-Deutsche Medizinische Wochenschrift*, 77(26), 833-837. DOI: 10.1055/s-0028-1116106
4. Chen, P., Li, L., Gao, Y., Xie, Z., Zhang, Y., Pan, Z., ... & Xin, X. (2019).  $\beta$ -carotene provides neuroprotection after experimental traumatic brain injury via the Nrf2-ARE pathway. *Journal of Integrative Neuroscience*, 18(2), 153-161. DOI: 10.31083/j.jin.2019.02.120
5. Hosseinian, F. S., & Beta, T. (2007). Saskatoon and wild blueberries have higher anthocyanin contents than other Manitoba berries. *Journal of agricultural and food chemistry*, 55(26), 10832-10838. DOI: 10.1021/jf072529m
6. Mattioli, R., Francioso, A., Mosca, L., & Silva, P. (2020). Anthocyanins: A comprehensive review of their chemical properties and health effects on cardiovascular and neurodegenerative diseases. *Molecules*, 25(17), 3809. DOI: 10.3390/molecules25173809
7. Eliseeva, T., & Yampolsky, A. (2021). Food against inflammation. *Journal of Healthy Eating and Dietetics*, 2(16), 25-30.
8. Zhao, L., Huang, F., Hui, A. L., & Shen, G. X. (2020). Bioactive components and health benefits of Saskatoon berry. *Journal of Diabetes Research*, 2020. DOI: 10.1155/2020/3901636
9. Kopceková, J., & Mrázová, J. (2022). Phytonutrients of bilberry fruit and saskatoon berry in the prevention and treatment of dyslipidemia. *Roczniki Państwowego Zakładu Higieny*, 73(3). DOI: 10.32394/rpzh.2022.0216
10. Du Preez, R., Wanyonyi, S., Mouatt, P., Panchal, S. K., & Brown, L. (2020). Saskatoon berry *Amelanchier alnifolia* regulates glucose metabolism and improves cardiovascular and liver signs of diet-induced metabolic syndrome in rats. *Nutrients*, 12(4), 931. DOI: 10.3390/nu12040931
11. Zhao, R., Xiang, B., Dolinsky, V. W., Xia, M., & Shen, G. X. (2021). Saskatoon berry powder reduces hepatic steatosis and insulin resistance in high fat-high sucrose diet-induced obese mice. *The Journal of Nutritional Biochemistry*, 95, 108778. DOI: 10.1016/j.jnutbio.2021.108778
12. Slavin, J. L., & Lloyd, B. (2012). Health benefits of fruits and vegetables. *Advances in nutrition*, 3(4), 506-516. DOI: 10.3945/an.112.002154
13. Lachowicz, S., Wiśniewski, R., Ochmian, I., Drzymała, K., & Pluta, S. (2019). Anti-microbiological, anti-hyperglycemic and anti-obesity potency of natural antioxidants in fruit fractions of Saskatoon berry. *Antioxidants*, 8(9), 397. DOI: 10.3390/antiox8090397
14. Corsale, I., Carrieri, P., Martellucci, J., Piccolomini, A., Verre, L., Rigutini, M., & Panicucci, S. (2018). Flavonoid mixture (diosmin, troxerutin, rutin, hesperidin, quercetin) in the treatment of I–III degree hemorrhoidal disease: a double-blind multicenter prospective comparative study. *International Journal of Colorectal Disease*, 33, 1595-1600. DOI: 10.1007/s00384-018-3102-y

[The HTML version of the article](#) is available on the edaplust.info website.

*Received 11.04.2023*

## **Birch juice: scientific facts about the benefits, features of preparation and use**

*Shelestun Anna*, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail:* shelestun.a@edaplust.info, eliseeva.t@edaplust.info

**Abstract.** Birch juice is not only tasty, but also a very useful drink, which is certainly worth including in the family diet in the fall period. To replenish the lack of vitamins and trace minerals in the body, to reduce the amount of cholesterol in the blood and thereby prevent the development of cardiovascular diseases, to reduce weight and get rid of frequent nosebleeds - all this is possible with a tasty juice made of berries from figs, which you can easily prepare yourself!