



Birch sap - living water with unique benefits

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Abstract. The article discusses the main properties of birch sap 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 birch sap in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of birch sap on the human body under certain medical conditions and diseases are analyzed separately.

Key words: birch sap , useful properties, contraindications, composition, calorie content

Natural birch sap is a dietary product donated by nature itself. It has been used in folk medicine for centuries to cleanse the body of toxins, uric acid and other harmful substances. Today, the drink is known as an alternative to sugary soda. But it not only helps reduce sugar intake, but also quenches thirst and replenishes mineral reserves, which is especially important when sweating heavily.

The calorie content of birch sap is very low and amounts to 8–25 kcal per 100 g. It contains little natural sweetener, and the composition as a whole does not differ much from mineral and well water. Nutrient content is influenced by various factors: geography, soil quality, age of the tree. As a rule, the drink contains a lot of magnesium, manganese and a small amount of vitamin C, [zinc](#), copper, phosphorus, potassium, folic acid. ^[12]

Top 7 Health Benefits of Birch Water: Should You Drink It?

1. Replenishes deficiency of vitamins and minerals

The sap is harvested in the spring, when the concentration of trace elements in the trees is maximum. Therefore, it contains many nutrients needed by the body. Sailors once drank superwater to protect

against scurvy, and today people use it to support immunity and fight against the lack of useful components. All the benefits can only be enjoyed by consuming the seasonal treasure in moderation as part of a balanced diet. ^[3]

2. Supports Liver Health and Helps Eliminate Toxins

Birch sap promotes detoxification of the body. It neutralizes toxic waste products - neutralizes substances that are processed by the liver. This applies to both fats and alcohol, pesticides, and other hazardous components. Superdrink does not replace drugs in severe conditions, but can be used in combination with maintenance therapy and for the prevention of gastrointestinal diseases. ^[four]

3. Protects bones and the body from oxidative stress

A glass of diet drink contains 130% of the daily requirement of manganese. The mineral plays a huge role in maintaining bone health, reducing bone loss. It is especially useful in combination with copper and zinc, which are also found in the product. An additional benefit comes from superoxide dismutase, an antioxidant that reduces the risk of chronic diseases and cancer. ^[5, 6, 7, 8, 9]

4. Shows antioxidant properties

Birch sap contains vitamin C and polyphenolic antioxidants that protect cells from free radical damage and reduce the risk of age-related diseases. This primarily concerns osteoporosis, type 2 diabetes, cancer, heart disease, Alzheimer's and Parkinson's. The scientists also found betulin in the composition, a substance that the body converts into betulinic acid, known for its anti-inflammatory, anti-cancer properties. ^[10, 11, 12, 13]

5. Prevents the development of caries

The drink contains xylitol, a natural sugar substitute that is good for gums and mouth. Unlike sugar, it is not food for bacteria and does not have the side effects of other sweeteners. The natural component normalizes the acid-base balance, strengthens the enamel. ^[14, 15, 16]

6. Lowers Cholesterol

The drink contains saponins, which improve cholesterol metabolism. They bind to bile acids and remove them from the body. This prevents the reabsorption of cholesterol, increases its excretion. Thus, saponins deplete the reserves of the component in the body, protect against excess. ^[17]

7. Improves kidney health

The nourishing elixir removes and filters waste products through the urinary tract: excess salt, phosphate, uric acid, ammonia, certain drugs. It improves kidney function, helps to get rid of excess weight.

Birch sap: contraindications and harm

The product should be taken with caution if there is an allergy to birch pollen, liver dysfunction. For other people, it is safe in moderation. This is important because of the risk of excess and manganese poisoning. Young children are most at risk, who can exceed the daily allowance by drinking just one glass of juice. ^[18, 19]

The question remains whether contaminants get into the drink not only through open containers during collection, but also through the soil. However, many scientists do not see a reason for concern and believe that all pollution remains in the root system - only nutrients are absorbed into the tree.

How much birch sap can children and adults drink?

The clear liquid is only useful in limited quantities due to possible mineral overdose. It is enough for adults to drink three servings of a drink with a volume of 300 ml each day, and one such serving is enough for children.

How to extract and drink birch sap for maximum benefit?

Birch water is similar in properties to coconut water, but its taste is much milder. It is harvested once a year - for several weeks in early spring, when the trees retain the maximum amount of nutrients. To do this, you need to choose a birch with a spreading crown with a diameter of 20 cm, growing as far as possible from the road. From the tools you will need a container for harvesting, a groove or a tube, a sharp knife.

The hole is best made on the south side of the trunk at a height of 30–50 cm from the ground, since this is where the most active juice circulation occurs. An incision is made with a knife, moving from bottom to top. The depth can be 2-3 cm or more if the trunk is very thick. The final touch is the installation of the tube and the fixation of the jar. After collecting the drink, it is necessary to close the hole with plasticine, wax, moss.

Freshly collected water looks like a colorless liquid and has a slightly sweet taste. You can drink it fresh or fermented. The natural product is the most useful, because canned and commercially bottled may contain sugar, flavorings.

Expert comment

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Birch sap is one of the most detoxifying and revitalizing drinks. Its nutritional profile and pleasant sweet taste appeal to all health conscious people. It improves immunity, accelerates recovery after sports, fights fatigue, spring weakness and lack of vitamins. The elixir of health is a great addition to a healthy diet, but do not forget that even birch water is good for the body in limited quantities.

Literature

1. Sapp, organic birch tree water, nettle, <https://fdc.nal.usda.gov/fdc-app.html#/food-details/429857/nutrients>
2. Staniszewski, P., Bilek, M., Szwerc, W., Tomusiak, R., Osiak, P., Kocjan, R., & Moskalik, T. (2020). The effect of tree age, daily sap volume and date of sap collection on the content of minerals and heavy metals in silver birch (*Betula pendula* Roth) tree sap. *PLoS One*, 15(12), e0244435. doi:10.1371/journal.pone.0244435
3. Grabek-Lejko, D., Kasprzyk, I., Zagula, GRZEGORZ, & Puchalski, CZESŁ. A.W. (2017). The bioactive and mineral compounds in birch sap collected in different types of habitats. *Baltic Forestry*, 23(2), 394-401. https://www.researchgate.net/publication/312026635_The_Bioactive_and_Mineral_Compounds_in_Birch_Sap_Collected_in_Different_Types_of_Habitats

4. Svanberg, I., Söukand, R., Luczaj, L., Kalle, R., Zyryanova, O., Dénes, A., ... & Kolosova, V. (2012). Uses of tree saps in northern and eastern parts of Europe. *Acta Societatis Botanicorum Poloniae*, 81(4). DOI: 10.5586/asbp.2012.036
5. Muselin, F., Dumitrescu, E., Berbecea, A., Doma, AO, Brezovan, D., Savici, J., ... & Cristina, RT (2018). The effect of cisplatin administration on certain trace elements homeostasis in rats and the protective effect of silver birch (*Betula pendula*) sap. *Journal of Trace Elements in Medicine and Biology*, 50, 474-481. DOI: 10.1016/j.jtemb.2018.02.002
6. Della Pepa, G., & Brandi, M. L. (2016). Microelements for bone boost: the last but not the least. *Clinical Cases in Mineral and Bone Metabolism*, 13(3), 181. doi: 10.11138/ccmbm/2016.13.3.181
7. Holley, A.K., Bakthavatchalu, V., Velez-Roman, JM, & St. Clair, DK (2011). Manganese superoxide dismutase: guardian of the powerhouse. *International journal of molecular sciences*, 12(10), 7114-7162. DOI: 10.3390/ijms12107114
8. Lee, SH, Jouihan, HA, Cooksey, RC, Jones, D., Kim, HJ, Winge, DR, & McClain, DA (2013). Manganese supplementation protects against diet-induced diabetes in wild type mice by enhancing insulin secretion. *Endocrinology*, 154(3), 1029-1038. DOI: 10.1210/en.2012-1445
9. Chen, P., Bornhorst, J., & Aschner, M. A. (2018). Manganese metabolism in humans. DOI: 10.2741/4665
10. Pham-Huy, L.A., He, H., & Pham-Huy, C. (2008). Free radicals, antioxidants in disease and health. *International journal of biomedical science: IJBS*, 4(2), 89. PMID: 23675073
11. Pandey, KB, & Rizvi, SI (2009). Plant polyphenols as dietary antioxidants in human health and disease. *Oxidative medicine and cellular longevity*, 2(5), 270-278. doi:10.4161/oxim.2.5.9498
12. Yogeewari, P., & Sriram, D. (2005). Betulinic acid and its derivatives: a review on their biological properties. *Current medicinal chemistry*, 12(6), 657-666. DOI: 10.2174/0929867053202214
13. Carr, AC, & Maggini, S. (2017). Vitamin C and immune function. *Nutrients*, 9(11), 1211. DOI: 10.3390/nu9111211
14. Janakiram, C., Kumar, CD, & Joseph, J. (2017). Xylitol in preventing dental caries: A systematic review and meta-analyses. *Journal of natural science, biology, and medicine*, 8(1), 16. doi: 10.4103/0976-9668.198344
15. Söderling, E.M. (2009). Xylitol, mutans streptococci, and dental plaque. *Advances in dental research*, 21(1), 74-78. DOI: 10.1177/0895937409335642
16. Bahador, ABBAS, Lesan, S., & Kashi, N. (2012). Effect of xylitol on cariogenic and beneficial oral streptococci: a randomized, double-blind crossover trial. *Iranian journal of microbiology*, 4(2), 75. PMID: 22973473
17. Vinarova, L., Vinarov, Z., Atanasov, V., Pantcheva, I., Tcholakova, S., Denkov, N., & Stoyanov, S. (2015). Lowering of cholesterol bioaccessibility and serum concentrations by saponins: in vitro and in vivo studies. *Food & function*, 6(2), 501-512. DOI: 10.1039/c4fo00785a
18. Lahti, A., & Hannuksela, M. (1980). Immediate contact allergy to birch leaves and sap. *Contact Dermatitis*, 6(7), 464-465. DOI: 10.1111/j.1600-0536.1980.tb.05567.x
19. O'Neal, S.L., & Zheng, W. (2015). Manganese toxicity upon overexposure: a decade in review. *Current environmental health reports*, 2(3), 315-328. DOI: 10.1007/s40572-015-0056-x

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