

ORGANIC ACIDS IN THE BARK OF BERLIN AND BALSAMIC POPLARS

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Organic acids are found in all living beings and play an important role in maintenance of acid-base balance in organisms, because after their full oxidization they give many of valuable alkaline components. In our present-day conditions of sedentary life style, stress situations and polluted environment that lead to the accumulation of acid products inside us, the alkalizing influence of organic acids has a great value in the rehabilitation of human organism.

The aim of our work is investigation of composition and amount of organic acids in the bark of Berlin poplar (*Populus berolinensis* Dipp.) and balsam poplar (*Populus balsamifera* L.).

Materials and methods. The bark was harvested in October, 2012 from trees growing in the Karazin KNU botanic garden. The research was made using Agilent Technology HP 6890 GC-chromatograph with mass-spectrometer detector 5973N. Identification of volatile components was made by comparing mass-spectra that we got with the data of NIST 02 library.

Results. In both samples 16 organic acids were identified: 10 aliphatic and 6 aromatic. General amount of acids in the bark of Berlin poplar was 18348.2 mg/%, and 10508.2 in the balsam poplar's bark. Oxalic (6036,5 mg/% and 2624,9 mg/%), citric (2624.9 mg/% and 2094.3 mg/%) and hepta-2,4-dienic (1103.3 mg/% and 969.7 mg/%) acids dominate among aliphatic acids. These acids are used in pharmaceutical and food industries as acidifiers and preservatives. Citric acid is part of the drug "Blemaren", that is used for dissolving and preventing generation of urine acid's and mixed concretions in kidneys. Aromatic acids are represented by anisic (6068.7 mg/% and 2986.0 mg/%), salicylic (1139.3 mg/% and 624.4 mg/%) and benzoic (796.8 mg/% and 401.7 mg/%) acids, that are strong antiseptics and anti-inflammatory agents.

Conclusion. Gathered data show that bark of Berlin and balsamic poplars contain a sufficient amount of carboxylic acids, what allows us to prognoses antiseptic, anti-inflammatory, litolitic influence of the drugs made from them.