

PHYTOCHEMICAL STUDY AND BIOLOGICAL ACTIVITY OF THE FRUIT OF *RIBES RUBRUM* L.

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Due to the sufficient width and the presence of different climatic zones, the territory of Kazakhstan is rich in various plant species. About 6,000 plant species grow in Kazakhstan, among which there are many endemic species.

Despite the abundance of plants, products based on them are not produced in the republic. For medicinal purposes, only a small part of the plants are used, and it is consumed in the form of various teas and tinctures. First of all, this is directly related to the insufficient knowledge of plants, the lack of a technological nature, i.e. lack of necessary enterprises in this direction.

Vegetable raw materials are renewable, environmentally friendly and cheap. It is important that plants used for food, medicinal or other purposes do not contain harmful substances, including heavy metals, or their content is low. For this reason, the determination of the elemental composition of raw materials is considered a necessary measure.

Ribes rubrum L. or common red currant is a bushy plant found in almost all regions of the Eurasian continent, growing along the banks of rivers and streams, along mountain slopes, forming thickets.

Red currant fruits contain sugars, organic acids, including malic, succinic, citric, ascorbic, carotene, thiamine, riboflavin, and pectin [1]. In folk medicine, it is used to reduce fever and improve stomach function. The red currant plant has a high ability to self-reproduce, one bush can give a good harvest. The fruits ripen evenly, do not fall off until the end of autumn, remain attached to the bunch.

According to the literature, the plant contains Ca - 33 mg, Fe - 1 mg, Mg - 13 mg, Mn - 0.186 mg, P - 44 mg, K - 275 mg, Na - 1 mg, Zn - 0.23 mg [2].

In our case, the currant fruits collected near the village of Berel, Katon-Karagay district, East Kazakhstan region in August 2022, were dried, burned, and the ash composition was determined. The study was carried out using the ICP-MS instrument. The composition of the ash corresponds to the literature data, the fruits contain K-86.2 g/kg, P-45.2 g/kg, Ca-29.0 g/kg, Mg-13.1 g/kg, Na-3.2 g/kg, Fe-1.1

g/kg, Mn-0.3 g/kg, Zn-0.05 g/kg [3]. This indicates that the amount of harmful heavy metals in the fruits is normal, and the minerals as nutrients are sufficient.

Currant fruits are used by the local population for food purposes. However, in most cases, the seed oil inside its fruit remains unused. The seeds contain many beneficial oils. In particular, about 200 g of pure oil can be obtained from 1 kg of dry seeds. The color of the oil is light brown, the density is about 0.95 g/ml.

The seed oil was extracted with chloroform. To determine the composition of the resulting oil, it was converted into an ester form and analyzed on gas chromatograph. The main components of the oil are methyl butyrate, methyl-*cis*-5,8,11,14,17-eicosapentaenoate, *cis*-8,11,14-eicosatrienoic acid methyl ester, γ -linolenic acid, methyl-*cis*-10-pentadecenoic acid, methyl ester of methyl laurate and methylundecanoate.

In order to determine the biological activity of seed oil, its anti-tuberculosis activity was studied. The activity of the oil was low. For testing system the isoniazid was used as a standard substance.

The presence of useful elements in the plant, such as potassium, phosphorus, phenolic compounds, vitamins, oiliness of seeds show a high potential for using the fruits of the red currant plant for food, medicinal and agricultural purposes.,

Literature

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