Main results. The total content of hydroxycinnamic acids was 1.44±0.10% expressed as chlorogenic acid in the St. John herb.

Conclusion. The obtained research results can be used in the development of herbal pharmaceuticals, dietary supplements and medicines.

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THE INVESTIGATION TOTAL CONTENT OF CATECHINS IN THE LINGONBERRY LEAF

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Introduction. Lingonberry (*Vaccinum vitis-idaea* L.) is an evergreen shrub of the *Ericaceae* family. Owing to rich chemical content of lingonberry leaf, extract has possessed variety of pharmacological activity: antimicrobial, antioxidant, anti-inflammatory, diuretic and neuroprotective actions [1]. Therefore, investigation the phytochemical composition of lingonberry leaf is a perspective topic for today.

The aim of the study. Determine the total content of catechins in the lingonberry leaf.

Methods of research. The object of the study was the lingonberry leaf. The leaf was collected in October 2021 in the Kostivtsi village, Zhutomyr region, Ukraine (50.329417, 29.536861). The determination the total content of catechins in green tea leaves a 5 g (an exact amount sample) was taken of the crushed raw material and placed in a 250 mL flask with ground glass joints, poured 100 mL of 70% ethanol and kept for 1 hours in a boiling water bath. The extraction was repeated one more time. After cooling, the solution was quantitatively transferred into a 250 mL volumetric flask and make up to the mark by the 70% ethanol (solution A). A 1 mL of prepared solution A was mixed with 7.5 mL of 1% vanillin solution in 96% ethanol in a 25 mL volumetric flask. Than the solution was made up by the addition 0.5 mol/L HCl in 96% ethanol solution. The mixture was analyzed at 505 nm after standing for 30 min as compensation liquid was 70% ethanol. The total content of catechins was determined using the standard substance (epigallocatechin-3-O-gallate). The calibration curve was plotted with interval concentrations 100 – 400 × 10^{-6} g/mL. The quantitative content of the sum of catechins, expressed as epigallocatechin-3-O-gallate, (X, %) was calculated according to the formula:

$$X(\%) = \frac{C_x \times K_{dil} \times 100 \times 100}{m \times (100 - W)},$$

where, C_x – concentration of epigallocatechin-3-O-gallate according to calibration curve, C×10^{-6} g/mL; K_{dil} – coefficient of dilution; W – weight loss during drying, %; m_n is mass of sample, g.

Main results. The total content of catechins was 3.12±0.10% expressed as epigallocatechin-3-O-gallate in the lingonberry leaf.

Conclusion. The obtained research results can be used in the development of herbal pharmaceuticals, dietary supplements and medicines.

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THE INVESTIGATION TOTAL CONTENT OF FREE ORGANIC ACIDS IN THE LINGONBERRY LEAF

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Introduction. Lingonberry (*Vaccinum vitis-idaea* L.) is an evergreen shrub of the *Ericaceae* family. Owing to rich chemical content of lingonberry leaf, extract has possessed variety of pharmacological activity: antimicrobial, antioxidant, anti-inflammatory, diuretic and neuroprotective actions [1]. Therefore, investigation the phytochemical composition of lingonberry leaf is a perspective topic for today.

The aim of the study. Determine the content of total organic acids in the lingonberry leaf

Methods of research. The object of the study was the lingonberry leaf. The leaf was collected in October 2021 in the Kostivtsi village, Zhutomyr region, Ukraine (50.329417, 29.536861). The quantitative determination of the total organic acids was carried out by the following method: 5.0 g (exact mass) of dried leaves of lingonberry leaves were grinded to the size of 1 – 2 mm. The extraction of free organic acids was provided by distilled water on water bath in a flask with a reflux condenser and extracted at the ratio raw material/solvent 1/40 (*m/v*), during the 2 hours. The obtained extract was filtrated to the measuring flask and a mark was made up by freshly boiled distilled water [2]. The quantitative content of the sum of organic acids, in terms of citric acid, (X, %) was calculated according to the formula:

$$X(\%) = \frac{(V_{eq} - V_x) \cdot 0.0032 \cdot K \cdot 100 \cdot 100 \cdot 100}{m \cdot 5 \cdot (100 - W)},$$

where, 0.0032 – the amount of citric acid, which is equivalent to NaOH solution, g/mL; V_{eq} is the equivalent volume of NaOH solution, mL; V_x – the blank volume of NaOH solution, mL; m – the mass of the raw materials, g; K – correction coefficient; W – the loss in mass upon drying, %.

Main results. The total content of organic acids was 2.08±0.10% expressed as citric acid in the lingonberry leaf.

Conclusions. The obtained research results can be used in the development of herbal pharmaceuticals, dietary supplements and medicines.

References