

STUDY THE TOTAL CONTENT OF FLAVONOIDS IN DIETARY SUPPLEMENT WITH LINGONBERRY

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Introduction. Lingonberry (*Vaccinium vitis-idaea*) is small shrubs belonging to the genus *Vaccinium*, *Ericaceae* family. It grows in Polissya, in the Carpathians, occasionally in the north of the Forest-Steppe in coniferous and mixed forests.

The main biologically active substances of lingonberry are phenolic compounds (arbutin, hydroquinone, gallo- and ellagotannins), flavonols (luteolin, kempferol and quercetine), hydroxycinnamic acids (chlorogenic, cumaric and ferulic acids), coumarines, organic acids. Infusion and decoction of fruits has a laxative, diuretic, antiseptic and anthelmintic effects.

Diseases of kidneys and urinary tract occupy a leading position in the world. Every third person is prone to such diseases. Nowadays there is a large number of dietary supplements with lingonberry in the pharmaceutical market of Ukraine.

Aim. Determine total content of flavonoids in dietary supplement with lingonberry.

Material and methods. The object of the study was dietary supplement with lingonberry «Extract of lingonberry», which contained extract of lingonberry fruits according to label information, dosage form is drops (30 mL), manufacturer is «MEDAGROPROM», Dnipro. The total amount of flavonoids was determined as follows: 5.0 mL of «Extract of lingonberry» preparation was dissolved in a 25.0 mL measuring flask and the volume was made up to the mark with 96% ethanol (Solution A). An aliquot of the solution A was mixed with 1.0 mL of 2% AlCl_3 solution in methanol and diluted to 25.0 mL with a 5% solution of glacial acetic acid in methanol. The prepared solution was allowed to stand for 30 minutes and its optical density was measured at 417 nm. An aliquot of the solution A was diluted to 25.0 mL with 5% solution of glacial acetic in methanol was used as a compensation liquid.

The total content of flavonoids in dietary supplement «Extract lingonberry» (MEDAGROPROM) in drops was calculated by the equation and expressed with respect to rutin:

$$X(\%) = \frac{A \cdot K_{dil} \cdot V_{drops} \cdot 100}{A_{st} \cdot V_{al}},$$

where, A – absorbance of the analyzed solution, A_{st} – absorbance of the standard solution of rutin; V_{al} – volume of an aliquot, mL; V_{liquid} – volume of drops, mL; K_{dil} – coefficient of dilution.

Results and discussions. The total content of flavonoids was $6.37 \pm 0.17\%$ or 63.7 ± 0.17 mg/mL in the total volume of drops.

Conclusions. Based on the study, it can be concluded that the problem of compliance with dietary supplements is relevant today and requires the introduction of regulatory documentation for the detection and determination of biologically active substances in dietary supplements.