STUDY THE TOTAL CONTENT OF PHENOLIC COMPOUNDS IN DIETARY SUPPLEMENT WITH LINGONBERRY

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Introduction. Lingonberry (*Vaccinum vitis idaea*) is small shrubs belonging to the genus *Vaccinium*, *Ericaceae* family. The main biologycaly 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 phenolic compounds 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 phenolic compounds was determined by Folin-Ciocalteu method. 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. An aliquot of the prepared solutions was mixed with 1.0 mL of 1 M Folin-Ciocalteu reagent, the mixture was diluted to the 25.0 mL with 20% Na_2CO_3 solution. The measurement of optical density of the solutions was carried out at 760 nm 30 minutes after preparation. The calibration curve was plotted using gallic acid, the calibration equation y = 0.1055x + 0.1745 (r^2=0.9951). The total content of phenolic compounds in dietary supplement «Extract lingonberry» (MEDAGROPROM) in total volume of drops was calculated by the equation and expressed with respect to gallic acid:

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

where, C_x – concentration of gallic acid according to the calibration curve; $C \times 10^{-6}$, g/mL; V_{al} – volume of an aliquot, mL; V_{drops} – total volume of the drops, mL; K_{dil} – coefficient of dilution.

Results and discussion. The total content of phenolic compounds was 8.70±0.17% or 87±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.