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The investigation total content of flavonoids in the blackberry (*Rubus plicatus*) leaves

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Introduction. Blackberry (Rubus fruticosus L.) is a perennial shrubbelonging to the rose family (*Rosaceae*). It is famous for its fruit which has medicinal, nutritive and cosmetic value. The genus *Rubus* is the largest genus of *Rosaceae* family and contains approximately 700 species. *Rubus* consists of 12 subgenera with some domestic species. Blackberry distributed throughout in Europe, Oceania, North and South America and Asia. Variability prevalence is observed in morphology, flower color, growth habit & chemical composition. In this large genus, there are a lot of wild species as well as hybrids and most of them are self-infertileor dio-ecious. The chemical composition of blackberry leaves includes a wide range of biologically active compounds such as catechins (mainly catechin), organic acids (notably citric and malic acids), hydroxycinnamic acids (such as caffeic and ferulic acids), flavonoids, ellagotannins. Given this background, the present study aimed to determine the total content of flavonoids in blackberry leaves using spectrophotometric methods

Materials and methods. The object of the study was leaves of blackberry (*Rubus plicatus*), collected from cultivation sites. The material was gathered in 2021 during the fruiting period in the vicinity of the village of Ternova, Kharkiv region (50°19′31″ N, 36°66′93″ E). The quantitative determination of the total flavonoids was carried out by the following was 2.0 g (exactly weighed) of the crushed raw material was placed in a 100 ml ground flask, poured with 40 ml of 60% ethanol and kept for 1 hour in a boiling water bath. After cooling, the solution was quantitatively transferred to a 50.0 ml volumetric flask, the volume was brought up to the mark (solution A). 1.0 ml of solution A was added to a volumetric flask with a capacity of 25.0 ml, then 1.0 ml of a 2% solution of $AlCl_3$ in 96% ethanol and a solution of 5% glacial acetic acid in methanol were added; the volume was adjusted to the mark. Compensation solution: 1.0 ml of solution A was added to a measuring flask with a capacity of 25.0 ml; with a solution of 5% glacial acetic acid in methanol was brought up to the mark. In parallel, the optical density was measured of the solution of the standart complex of rutin with aluminum chloride. After 30 minutes, the optical density at 415 nm was measured. The quantitative content of the sum of flavonoids, in terms of rutin, (X, %) was calculated according to the formula:

$$X = \frac{A \cdot m_{st} \cdot K_{dil} \cdot 100}{A_{st} \cdot m \cdot (100 - W)},$$

where, A – absorbance of analyzed solution; A_{st} – absorbance of stadard rutin solution; K_{dil} is the dilution factor; W – weight loss during drying, %; m is mass of sample, g, m_{st} – mass of standard rutin, g.

Results and discussion. The total content of flavonoids was 1.68±0.10% expressed as gallic acid in blackberry leavesf.

Conclusion. The obtained research results can be used in the development of herbal remedies, dietary supplements, and medicinal products.