

Исследования показали, что в патогенном комплексе семян раторошши пятнистой доминируют грибы родов *Alternaria*. Обработка семян протравителем Витарос, ВСК снизила зараженность семян на 53-70,4%, увеличилась лабораторную всхожесть семян на 6-10%.

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EVALUATION OF COMPOSITION AND ANTIOXIDANT ACTIVITY OF THE FUNCTIONAL TEAS EXTRACTS

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Flavonoids are an important group of natural compounds, which can prevent various diseases and have anticancer effect due to their antioxidant properties. The activity of compounds in functional teas (complex mixtures) was determined. The influence of the extraction conditions, amount of flavonoids and phenolic compounds in the various functional teas was studied. Mixtures of medicinal herbs have a complex influence on the human organism [1]. The majority of the active antioxidant compounds in leaves, flowers and fruits are flavonoids, isoflavones, flavones, anthocyanins, coumarins, lignans, catechins, and isocatechins. [3]. Flavonoids are a group of natural benzo- γ -pyran derivatives and are ubiquitous in photosynthesizing cells [4]. Flavonoids can be analyzed by thin-layer chromatography [5-8], gas chromatography [9, 10], high performance liquid chromatography [11-15] and capillary electrophoresis [15-21]. The aim of this study was to develop and validate the HPLC-DPPH method, suitable for analysis of flavonoids in functional teas extracts and to investigate the effects of extract preparation and the flavonoid antioxidant activity in the functional teas extracts by mean of.

The content of phenolic compounds and total flavonoids was determined spectrophotometrically. High performance liquid chromatographic analysis with reaction detector was used for separation of medicine plants and for quantitative determination of flavonoids. The results were compared to spectrophotometric analysis results.

Functional teas were provided by Švenčionių Vaistažolės (Švenčionys, Lithuania).

For Capillary electrophoresis whole mix analysis with pH 8.3 showed better resolution. Organic solvent acetonitrile was added to the background electrolyte of 15% v/v in order to improve selectivity and resolution, solubility of the sample compounds and reduce their interaction with the capillary inner wall. Repeatability for peak migration time (RSD<0.4%) and for peak area (RSD<3%). Injection time and pressure was selected for further analysis, since it presents the best efficiency, in range (64980,87-116206,3 m⁻¹). For the capillary electrophoresis was choose 4 functional methanol teas extracts. Other functional teas extracts couldn't be analyzed of CZE of them matrix effect on the capillary wall. The repeatability and reproducibility for migration time and peak area were acceptable and did not exceed 4.8% for migration time and 6.4% for peak area. Calibration curves for the quantitative analysis showed sufficient correlation for all analyses in a concentration range of 0.005-0.12 mg/ml.

The total amount of flavonoids, phenolic compounds and antioxidant activity, determined using DPPH radicals, of functional teas extracts was evaluated. The influence of the extraction conditions (with SPE and without SPE extraction), amount of flavonoids and phenolic compounds in the various medicinal herbs teas was studied out.

The antioxidant activity was determined: the most active compounds of functional tea were obtained in Diaphoretic herbs mixture Nr. 3 – 62% and the lowest in Expectorant herbs mixture. The highest content of flavonoids was obtained in Choleric herbs mixture 2.08% and the highest content of phenolic compounds was determined in Diaphoretic herbs mixture Nr. 3 (raw10) 3.10 mg/g. The most activity have Liuteolin, Epicatechin, Rutin and Quercetin in functional teas.

The total amount of flavonoids was not identical to antioxidant activity, however amount of phenolic compounds in functional teas has shown a correlation to the antioxidant activity

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