

## ABSTRACT

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Title of Diploma Thesis: Determination of floridzin and other phenolic compounds in apple leafs by HPLC

This diploma thesis is divided to theoretical and experimental part. The theoretical part is focused on phloridzin and its characterization. In the experimental part the phloridzin, phloretin, chlorogenic acid, rutin and quercitrin were analyzed with a high performance liquid chromatography (HPLC) method from leaves of genus *Malus*. These compounds were identified in barks and buds of apple trees. The experimental part deals with optimization and validation of method too.

Column YMC-Triart C18 ExRS 150 x 4.6 mm x 5µm, 8 nm and gradient elution consisting of organic part of ACN and water part with phosphoric acid (pH= 2.2) was used for analysis. The detection was performed by DAD detector at wavelengths 280 nm, 327 nm a 354 nm. The temperature of column space was 30 °C, injection volume was 1 µl and flow rate 1 ml/min.

Phenolic compounds from apple leaves originating from various cultivars were separated and identified. Each cultivar was extracted by 2 types of extraction reagents (methanol with formic acid or acetic acid) to find out which one is more effective. Concentrations of phenolic compounds in bark and buds were determined too.

The theoretical part except the characterization of phenolic compound deals with phloridzin and its chemical structure, biosynthesis, behavior in organism and possibilities in extractions. The latest studies about utilization and its potential effect on diabetes mellitus type 2 are mentioned. HPLC method and types of detections are described too.

Key words: HPLC, phloridzin, phloretin, chlorogenic acid, quercitrin, rutin, apple leaves, extraction