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QUANTITATIVE ANALYSIS OF SOME ANTIOXIDANT COMPOUNDS FROM THE HYDROALCOHOLIC EXTRACTS OF *ROSA CANINA*

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Abstract: The analysis of antioxidant compounds from the hydroalcoholic extracts of Rosa canina (rose hip) was performed by high performance liquid chromatography, using a Shimadzu Nexera X2 ultra high performance liquid chromatograph (UHPLC) equipped with a Shimadzu DAD detector (Tokyo, Japan) M30A and a Nucleosil 100-3-C18 reverse phase column.
The analyzed plant material was from rose hip fruits (*Rosa canina*). Two types of hydroalcoholic extracts were analyzed (90%, 70%); the 70% ethanolic extracts had a higher content of phenolic and polyphenolic compounds, compounds with a strong antioxidant character. The analyzed antioxidant compounds were: vanillic acid, rosmarinic acid and ferulic acid. The content of ethanol extracts of *Rosa canina* in the determined compounds varies between 7.33 -18.97 mg/L..

• Introduction

The antioxidant efficacy of phenols containing voluminous substituents in the ortho positions to the hydroxyl group is reduced, and they are of no practical interest. The analyzed phenolic compounds were: vanillic acid, rosmarinic acid and ferulic acid.Different extraction media were also tested to ensure the maximum extraction of antioxidants from the samples.

• Material and method

The studies undertaken had as raw material the plant species: *Rosa canina* - *fam. rosaceae* – from Fares S. A. - Orăștie.

Reagents: methanol and phosphoric acid for HPLC – Merck; vanillic acid (≥ 99%), rosmarinic acid (≥ 99%), ferulic acid (≥ 99%) – Roth.

Method: High performance liquid chromatography..

• Results and discussions

The results show that the extracts obtained by static extraction using 70% ethanol as solvent have the highest content in the analyzed compounds.

The three phenolic compounds analyzed were present in the two types of used hydroalcoholic extracts, in significant quantities.

The experimental results obtained fromthe chromatographic analysis were in good agreement with those obtained using the external standard method for finding known amounts of pure phenolic compounds.

• Conclusions

In the analyzed hydroalcoholic extracts, phenolic compounds with an antioxidant character were quantitatively determined by high performance liquid chromatography.

As a result of the analysis carried out, it can be stated that the 70% ethanol hydroalcoholic extracts present higher amounts of phenolic compounds, compared to the 96% ethanol hydroalcoholic extracts obtained in the same way.