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The antioxidant activity of rosehip (*Rosa canina* L.) review

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Abstract: In recent years, rosehip has been the subject of several studies due to its nutraceutical properties for human health and the observed beneficial health effects that may result from certain compounds extracted from the fruit, such as polyphenols, carotenoids, vitamin E, flavonoids and the antioxidant vitamin C. The medicinal properties of *Rosa canina* fruits are due in part to their richness in phenolic substances [10]. Rosehips contain several biologically active compounds, such as: organic acids, pectins, flavonoids, tannins, carotenoids, fatty acids, vitamins (especially vitamin C and also vitamins B1, B2, K, PP, E), macro- and microelements, etc.[4].

• Introduction

The increasing interest, in recent years, for herbal remedies, has led to the appearance of numerous studies that had as their main objective the analysis of a large number of plants used in traditional medicine and which are recognized by humans[1]. For more than 2,000 years, the pseudofruits of *Rosa canina*, as some researchers call them, often known as rosehips, have been used as an herbal remedy. *Rosa canina* L. belongs to the Rosaceae family, which consists of more than 100 species and is very widespread, especially in Europe, Asia, North America, Africa and the Middle East[1,2].

• Results and discussions

Antioxidants play an important role in the body's defense mechanisms against pathologies related to the attack of free radicals. *Rosa canina* L. is a natural source of multivitamins, especially vitamin C (whose content exceeds 10 times that of currants and fifty times that of lemons)[17] and phenolic compounds.



Fig.1 Rosehips-fruits, seeds and pulp

The high antioxidant activity of rosehips is due to both vitamin C and the high total phenolic content. Vitamin E and carotenoids are also reported to be components that contribute to antioxidant activity[19].

A study, indicated that rose hips had excellent antioxidant properties and could be used as an alternative to synthetic antioxidants.

• Conclusions

- Rosehip occupies an important place in the human diet and in the food industry due to its nutritional and sensory properties and the wealth of bioactive compounds
- *Rosa canina* L. is recognized for its high content of polyphenolic compounds.
- *Rosa canina* L. is a natural source of multivitamins, especially vitamin C.
- Rosehips contain higher amounts of different antioxidants compared to many other fruits.

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References:

- Kaj Winther, Anne Sophie Vinther Hansen, Joan Campbell-Tofte Bioactive ingredients of rose hips (*Rosa canina* L) with special reference to antioxidative and anti-inflammatory properties: in vitro studies, *Botanics: Targets and Therapy* **2016**;6 11–23, <http://dx.doi.org/10.2147/BTAT.S91385>
- Małgorzata Kubczak, Ainur B. Khassenova, Bartosz Skalski, Sylwia Michlewska, Marzena Wielanek, Araylim N. Aralbayeva, Maira K. Murzakhmetova, Maria Zamaraeva, Maria Skłodowska, Maria Bryszewska, Maksim Ionov Bioactive Compounds and Antiradical Activity of the *Rosa canina* L. Leaf and Twig Extracts, *Agronomy* **2020**, 10, 1897; doi:10.3390/agronomy10121897
- Shyryn Tolekova, Turegeldy Sharmanov, Yury Sinyavskiy, Ramza Berzhanova, Ramazan Mammadov, Ozge Kilincarslan Aksoy, Rusif Yusifli Antioxidant, Pharmacological, Medical Properties and Chemical Content of Rosa L. Extracts, *International Journal of Secondary Metabolite* **2020**, Vol. 7, No. 3, 200–212 <https://doi.org/10.21448/ijsm.726140>