RESEARCH ON USE OF SUMAK *(Rhus coriaria)*

PLANT IN NUTRITION AND PHYTOTHERAPY

SUMMARY

Sumac *(Rhus coriaria*) is a plant of the Anacardiaceae family, which has 150 different species. The powder of the sumac (*Rhus coriaria*) fruit is defined in the communiqué as the ground state of the fruit after drying under appropriate technical conditions by adding table salt. due to its sour taste, its fruits, which are kept in water, are filtered and used as "sumac sour" in sauces, dried powdered meals, salads and meats with the aim of giving a lemony taste. Studies have shown that sumac (*Rhus coriaria*) fruits are rich in tannins and contain many compounds such as high amounts of phenolic substances, organic acids, fatty acids, vitamins and minerals. In the light of this information, the sumac plant grown in Gaziantep-Oğuzeli region was chosen as the research material in this study. Based on the fruits of the plant, phenolic, flavonoid, anthocyanin amounts and antioxidant activity properties of water, alcohol and aqueous-alcohol extracts were investigated. Fatty acid composition was analyzed in fruits extracted with n-hexane using the Soxhlet device. According to the results obtained, the optimum solvent was determined. The sumac (*Rhus coriaria*) fruits we collected and the powdered sumac taken from the herbalist were used as pattern. In the antioxidant activity determination, the antioxidant activity (IC50) measured by DPPH was found to be 16,22 (µg/mL) in sumac fruit and 17,36 (µg/mL) in powdered sumac. In the powdered sumac pattern taken from the sumac fruits we collected and from the herbalist; for the determination of the amount of phenolic-flavonoid substance; Extracts were prepared using water, ethyl alcohol and water-ethyl alcohol (50:50) dissolvent systems. The amount of phenolic substance was determined mostly in water-ethyl alcohol solutions of sumac samples. The phenolic substance in 1 gram of dry plant was found to be 55,50 mg in powdered sumac and 54,02 mg in fruit sumac. The amount of flavonoid substance was determined mostly in ethyl alcohol solutions of sumac patterns. The flavonoid substance in 1 gram of dry plant was found to be 5,00 mg in fruit sumac and 3,87 mg in powdered sumac. The chemical composition of fatty acids in sumac (*Rhus coriaria*) fruit was analyzed by gas chromatography mass spectrometry and flame ionization detector (GS-MS/FID), and 10 components were identified and their amounts were determined. The main fatty acid components has been detected oleic acid (27,34%), palmitic acid (21,06%) and/linoleic acid (17,65%). While the total amount of anthocyanin was 0.069% in powdered sumac, it could not be detected in fruit sumac.

Keywords: Sumac, nutrition,chemical composition, phenolic compound