

THE STUDY OF CARBOXYLIC ACIDS IN OPOPHYTUM HERB AND FLOWERS

Dababneh M. F., Gurieva I. G.

Al-jouf University, Al-jouf, Kingdom of Saudi Arabia

National University of Pharmacy, Kharkiv, Ukraine

irenegurieva@gmail.com

Introduction. *Opophytum forskalii* (syn. *Mesembryanthemum forskalii*), or samh, is a species from Aizoaceae family which unites drought-tolerant succulent plants. The plants from *Opophytum*, or *Mesembryanthemum* genus are known under the name ice plants due to the glittering cells present on their surface.

The representatives of *Mesembryanthemum* genus are known to accumulate flavonoids, phenolic acids, fatty acids. They are widely used as cosmetic agents to avoid skin dehydration and ageing, as well as antioxidants, antidiabetic, anti-inflammatory, antibacterial remedies. Samh, or *Opophytum forskalii*, grows wildly in Al-jouf (northern part of Saudi Arabia) and is extensively used by natives as flour for bread, cookies or is just mixed with dates. Recent research has shown it to possess moderate hypoglycaemic activity, though the data on its chemical composition is insufficient.

Aim. The purpose of the current experiment was to determine the qualitative composition and quantitative content of organic acids in *Opophytum* herb and flowers.

Materials and methods. The plant material was collected in Al-jouf region of Saudi Arabia in 2016. Organic acids were studied by GC-MS method using the Agilent Technologies 6890 chromatograph with MS detector 5973. Internal standard – tridecane; capillary chromatographic column DB-5 with internal diameter 0,25 mm and length 30 m; speed of the gas-carrier (helium) – 1,2 ml/min; evaporator temperature - 250°C; the thermostat temperature was programmed from 50°C to 320°C with the speed 4 degrees per minute. The mass-spectra libraries NIST05 and WILEY 2007 were used for the identification of the components.

Results and discussion. The experiment carried out allowed detecting 26 carboxylic acids in both types of the plant material studied. *Opophytum forskalii* herb and flowers were found to accumulate quite large amounts of oxalic, malic and citric acids. There were 10 fatty acids detected among the total number of organic acids in both types of *Opophytum* plant material. Unsaturated fatty acids prevailed among the total number of fatty acids in both herb and flowers.

Conclusions. The obtained data will be used at working out the standardization parameters and quality control methods for *Opophytum forskalii* herb and flowers in future.