

PHYTOCHEMICAL STUDY OF *FORTUNELLA JAPONICA*

Zouane Ranya, Tartynska G.S., Velma V.V.

National University of Pharmacy, Kharkiv, Ukraine

Introduction. The appearance and taste of the fruits of Marum kumquat (*Fortunella japonica* Swingle), or *Fortunella japonica* make them a very popular gastronomic and decorative element in many countries. The fruits are used in folk medicine for the treatment of inflammatory diseases of the respiratory tract, lowering cholesterol, prevention of viral and bacterial diseases.

They are added to meat, fish, jam, candied fruit, but most often it is eaten raw with a thin skin, which gives the flesh a pleasant spicy aroma. *Fortunella japonica* fruits are rich in vitamin C, macro- and microelements, phenolic compounds, peel – in essential oil.

As the chemical composition of the plant is insufficiently studied, it is important to conduct a comprehensive phytochemical study of raw materials *Fortunella japonica* [2, 3, 4].

The aim of this work was to identify and quantify the content of free amino acids in the fruits of *Fortunella japonica*. The object of the study was air-dried and crushed *Fortunella japonica* fruits.

Materials and methods. Detection of amino acids was performed by reaction with 0.2% freshly prepared solution of ninhydrin in isopropyl alcohol. Quantitative determination of free amino acids was performed by a well-known method, spectrophotometric method on a spectrophotometer Optizen POP, at a wavelength of 573 nm. The content of the amount of amino acids was calculated in terms of leucine and completely dry raw materials [1].

Results and their discussion. As a result of the chemical reaction with 0.2% freshly prepared ninhydrin solution, a purple-red color was observed, indicating the presence of amino acids.

The quantitative content of the sum of amino acids is $0.88 \pm 0.05\%$. The obtained data are one of the stages in the complex phytochemical study of *Fortunella japonica*.

References:

1. Кисличенко О. А., Процька В. В., Журавель І. О. Дослідження якісного складу та визначення кількісного вмісту суми амінокислот у сировині моркви посівної сортів «Яскрава», «Нантська харківська», «Оленка», «Комет» та «Афалон». *Фітотерапія. Часопис*. 2018. № 1. С. 41-45.
2. Barreca D. et al. Kumquat (*Fortunella japonica* Swingle) juice: Flavonoid distribution and antioxidant properties. *Food Research International*. 2011. Т. 44. №. 7. С. 2190-2197.
3. Choi H. S. Characteristic odor components of kumquat (*Fortunella japonica* Swingle) peel oil. *Journal of agricultural and food chemistry*. 2005. № 53 (5). P. 1642-1647.
4. Dideriksen K., Reitelseder S., Holm L. Influence of amino acids, dietary protein, and physical activity on muscle mass development in humans. *Nutrients*. 2013. Т. 5. №. 3. С. 852-876.