

# THE DETERMINATION OF FLAVANOIDS QUANTITATIVE CONTENT IN RAW MATERIAL OF THE *CITRUS X PARADISI* L.

*Mohammed Loulidi Lahkim, Protska V.V.*

National University of Pharmacy, Kharkiv, Ukraine

**Introduction.** Grapefruit (*Citrus x paradisi* L.), of the family Rutaceae Juss., is an essential member of the Citrus fruits. It has been used as a folk medicine in many countries as antibacterial, antifungal, anti-inflammatory, antimicrobial, antioxidant, antiviral, astringent, and preservative. It has also been used for cancer prevention, cellular regeneration, lowering cholesterol, cleansing, detoxification, heart health maintenance, Lupus nephritis, rheumatoid arthritis and weight loss [1, 2].

*Citrus x paradisi* L. is a very important source of bioactive compounds such as vitamins C, E, A, phenolic compounds (flavonoids, phenolic acids and coumarins), and terpenic substances, such as carotenoids and limonoids [2].

The important group of biologically active substances of *Citrus x paradisi* L. is flavonoids. The major flavonoids present in *Citrus x paradisi* L. are rutin, naringin, hesperidin, neohesperidin, didymin and andponcirin [3].

The aim of this study was to determinate the yield of flavonoids of the *Citrus x paradisi* L. peels, pulp and leaves.

**Materials and methods.** For studies were used air-dry crushed peels, pulp and leaves of the Citrus x paradisi L. The raw material of *Citrus x paradisi* L. were collected in Morocco in 2023. Extraction was prepared using of 70% ethanol. The quantitative content of flavonoids was determined by a spectrophotometry method in terms of rutin and completely dry raw materials by the method of the State Pharmacopoeia of Ukraine (SPhU). All experiments were performed in triplicate. The results are presented as mean  $\pm$  SD; results were significant when  $p < 0,05$ .

**Results and their discussion.** According to the results of the experiment, the highest flavonoids yields were determined in the peels of *Citrus x paradisi* L. Their content in these raw materials amounted to  $2.15 \pm 0.06\%$ . Un the leaves of *Citrus x paradisi* L. these compounds accumulated twice as less in comparison with peels of studied plant ( $1.04 \pm 0.03 \%$ ). Pulp of *Citrus x paradisi* L. contained only  $0,53 \pm 0.02 \%$  of flavonoids.

**Conclusions:** The obtained data can be used in further plant raw material quality control methods development as well as at the stages of new plant remedies development.

## References:

1. Wu T, Guan Y, Ye J. Determination of flavonoids and ascorbic acid in grapefruit peel and juice by capillary electrophoresis with electrochemical detection. *Food Chemistry*. 2017. № 100(4). P. 1573–1579.
2. Grapefruit (*Citrus paradisi* Macfad) Phytochemicals Composition Is Modulated by Household Processing Techniques/ Uckoo Ram, Jayaprakasha Guddadarangavvanahally, Balasubramaniam V.M., Patil Bhimanagouda. *Journal of food science*. 2012. № 77. P. 921-926.
3. Gupta V, Kohli K. Pharmacological potentials of Citrus paradisi- an overview. *International journal of phytotherapy research*. 2020. № 67. P. 8-17.