

STUDY THE CONTENT OF ASCORBIC ACID IN HERB OF *URTICA URENS L.*

Alchamman E., Sydora N. V.

National University of Pharmacy, Kharkiv, Ukraine

sydora2005@gmail.com

Introduction. For a long time we are using plants for the treatment and prevention of various diseases. And nowadays phytotherapy is an actual direction of correction of various diseases. Recently, the popularity of herbal preparations has increased, which is due to the fact that due to a complex of biologically active substances (BAS), resistance to them is less often formed. Particular attention in the choice of objects of research should be given to plants having adequate sources of raw materials. One of such plants is nettle stinging (*Urtica urens L.*), which grows on the territory of Ukraine. This plant has found application in folk medicine and homeopathy for the treatment of nasal, hemorrhoidal and uterine bleeding. In order to expand the information on BASs of species of the genus *Urtica L.*, a phytochemical study of the herb *Urtica urens L.* is of scientific interest.

The **aim of our study** was to investigate the content of ascorbic acid in *Urtica urens L.* herb collected in different region of Ukraine.

Materials and methods. The object of the study was the dried herb of *Urtica urens L.* collected in 2016 year. To identify the ascorbic acid was used the chromatographic method. Extraction of ascorbic acid from the raw material was carried out with distilled water. For this, the raw material was placed in a flat bottom flask, poured with water at room temperature in a feed-extractant ratio of 1:10, mixed and insisted for 20 minutes. The filtrate was applied to a capillary plate Silufol chromatographic grade, dried and chromatographed in the solvent system ethyl acetate-glacial acetic acid (8: 2). The resulting chromatogram was dried in a fume hood and treated with 0.04% aqueous solution of 2,6-dichlorphenolindophenolate sodium. Chromatography was performed using a standard sample of ascorbic acid. The quantitative content of ascorbic acid was determined by the titrimetric method. 20 g of raw material were ground, placed in a flask, water purified in a feedstock-extractant ratio of 1:15 was added, insisted for 20 minutes. After the contents are filtered. 1 ml of the filtrate was placed in a conical flask, 1 ml of a 2% solution of hydrochloric acid and 13 ml of purified water was added. Titrant is a solution of 2,6-dichlorphenolindophenolate sodium (0.001 mol / l). The quantitative association of ascorbic acid was determined by the formula:

$$x = \frac{V * 0,000088 * 300 * 100 * 100}{m * (100 - W)}$$

are: V - the volume of a solution of sodium 2,6-dichlorophenolindophenolate (0.001 mol / l), used for titration, ml;

m - the weight of the sample, g;

W - loss in mass when drying raw materials, %;

1 ml of sodium solution of 2,6-dichlorophenolindophenolate (0.001 mol / l) corresponds to 0.000088 g of ascorbic acid.

Results and discussion. After processing the chromatogram with a chromogenic reagent, white spots were found on a blue background, which in color and Rf values coincided with the standard sample. The results of the quantitative content of ascorbic acid are given in Table 1. The statistical processing of the data was carried out using the MS Excel program using the basic statistical indicators.

Table 1

The quantitative content of ascorbic acid in herb of *Urtica urens* L.

m	n	X_i	X_{cp}	S^2	S_{cp}	P	t(P, n)	Interval	$\varepsilon, \%$
1	2	3	4	5	6	7	8	9	10
Raw materials collected in the Kharkov region									
5	4	0,1012	0,10	0,000510031	0,0125	0,95	2,78	0,10±0,0404	1,03
		0,1001							
		0,1011							
		0,1001							
		0,1000							
Raw materials collected in the Kiev region									
5	4	0,0800	0,08	0,000023500	0,0115	0,95	2,78	0,083±0,006	1,25
		0,0840							
		0,0910							
		0,0790							
		0,0810							
Raw materials collected in Ivano-Frankivsk region									
5	4	0,1201	0,12	0,000000177	0,0002	0,95	2,78	0,12±0,0005	1,02
		0,1204							
		0,1193							
		0,1202							
		0,1199							

Conclusions. Based on the results of the studies, ascorbic acid was identified in all samples. The quantitative content of ascorbic acid in raw materials harvested in the Kharkiv region was 0.10%, Kiev region - 0.083%, Ivano-Frankivsk region - 0.12%.