

**RESEARCH THE LIPOPHILIC COMPOUNDS
FROM *CRATAEGUS PENTAGYNA* W. K. FLOWERS**

Lysyana A. A., Sydora N.V., Kovaljova A M., Avidzba Yu.N.
The National University of Pharmacy, Kharkiv, Ukraine
sidora2005@rambler.ru

The aim of investigation

In Ukraine are growing 30 species of hawthorn, 4 of which are pharmacopeia and applied as antihypertensive, sedative, cardiogenic agents. It is known that for such pharmacological activity are responsible phenolic compounds (flavonoids, hydroxycinnamic acids). At the same time others classes of compounds practically have not been studied. So, the aim of this investigation is the study of lipophilic compounds of *Crataegus pentagyna* W. K. flowers.

Materials and methods

The object of study was flowers of *C. pentagyna* W. K., collected in bud phase.

Qualitative and quantitative analysis of fatty acids was determined by gas chromatography in gas chromatograph "Chrome - 5". Volatile compounds content conducted by used chromatography-mass-spectrometry method in gas chromatography-mass spectrograph" Hewlett - Packard ".

Content of chlorophylls and carotenoids determined in lipophilic fraction (extractant – chlorophorm). For its identification used one-dimensional and two-dimensional chromatography in thin layer of sorbent on the plates «Silufol UV-268». Solvent system was hexane-acetone (6:3). Like chromogenic reagent used the solution of phospho-molybdic acid.

Obtained results

In raw material identified 10 fatty acids (myristic, pentadecanoic, palmitic, stearic, palmitoleinic, heptadecinic, oleic, linoleic, linolenic, 2-oxypalmytic); chlorophylls and carotenoids; volatile substances.

Results of study are shown in Table 1, 2.

Table 1

Fatty acids composition of *C. pentagyna* W. K. flowers

№	Retention index	Name of acid	Content, mg/kg
1	2	3	4
1	24.241	myristic	172.61
2	26.065	pentadecanoic	20.79
3	28.357	palmitic	3025.83
4	28.697	palmitoleinic	38.12

1	2	3	4
5	29.79	heptadecinic	27.62
6	31.893	stearic	731.27
7	32.11	oleic	241.79
8	33.025	linoleic	2332.23
9	34.006	linolenic	1677.47
10	35.462	2-oxypalmytic	148.80

As shown in Table 1, among fatty acids are dominant saturated fatty acids, unsaturated presented with oleic, linoleic, linolenic acids. Most high concentration established for palmitic, linoleic, linolenic acids.

Table 2

Volatile compounds of *C. pentagyna* C. W. flowers

No	Retention index	Compound	Content, (%)
1	4.94	benzaldehyde	7.7
2	6.65	limonene	1.6
3	7.15	methyl ester of isoleucine	108.6
4	11.47	p-cimen-8-ol	3.9
5	11.63	α -terpineol	11.7
6	13.64	anise aldehyde	37.5
7	14.91	indol	3.7
8	15.96	methyl ester of phormylisoleucine	6.9
9	16.96	eugenol	53.3
10	40.28	squalen	192.8

As shown in Table 2, in raw material was founded 10 volatile compounds: monocyclic monoterpenoids (limonene, α -terpineol), triterpenoids (squalen), aromatic compounds (benzaldehyde, eugenol, p-cimen-8-ol, anise aldehyde), amino acids derivatives (methyl ester of isoleucine, methyl ester of phormylisoleucine), nitrogen-containing substances (indol).

According to the results of fluorescence and the values of Rf 2 substances classified as chlorophylls, 3 - as carotenoids. The color of spots seen in daylight and UV- light before and after processing of chromogenic reagent.

Conclusions

1. In *C. pentagyna* W. K. flowers were determined 10 fatty acids and 10 volatile compounds of different chemical structure.

2. In the chloroform fraction of *C. pentagyna* W. K. flowers established the presence of chlorophylls and carotenoids.