

Dynamics of main group phenolic compound's contents in *Cotinus coggygia* leaves from Bulgaria

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Introduction: *Cotinus coggygia* Scop (syn. *Rhus cotinus* L.), also known as the "smoke tree", is species belongs to family *Anacardiaceae*. It has a wide distribution in Europe and Asia (Novakovic et al., 2007, Tutin et al., 1968) and leaves from it has been used in folk medicine due to its rich chemical compounds (Matic et al., 2015). This herbal substance is number one trade object among all hydrolysable tannins drug in Bulgaria and as those have to be subject to different content analysis.

Aim: The aim of this work is focused on the phytochemical analysis of the main group phenolic compounds from the plant leaves, in conjunction with the compound's dynamic in one vegetation season.

Material and methods:

The plant material - leaves of *Cotinus coggygia* were collected in flowering season of May to September 2018, from North-East floristic region of Bulgaria. Plant material was air-dried in darkness at room temperature and identification was carried out at the Department of Biology of the Medical University of Varna, according to Tutin et al. (1968).

Quantification of total water soluble polyphenols, tannins, hydroxycinnamic derivatives and flavonoids

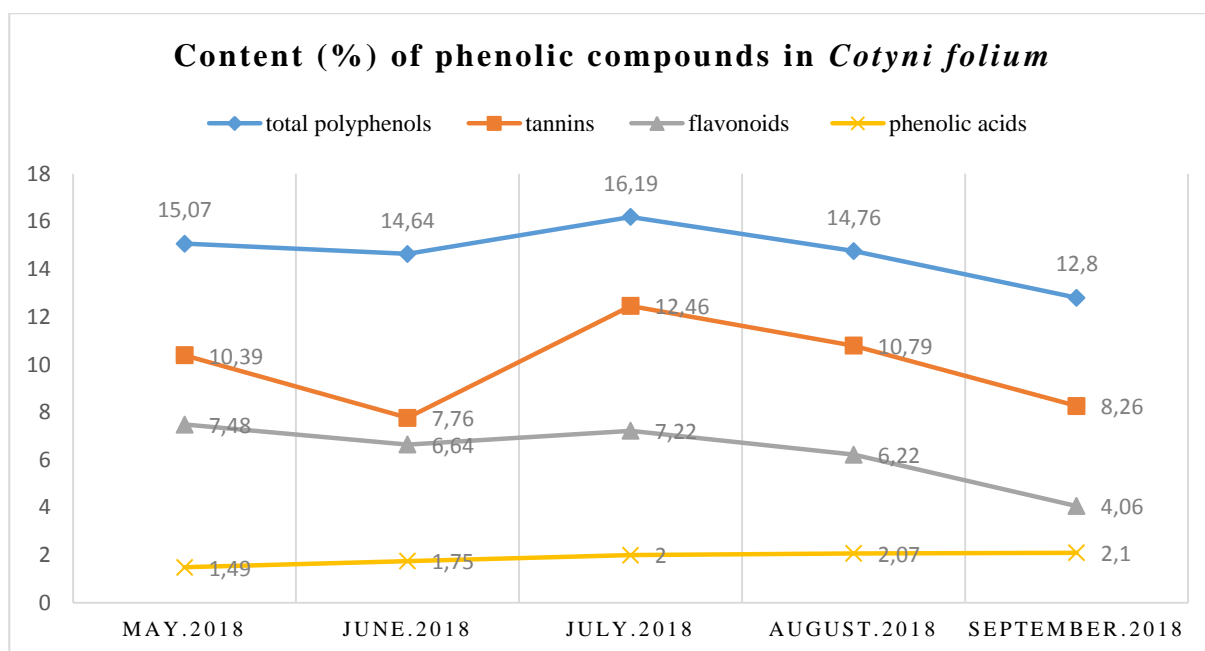
The determination of total water soluble polyphenols, tannins and phenolic acids in the leaves were performed according to the European Pharmacopoeia (2011a, b). The content of the flavonoids was spectrophotometrically determined according to the Russian Pharmacopoeia (1990).

Results and Discussions:

Tab.1. Content (%) of phenolic compounds in *Cotyni folium* in one vegetating seson

Compounds Month of harvesting	Total polyphenols (WSPP)	Tannins (T)	Flavonoids (F)	Phenolic acids (PhA)
may.2018	15.07 ±0.03	10.39±0.21	7.48±0.01	1.49±0.04
june.2018	14.64±0.09	7.76±0.19	6.64±0.05	1.75±0.02
july.2018	16.19±0.11	12.46±0.09	7.22±0.12	2.00 ±0.11
august.2018	14.76±0.07	10.79±0.23	6.22±0.13	2.07±0.09
september.2018	12.80 ±0.08	8.26±0.05	4.06±0.09	2.10 ±0.07

Fig.1.Content (%) of phenolic compounds in *Cotyni folium* in one vegetating seson



The amount of water soluble phenolic compounds in plant and tannins were expressed as pyrogallol equivalent in % (Fig. 1, Tabl. 1). The month, characterised by higher contents of these compounds were July (respectively $16.19 \pm 0.11\%$ and $12.46 \pm 0.09\%$), followed by August ($14.76 \pm 0.07\%$ and respectively $10.79 \pm 0.23\%$).

The phytochemical analysis for flavonoids content showed that this group was represented by almost equal value in all established period and only in September there are decrease in quantity of this phenols ($4.06 \pm 0.09\%$).

Research on the quantity of phenolic acids showed that this group varies in narrow range (from $1.49 \pm 0.04\%$ to $2.10 \pm 0.07\%$) in all vegetative season. In compare with other phenolics groups they are presented in the lowest quantity.

All these phytochemical analysis were made as part of larger scale study on the standardization of medicinal herbal substances and the identification of the exact vegetative phase by which they accumulate a maximum amount of active substance.

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