

**THE CONTENT OF PHENOLIC COMPOUNDS
IN *VACCINIUM VITIS-IDAEA* AND *OXYCOCCUS PALUSTRIS*
(ERICACEAE) DURING DIFFERENT VEGETATION PERIODS**

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SUMMARY

The analysis of dynamics and accumulation patterns of different groups of phenolics in *Vaccinium vitis-idaea* L. and *Oxycoccus palustris* Pers. during 3 years was the aim of this study. The total content of soluble phenolic compounds, flavonoids, catechins and anthocyanins in leaves and fruits were determined as well as soil composition was analysed during different vegetation periods (budding, flowering and fruiting). *V. vitis-idaea* and *O. palustris* leaves and fruits were collected in Pustynskiy reserve (Nizhegorodskaya oblast). Biochemical investigations covered 2010–2012 vegetation years. Soil samples were also collected by quartering in 2012 during above mentioned phenological phases. The quantitative analysis of phenolic compounds was conducted by colorimetric method in ethanolic extracts.

It was shown that *V. vitis-idaea* and *O. palustris* accumulated high amount of phenolics. Presumably acidic oligotrophic soils were among environmental factors affecting phenolics content in the plant tissues. Total soluble phenolic compounds content (mg/g fresh weight) ranged 77–144 in *V. vitis-idaea* leaves and 28–120 in *O. palustris*; flavonoids ranged 39–105 and 9–61; catechins 10–32 and 4–27 correspondingly. Polyphenolic content varied significantly among vegetation periods but 3-year investigation gave a proof that high amount and seasonal variations of phenolic substances were characteristic to the secondary metabolism of these species.

Besides, the temporal pattern of secondary metabolites accumulation in leaves in phenophases (polyphenolic amount was higher during fruiting and budding than during flowering) was more evident in *V. vitis-idaea*. On the contrary, phenolic composition in *O. palustris* was labile and its changes were less affected by flavonoid variations. It was revealed that total content of phenolics in *V. vitis-idaea* and *O. palustris* leaves was about 10 times and flavonoids content was about 10–100 times more than in fruits. However fruits in both species exceeded leaves in anthocyanin amount.

Key words: *Vaccinium vitis-idaea*, *Oxycoccus palustris*, phenolic compounds, flavonoids, catechins, anthocyanins.