

**ACCUMULATION AND DISTRIBUTION OF MICROELEMENTS IN *VACCINIUM VITIS-IDAEA* PLANTS
(ERICACEAE) IN THE SOUTHERN BAIKAL AREA**

© L. V. Afanasyeva, * V. K. Kashin

Institute of General and Experimental Biology, SB RAS, Ulan-Ude, Republic of Buryatia

* E-mail: afanl@mail.ru

REFERENCES

1. Dikorastushchie poleznye rasteniya Rossii 2001. [The wild useful plants of Russia]. Ed. by A. L. Budantsev. St. Petersburg. 663 p. (In Russian)
2. Lovkova M. Ya., Sokolova S. M., Buzuk G. N. 1999. Specific features of the elemental composition of medicinal plants synthesizing phenolic compounds. — Applied biochemistry and microbiology. 35(5): 578–589. (In Russian)
3. Bityutskiy N. P. 2011. Mikroelementy vysshikh rasteniy [Microelements of the higher plants]. St. Petersburg. 368 p. (In Russian)
4. Lovkova M. Ya., Buzuk G. N., Sokolova S. M., Derevyago L. N. 2005. On possibility of medical plants use for treatment and prophylaxis of microelementoses and pathological states. — Trace elements in medicine. 6(4): 3–10. (In Russian)
5. Marschner H. 1997. Mineral nutrition of higher plants. London. 889 p.
6. Rumyantsev E. V., Antina E. V., Chistyakov Yu. V. 2007. Himicheskie osnovy zhizni [The chemical basis of life]. Moscow. 560 p. (In Russian)
7. Kabata-Pendias A. 2011. Trace elements in soils and plants. 4th Edition. Boca Raton. 505 p.
8. Lyutikova M. N., Botirov E. Kh. 2015. Khimicheskii sostav i prakticheskoe primeneniye yagod brusniki i klyukvy [The chemical composition and the practical application of *Vaccinium vitis-idaea* and *Oxycoccus palustris* berries]. — Khimiya rastitelnogo syrya. 2: 5–27. (In Russian)
9. Ramenskaya M. K. 1974. Mikroelementy v rasteniyakh Kraynego Severa [Microelements in the Far North plants]. Moscow; Leningrad. 159 p. (In Russian)
10. Brusnika 1986. [The cowberry]. Moscow. 80 p. (In Russian)
11. Raseyannye elementy v borealnykh lesakh 2004. [Trace elements in the boreal forests]. Moscow. 616 p. (In Russian)
12. Artemkina N. A. 2010. The content of phenolic compounds and elemental composition in *Vaccinium vitis-idaea* (Ericaceae) in the spruce forests of the Kola Peninsula in the conditions of technogenic pollution. — Rastitelnye resursy. 46(2): 86–97. (In Russian)

13. Evert E., Luke X., Shtayn G., Endflyayn X. 1981. Vozdeystvie vrednykh veshchestv v lesnom hozyaystve [The impact of pollutants in forestry]. In: Vliyanie zagryazneniya vozdukha na rastitelnost [Influence of air pollution on vegetation]. Moscow. P. 100–118. (In Russian)
14. Steinnes E., Lukina N., Nikonov V., Aamlid D., Royset O. 2000. A gradient study of 34 elements in the vicinity of a copper-nickel plant in the Kola Peninsula. — Environ Monit. Assess. 60(1): 71–88.
15. WHO (World Health Organization). 2005. Quality control methods for medicinal plants materials reused draft update. QAS/05, 131/Rev. 1. 27 p.
16. Sanina N. B., Chuparina E. V., Nesterova A. A. 2004. Chemical composition of plants in the Baikal Biospheric Reserve (in connection with the problem of degradation of fir forest at the northern side of the Khamar-Daban mountain ridge. — Contemporary problems of ecology. 1: 57–65.
17. Belogolova G. A., Koval P. V., Matyashenko G. V., Gunicheva T. N., Chuparina E. V. 2006. Distribution of macroelements in plants of the South Baikal region. — Contemporary problems of ecology. 3: 359–369.
18. Baykal. 1993. Atlas [The Baikal Lake]. Ed. by G. I. Galaziy. Moscow. 160 p. (In Russian)
19. Tipy lesov gor Yuzhnoy Sibiri 1980. [The types of mountain forests of the Southern Siberia]. Ed. by V. N. Smagin. Novosibirsk. 334 p. (In Russian)
20. Metody biohimicheskogo issledovaniya rasteniy 1987. [Methods of biochemical plant research]. Leningrad. 430 p. (In Russian)
21. Teoriya i praktika khimicheskogo analiza pochv 2006. [The theory and practice of chemical analysis of soils]. Ed. by L. A. Vorobevoy. Moscow. 400 p. (In Russian)
22. Praktikum po agrokhimii 2001. [Workshop on agricultural chemistry]. Ed. by V. G. Mineeva. Moscow. 689 p. (In Russian)
23. Serbulaa S. M., Miljkovic D. D., Kovacevic R. M., Ilic A. A. 2012. Assessment of airborne heavy metal pollution using plant parts and topsoil. — Ecotoxicol. Environment. Saf. 76: 209–214.
24. Zaytsev G. N. 1990. Matematika v eksperimentalnoy botanike [Mathematics in the experimental botany]. Moscow. 296 p. (In Russian)
25. Shkolnik M. Ya. 1974. Mikroelementy v zhizni rasteniy [Microelements in the plants' life]. Leningrad, 324 p. (In Russian)
26. Nozdryukhina L. R., Grinkevich N. I. 1980. Narushenie mikroelementnogo obmena i puti ego korrleksii [Violation of microelement exchange and ways of its correction]. Moscow. 280 p. (In Russian)
27. Seregin I. V. 2009. Raspredelenie tyazhelykh metallov v rasteniyakh i ikh deystvie na rost: Avtoref. dis. ... dokt. biol. nauk. Moscow. 53 p. (In Russian)
28. Metodicheskie rekomendatsii № 2.3.1. 1915-04 «Rekomenduemye urovni potrebleniya pishchevykh i biologicheski aktivnykh veshchestv». 2004. Moscow. 34 p. (In Russian)

29. Zdorovye Rossii: Atlas [Health of Russia: Atlas]. 2007. Ed. by L. A. Bokeriya. Moscow. 254 p. (In Russian)
30. SanPiN 2.3.2.1078-01 «Gigienicheskie trebovaniya bezopasnosti i pishchevoy cennosti pishchevykh produktov» [Hygienic requirements for safety and nutrition value of food products]. 2001. Moscow. 180 p. (In Russian)