

## Chemical composition and ecological and biological characteristics of *Halenia corniculata*

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### Abstract

In this paper the chemical composition of the aerial part of *Halenia corniculata* (*Gentianaceae*), assembled in the territory of Kabansky District of the Republic of Buryatia and Irkutsk region in 2016 is studied. The quantitative content of the dominant groups of biologically active substances is identified in the 5 samples *H. corniculata* (coenopopulations 1-5). The quantitative content of  $\gamma$ -pyrone compounds in the aerial part of *H. corniculata* ranges from 6.11 to 10.83% (chromato-spectrophotometric method), organic acids – from 4.53 to 5.78% (technique of potentiometric titration), tannins – from 1.03 to 1.26% (trilonometric method) alkaloids – from 0.21 to 0.31% (gravimetric method), water-soluble polysaccharides – from 2.79 to 3.31% (gravimetric method), pectin substances – from 5.46 to 6.11 % (gravimetric method) and hemicellulose – from 5.72 to 6.75 % (gravimetric method) (abs.-dry raw materials).

An ecological and biological characteristic of *H. corniculata* is investigated. The 5 geobotanical descriptions in plant communities with the participation of *H. corniculata* are done in the district of research. Learned coenopopulations *H. corniculata* are confined to the following communities: *Achillea* – *Halenia* – herb, *Halenia* – *Leucanthemum* – herb, *Potentilla* – *Halenia* – herb, *Halenia* – *Achillea* – herb and *Potentilla* – *Chamerion* – herb.

The predictive estimate of resources of raw materials *H. corniculata* in Kabansky region of the Republic of Buryatia and Irkutsk region is spent. Phytomass, biological and exploitation resources of the aerial part of *H. corniculata* is identified. Phytomass of *H. corniculata* ranges from 22.1 $\pm$ 5.7 to 146.0 $\pm$ 31.6 g/m<sup>2</sup> (fresh raw materials) and from 5.6 $\pm$ 1.5 to 33.5 $\pm$ 7.8 g/m<sup>2</sup> (air-dry raw materials). The largest stock of raw materials of *H. corniculata* is in *Halenia* – *Achillea* – herb (coenopopulations 4). Total biological resources of *H. corniculata* in the study area (4.01 hectares) are 4246.8 kg (fresh raw materials) and 989.3 kg (air-dry raw materials). Total exploitation resources of *H. corniculata* are 2372 kg (fresh raw materials) and 504.3 kg (air-dry raw materials).

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