

COUMARINS OF THE ROOTS, EPIGEAL MASS, AND FRUIT OF Prangos equisetoides

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The quantitative compositions of the coumarins of the roots, the epigeal mass, and the fruit of Prangos equisetoides Kuzmina collected at three points in the Karatau range in South Kazakhstan have been studied. The roots were collected in the gorge of the R. Kok-sarai, on the road between the village of Achisai and the town of Kentau, and in the environs of the village of Chulak-Kurgan, the fruit in the gorge of the R. Bayaldyr, and the epigeal mass (leaves and stems) between the village of Achisai and the town of Kentau.

Depending on the growth site, the roots of P. equisetoides contained from 2.8 to 3.56% of coumarins, determined by Svendsen's method [1], the epigeal mass contained 1.47%, and the fruit 3.66%.

The coumarins were identified on the basis of the results of a study of the total coumarin material by gas-liquid chromatography with separation on a column containing the stationary phase OV-17 (3%) under programmed conditions [2] and was also confirmed by paper chromatography (with markers) in two systems.

In different plants of the species Prangos we detected the following coumarins: osthole (traces), suberosin, and meranzin. Of furocoumarin derivatives we identified psoralen and its 5- and 8-substituted derivatives bergapten, isoimperatorin, oxypeucedanin, oxypeucedanin hydrate, pranferol, xanthotoxin, and imperatorin (the last two substances have so far been found only in the roots), prangenin (in the roots and fruit), and xanthotoxol — in all parts of the plant, just like prangenin hydrate — and the dihydrofurocoumarins marmezin and deltoin. Traces of pranchimgin were detected in the fruit and roots collected in the region of the village of Chulak-Kurgan.

The qualitative compositions of the coumarins of the roots collected at the three points were similar. Suberosin, psoralen, and pranchimgin were not detected in the roots from the Kok-Sarai gorge or on the road from Achisai to Kentau. Osthole has not yet been found in the roots from the latter region but only its epoxy derivative (meranzin) has been identified. The remaining coumarins mentioned were detected in different quantitative ratios in all the organs of P. equisetoides.

The present investigation has confirmed once again that the qualitative set of coumarins depends little on the growth site. Considerably larger variations are observed in the quantitative ratios of individual components in plants from different regions [3].

LITERATURE CITED

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