DYNAMICS OF THE ACCUMULATION OF THE ALKALOIDS OF *Nitraria sibirica*

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We have studied the total alkaloids present in various organs of *Nitraria sibirica* Pall. as functions of the vegetation period. Attempts were first made to determine the optimum method of extraction, as previously for *N. komarovii* [1]: the same amounts of samples of the comminuted plant were extracted in parallel by three methods: 1) with a 2% solution of acetic acid in chloroform; 2) with methanol; and 3) with chloroform after the plant had been wetted with an 8% solution of ammonia. The purest combined material and the best yield of it were obtained by the use of the third method, which is that generally adopted for the isolation of mixtures of bases, and we subsequently used only this method.

The amounts of alkaloids in the buds, flowers, leaves, stems, seeds, fruit, and roots of plants collected in the environs of the village of Rybach'e (KirgSSR) were as follows:

Plant organ	Date of collection	Total alkaloids, %	Plant organ	Date of collection	Total alkaloids, %
1. Buds	17. V 1981	0.31	8. Stems	1.IX 1981	0.11
2. Flowers	7.VI "	0.35	9. Stems	1.IX "	0.12
3. Leaves	17.V "	0.67	10. Fruit	19.IX 1977	0.29
4. Leaves	7.VI "	0.60	11. Roots	17. V 1981	0.029
5. Leaves	1.IX "	0.36	12. Roots	7. VI "	0.030
6. Stems	17.V "	0.16	13. Roots	1. IX "	0.048
7. Stems	7.VI "	0.14	14. Roots	28.IX 1975	0.056

These results show that by the end of the vegetation period the total amount of alkaloids in the leaves and stems has decreased and in the roots it has risen, i.e., the change in the base content follows the rule found previously from the dynamics of the accumulation of alkaloids in plants [2-4].

It is interesting to note the considerable amounts of alkaloids in the fruit. The qualitative compositions of the bases in the individual organs are being studied. At the present time, the epigeal part of *N. sibirica* has yielded isonitramine, nitramine [5], nitraramine [6], schoberine [7], nitraramine N-oxides [8], sibirine, (±)-nitramine, L-vasicinone, base 10 (M^+ 206), base 17 (M^+ 211), and a number of others.

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