

DYNAMICS OF THE ACCUMULATION OF THE ALKALOIDS OF

Convolvulus subhirsutum

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We have studied the accumulation of the alkaloids of *Convolvulus subhirsutum* Rgl. et Schmalh., collected in the environs of the village of Dzhigi, Chimkent province, Kaz. SSR. We investigated the epigeal part and roots of this plant in three vegetation periods. The results of the determination of the total amount of the main alkaloids are given below:

Phase of development	Epigeal part				Roots, %			
	Total alkaloids	Convolvine	Convolamine	Phenolic fraction	Total alkaloids	Convolvine	Convolamine	Phenolic fraction
Vigorous growth	1	91,2	1,32	5,7	2,6	67,9	6,7	22,6
Flowering	0,68	60,0	20,3	17,4	2,9	66,6	4,6	27,3
Fruit-bearing	0,5	33,0	14,3	33,0	4,3	61,5	2,6	33,7

The amount of total alkaloids in the epigeal part decreased as the plant developed while in the roots it increased, reaching 4.3% at the end of the vegetation period, i.e., the change in the amount of total alkaloids obeyed the law of the dynamics of the accumulation of alkaloids in plants found previously [1-3].

The qualitative composition of the mixture of bases also changed with the phase of development of the plant. Thus, at the beginning of vegetation 91% of the total alkaloids of the epigeal part and approximately 68% of those of the roots were convolvine. With the growth of the plant the amount of convolvine in the epigeal part gradually fell, and by the fruit-bearing period it had decreased to one half. The sharp fall in the amount of convolvine in the epigeal part was compensated by a considerable (almost sixfold) increase in the amount of phenolic alkaloids. In the roots there was no such sharp decrease in the amount of convolvine, although the tendency to a decrease was retained. At the same time, the amount of convolamine and of phenolic bases rose until the end of the vegetation period. It is interesting to note that the maximum accumulation of convolamine in the epigeal part was observed in the flowering period and the maximum amount in the roots was observed in the period of vigorous growth.

The qualitative compositions of the combined materials obtained are being studied. At the present time convolidine [4], convolicine [5], phyllalbine, convoline, subhirsine, and confoline [6] have been isolated from the epigeal part and roots, in addition to convoline and convolamine.

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