

ACCUMULATION DYNAMICS OF *Buxus sempervirens* ALKALOIDS

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*Buxus sempervirens* L. is a decorative evergreen bush [1, 2]. In the present report we study the accumulation dynamics by season of total and main alkaloids from this plant cultivated in decorative settings of Tashkent.

The analysis used air-dried material (500 g) and alkaloids extracted by ethanol—water—glacial acetic acid (75:21:4). The ethanol was removed. The acidic solution was made basic with 10% aqueous  $\text{NH}_3$  to pH 9-10. The alkaloids were extracted with  $\text{CHCl}_3$ . The  $\text{CHCl}_3$  was removed. Drying produced the total alkaloids (Table 1), which were a complex mixture of bases that was difficult to separate into the pure components by ordinary methods. Therefore, the total alkaloids were dissolved separately in benzene and separated by basicity using a citrate—phosphate buffer at pH 8.0-2.0 (0.5 pH intervals).

Fractions at pH 8.0, 7.5, 7.0, and 6.5 were chromatographed on an aluminum oxide column (Brockman II) with elution by ether—ethanol (8.5:1.5, 4:1, 7:3, 6.5:3.5, 3:2). The early eluents (8.5:1.5, 4:1, and 7:3) isolated cyclobuxine-D; the later ones, cyclovirobuxine-D [3-7] (Table 1).

Quantitative analysis showed that the total content of alkaloids increases with increasing age of the plant. In addition to the change in the total content, the content of individual alkaloids in various plant organs varies depending on the collection time (Table 1).

Thus, the highest content of alkaloids is observed in first-year twigs; the lowest, in older branches. The content of main alkaloids in all organs is almost the same.

TABLE 1. Quantitative Changes of Alkaloid Content

Collection time (1995)	Plant organ	Content, %		
		total alkaloids	cyclobuxine-D	cyclovirobuxine-D
First year				
March	-	1.34	0.11	0.05
June	-	1.41	0.12	0.05
September	-	1.90	0.16	0.07
December	-	2.10	0.18	0.09
Leaves and twigs				
March	-	1.23	0.11	0.04
June	-	1.34	0.12	0.04
September	-	1.45	0.14	0.05
December	-	1.60	0.16	0.06
Branches				
March	-	0.90	0.13	0.04
June	-	0.93	0.13	0.05
September	-	1.00	0.14	0.06
December	-	1.00	0.16	0.06

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