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CONTENT OF ASCORBIC ACID IN ALCOHOL EXTRACTS OF EARLY-FLOWERING PLANTS

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Early-spring plants have developed a complex of the adaptations promoting preservation and the maximum use of heat at his shortcoming and resistance to overheating as a result of strong sunlight, high temperature of a substratum and to an insufficient amount of precipitation. Biomorphological adaptations of early-spring early-flowering plants are a complex component of their adaptation to conditions of their existence [1]. One of factors promoting this adaptation is the high content of ascorbic acid in fabrics of early-flowering plants, so in leaves of a bear leek contain up to 0,73%, in bulbs – up to 0,10%, in flowers and leaves of a primrose – up to 500 mg of % Ascorbic acid inactivates free radicals, forming an inactive radical and is a cofactor of ascorbateperoxidase [2].

The work purpose – to reveal differences in the content of ascorbic acid in alcohol extracts of early-flowering plants

Material and methods. The research of concentration of ascorbic acid was conducted in from vegetative and generative bodies of early-flowering plants. Determination of the quantitative content of ascorbic acid was carried out by a spektrofotometrichesky method at a wavelength of 265 nanometers. The maintenance of ascorbic acid is expressed in mkg/g of crude weight [2].

Mathematical processing of the received results was carried out by methods of parametrical and nonparametric statistics with use of a package of the statistical Microsoft Excel 2003, STATISTICA 6.0 programs.

Results and their discussion. Follows from table 1 that the largest content of ascorbic acid was observed in leaves of *Allium ursinum L.* and *Allium schoenoprásum*, at *Primula officinalis* – in flowers. The maintenance of this index is higher in plant material in comparison with extracts. In extracts of 70% of alcohol the maintenance of ascorbic acid is higher than 40% of alcohol in comparison with extracts.

Table 1 – The maintenance of ascorbic acid of mg/g in vegetative and generative bodies of early-flowering plants ($M\pm m$)

Plant object	Organ of the plant	Objects of research		
		Botanical garden (Vitebsk)	70% alcohol extract	40% alcohol extract
<i>Allium ursinum</i>	Leaves	23,12±0,15 ⁶	21,08±0,14 ⁶	19,10±0,13 ⁶
	Stalks	17,36±0,11 ⁶	16,45±0,15 ⁶	12,38±0,12 ⁶
	Roots	15,16±0,15 ^{1,2,6}	13,28±0,11 ^{1,2,6}	11,05±0,13 ^{1,2,6}
<i>Allium schoenoprasum</i>	Leaves	10,92±0,11 ^{1,6}	9,36±0,10 ^{1,6}	7,33±0,06 ^{1,6}
	Stalks	8,68±0,12 ^{4,6}	7,35±0,11 ^{4,6}	6,18±0,14 ^{4,6}
	Roots	7,34±0,14 ^{3,5,6}	7,02±0,10 ^{3,5,6}	5,22±0,11 ^{3,5,6}
<i>Primula véris</i>	Flowers	98,25±0,49 ¹⁻⁵	82,33±0,26 ¹⁻⁵	66,68±0,57 ¹⁻⁵
	Leaves	77,03±0,67 ^{1,6}	75,11±0,42 ^{1,6}	61,24±0,25 ^{1,6}
	Stalks	27,12±0,26 ^{2,5,6}	24,16±0,32 ^{2,5,6}	17,98±0,16 ^{2,5,6}

The note – ¹P < 0,05 in comparison with leaves of *Allium ursinum*; ²P < 0,05 in comparison with stalks of a *Allium ursinum*; ³P < 0,05 in comparison with roots of a *Allium ursinum*; ⁴P < 0,05 in comparison with leaves of an *Allium schoenoprasum*; ⁵P < 0,05 in comparison with stalks of an *Allium schoenoprasum*; ⁶P < 0,05 in comparison with flowers of a *Primula véris*.

Statistically significant results are received when comparing leaves of *Allium ursinum* with the roots *Allium ursinum* (in leaves the maintenance of ascorbic acid is 1.59 times more larger), with leaves *Allium schoenoprasum* and the roots *Allium schoenoprasum* (in leaves the maintenance of this index is 1,33 times more), with stalks of *Primula officinalis* and leaves of *Primula officinalis* (in leaves the maintenance of this index is more in 3,11); when comparing maintenance of ascorbic acid in the roots *Allium ursinum* with the roots *Allium schoenoprasum* (in the roots *Allium ursinum* the maintenance of this index is 1,89 times more); when comparing maintenance of ascorbic acid in stalks of *Primula officinalis* is 3,29 times more larger in comparison with *Allium schoenoprasum* and by 1,47 times in comparison with *Allium ursinum*.

Conclusion. Thus, the maintenance of ascorbic acid depends on type of body and on concentration of alcohol (70% and 40%) in extracts. In extracts of 70% of alcohol concentration of ascorbic acid is higher than 40% of alcohol in comparison with extracts. High content of ascorbic acid is noted in extracts (70%) of *Primula officinalis* flower.

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