Amino acid composition of Sea Buckthorn

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Introduction. Amino acids are organic compounds that form proteins and occupy an important place in the metabolism. There are 28 amino acids, all of them are divided into interchangeable and irreplaceable (they can be obtained only with food). Deficiency of at least one of them can cause irritability, fatigue and weakness, poor appetite, growth retardation and weight loss, anemia, hemorrhage and even reproductive system disorders [1].

Aim. To analyze the amino acids of sea buckthorn. Plant variety - Solodka ginka, zoned in Ukraine.

Materials and research methods. The fruits of the sea buckthorn, which were collected in the NUPh garden (2018), were used as an object of study.

Analysis of the qualitative composition of amino acids was performed by chromatography on paper. An analytical sample of the raw material was ground to a particle size of 1-2 mm. Next, 10.0 g of the crushed raw material was placed in a flask, filled with 70% alcohol (1:10) and extracted in a water bath. The resulting extract was evaporated in vacuum to a thick extract and applied to a chromatogram.

Chromatographic analysis was performed by ascending paper chromatography on Filtrak FN-4 paper in a solvent system of n-butanol-acetic acid - water (4: 1: 2). For comparison, a standard set of amino acids (TU 6-09-3147-83) at a concentration of 0.1% was used. After passing through the solvent system, the chromatograms were treated with a 0.2% alcohol solution of ninhydrin in acetone and placed in an oven, where it was dried at a temperature of 60-80 ° C. Amino acids were identified by stain color and Rf value in comparison with reliable samples [2].

Results. The results of the study indicate that in the fruits of buckthorn Solodka ginka were identified: serine, histidine, glycine, threonine, arginine, alanine, tyrosine, valine, methionine, phenylalanine, isoleucine, leucine, lysine, proline and asparagine, glutamine amino acids.

Literature:

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