NITROGEN-CONTAINING COMPOUNDS OF *Glycine hispida*

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Glycine hispida Moench. (*Glycine soja*; soybean) is an agricultural crop and is used as the raw material for animal husbandary, foodstuffs, the medical industry, and technology [1].

Thanks to their high content of protein and essential amino acids, soybean products have a favorable influence on the tissue metabolism and are widely used in pediatric and dietetic nutrition [2].

We have studied a number of varieties of the soybean grown under the conditions of the Khar'kov province and have shown the presence in them of several groups of biologically active substances [3]. The pharmacological complex obtained from the epigeal part has revealed hypoglycemic activity. By chromatography on Filtrak FN12 paper in the butanol—acetic acid—water (4:1:2) and (15:3:7) systems with the use of chromogenic reagents, in addition to phenolic compounds, 17 amino acids have been detected and identified.

The isolation and separation of the amino acids was performed by column chromatography and preparative paper chromatography in the systems mentioned above. The amounts of the amino acids were determined by a chromatophotocolorimetric method in a hydrolysate of the substance [4].

After three passages through the chromatogram of the top layer of a butanol—acetic acid—water mixture, the chromatogram was visualized with a 0.2% solution of ninhydrin in acetone. The intensity of the coloration of the amino acids in the hydrolysate was determined by comparison with the extinctions of eluates of the spots of a standard solution of amino acids.

The percentage amounts of the following amino acids were determined: valine, 0.61; glycine and threonine, 0.40; leucine, 0.35; aspartic and glutamic acids, 0.33; serine, 0.30; alanine and arginine, 0.22; isoleucine, 0.19; methionine, 0.16; phenylalanine, histidine, and lysine, 0.13; cystine, 0.06. A high content of proline and a low content of tyrosine were found in the preparation.

When the complex preparation was separated on a column of polyamide (with water as the eluent), a substance was isolated with the composition $C_4H_6N_4O_3$, mp 235-237°C (decomp.), R_f 0.36 (butanol—acetic acid—water (4:1:2)), giving a positive reaction with a 1% ethanolic solution of p-dimethylaminobenzaldehyde containing 5% of hydrochloric acid [5].

On the basis of its elementary composition, a comparison with an authentic sample, and its UV, IR, and PMR spectra, the compound isolated was identified as 5-ureidohydantoin (allantoin).

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