

INVESTIGATION OF THE AMINO ACID AND CARBOHYDRATE COMPOSITION

OF *Juncus effusus*

A. G. Nikolaeva, B. G. Nikolaev,
and O. A. Bilan

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The genus *Juncus* L. family Juncaceae [1] is represented in the Ukraine by 29 species. Information on the chemical composition of the plants of this genus is extremely meagre, but there is a small amount of information on the similiarity of the chemical compositions of the rushes and the grasses [2].

The present communication gives the result of an investigation of the carbohydrate and amino acid compositions of *Juncus effusus* (common rush) collected in August-September in the flood-plains of the river Dnepr in the town of Zaporozh'e.

The raw material was exhaustively extracted with 70% ethanol with heating, and the extracts were concentrated to a volume of 50 ml. Chromatography was performed by the descending method on Leningrad S ["medium"] paper in the butan-1-ol-benzene-pyridine-water (5:1:3:3) and butan-1-ol-acetic acid-water (4:1:5) and (4:1:2) systems. The chromatograms were revealed with a 0.5% solution of ninhydrin in acetone (amino acids) and with aniline phthalate reagent (reducing sugars).

The qualitative amino acid composition was determined by repeated chromatography in the presence of 19 authentic samples of amino acids which were used in the form of three artificially created mixtures for the more accurate determination of the R_f values. It was established that the herbage of the common rush is richest in free amino acids. It was found to contain DL- β -phenyl- α -alanine, DL-norvaline, DL-methionine, DL-tryptophan, and β -alanine; in the rhizomes, L-arginine, glycine, DL-methionine, DL-alanine, and DL-valine predominated. The fruit and young stems were relatively poor in amino acids, but contained L-glutamic acid, DL-tryptophan, L-arginine, serine, and β -alanine.

The free carbohydrates consisted mainly of glucose and galactose (rhizomes, young stems, herbage), and also sucrose (rhizomes). Three unidentified compounds assigned to the reducing sugar group were found in the fruit and herbage. A considerable amount of salts of silicic acid was found in various organs of the common rush.

LITERATURE CITED

1. Flora of the Ukrainian SSR [in Ukrainian], Vol. 3, Vyd. AN URSR, Kiev (1950), p. 21.
2. Flora of the USSR [in Russian], Vol. 3, Moscow-Leningrad (1949), p. 504.

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