

AN INVESTIGATION OF THE AMINO ACIDS
OF *Passiflora incarnata* CULTIVATED IN GEORGIA

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UDC 547.9 : 582,962 × 582.998

In view of the wide biological spectrum of the activity of *Passiflora incarnata* [1, 2] and at the same time the absence of a unanimous opinion on its main active principle [3, 4], we have carried out a phyto-investigation of all the vegetative and reproductive organs of the plant for their content of various chemical groups of compounds. We give the results of a study of the amino acids.

To determine the free amino-acid composition, the raw material was collected in Tbilisi in the medicinal plants plot in 1971. It was extracted exhaustively with a 10-fold amount of methanol (50%) at the boil for 2 h. The resulting extracts were filtered, concentrated under vacuum, and used for analysis. A "Passiflora extract," which is used in medical practice and is obtained from the epigeal parts of the plant in 70% ethanol, was tested in parallel. The quantitative amino-acid composition was determined by paper chromatography [BAW (4:1:5) system, type FN No. 11 paper, 58 × 15 cm] and also by two-dimensional chromatography [system 1 - the same; 2 - phenol saturated with water (75:25); paper size 28 × 28 cm] in the presence of authentic samples of amino acids. The chromatograms were revealed with a 0.5% ethanolic solution of ninhydrin with heating at 100°C for 5 min [5].

It was established that the leaves, flowers, and the "Passiflora extract" are particularly rich in free amino acids. Among these substances tyrosine, proline, and phenylalanine predominate.

In the fruit, stems, tendrils, and roots tyrosine, valine, and glutamine predominate. In addition to the amino acids already mentioned, the stems contain α -alanine.

Thus, in all the organs of *Passiflora incarnata* the presence of from 12 to 21 amino acids has been established. In addition to the predominating compounds mentioned above, spots of β -alanine, arginine, histidine, glycine, lysine, leucine, methionine, tryptophan, serine, and other unidentified acids appeared with greater or smaller intensity in the extracts from various parts of the plant.

Using the method of determining amino acids from the intensities of the color of their spots [5] we found that the leaves contained about 5% of combined amino acids, the stems 4%, the leaves 1%, the roots 0.5%, and the medicinal preparation 4.5%.

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Tbilisi Order of the Red Banner of Labor State Medical Institute. Translated from *Khimiya Prirodnykh Soedinenii*, No. 2, p. 266, March-April, 1974. Original article submitted June 12, 1973.

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