

Cytisine is used in the form of the preparation Cytiton, which consists of a 0.15% solution of the alkaloid cytisine, for stimulating the respiratory center in operations, traumas, and asphyxia of the newborn [1].

In the medical industry, cytisine is obtained from the herbage or seeds of *Thermopsis lanceolata* or *Thermopsis altermiflora*. Cytisine has also been detected in other representatives of the leguminosae family. Among plants of the domestic flora, we have studied goldenchain laburnum, which is used as a decorative plant but does not find medical application [5, 6].

Our aim was to expand the raw materials basis of cytisine through new plants. We investigated the seeds of *Laburnum anagyroides* collected in the environs of Pyatigorsk (Stavropol'skii Krai).

We considered the possibility of using ion-exchange resins for isolating cytisine from aqueous extracts of the laburnum seeds and, in particular, in the process of extracting, sorbing, and desorbing cytisine. Experiments showed the desirability of using a 2% solution of sulfuric acid for extraction. The cation-exchangers KU-1, KU-2-8, KRS-3t-40, KRS-2P, KRS-4P, and KRS-5 were used as sorbents. The highest exchange capacity for cytisine out of all the cation-exchangers investigated was possessed by KRS-5.

The ground raw material (4 kg), collected on August 20, in the stage of fruit-bearing, was loaded into a battery of three extractors and was extracted continuously by the repercolation method with 2% sulfuric acid. The acid extract was passed through a battery of adsorbers consisting of three columns filled with KRS-5 cation-exchanger in the H<sup>+</sup> form (1 kg each). The rate of flow of extractant was 300-400 liters/h·m<sup>2</sup>. After sorption, the cation-exchanger was washed with distilled water to neutrality, and the alkaloids were desorbed with a 5% solution of ammonia in ethanol. The rate of flow of eluent was 30-40 liters/h·m<sup>2</sup>. The ethanol was distilled off from the eluates, and the alkaloids were extracted from the aqueous residue with chloroform. The chloroform extract was concentrated in vacuum and was dried with anhydrous sodium sulfate, and then 1.5% of its volume of activated wood charcoal and anhydrous potassium carbonate were added. After filtration, the chloroform was distilled off and the cytisine base was isolated by crystallization from acetone. The total yield of cytisine corresponding to the requirements of the State Pharmacopeia of the USSR (Xth edition) was 94 g (2.35% on the weight of raw material); mp 154°C.

To determine the authenticity of the cytisine, qualitative reactions were performed in accordance with the requirements of the State Pharmacopeia of the USSR (Xth edition), and in addition to this a chromatographic check was made using a "marker". The alkaloid cytisine was identified.

Thus, the seeds of goldenchain laburnum can be recommended as an additional source of raw material for obtaining cytisine.

#### LITERATURE CITED

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