ISOLATION OF ALKALOIDS FROM Petilium raddeanum BY THE ION-EXCHANGE METHOD

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The plant P. raddeanum collected in the Kizyl-Arvat region of the Ashkhabad oblast in the flowering stage contains a mixture of alkaloids (1%) [1]. The extraction of the alkaloids from the plant was investigated with various organic solvents, water, and dilute aqueous solutions of acids. The best results were obtained by extraction with 0.25% hydrochloric acid.

The process of the adsorption and desorption of the alkaloids has been studied on various cation-exchange resins. The best of the adsorbents is KU-1 resin. On this basis, we have developed an ion-exchange method for isolating alkaloids from P. raddeanum, The comminuted epigeal part of the plant (30 kg) was extracted with 0.25% hydrochloric acid in a 250-liter extractor. The acid extract of the alkaloid was passed through adsorbers consisting of two columns (d 0.15 m, l 0.4 m) each containing 2-2.2 kg of KU-1 cation-exchange resin in the hydrogen form. The rate of adsorption was 5-6 liters/h. The desorbent used was 96% ethanol saturated with gaseous ammonia to pH 9-9.5. The ethanolic solution obtained from the absorbers was concentrated in vacuum. The residue after the elimination of the ethanol was dissolved in 5% sulfuric acid. The acid solution was made alkaline with 25% ammonia, and the alkaloids were extracted with ether and chloroform. The yield of combined alkaloids was 0.9% of the weight of the dry plant.

The ethereal fraction of the combined alkaloids yielded imperialine, petiline, petilinine, and petilidine, and the chloroform fraction yielded the glucoalkaloid edpetiline [1, 2].

LITERATURE CITED

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