

There is information on the presence of triterpene saponins in the seeds of *Phaseolus vulgaris* family Fabaceae, but the chemical composition of the bean pods has not been studied [1-4].

We have investigated the pods of the bean *Phaseolus vulgaris* growing in the environs of Tbilisi (village of Mukharvani). In an aqueous ethanolic extract prepared from the air-dry raw material, flavonoids, saponins, amino acids, and free sugars were detected by TLC, PC, and qualitative reactions. The amino acids included aspartic acid, glutamine, serine, alanine, proline, and methionine. Flavonoids were present in the extract mainly in the glycosidic form. The purified total flavonoid material, consisting of five components with  $R_f$  0.24, 0.28, 0.33, 0.39, and 0.48, was isolated.

On TLC in a thin layer of silica gel in the chloroform-methanol-water (70:22.5:4) system, an aqueous extract gave three spots, and a chloroform extract another one spot, of triterpene compounds with  $R_f$  0.23, 0.43, 0.64, and 0.75, respectively [6]. The combined triterpene substances from the chloroform extract were separated on a column of alumina. White acicular crystals with mp 138-139°C,  $[\alpha]_D^{25} + 38^\circ$  (c 0.1; methanol) were obtained. In UV light they gave a dark violet spot. Their IR spectrum was identical with that of β-sitosterol. The acetate of the substance isolated, like that of authentic β-sitosterol, had mp 123°C and the benzoate 145°C.

The total flavonoids were separated on a column of polyamide sorbent. This gave substances A and B. After recrystallization, A had mp 182-184°C,  $[\alpha]_D^{20} - 37.81^\circ$  (c 1.4; pyridine). Substance A was identified as rutin on the basis of its IR and UV spectra and the results of acid and enzymatic hydrolysis and the absence of a depression in a mixed melting point test.

Substance B, mp 317-320°C, was a flavonoid aglycone. By comparative PC analysis and IR and UV spectroscopy it was identified as quercetin [6].

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