

POLYPHENOLS FROM THE LEAVES OF *Hippophae rhamnoides*

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In the leaves of *Hippophae rhamnoides* collected in the environs of Alma-Ata we have shown by paper chromatography the presence of phenolic acids, flavonol aglycones and glycosides, hydrolyzable tannin substances, and coumarins.

For their isolation, the leaves were extracted with methanol and the concentrated extracts were diluted with water and extracted successively with benzene, ether, ethyl acetate, and butanol.

Two-dimensional paper chromatography in 15% acetic acid and in the BAW (4 : 1 : 5) system of the ethereal fraction showed the presence of seven substances of polyphenolic nature, five of which were isolated by partition column chromatography on polyamide and silica gel and by preparative paper chromatography.

On the basis of qualitative reactions, UV spectroscopy with ionizing and complex-forming reagents, reaction products, R_f values in various solvent systems, and comparison with authentic samples, these substances were identified as quercetin C₁₅H₁₀O₇, mp 309-311°C; kaempferol, C₁₅H₁₀O₆, mp 273-275°C; isorhamnetin C₁₆H₁₂O₇, mp 303-305°C, myricetin, C₁₅H₁₁O₈, mp 356-360°C; and gallic acid C₇H₆O₅, mp 224-226°C.

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MONOTERPENE COMPOUNDS OF THE ESSENTIAL OILS OF PLANTS OF THE GENUS *Santolina*

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We have studied the composition of the monoterpene compounds of the essential oils from the epigeal parts of *Santolina virens* Willd. (green lavender cotton) and *S. chamaecyparissus* L. (Cyprus lavender cotton), family Compositae, which are widely cultivated in the southern regions of our country and are used in folk medicines. The essential oils were obtained by treating the epigeal mass of each species of lavender cotton with steam. The yields of essential oils were 1.9% (for the green lavender cotton) and 0.8% (for the Cyprus lavender cotton) of the weight of the air-dry plant. The physicochemical constants of the essential oils of the Cyprus lavender cotton were: n_D^{20} 1.4822, d_4^{20} 0.8950, α_D^{20} -3.22; acid No. 2.32; ester No. 14.25; ester No. after acetylation 70.59; free alcohols 3.17%; and from green lavender cotton: d_4^{20} 0.8900, n_D^{20} 1.4860, α_D^{20} -4.00; acid No. 3.29; ester No. 29.10; ester number after acetylation 99.21; free alcohols 2.97%.

The monoterpene fractions of the essential oils were obtained by fractional distillation of the oils in vacuum (bp 66-70°C/5 mm); they amounted to 68 and 71%, respectively. To isolate fractions of monoterpene hydrocarbons and monoterpene oxygen compounds we used the chromatographic separation of the monoterpene fractions of the essential oils on column of Al₂O₃ (activity grade II). Petroleum ether was used as the eluent. The separation was monitored by IR spectroscopy.

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