

CHEMICAL COMPOSITION, PHYSICOCHEMICAL CHARACTERISTICS, ANTIOXIDANT AND ANTIBACTERIAL ACTIVITIES OF ROYAL JELLY FROM CENTRAL MOLDOVA

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Abstract. The study evaluates the quality, physicochemical indicators and antibacterial activity of royal jelly from local Carpathian bees collected in period May-July 2024. Research revealed that royal jelly contains heavy metals, specifically lead at 0.075 mg/kg and cadmium at 0.132 mg/kg. The total amino acid content in royal jelly averages 280.432 g/kg, with significant proportions of aspartic acid at 17.69%, glutamic acid at 11.21%, lysine at 8.59%, leucine at 8.01%, and proline at 6.19%. The highest components of the alcoholic extract include heneicosane, hexacosane, and dibutyl phthalate, while the aqueous-alcoholic extract is distinguished by the presence of heptacosane and tetratetracontane. The product harvested in July 2024 demonstrated clear antibacterial activity against all the microorganisms tested, showing a particularly strong effect against Gram-positive microorganisms.

Keywords: royal jelly, physicochemical indicator, amino acid, antioxidant activity, antibacterial activity.