Study of the Biochemical Composition of the Pigmented Ethanolic Extracts Obtained from the Residual Biomass of *Arthrospira platensis*

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Abstract. This study focuses on the potential use of industrial by-products, particularly the microalgae Arthrospira platensis, to produce nutritive extracts that provide beneficial effects for human and animal health. The paper provides data on the biochemical composition of ethanol extracts based on pigments obtained from the remaining biomass of Arthrospira platensis. The optimal procedures for the extraction of biologically active substances with the use of ultrasound, homogenization and temperature were studied at the laboratory level. As a result, it was established that the extracts are characterized by a high content of β-carotene and lutein, but also by a balanced content of proteins and carbohydrates. Protein content was found to range from 13.33±0.038-17.55±0.13% (d.w.) and carbohydrates 12.78±0.26-24.075±0.33% (d. w.). The highest results were recorded in the experimental variant of extracting biologically active substances with 96% ethyl alcohol, at a temperature of +45˚C, for 30 minutes. Taking into account the valuable biochemical composition, ethanolic extracts of a pigmented nature have a relevant potential for application in animal husbandry, medicine, food and the cosmetic industry.

Keywords: *Arthrospira platensis*, β-carotene, lutein, carbohydrates, proteins

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