

THE BIOACTIVE POTENTIAL OF NATIVE AROMATIC HERBS USED IN FOOD

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Background: In the Republic of Moldova, there is a long-standing tradition of cultivating and using aromatic herbs in culinary practices. Beyond enhancing the flavor of meat and vegetable dishes, these herbs contribute to digestive health and support detoxification processes. Moreover, many aromatic plants are recognized as valuable sources of bioactive compounds with significant antioxidant potential, which are associated with various health-promoting effects.

The aim of this study was to evaluate the content and potential of biologically active compounds in selected native aromatic herbs.

Materials and methods: The study was carried out on a representative selection of widely consumed herbs: mint, dill, parsley, lovage, red basil, green basil, celery, rosemary, thyme, and lettuce. Active acidity and the content of simple sugars were determined in the juice extracted from fresh plant material. Total chlorophyll content, including chlorophyll a and chlorophyll b fractions, was determined spectrophotometrically using a UV-Vis-1800 spectrophotometer (Japan). Vitamin A content, expressed as β -carotene, was quantified following extraction with hexane and measurement of absorbance at 450 nm.

Results: The determination of dry matter content revealed considerable variation among the analyzed samples, ranging from 19.2% in thyme to a significantly lower value of approximately 7.8% in lettuce leaves. The active acidity (pH) of the herb extracts showed a narrow variation, with values between 6.85 in celery and 7.02 in parsley, indicating a slightly acidic to neutral character. The content of simple sugars varied from 2.55% in celery to 6.43% in mint, suggesting differences in metabolic composition among species. High chlorophyll content was observed particularly in mint (388 mg%), dill (370 mg%), and green basil (247 mg%), indicating their strong photosynthetic capacity and potential antioxidant activity. The assessment of vitamin A content, expressed as β -carotene, also demonstrated notable variability. Lovage exhibited the highest concentration (9.3 mg/100 g), followed by lettuce (7.56 mg/100 g) and dill (5.68 mg/100 g), whereas thyme recorded the lowest value (3.30 mg/100 g). These differences highlight the nutritional diversity of the studied herbs.

Conclusions: The investigated native aromatic herbs represent valuable sources of bioactive compounds, particularly chlorophylls and provitamin A (β -carotene), with significant nutritional and functional potential. The variability observed among species underscores the importance of their informed selection and combination in the diet to maximize health benefits. Furthermore, these findings support the potential application of aromatic herbs as functional ingredients in the development of health-oriented food products.

Keywords: bioactive compounds, aromatic herbs, chlorophyll, vitamin A, nutritional value

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