

## BIOLOGICAL POTENTIAL, HEALTH CAPACITY, AND FUNCTIONAL ACTIVITY OF EMULSION SYSTEMS OBTAINED BY INCORPORATING PLANT EXTRACTS

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### Abstract

The production of safe food with high quality is one of the most important topics nowadays. The researchers have been looking for innovative approaches to the preparation of a new generation of emulsified products that can serve as a matrix carrier for the incorporation of valuable components with high functional potential. New products may have the capacity to prevent cardiovascular and central nervous system diseases, oncological diseases, and atherosclerosis. Finding and identifying new properties and applications of medicinal plants containing biologically active ingredients is of great importance in the future. Medicinal plants and their secondary metabolites are subject of interest in the pharmaceutical and food industries. In the article, the three valuable species of herbs: hawthorn fruit (*Crataegus monogyna*), thistle (*Onopordum acanthium* L.), thyme (*Thymus callieri*) and their potential for incorporation in food emulsions are reviewed.

One hundred seventy-three literary sources were studied - studies of various scientific groups around the world. The research covers a significant range of results concerning plants as a source of biologically active substances, and the integration of plant extracts into food products. The antioxidant potential and chemical composition of plants as a bio-component for food matrices have been studied. A thorough characterization of the chemical composition, pharmacological activities, and biological potential of three plants distributed in the Republic of Bulgaria - hawthorn fruit (*Crataegus monogyna*), thistle (*Onopordum acanthium* L.), and thyme (*Thymus callieri*) was made. Their application in the food industry was studied. The potential possibilities for the preparation of food emulsion systems with the addition of plant sources have been examined. A broad overview of the innovative modern approaches for obtaining a new generation of emulsion products was made.

The present review evaluates the possibilities of enhancing the biological potential and health effects of edible emulsion dispersion systems by incorporating plant extracts of medicinal plants into them.

**Key words:** *Biological potential, Secondary metabolites, Emulsions.*