Review paper
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FOOD INDUSTRY APPLICATIONS OF PROPOLIS: A REVIEW

Yulian Tumbarski[1*], Mariyana Topuzova[2], Mina Todorova[3]

[1]Department of Microbiology, University of Food Technologies, Maritsa Blvd. 26, 4002 Plovdiv, Bulgaria
[2]Department of Organic Chemistry and Inorganic Chemistry, University of Food Technologies, Maritsa Blvd. 26, 4002 Plovdiv, Bulgaria
[3]Department of Organic Chemistry, "Paisii Hilendarski" University of Plovdiv, Tsar Asen 24, 4000 Plovdiv, Bulgaria

[*]e-mail: tumbarski@abv.bg

Abstract

Nowadays, the increasing consumer's demands for fresh and minimally processed foods without chemical additives attracted the research attention on some novel methods in food industry and use of natural compounds as alternative of chemical preservatives. As a unique natural product obtained from beekeeping, propolis possesses a wide range of biological activities and health benefits that can be used in food production and biopreservation. Propolis (bee glue) is a sticky resinous substance that is collected and processed by honey bees (*Apis mellifera* L.) from various plant sources such as flowers, leaf buds and tree exudates, and serving as a building and defensive material in their hives. This review discusses the trends in application of propolis as a safe, innovative and promising approach to quality improvement and natural preservation of different food products.

The broad antimicrobial spectrum of propolis against spoilage microorganisms and foodborne pathogens offers a great variety of applications in food industry for biopreservation of meat, fish and poultry products, eggs, milk and dairy products, perishable fruits, vegetables, fruit juices and other beverages. In addition to its antimicrobial potential, the strong antioxidant properties of propolis can contribute to increase the nutritional value of the products or to retard the lipid oxidation and protein degradation of processed foods. For this purpose, propolis can be added directly to the food matrix in the form of an extract, to be applied on the surface of the product as a bioactive film or edible coating, or to be included in the composition of food biopackaging materials, thus preventing the food spoilage and enhancing the storage life of the food products.

The present study on the applications of propolis in the food industry worldwide and its valuable properties reveals the potential of this natural product as a food additive, as a functional food ingredient, and as a prospective food biopreservative agent prolonging the shelf-life and improving the quality of food products.

Key words: *Propolis, Bee products, Natural products, Food biopreservation, Functional foods.*