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Potential impact of packaging type material in beer quality

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Abstract

Background: The materials in which beverages are packed are crucial to maintain quality, nutritional properties, and safety of the final product. In what beer concerns, and even under optimal storage conditions, its quality deteriorates as the product approaches the expiration date, regardless of the container type in which it is packed [1]. Therefore, a careful selection of packaging is imperative to maintain beer's integrity and quality, when tasted by the consumer. **Objective:** This work aims to discuss how the type of beer packaging influences the integrity and quality of this beverage during storage. **Methods:** A literature review was performed, using PubMed, b-on, and Web of Science databases. Articles related to the influence of packaging types on beer quality, in English, and published in the last 5 years were included. **Results:** Plastic bottles (PB) proved to be the least suitable type of packaging for long-term storage, as beer exhibits significant changes in volatile compounds, turbidity, color, bitterness intensity, and decrease in CO₂ content, unlike glass bottles (GB), aluminum cans (AC), and stainless steel kegs (KG), where these parameters remain constant [1-3]. Furthermore, Brown GB proved to be a more effective barrier against light compared to green GB and PB, as well as containing lower amounts of phthalates than beers in PB and AC [4,5]. AC was capable of retaining all organoleptic characteristics, showing a slight increase in bitterness after 10 months of storage [1]. However, beers stored in AC were characterized by higher aluminum contents compared to the products stored in glass bottles [6]. **Conclusions:** The beer packaging material plays a crucial role in its quality. Thus, GB, AC and KG, due to their barrier characteristics and protection against external factors, generally outperform PB in preserving the integrity and quality of beer.

Keywords: beer; packaging material; quality

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