

tea beverage chains are also expanding in both domestic and overseas markets. Tea beverages have become an important part of leisure consumption, especially among young consumers, and the industry is characterized by intensified competition, rapid product iteration, and increasing demand for differentiated ingredients and flavors (Huang, 2025). At the same time, the tea industry is also facing the need to transform toward low-carbon, ecological, and deep-processing development. Policy and market forces are jointly promoting the extension of the tea industrial chain and the development of health drinks, functional ingredients, and related derivative products (Zhang et al., 2024). Currently, consumer demand is gradually shifting from traditional hot-brewed tea toward convenient, standardized, and ready-to-drink tea beverage products, while still emphasizing health attributes and natural sources (Lu and Liu, 2025; Yang, 2025). Against this background, Hangbaiju, which combines medicinal value, beverage value, and regional cultural characteristics, has ushered in an important opportunity for transformation from traditional flower tea to modern functional tea beverages.

Hangbaiju has the characteristics of relatively high safety, refreshing flavor, and clear functional components, which align well with consumer demand for natural antioxidant, anti-inflammatory, and plant-based health beverages (Lu and Liu, 2025). In addition to traditional chrysanthemum tea, new products such as compound herbal teas, cold-brew teas, ready-to-drink tea beverages, and chrysanthemum functional drinks have continued to emerge, further expanding the consumption scenarios and market space of Hangbaiju. Scholars have pointed out that Chinese herbal teas and flower teas should transform from loose and traditional forms into fast, convenient, and standardized beverage formats, and reach young consumers and international markets through modern channels such as e-commerce and social media (Yang, 2025). Therefore, the development of Hangbaiju tea beverage products is not only a modern utilization of traditional medicinal and edible resources, but also an important pathway connecting traditional herbal culture, modern lifestyles, and global health consumption trends. Although market demand continues to expand, the Hangbaiju industry still faces problems such as insufficient product development depth, obvious product homogenization, limited deep-processing capacity, weak coordination between upstream and downstream sectors, and insufficient influence of regional public brands. These factors restrict, to some extent, the value enhancement and sustainable development of the Hangbaiju industry.

This study explores the development of Hangbaiju tea beverage products and industrial chain extension. On the basis of analyzing Hangbaiju's resource advantages, industrial foundation, and changes in market demand, it systematically reviews the development directions of Hangbaiju tea beverage products, key processing technologies, industrial chain extension pathways, and strategies for brand promotion and integrated development. Existing studies on Hangbaiju have mostly focused on component analysis, extraction technologies, and functional evaluation, and have verified its application value in food forms such as tea beverages and nutritional drinks. However, research integrating these technical foundations with industrial chain upgrading remains relatively insufficient, particularly in areas such as standardized raw material base construction, low-carbon processing, diversified product development, brand building, and domestic and international market expansion. Therefore, this study aims to clarify feasible pathways for transforming Hangbaiju from traditional dried flower products into standardized, functional, and branded tea beverage products, promote the high-value utilization of Hangbaiju resources, support the development of regional characteristic industries, enrich the functional tea beverage product system, and provide a reference for the transformation, upgrading, and global expansion of Chinese traditional tea and herbal beverage industries.

2 Development Directions of Hangbaiju Tea Beverage Products

2.1 Upgrading traditional hangbaiju tea beverage products

Traditional Hangbaiju tea beverages are mainly consumed by brewing dried flowers and are characterized by simple preparation, a broad consumer base, and an elegant floral flavor. However, with growing consumer demand for high-quality, convenient, branded, and functional products, single-form flower tea products can no longer fully reflect the comprehensive value of Hangbaiju resources. Studies on functional beverages indicate that consumers are increasingly concerned with natural bioactive compounds, health benefits, and product stability. Therefore, traditional herbal beverages need to enhance their market competitiveness through clarification of