Ribeirão Preto Beer: Craft Brewing Innovation and Geographical Indication as Catalysts for Economic and Cultural Development

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Abstract

Ribeirão Preto, historically recognized as Brazil's "capital of draft beer," has played a central role in the country's brewing tradition since the late 19th century. Initially, the region was propelled by small-scale Italian immigrant breweries and later by large industrial players, but it experienced a decline in the mid-20th century. However, the craft beer movement, which emerged in the mid-1990s, has revitalized the local beer industry. Efforts to secure a Geographical Indication (GI) for the region's beer catalyzed crucial cooperation with academic institutions, particularly the Federal Institute of Education, Science and Technology of São Paulo - campus Sertãozinho (IFSP). This collaboration led to the establishment of a beer research center (the Multidisciplinary Center for Brewing Technology), a Technical Brewing Program, and joint research projects between breweries and the university, enhancing the local industry through technological support and innovation.

These initiatives have significantly contributed to the region's economic development, fostering job creation, local tourism, and the expansion of small and medium-sized breweries. A key project within this framework is the Manipueira Project, an initiative led by the Brazilian Association of Craft Breweries (ABRACERVA) in collaboration with IFSP and breweries across Brazil. The project explores the use of *manipueira* (cassava wastewater) in beer fermentation, focusing on terroir as the locally sourced *manipueira* imparts distinctive regional characteristics to each brew. This research blends indigenous Brazilian brewing traditions with modern techniques, positioning Brazil as a global innovator in terroir-driven brewing, while also promoting the use of native ingredients.

Moreover, the Multidisciplinary Center for Brewing Technology at IFSP has been pioneering Industry 4.0 innovations, with a strong emphasis on sustainability. The application of advanced technologies, such as automation, data analytics, and process control systems, has optimized resource use, reducing energy and water consumption during brewing. These practices align with broader sustainability goals, making the brewing process more efficient and environmentally responsible. By integrating these cutting-edge technologies with traditional brewing methods, Ribeirão Preto exemplifies how cultural heritage and technological advancements can harmoniously drive sustainable industry growth.

This paper shows a scenario in which GI can function as a strategic tool for promoting both

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economic development and the preservation of cultural identity. The collaboration between academia, local industry, and government initiatives underscores the potential of innovation to foster a dynamic, sustainable craft brewing sector that respects historical traditions while advancing toward modern practices. These insights offer valuable perspectives on the roles of territorial branding, sustainability, and local collaboration in shaping the future of craft brewing.

Keywords: Craft brewing, Geographical indication, Sustainability, Industry 4.0, Manipueira fermentation