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Assessment of raw materials requirements and by-products production in the Irish brewing and distilling sector

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Statement of the Problem: In Ireland, there is a proportionate increase in the demand of raw materials for the brewing and distilling sector emanating from increased production output of the sector. For a sustainable production process, there is a need for a strong base for supply of raw materials input and a sustainable outlet for the by-products. Hence, two key issues for the sector in this regard are: providing raw materials input on a sustainable basis and finding additional added value uses for by-products of the sector. The study aimed to provide quantitative and qualitative data on raw materials input and by-products production as well as proffer valorisation initiatives for by-products of the sector. **Methodology & Theoretical Orientation:** An online survey was conducted to ascertain the status of raw material inputs and by-products production within the sector. Samples of wastewater were collected to study the chemistry of wastewater produced by the sector and its implications for the environment. Distilled gin spent botanicals (DGSB) was selected for valorisation. DGSB samples were collected and evaluated for its chemical profile, polyphenolic content, and antioxidant activity. **Findings:** Survey data showed average input and output for raw materials and by-products per unit of product, import dependency of the sector, and current management practices for the by-products. The wastewater quality assessment showed physicochemical properties of the wastewater samples. Characterisation of DGSB showed that the DGSB samples can become an important source of essential minerals and can also be utilised as a natural and potent source of polyphenols and antioxidants in functional food development. **Conclusion & Significance:** Raw materials and by-products are important sustainability markers for the Irish brewing and distilling sector. Therefore, the sector requires provision of raw materials on a sustainable basis and valorisation initiatives for the by-products.

Biography

Ekene studied BSc and MSc Food Science at the University of Nigeria, Nsukka. His MSc thesis explored entomophagy as a non-traditional approach to sustainable diet consumption by its incorporation in gluten free diets. He also did one year research study after his MSc at Jiangsu University China where he studied the effects of ultrasound assisted fermentation processes. At present, he is pursuing a PhD in Food Science at TU Dublin where he is exploring sustainability strategies for the Irish brewing and distilling sector. He has published works in peer-reviewed journals in the areas of food product development, ultrasound assisted processes, sustainable diets, food wastes/by-products valorisation and sustainable food production. He has presented his PhD work at both national and international conferences and, to stakeholders and experts in the food and drinks industry including Department of Agriculture Food and the Marine Ireland, Drinks Ireland and Institute of Brewing and Distilling.

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