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Development of Functional Corn Silk Beverages: Impact of Fermentation, Drying, and Infusion Methods on Bioactive and Sensory Attributes

[Durratul Zanan Aunu](#), [Shumia Islam Shampa](#), [Rubayat Binte Amir Santa](#), [Nushrat Yeasmen](#),
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This article is part of Special Issue: **Biochemical innovations in food waste valorization**

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Abstract

Corn silk is an underutilized agricultural byproduct rich in bioactive compounds, yet its application in functional beverages is limited by poor extractability, processing losses, and suboptimal sensory quality. This study investigated the combined effects of lactic acid fermentation, drying methods, and infusion conditions on the nutritional, phytochemical, structural, and sensory attributes of cornsilk-based beverages. Corn silk was fermented using lactic acid bacteria and subsequently processed by sun drying, steamed vacuum drying, fermented preparation of hot and cold infusions. Have questions about this content? Try AI Companion. significantly enhanced protein, ash, and fat. Microstructural (SEM) and FTIR analyses revealed matrix loosening and protein conformational changes that favored phytochemical release. Fermented vacuum-dried

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Investigating the Feasibility of Developing Yarns and Socks from Corn Silk Fibers

by Muhammad Nadeem ¹, Muhammad Irfan ^{1,*}, Abdul Basit ¹, Ali Afzal ^{1,*}, Hafsa Jamshed ¹, Liliana Indrie ^{2,*} and Adina Albu ²

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Abstract

The growing demand for sustainable and functional textiles has prompted exploration of novel natural fibers from agricultural by-products. This study investigates the feasibility of utilizing corn silk fibers, an abundant agro-waste from corn processing, as a blend component with cotton for yarn and knitted product development. Corn silk fibers were blended with cotton to produce ring-spun yarns, which exhibited tenacity, elongation, and hairiness comparable to pure cotton yarns. The tenacity and elongation of the cotton yarn were 16 cN/Tex and 5.46%, while those of

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