

Booklet studentische Arbeiten (student projects) - Template

Author of the Bachelor's Thesis:

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Research Group:

Food Technology

Title of the Bachelor's Thesis:

Ultra-Fine Grinding of Coffee Silverskin and Spent Coffee Ground: Exploring Feasibility and Potential Use in 'Chocolate' Bar Production

Text:

This bachelor's thesis explores ultra-fine grinding of coffee silverskin (CS) and spent coffee grounds (SCG) ($< 10 \mu\text{m}$) and the applicability of CS and SCG in chocolate as a promising end product application. As a part of the ZHAW project 'Valorization of Swiss Agri-Food Side Streams' (VALISS), it endeavors to repurpose food industry by-products with a focused lens on CS derived from coffee roasting and SCG derived from coffee extraction.

While the tested wet techniques like agitated bead milling and three-roll milling did not yield the desired particle size distribution, the potential for effectively producing ultra-fine particles remains an interesting pursuit, demonstrating the need to further investigate the ultrafine grinding of CS and SCG.

The exploration into the incorporation of CS and SCG in 'chocolate' bars has yielded promising results, boasting a 10 - 20 % reduction in sugar content and the elimination of traditional emulsifiers, seemingly without noticeable sensory or textural compromise.

This bachelor's thesis sheds light onto the potential of coffee by-products as transformative ingredients, paving the way for sustainable food practices through the ingenious utilization of by-product resources.