

Leftover Coconut Pulp: An Alternative for Dietary Fibre GlutenFree Products

ABSTRACT

Gluten, a protein found in various grains, plays a crucial role in providing the elasticity and structure of food products. However, for individuals with gluten intolerance (GIP), adhering to gluten-free diets is necessary, which can lead to a decrease in dietary fibre intake essential for maintaining intestinal health. Moreover, gluten-free products are often more expensive. This study focuses on developing an optimal formulation for a high dietary fibre gluten-free alternative flour using leftover coconut pulp, an agricultural waste product. The study involved physical experiments, including milling yield, water activity, and colour analysis, to determine the ideal drying time and temperature for producing leftover coconut pulp flour (LOCPF). Various drying times (2, 3, and 4 hours) at temperatures of 40, 50, and 60°C were tested. The results of the physical analysis revealed that LOCPF dried at 40°C for 3 hours yielded the most favourable outcomes, with a higher milling yield ($51.43 \pm 0.15\%$), maintained acceptable water activity levels (0.53 ± 0.01), and colour properties closely resembling those of wheat flour, the control sample. This study suggests that Leftover Coconut Pulp Flour (LOCPF) is a promising high dietary fibre gluten-free flour alternative for individuals with gluten intolerance. Furthermore, LOCPF has the potential to contribute to waste reduction by utilizing agricultural by-products, reduce the cost of gluten-free products, and simultaneously enhance the dietary fibre content of gluten-free diets.