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Assesment of incorporating pineapple bagasse as a raw material in the bakery industry

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The objective of this study was to determine the possibility of using industrial fruit processing by products (FPBP) such as fruit peel, skin, seed or pulp (bagasse) with value addition in the food industry. Among the major fruits used in fruit processing, pineapple has the highest wastage value of 65%, which has a potential to be used for vinegar production and as a source of dietary fiber. Pineapple fruit waste is identified as four types, viz., crown and stem, first peel, second peel, and pulp waste, which is 20%, 35%, 26%, and 19% of average wastage, respectively. This study analyzes the value of using pineapple pulp bagasse (PPB) as a dietary fiber source in the food industry. PPB was collected from a selected fruit processing company and dehydrated at 60°C overnight to obtain the dry pineapple pulp powder (PPP) which (425µm, mesh size) had 0.38 water activity. The proximate composition of PPP showed moisture 6.66±0.06%, ash 2.35±0.06%, crude fat 2.49±0.94%, crude protein 4.10±0.01%, dietary fiber 32.53%, and carbohydrate 51.87% on dry basis. The water holding capacity (WHC) and oil holding capacity (OHC) of the prepared flour were 5.14±0.25mL/g and 6.48±0.20 g/g respectively. The soluble dietary fiber fraction mainly determines the hydration property (WHO and OHC) of foods. As value addition to a bakery product, muffins was prepared with different PPP and cake flour ratios (0:100, 5:95, 10:90, 15:85 and 20:80). The 5-10% substitution muffin got the highest preference over 80 untrained panelists. In conclusion, the pulp powder prepared from industrial fruit waste can be combined with soft wheat flour in the bakery industry. Value addition of bakery products simultaneously gives an economically viable application for the industrial fruit waste.

Key words: Industrial Fruit Processing by Products, Pineapple Pulp Powder, Proximate Composition, Dietary Fiber, Food Industry.

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