A REVIEW ON UTILIZATION OF RED DRAGON FRUIT PEEL AS PREBIOTIC AND NATURAL INGREDIENT

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(Nurul Ain Binti Esa)

ABSTRACT

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The waste utilization of the fruit processing industries has arisen as one of the challenging elements in the globe due to the production of enormous volumes of by-products, such as peels, seeds, and discarded flesh. Fruit peel is thought to make up at least 20% of the weight of fresh fruit. Fruit peels are regarded as an important dietary fiber source and are expected to function well as prebiotics. In this review, the chemical composition, natural and prebiotic properties of red dragon fruit *(Hylocereus polyrhizus*) peel are comprehensively scrutinized. These peels are rich in water, nutrients, fiber, including abundance of vitamins, minerals, and antioxidant. The potential health benefits of these bioactive and natural compounds as prebiotics and other value-added products are discussed. This study provides insight on the development of the products and the bioactive compounds from dragon fruit peels for human use.

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CHAPTER 1

INTRODUCTION

1.1 Background of study

Waste management, often known as waste disposal, refers to all processes used to control surplus or unwanted resources from production to final disposal. After water quality, the management of solid waste is the subject that concerns the emerging nations the most (Rabiu et al., 2018). Food waste is one of the compositions of the solid waste and 50% of the food waste is fruits and vegetables waste or residue, and root crops (Gupta et al., 2019). It is crucial to manage industrial fruit by-products to reduce the amount of food waste that ends up in landfills and to create strategies for reuse and recycle that will allow for economic value addition and valorisation. Based on Campos et al. (2020), food waste disposal results in various worldwide problems in various fields, including social, environmental, and economic. Thus, the waste must be utilized into another product or function to reduce the waste and save the environment.

According to Guarino et al. (2020), in 1995, Gibson and Roberfroid have described prebiotic as “non-digestible food elements that benefit the host by selectively boosting the growth and/or activity of one or a limited number of bacteria in the colon, and thereby enhances the host health.