

An innovative reduced-calorie food made with konjac for diabetics

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Background

Diabetes Mellitus (DM) is a common chronic disease in Hong Kong. Type II (DM) patients are required to limit their carbohydrates intake to control their blood glucose to a reasonable level. This means sugar and calorie intake control are very important to alleviate the conditions for these patients. To provide consumers with more choices for healthy food, this project seeks to produce a reduced-calorie healthy food with konjac.



Objectives

- To develop a low-calorie glutinous rice dumpling with konjac.
- To optimize the best formula for making a glutinous rice dumpling of good eating quality with konjac powder.
- To replace the white sugar with a sweetener like trehalose, aspartame, and xylitol for lowering the calories.
- To apply a creamy filling with antioxidant-rich food sources of avocado, taro, green tea, and tofu for glutinous rice dumpling.



Methodology

First stage: Control product
The traditional recipe is used to try and make a successful glutinous rice dumpling first.

Second stage: Trial production
Several testings are conducted to find out the best formula for making glutinous rice dumplings with suitable textures and sweetness.

Third stage: Product development with new filling flavor
Different creamy ingredients used contain low sugar or benefits to patients with diabetes, such as taro and bean paste, to make a mousse-like filling. To lower the calories and make it a healthier dumpling, avocado and skim milk are also be used to replace the cream that needs to be used for making the mousse.

Final stage: Evaluation
125 students are invited to do the survey. They were asked to complete a questionnaire about their preference for the healthy reduced-calorie konjac glutinous rice dumpling. In the survey, the preference and understanding of the normal glutinous rice dumpling are investigated. Also, the acceptance and interest of new fillings flavor can be examined.



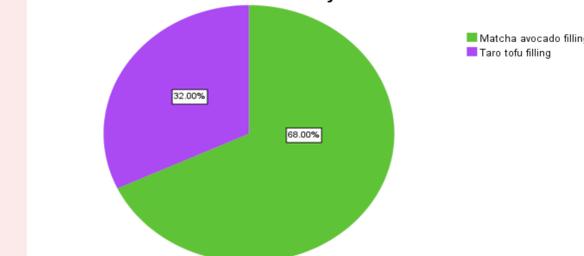
Findings

The best ratio of konjac powder and glutinous rice flour was found to be 1:6.5, and the calorie of the dumpling reduced by at least 15%. Taro tofu filling and matcha avocado filling were developed. About 97.6% of the surveyed respondents were interested in the new konjac glutinous rice dumpling. Furthermore, most of the respondents would like to try the two new fillings but more people were willing to try the matcha avocado flavor.

Are you interested in a reduced calories konjac glutinous rice dumpling?



Which filling of konjac glutinous rice dumpling you are more willing to try?



Conclusion

Low-calorie healthy glutinous rice dumplings with konjac are developed



More people can enjoy this traditional dessert, especially patients with diabetes.