PHYSICOCHEMICAL CHARACTERIZATION OF EDIBLE BIRD NEST EXTRACT AS FUNCTIONAL INGREDIENTS IN THE INSTANT SOUP APPLICATION.

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2022

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This report is submitted in partial fulfillment of the requirements
needed for the award of
Bachelor of Chemical Engineering (Environment) with Honours

CENTRE FOR CHEMICAL ENGINEERING STUDIES
UNIVERSITI TEKNOLOGI MARA

AUG 2022

ACKNOWLEDGEMENT

First and foremost, I am thankful to God for giving me strength and guidance to finish this report. Special thanks to my final year project supervisor, Ts. Mohamed Syazwan bin Osman for all the guidance and support throughout the completion of this report. The encouragement, advice and constructive critiques have expanded my horizons and improved me to the next level of path and works. Next, I would like to express my appreciation to all my FYP colleagues, Muhammad Ikhwan, Raja Nurezzatul Husna and Arbaie who have been working with me and always extends their hands, idea and support whenever I found difficulties regardless in classes or laboratory works. They were always there to help me whenever I need them. Last but not least, my thanks also go to my parents and family for giving me such as worthwhile, motivational, financial support and love throughout my thick and thin. To all of you who involved directly or indirectly to lend your hands in, I shall convey my sincere appreciations from bottom of my heart. May Allah bless all of you. Thank you.

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ABSTRACT

Edible bird nest (EBN) is one of the natural resources that rich in functional properties such as protein and carbohydrate. However, recently, there is lack of study regarding to the EBN protein extraction. This is believed due to the lack of standardize protein extraction method. On top of that, the current work was caried out to compare the physicochemical characterization of EBN hydrolysate with different type of extraction method. Alkaline hydrolysis and heat extraction method are both methods that will be compared. Four type of analysis that will be operate is yield, viscosity, FTIR and DPPH assay. The viscosity for all the EBN samples were in the ranges of 2000 to 3000 mpa.s. This is believed due to the same type of drying method. The absorption spectrum shows the functional group that present in the EBN samples. A broad absorption band in the 3 267.22-3 275.29 cm^{-1} range was discovered and identified as hydrogen bonded (O-H) stretching vibration indicating the moisture content in the sample. Besides, at the peak that near to 1400 cm^{-1}, the existence of polysaccharide group. Then, the formulation of EBN based instant soup would be done by using Response Surface Method (RSM). The design used to for this formulation is Centre Composite Design. EBN, mushroom powder, and skimmed milk percentage weight are the manipulated variable that will be the factor in this formulation. This formulation will be run by using Design Expert 13^{th} edition software. After the optimization, the optimum condition to formulate EBN based instant soup with high value of antioxidant activity are 39.54% of EBN, 18.64% of mushroom powder and 18.96% of skimmed milk. The percentage error obtained from the predicted antioxidant activity by RSM compared to actual antioxidant value is 5.32% which less than 10 %. This shows that the model is valid to be used.