ANTIOXIDANT STUDY OF EXTRACTED *Areca catechu* NUT AND ITS POTENTIAL AS HAIR OIL'S ADDITIVE

FATIN ATIQAH BINTI MOHAMMAD ADZUAN

BACHELOR OF SCIENCE (Hons.)
CHEMISTRY WITH MANAGEMENT
FACULTY OF APPLIED SCIENCES
UNIVERSITI TEKNOLOGI MARA

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FATIN ATIQAH BINTI MOHAMMAD ADZUAN

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Madam Shafinas Binti Abdullah
Supervisor
Faculty of Applied Sciences
Universiti Teknologi MARA
02600 Arau
Perlis

Dr. Siti Nurlia Ali
Program Coordinator
Faculty of Applied Sciences
Universiti Teknologi MARA
02600 Arau
Perlis

Dr. Zuliahani Ahmad
Head Centre of Studies
Faculty of Applied Sciences
Universiti Teknologi MARA
02600 Arau
Perlis

Date: FEBRUARY 2023

ABSTRACT

ANTIOXIDANT STUDY OF EXTRACTED *Areca catechu* NUT AND ITS POTENTIAL AS HAIR OIL'S ADDITIVE

Hair loss affects more than 80% of men and nearly half of women especially as they approach middle age or experiencing the stress of difficulties in daily lives. Nowadays, too many hair care products are based on synthetic formulations. Not only that, but many manufacturers of hair care products are more concerned about the amount of production that can be sold than the quality and safety of consumers. Thus, this study aimed to identify the chemical constituents in Areca catechu nut extract by using the phytochemical screening and FTIR analysis, to examine the antioxidant properties using the total phenolic content (TPC), DPPH free radical scavenging assay and to formulate and analyze the hair oil using extracted *Areca catechu* nut. The dried *Areca catechu* nut was successfully extracted by maceration extraction technique with the percentage yield of 41.46%. The phytochemical screening showed the presence of alkaloid, flavonoid, tannins, saponin and phenolic while the FTIR analysis revealed the predominant functional group of alcohol and carbonyl group at peak 3321 cm^{-1} and 1044 cm^{-1}. The antioxidant activity demonstrates that the ethanolic extracts of *Areca catechu* nut showed the highest inhibitory DPPH free radical up to 93.79% at 100 ppm. The total phenolic content obtained in this study is 10.38 mg GAE/g. The hair oil was successfully prepared, and stability tests included pH, irritation and organoleptic were analyzed. Hence, this formulation with the addition of *Areca catechu* nut has a great potential to be commercialized as a potent natural product hair oil that can help in reducing hair loss and promotes hair growth.

TABLE OF CONTENTS