

DEVELOPMENT OF BISQUITS FROM *Antennaria cubillaris*
(composites)

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Development of biscuits from *Artemisia capillaris* (*Compositae*)

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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any degree at UMT or other institutions.

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ABSTRACT

Yin Chen Hao (*Artemisia capillaris*) was made into biscuits, namely *A. capillaris* biscuits. Three formulations were developed using same methods - grounded *A. Capillaris*. The differences were based on the amount of grounded *A. capillaris* added into the biscuits which is Formulation A (1% of grounded *A. capillaris*), Formulation B (3% of grounded *A. capillaris*) and Formulation C (5% of grounded *A. capillaris*). This food items was subjected to physical and chemical analysis as well as comparative sensory evaluation. The sensory profile and acceptability of three formulations of *A. capillaris* biscuits were measured. A total of 100 panels were involved in this test. Results revealed that *A. capillaris* biscuits with 1% addition of grounded *A. capillaris* which is Formulation A were the most accepted (mean score – 5.08). The hardness of *A. capillaris* increased as the amount of grounded *A. capillaris* added into *A. capillaris* biscuits. A dissimilar result was observed in fracturability. *A. capillaris* biscuits gave higher reading of fracturability as the amount of grounded *A. capillaris* is lowest. The colours of *A. capillaris* biscuits become darker as the amount of grounded leaf is increased. It is same with the greenness of biscuits; it's become more greenish as the amount of grounded *A. capillaris* added into the biscuits is increased. Formulation C contained more moisture than the other two formulations. Protein content of *A. capillaris* biscuits were the highest in formulation C (62.87% of protein) than Formulation B and A (56.00% and 53.60% of protein). Formulation C showed the higher fat content (5% of grounded *A. capillaris* contained 24.11% fat) than Formulation B and Formulation A. fiber content of *A. capillaris* biscuits were the highest in Formulation C (0.34% of fiber). It was found that in overall, *A. capillaris* biscuits made from 1% of grounded *A. capillaris* produced better acceptance by most panels.

Penghasilan biskut daripada *Artemisia capillaris* (*Compositae*)

ABSTRAK

Yin Chen Hao (*Artemisia capillaris*) telah dijadikan biskut, biskut *A. Capillaris*. Sebanyak tiga formulasi telah di hasilkan menggunakan kaedah yang sama. Perbezaannya adalah berdasarkan jumlah amaun serbuk *A. capillaris* yang ditambah ke dalam setiap formulasi yang mana formulasi A (1% serbuk *A. capillaris*), formulasi B (3% serbuk *A. capillaris*), dan formulasi C (5% serbuk *A. capillaris*). Produk ini kemudiannya digunakan untuk analisis fizikal dan juga kimia serta penilaian sensori. Profil sensori dan juga tahap penerimaan bagi ketiga-tiga formulasi telah di ukur. Sebanyak 100 orang panel tidak terlatih telah terlibat dalam ujian penilaian sensori yang telah di jalankan. Keputusan telah menunjukkan bahawa biskut *A. capillaris* dengan penambahan sebanyak 1% serbuk *A. capillaris* (formulasi A) adalah yang paling di sukai oleh panel (purata skor- 5.08). Nilai kekerasan (hardness) bagi biskut *A. capillaris* meningkat seiring dengan pertambahan jumlah serbuk *A. capillaris*. Keputusan berbeza didapati bagi 'fracturability' biskut yang terhasil. Biskut *A. capillaris* memberi nilai bacaan yang tinggi apabila jumlah serbuk *A. capillaris* adalah sedikit. Bagi warna pula, Warna bagi biskut *A. capillaris* yang terhasil menjadi semakin gelap apabila jumlah serbuk *A. capillaris* yang ditambah semakin meningkat. Hal yang sama didapati berkenaan dengan warna kehijauan biskut. Semakin banyak serbuk di tambah, semakin hijau warna biskut. Formulasi C mengandungi lebih banyak lembapan berbanding formulasi lain. Kandungan lembapan bagi biskut yang terhasil berada dalam lingkungan 0.53-0.63%. Kandungan Protein tertinggi bagi biskut *A. capillaris* dapat di lihat pada formulasi C (62.87% protein) berbanding dengan formulasi B dan A (56.00% dan 53.60%). Formulasi C menunjukkan nilai tertinggi bagi kandungan lemak (24.11% kandungan lemak). Nilai adalah yang tertinggi di antara ketiga-tiga formulasi. Nilai kandungan fiber bagi biskut *A. capillaris* yang terhasil adalah tinggi pada formulasi C (0.34%). Secara keseluruhannya, didapati biskut *A. capillaris* yang diperbuat daripada 1% serbuk *A. capillaris* mendapat penerimaan yang baik di kalangan panel.