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Determination of antioxidative activity and total phenolic compound in different parts (leaves, roots and petiole) of Yin Chen Hao (*Artemisia capillaris*) / Nellie Lourdsamy Jaya.

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Lihat Sebelah

HAK MILIK
PUSAT PEMBELAJARAN DIGITAL SULTANAH NUR ZAHIRAH

**DETERMINATION OF ANTIOXIDATIVE ACTIVITY AND
TOTAL PHENOLIC COMPOUND IN DIFFERENT PARTS
(LEAVES, ROOTS AND PETIOLE) OF YIN CHEN HAO
(*Artemisia capillaris*)**

NELLIE A/P LOURDSAMY JAYA

**RESEARCH PROJECT submitted in partial fulfillment of the
requirements for the Degree of Bachelor of Food Science (Food
Service and Nutrition)**

**FACULTY OF AGRO TECHNOLOGY AND FOOD SCIENCE
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DECLARATION

I hereby declare that this research project is based on my original work except for quotations and summaries that have been duly acknowledged.



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Date: 18 June 2007

Approved by,



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ABSTRACT

Yin Chen Hao or *Artemisia cappilaris* has been used to treat hepatitis, jaundice or fever and also as flavoring. The modern research has confirmed that the plant contains tonic and strengthening effect upon the liver, gallbladder and digestive system. The objectives of this study were to determine the highest antioxidant activity and total phenolic compound in the different parts of Yin Chen Hao (leaves, petioles and roots). The first stage of the study was conducted to evaluate the antioxidant activity in different parts namely leaves, petioles and roots in order to determine which give the highest antioxidants activity results. Methanol and ethyl acetate were used as an extraction solvent. Antioxidative assay were carried out using Ferric thiocyanate method (FTC) while total phenolic compounds (TPC) were determined using the Folin-Ciocalteau phenol method. Results from FTC showed the leaves from the ethyl acetate extracts shows the highest value antioxidant activity and there were not significantly different ($p < 0.05$) with α -tocopherol and BHT. While the roots sample from the methanol extracts showed the lowest antioxidant activity and were significantly different ($p < 0.05$) as compared to BHT but not significantly different ($p < 0.05$) with α -tocopherol. On the other hand the results for (TPC) showed the leaves from methanol extracts showed highest total phenolic compound but there were no significant different ($p < 0.05$) between the samples. The roots from the ethyl acetate extracts has shown the lowest total phenolic compound but there were significantly different ($p < 0.05$) with the leaves from the ethyl acetate extracts. Overall, Yin Chen Hao can be used as one of the natural antioxidant herbs because it is as good as the α -tocopherol and BHT.

PENENTUAN AKTIVITI ANTIOKSODAN DAN KANDUNGAN FENOLIK PADA BAHAGIAN YANG BERBEZA (DAUN, PETIOLE DAN AKAR) DALAM ARTEMISIA CAPILLARIS (YIN CHEN HAO)

ABSTRAK

Yin Chen Hao ataupun *Artemisia capillaris* telah digunakan dalam bidang perubatan untuk mengubati hepatitis, memyembuhkan penyakit kuning ataupun demam dan juga digunakan sebagai penambah perisa. Dalam penyelidikan moden ini, mereka telah mengesahkan bahawa tumbuhan ini mengandungi banyak kandungan tonik dan memberikan kesan ke atas hati, pundi hempedu dan juga system penghadaman. Objektif kajian ini adalah untuk menentukan tahap aktiviti antioksidan dan kandungan bahan fenol dalam daun, batang dan juga akar Yin Chen Hao. Peringkat awal kajian ini telah melibatkan penentuan tahap aktiviti antioksidan dalam pelbagai bahagian seperti daun, batang dan akar dalam Yin Chen Hao dengan tujuan untuk menentukan yang mana akan memberikan keputusan aktiviti antioksidan yang tertinggi. Metanol dan etil asetat digunakan sebagai pelarut untuk mengekstrak sampel. Analisis antioksidan dijalankan dengan menggunakan kaedah tiocianat ferik (FTC) manakala kandungan bahan fenol (TPC) dapat ditentukan dengan menggunakan kaedah Folin-Ciocalteu fenol. Keputusan daripada kaedah (FTC) menunjukkan ekstrak daun daripada etil asetat menunjukkan aktiviti antioksidan yang paling tinggi dan tiada perbezaan signifikan ($p < 0.05$) antara α -tocopherol dan BHT. Manakala, sampel akar daripada ekstrak metanol menunjukkan aktiviti antioksidan yang paling rendah dan terdapat perbezaan signifikan ($p < 0.05$) dengan BHT dan tiada perbezaan signifikan ($p < 0.05$) dengan α -tocopherol. Manakala bagi keputusan untuk (TPC) pula ia menunjukkan bahagian daun daripada ekstrak metanol mempunyai kandungan bahan fenol yang tertinggi dan tiada perbezaan signifikan ($p < 0.05$) dengan sampel yang lain. Manakala, akar daripada etil asetat ekstrak menunjukkan keputusan kandungan bahan fenol yang terendah dan mempunyai perbezaan signifikan ($p < 0.05$) dengan sampel daun daripada ekstrak etil asetat. Secara keseluruhannya, Yin Chen Hao dapat digunakan sebagai herba antioksidan yang semulajadi kerana ia adalah sebaik seperti α -tocopherol dan BHT.