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กวาวเครือขาว *Pueraria mirifica* ในประเทศไทย



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จุฬาลงกรณ์มหาวิทยาลัย

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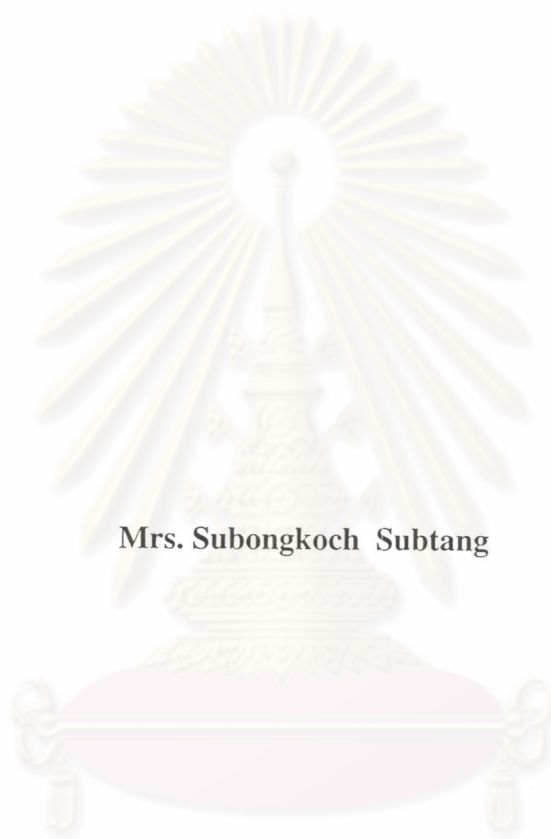
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**COMPARATIVE ISOFLAVONE HPLC FINGERPRINTS FROM
THE EXTRACTS OF WHITE KWAO KRUA *Pueraria mirifica*
IN THAILAND**



Mrs. Subongkoch Subtang

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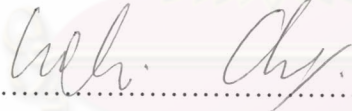
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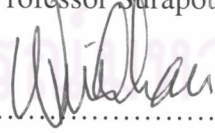

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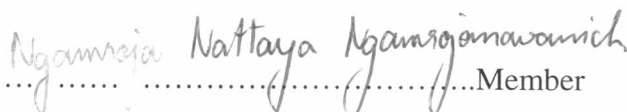
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การวิเคราะห์สารสกัดจากกวาวเครือขาว โดยเปรียบเทียบบรอยฟิมพ์ไอโซฟลาโวนของสารไอโซฟลาโวนจากการเตรียมสารสกัด 4 วิธีคือกวาวเครือขาวที่ผ่านการทำแห้งแบบพ่น ผงกวาวเครือขาวสกัดด้วยเมทานอล น้ำ หรือเอทานอล โดยมีสารมาตรฐานเป็น ฟิวราริน ไดด์ซิน เจนิสติน ไดด์เซอินและเจนิสเตอิน พบว่ากวาวเครือขาวที่ผ่านการทำแห้งแบบพ่นตรวจวัดปริมาณไอโซฟลาโวนได้สูงสุดคือ 109.66 มก/100 ก น้ำหนักผงแห้ง กวาวเครือขาวที่สกัดด้วยเมทานอลตรวจวัดปริมาณไอโซฟลาโวนได้ 54.58 มก/100 ก น้ำหนักผงแห้ง ซึ่งสูงกว่ากวาวเครือขาวที่สกัดด้วยน้ำ หรือเอทานอล ซึ่งตรวจวัดปริมาณไอโซฟลาโวนได้ 26.09 และ 6.09 มก/100 ก น้ำหนักผงแห้ง ตามลำดับ ผลการวิเคราะห์กวาวเครือขาวจาก 29 จังหวัด พบว่ามีความหลากหลายของปริมาณไอโซฟลาโวนรวมและ ไอโซฟลาโวนแต่ละชนิด กวาวเครือขาวที่ตรวจวัดปริมาณไอโซฟลาโวนได้สูงสุด คือ กวาวเครือขาวจากจังหวัดกาญจนบุรี (198.29 มก/100 ก น้ำหนักผงแห้ง) และต่ำสุดคือกวาวเครือขาวจากจังหวัดน่าน (18.85 มก/100 ก น้ำหนักผงแห้ง) กวาวเครือขาวที่เก็บจากแหล่งต่างกัน ภายในจังหวัดเดียวกันตรวจวัดปริมาณไอโซฟลาโวนได้แตกต่างกันมาก การวิเคราะห์กวาวเครือขาวที่เก็บตัวอย่างจากแปลงปลูก พบว่า กวาวเครือขาวสายพันธุ์ดอยเต่า และ สายพันธุ์ชัยปราการที่ปลูกในสถานที่ต่างกัน เก็บเกี่ยวในฤดูต่างกัน ตรวจวัดปริมาณไอโซฟลาโวนได้แตกต่างกัน กวาวเครือขาวที่ขยายพันธุ์จากต้นแม่เดียวกัน และมีพัฒนาการของหัวต่างกัน ตรวจวัดปริมาณไอโซฟลาโวนได้แตกต่างกัน ปัจจัยที่มีผลต่อปริมาณไอโซฟลาโวนคือ บริเวณที่ปลูก ฤดูเก็บเกี่ยว และพันธุ์กรรมของกวาวเครือขาว

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The comparative HPLC fingerprint assay for isoflavone content in *P. mirifica* was established with four different preparation methods including spray dry, methanol, ethanol and water extraction and with the aid of 5 isoflavone reference standards including puerarin, daidzin, genistin, daidzein and genistein. It was found that spray dried powder established highest isoflavone content (109.66 mg/100 g powder). Methanol extract sample established the highest amount of isoflavone, 54.58 mg/100 g powder compared with 26.09, 6.90 mg/100g powder established by water and ethanol extracted, respectively. The analysis from 29 collected samples represent the provincial distribution revealed a great diversity of both total and individual assayed-isoflavone. The maximum and minimum amount of isoflavone was found in the sample collected from Kanchanaburi (198.29 mg / 100 g powder) and Nan province (18.85 mg / 100 g powder), respectively. The different collected site in the same province was found influenced to the amount of detectable isoflavone content in the wild plants. Analysis of the cultivated plants revealed that *P. mirifica* clone Doi Tao and Chaiprakarn grown in different location, harvest in different season have different isoflavone content. *P.mirifica*, from clonal propagation with different in differentiation stage of the tubers showed difference in isoflavone content of the tubers.

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ABBREVIATIONS

cAMP	= Adenosine 3', 5'-cyclic monophosphate
cm	= Centimetre
g	= Gram
HPLC	= High Performance Liquid Chromatography
IC ₅₀	= Median Inhibitory Concentration
m	= Metre
µg	= Microgram
ml	= Microlitre
mg	= Milligram
min	= Minute
nm	= Nanometre
RT	= Retention time
SE	= Standard error
UV	= Ultraviolet

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

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