

**Thesis Title**      Determination of Paraquat from the Surface of  
Treated Weeds

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**M.S.**                  Environmental Risk Assessment for Tropical  
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### **ABSTRACT**

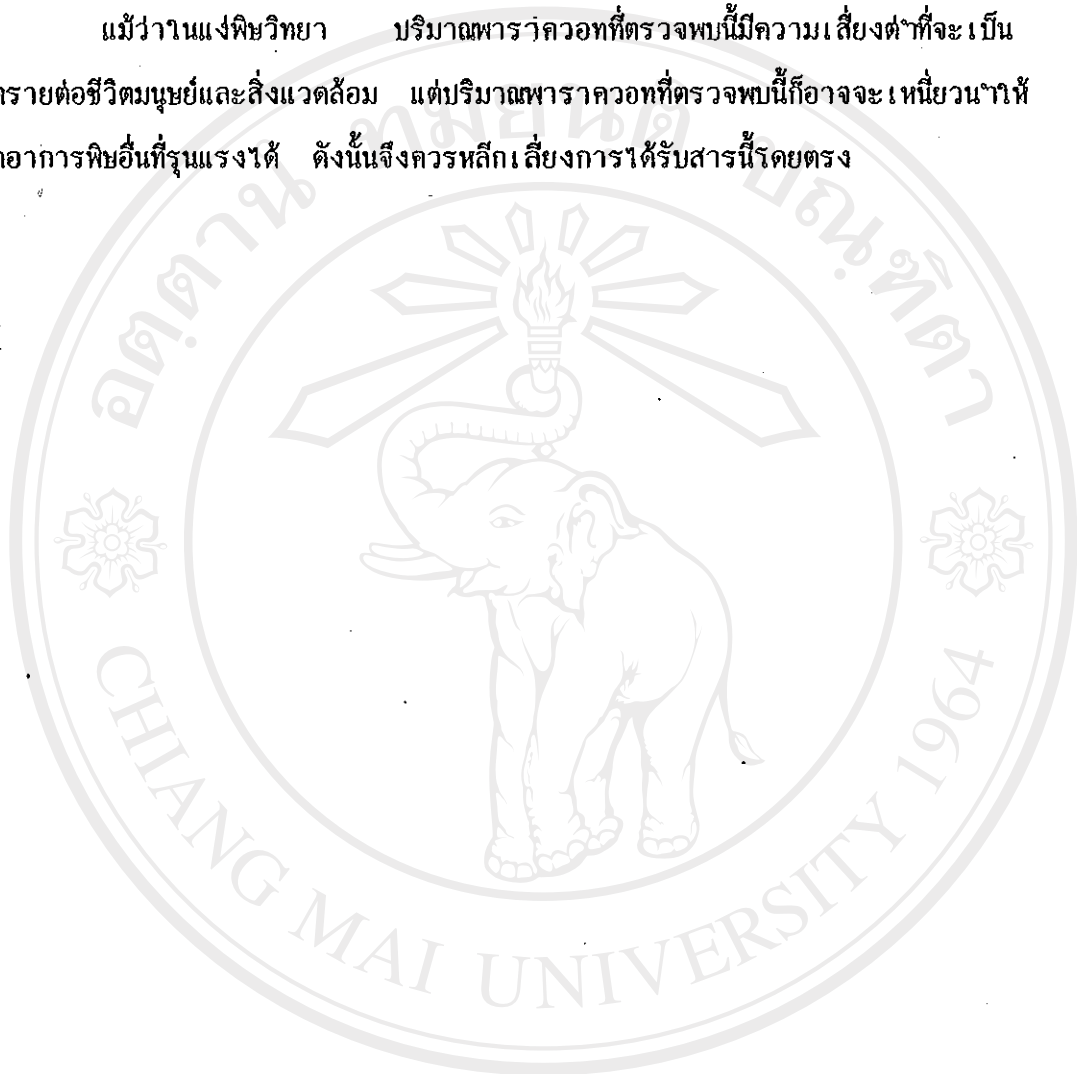
The deposited paraquat on the surface of weeds treated with two types of application was determined by a spectrophotometric method in this study. The first paraquat application by a farmer was 1584 g/ha and the second application by an agricultural officer was 377 g/ha. The sampling site was one of the longan (*Dimocarpus longan Lour*) plantations at Ban Sop Pao, Muang District, Lamphun Province, and it contained the weed density of approximately 232 g/m<sup>2</sup>. The treated weeds were collected on the day of the application and 1, 2, 3 and 8 days after application. Each sample of 50 g amount was extracted with water and concentrated by solid phase extraction, using cyano-spe, prior to analysis. Having been reduced with alkaline sodium dithionite, the extract containing deposited paraquat was determined promptly using a

UV-VIS spectrophotometer by measuring peak height at 396 nm. The results obtained revealed that the deposited paraquat declined very rapidly within the first two days after application and that more than 94 % of this compound degraded within 8 days after application. The amounts of deposited paraquat detected from the farmer's application were in the range 0.8-13 mg/kg or 1.1-20 g/ha whereas those detected from the agricultural officer's application or the recommended practice were in the range 0.33-10 mg/kg or 0.54-16 g/ha. The limit of determination was found to be 0.02 mg/kg or 0.06 g/ha.

Although the amounts of the deposited paraquat found in this study were toxicologically of low risk to human beings and the environment, direct exposure to such a treated area should be avoided because this detected paraquat could still induce the secondary severe effect.



แม้ว่างานแง่พิษวิทยา ปริมาณพาราควอทที่ตรวจพบไม่มีความเสี่ยงต่ำที่จะเป็นอันตรายต่อชีวิตมนุษย์และสิ่งแวดล้อม แต่ปริมาณพาราควอทที่ตรวจพบนี้ก็อาจจะเหนียวนาให้ เกิดอาการพิษอื่นที่รุนแรงได้ ดังนั้นจึงควรหลีกเลี่ยงการได้รับสารนี้โดยตรง



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