

Pruchya Ekkathin 2012: Integrated Weed Management in Sugarcane by Reduced Herbicide Use. Master of Science (Agronomy), Major Field: Agronomy, Department of Agronomy.  
Thesis Advisor: Mr. Sarawut Rungmekarat, Ph.D. 137 pages.

The objectives of this study were to (i) evaluate the efficiency of pre-emergence herbicides and (ii) determine the integrated weed control methods which can reduce the use of herbicide in sugarcane planting area by pre-emergence herbicide application combine with planting *Crotalaria juncea* planted at the rate of 5 and 10 kilograme/rai and cut mulching at 50 days after application compare pre-emergence herbicide application only and pre-emergence herbicide application combine with mechanical methods. The result showed that pre-emergence herbicide pendimethalin+imazapic at the rates of 132+12 g ai/rai was the most effective, for controlling weeds at 30, 60 and 90 DAA. For integrated weed management, the use of the pre-emergence herbicides and planting *Crotalaria juncea* at the rates of 10 kg/rai at 30 DAA and cut mulching at 50 DAP was the best weed control methods by reducing the number and dry weight of the weed species, including jungle rice (*Echinochloa colona*), sprangletop (*Leptochloa chinensis*), crowfoot grass (*Dactyloctenium aegyptium*), horse purslane (*Trianthema portulacastrum*), morning glory (*Ipomoea gracilis*), caltrops (*Tribulus terrestris*) and purple nutsedge (*Cyperrus rotundus*), and gave the highest number of tiller and yield of sugarcane.

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Thesis Advisor's signature