

Porntinun Pitison 2013: Integrated Weed Management in Physic Nut (*Jatropha curcus* L.) to Reduce Herbicide Application. Master of Science (Agronomy), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Mr. Sarawut Rungmekarat, Ph.D. 97 pages.

Integrated weed management in physic nut (*Jatropha curcus* L.) to reduce herbicide applications were studied. Randomized Complete Block Design (RCBD) was arranged in this experiment using pre-emergence herbicide application combined with cover crop planting. The result showed that the pre-emergence herbicide; acetochlor and pendimethalin combined with 3 kinds of cover crops; cowpea, jack bean and sunn hemp had efficiency on weed control. For study on efficiency of pre-emergence and post-emergence herbicides in physic nut, it was found that pendimethalin combined with glyphosate gave the highest efficiency on weed control but showed phytotoxic to physic nut. The results of efficiency of pre-emergence herbicide compared with cover crop planting showed that 3 kinds of cover crops; cowpea, jack bean and sunn hemp had not significant efficiency with pendimethalin and acetochlor and could be controlled for 60 days after cover crop planting and herbicide applications. Moreover, efficiency of post-emergence herbicides and tillage on weed control were investigated. The results showed that glyphosate had efficiency on weed control for 90 days after herbicide application. While, tillage had efficiency on weed control for 60 percent and could be controlled for 60 days after tillage. In addition, the first year of physic nut planting, herbicide application with cover crop planting had efficiency on weed control for 5 months. And in the second year, cover crop planting and pre-emergence herbicide application were not different in weed control. Whereas, post-emergence herbicide application had more efficiency to weed control than tillage and hoe weeding.

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Thesis Advisor's signature