

Kularb Laosatit 2010: Genetic Diversity of Waan Chak Modlook (*Curcuma* sp.) in Thailand Revealed by Amplified Fragment Length Polymorphism (AFLP). Master of Science (Agronomy), Major Field: Agronomy, Department of Agronomy.

Thesis Advisor: Assistant Professor Vichien Keeratinijakal, Ph.D. 103 pages.

Waan Chak Modlook (*Curcuma* sp.) is an indigenous medicinal plant of Thailand. High similarity in morphological characteristics observed among *Curcuma* spp. may caused confusion in utilization. The purposes of this research were to identify species and study genetic diversity among Waan Chak Modlook. Ninety-five accessions of Waan Chak Modlook and other *Curcuma* spp. collected from 38 provinces throughout Thailand were analyzed using AFLP technique. Nine *EcoRI*–*MseI* primer combinations produced a total of 202 bands, 152 of them were polymorphic (75.25%). Polymorphic information contents (PICs) values ranged from 0.00 to 0.50 with average PICs score of 0.25. Dendrogram derived from AFLP showed that all samples could be classified into four major clusters. The Waan Chak Modlook samples were grouped into cluster I, III and IV while the other *Curcuma* spp. samples were grouped together into cluster II. The values of similarity coefficient ranged from 0.57 to 1.00. The result from principal coordinates analysis (PCoA) methods corresponded to the UPGMA clustering analysis.

The morphological data along with AFLP data indicated that Waan Chak Modlook samples in cluster III and IV could be identified to *Curcuma comosa* Roxb. but Waan Chak Modlook samples in cluster I and others in cluster II could be identified to *Curcuma* sp. This study indicated that AFLP technique is useful for studying genetic diversity and identifying species of Wan Chak Modlook.

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