

## Research Summary

### **A Comparative study of Iwate kiln for making wood vinegar and utilization of the wood vinegar in Japan and Thailand**

This research project had been started after agreement for the Grant with MOU by 30 March 2009 and acceptance, confirmation of the receipt of the Grant were sent to Foundation. Then the project was started to do in Thailand as below.

1. Collecting information on various types of kiln, methods of building kiln for burning charcoal and making wood vinegar in Japan and Thailand. (as shown on Chapter 2)

2. Collecting information on the perception adoption and satisfaction of Thai farmers in Thailand by questionnaires study in Thailand. The sites of study (Questionnaires) in Japan were **Case study 1:** study and development on wood vinegar production for agriculture utilization and improvement farmers career in Uttaradit province, Thailand under the Lower Northern Research Project 2007. **Case study 2:** study on satisfaction of the wood vinegar products for Organic farming of Thai farmers in the irrigation area of the Khwae Noi Irrigation Project (The Khwae Noi Dam Project according to His Majesty the King's initiatives), Phitsanulok Province, Thailand under the Feasibility study for land consolidation and review of Water management of khwae noi irrigation project 2009 (as shown on Chapter 3 and 4).

3. Collecting information on various types of wood vinegar products at the shops in Thailand. (as shown on Chapter 2 and 3)

4. Visiting to Japan in 3-13 April 2010 and collecting information on the perception adoption and satisfaction of Japanese by questionnaires study in Japan, collecting information on various types of wood vinegar products at the shops in Japan. The sites of study (Questionnaires) in Japan were in Kumamoto-prefecture, Kyushu, Japan. The questionnaires were sent to Japan and collected on March-April 2010 by post with kindness help of Prof. Dr.Tsutomu Ichikawa, Dean of School of Industrial Engineering, and Prof.Dr. Tatsuro Murata, former Dean of School of Agriculture, Tokai University, Kyushu and Mr. Kazuyuki Shido, Director of Kumamoto Irrigation office, Japan. (as shown on Chapter 2,3 and 4)

## Publication of the Results of Research Project:

### Verbal Presentation

**Date** : 1-2 August 2010 **Name of Conference** : The 6<sup>th</sup> Naresuan Environmental Annual Conference, Faculty of Agriculture Natural Resources and Environment, Naresuan University, Phitsanulok, Thailand.

**1.Title of Presentation:** “A Comparative Study of Iwate Kiln for Making Wood Vinegar and Adoption of The Wood Vinegar in Japan and Thailand **Presenter:** Udomporn Pangnakorn<sup>1\*</sup>; Sombat Chuenchooklin<sup>2/</sup> and Anusorn Vorasingha<sup>3/</sup>

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<sup>2/</sup> Department of Civil Engineering, Faculty of Engineering, Naresuan University, Phitsanulok, 65000, Thailand.

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**2.Title of Presentation:** “Toxicity test of Wood Vinegar and Extracted Substance from Some Medicinal Plants on Mosquito larva (*Culex quinquefasciatus*)

**Presenter** : Suwimol Kanlaya <sup>1/</sup> Udomporn Pangnakorn<sup>2\*/</sup> and Chumpon Kuntha <sup>2/</sup>

<sup>1/</sup> Graduate student Department of Agricultural Science, Naresuan University, Phitsanulok, 65000, Thailand.

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**Date** : 30-31 July 2010 **Name of Conference** : The 6<sup>th</sup> Naresuan Environmental Annual Conference, Faculty of Agriculture Natural Resources and Environment, Naresuan University, Phitsanulok, Thailand.

**1.Title of Presentation:** “Study on Effect of Wood Vinegar for House Fly (*Musca Domestica* L.) Control **Presenter** : Suwimol Kanlaya <sup>1/</sup> Udomporn Pangnakorn<sup>2\*/</sup> and Chumpon Kuntha <sup>2/</sup>

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### Book

**Title and Author of the book:** “A Comparative Study of Iwate Kiln for Making Wood Vinegar and Adoption of The Wood Vinegar in Japan and Thailand by Udomporn Pangnakorn