

**National Pingtung University of Science and  
Technology**

**Department of Tropical Agriculture and International  
Cooperation**

## **Conference Attendance Report**

**The 8<sup>th</sup> Thailand -Taiwan Bilateral Conference” on  
“Science Technology and Innovation for Sustainable  
Tropical Agriculture and Food”**

**Venue and Date:**

**at Kasetsart Golden Jubilee Administration  
and Information Center**

**June 26-27, 2014**

**Kasetsart University, Bangkhen Campus**

**Student: Korawit Chaisu (P10022009)**

**Advisors: Albert Linton Charles (Ph.D.)**

**Guu Yuan-Kuang (Ph.D.)**

**Chiu Chiu-Hsia (Ph.D.)**

**July 9, 2014**

## 1. Introduction

In order to support the bilateral academic cooperation between National Pingtung University of Science and Technology and Kasetsart University after the signing of the Academic Exchange Agreement signed in 1998, both universities agree to jointly organize the biannually academic conference which enlarges an opportunity for their faculty members, researchers and students to exchange their idea and knowledge. The First Bilateral Conference entitled “The 1<sup>st</sup> Bilateral Conference between National Pingtung University of Science and Technology and Kasetsart University” was hosted by National Pingtung University of Science and Technology during May 1 - 6, 2001.

This Year, Kasetsart University feels most honor to be the host of the International Conference on the 8<sup>th</sup> Thailand - Taiwan Bilateral Conference. Besides, in 2013, National Pingtung University of Science and Technology together with Kasetsart University and other universities in Asia initiated a new network of academic collaboration entitled University Network for Tropical Agriculture : UNTA aiming to strengthen academic activities among all members. Thus, the International Conference on the 8<sup>th</sup> Thailand-Taiwan Bilateral Conference and the 2<sup>nd</sup> UNTA Meeting with the theme “*Science Technology and Innovation for Sustainable Tropical Agriculture and Food*” are organized during June 26-27, 2014 at the Rueang Khao Meeting Room, Faculty of Agriculture, Vachiranusorn Building, Faculty of Agriculture, Kasetsart University, Bangkhen Campus.

The theme “*Science Technology and Innovation for Sustainable Tropical Agriculture and Food*” has reflected the essence of agriculture toward the development of several countries. In the midst of the global economy, agricultural scientists, economists, and business entrepreneurs are always emphasizing on generating appropriate technologies and business environment to achieve the better quality products and livelihood for all mankind. Knowledge and experience sharing among scientists and scholars in agricultural and social sciences on Food and Agricultural Innovation have evoked significantly. Therefore, National Pingtung University of Science and Technology and Kasetsart University jointly provide this forum for all concerns to join one another to exchange their knowledge and research results how innovation in food and agriculture will be positively impacted the global society and the better living for our successors.

## **2. Objectives**

1. To provide opportunities for faculty members, scientists, scholars, researchers and students to exchange their idea and knowledge in Agro-Industry, Agriculture, Economics and Related field,
2. To exhibit and demonstrate new bodies of knowledge and research outcomes to the public, and
3. To enhance an academic cooperation and advance research cooperation between universities in Thailand and Taiwan.

## **3. Facilitator**

International Affairs Division, Office of the President

## **4. Organizers**

1. Faculty of Agro-Industry
2. Faculty of Agriculture
3. Faculty of Agriculture at Kamphaeng Saen
4. Faculty of Economics
5. Faculty of Forestry
6. Faculty of Fisheries
7. Faculty of Social Science
8. Faculty of Engineering at Kamphaeng Saen

## **5. Date and Venue**

The event will be from June 26-27, 2014, and the venue is the Vachiranusorn Building, Faculty of Agriculture, Kasetsart University, Bangkok Campus Bangkok, Thailand.

## **6. Participant**

Participants in this forum are:

1. Faculty members and students, National Pingtung University of Science and Technology.
2. Faculty members from University Network for Tropical Agriculture - UNTA.

3. Faculty members, scientists, scholars, researchers and students from Thai universities.

## **7. Activities**

1. Invited Speeches from UNTA members
2. Introductory Remarks
3. Paper and poster presentations
4. Excursion and business meeting

## **8. Expected Outcome**

1. Enhancing the academic cooperation and joint research
2. Playing an academic role for the international reputation
3. Building academic linkage between National Pingtung University of Science and Technology, Kasetsart University, other participating Institutes and private sector

**Poster & Oral Presentation  
Thursday, 26 June 2014**

**Session 5:  
Agricultural Irrigation & Innovative Technology  
in Agricultural and Food Engineering**

Meeting Room 3

**Chairman: *Asst. Prof. Dr. Wen-Shinn Shyu, Dr. Wanrat Abdullakasim***

**Co-Chair: *Asst. Prof. Dr. Shu-Rong Yang, Dr. Somchai Donjadee***

Table 1. The conference program schedule of Session 5

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| <b>Time</b> | <b>Title</b>   |
|-------------|--|
| 12.00-13.30 | <b>Lunch</b>   |
| 13.30-13.50 | <b>Screening of Nutrient Parameters for Lactic Acid Production by <i>Lactobacillus rhamnosus</i> 1-7 in Molasses Fermentation Using Plackett-Burman Design</b><br><i>By Korawit Chaisu</i> |
| 13.50-14.00 | <b>Isolation and Characterization of <i>Pediococcus acidilactici</i> from Soy Sauce *</b><br><i>By Chuennjit chancharoonpong, Pao-Chuan Hsieh</i>  |

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June 26 – 27, 2014 at Kasetsart University, Bangkok, Thailand

# Screening of Nutrient Parameters for Lactic Acid Production by *Lactobacillus rhamnosus* 1-7 in Molasses Fermentation Using Plackett-Burman Design

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## Abstract

Lactic acid is one of the functional and valuable compounds utilized in food, pharmaceutical and chemical industries while Poly lactic acid (PLA) is a biodegradable polymer that has a variety of applications. In recent years, microbial conversion of renewable raw materials has become an important objective in industrial biotechnology. Sugarcane molasses can be considered as potential renewable raw materials in PLA production. It is available in many countries as byproduct of sucrose production, which can be used as substrate for lactic acid fermentation. The objective of this study is to screen and analyses the important nutrient constituents was carried out using Plackett-Burman experimental design for lactic acid production by *Lactobacillus rhamnosus* 1-7 grown in molasses fermentation. Plackett-Burman experimental design was used to evaluate ten medium components added to molasses. Five variables namely Meat extract (10g/L), Calcium Carbonate (5g/L), Yeast extract (5g/L), Peptone (10g/L), and Di-potassium hydrogen phosphate (2g/L) of 10 variables the effect increased lactic acid production. The concentrations of these five components as well as the molasses were further optimized using the response surface method.

**Keywords:** Lactic acid, *Lactobacillus rhamnosus*, molasses, poly lactic acid, renewable raw material

# KASETSART UNIVERSITY



Awards this Certificate of Appreciation

to

***Korawit Chaisu***

In Recognition of Your Participation in

**The 8<sup>th</sup> Thailand – Taiwan Bilateral Conference**

on

***“Science Technology and Innovation for Sustainable Tropical Agriculture and Food”***

June 26 – 27, 2014

Kasetsart University, Bangkok, Thailand

(Vudtechai Kapilakanchana)

Associate Professor

President, Kasetsart University

Figure1. Participation and Presentation Certificate

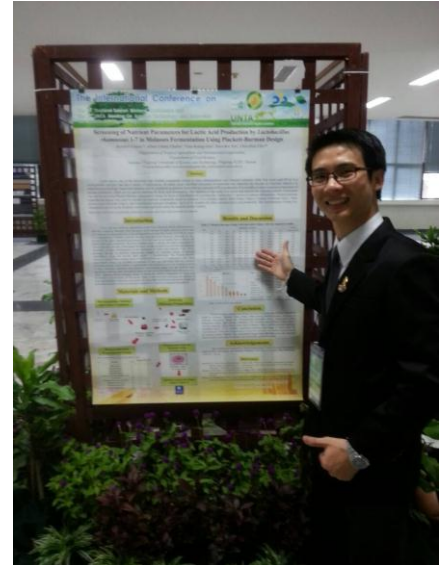


Figure 2. Reference Photos





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July 9, 2014

Dear National Pingtung University of Science and Technology (NPUST):

Due to the financial support that I received from the NPUST, I was recently able to attend the 8th Thailand-Taiwan Bilateral Conference with the theme “Science Technology and Innovation for Sustainable Tropical Agriculture and Food” are organized during June 26-27, 2014 at the Rueang Khao Meeting Room, Faculty of Agriculture, Vachiranusorn Building, Faculty of Agriculture, Kasetsart University, Bangkhen Campus.

At the poster oral presentation sessions, I presented the paper entitled “Screening of Nutrient Parameters for Lactic Acid Production by *Lactobacillus rhamnosus* 1-7 in Molasses Fermentation Using Plackett-Burman Design”. Our paper received much interested from many researchers in the same and related research from differing angles, in which give valuable suggestion and constructive criticisms.

Finally, I would like to take this opportunity to thank in advance to committee members for their generous support under the NPUST, It was a wonderful opportunity and a very valuable memorable experienced.

Best regards,  
Yours sincerely,

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Mr. Korawit Chaisu

Ph.D. Candidate

Department of Tropical Agriculture and International Cooperation

National Pingtung University of Science and Technology