



**INTERNATIONAL FOOD CONFERENCE  
AGRICULTURAL TECHNOLOGY FACULTY**

WIDYA MANDALA SURABAYA CATHOLIC UNIVERSITY

Jl. Dinoyo 42 – 44 Phone (031) 5682211, 5678478 ext. 201 Surabaya 60265



Surabaya, August 20, 2011

To **CHRISTOFORA HANNY WIJAYA**  
DEPARTEMEN FOOD SCIENCE AND TECHNOLOGY  
BOGOR AGRICULTURAL UNIVERSITY  
BOGOR, INDONESIA

Dear Colleague,

We are pleased to acknowledge that your abstract submission entitled: **"Ability of cajuput candy in maintaining oral health: In vitro inhibition of cajuput candy flavor formula against *Streptococcus mutans* and *Streptococcus sobrinus*"** is accepted for oral presentation at the International Food Conference 2011 that will be held in Surabaya, Indonesia, October 28 - 29, 2011.

To update IFC 2011, please visit the web <http://ifc2011.wima.ac.id>. We look forward to your participation and support.

With best regards,

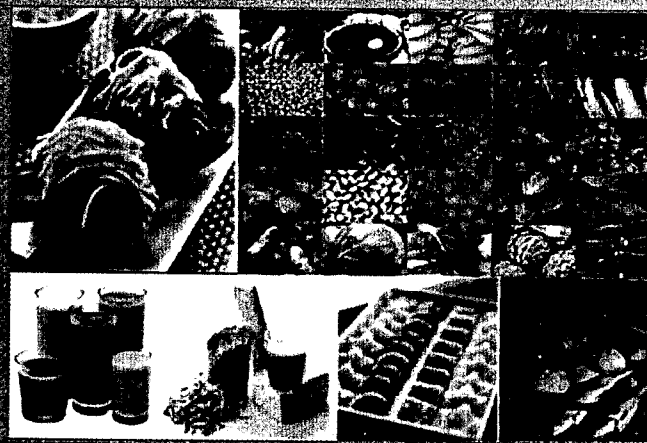
Indah Kuswardani, Ir. MP.  
Chair Person of The Organizing Committee  
International Food Conference 2011  
Department of Food Technology  
Widya Mandala Surabaya Catholic University  
Surabaya, Indonesia



**International Food Conference 2011**

**"Life Improvement through Food Technology"**

**Surabaya, October 28<sup>th</sup> - 29<sup>th</sup>, 2011**



Organized by:

**Faculty of Agricultural Technology  
Widya Mandala Catholic University Surabaya  
INDONESIA**



Topic: <b>FOOD SAFETY</b>			FRIDAY, OCTOBER 28 <sup>th</sup> , 2011
Paralel Session Room: A. 303 - Agustinus Building (3 <sup>rd</sup> floor)			
TIME	CODE	NAME	TITLE
13.30 - 14.20	SA - 01	Sri Harminda P. Hartantyo and Norraiah Abdullah Sani	Prevalence of <i>Cronobacter sakazakii</i> and Other Microorganisms in Neonatal Intensive Care Units of Malaysian Hospitals
	SA - 02	Thitikorn Mahidsanan, Piyawan Gasaluck	Effect of Freeze drying and maltodextrin on Poly- $\beta$ -glutamic acid ( $\beta$ -PGA) production ability of <i>Bacillus subtilis</i> starter powder
	SA - 03	Tang, J.Y.H., Izenty, B.I., Nur'izzati, A.J., Rahmah, S.M., Roslan, A. and Abu Bakar, C.A.	Survival of <i>Vibrio Cholerae</i> O1 in Cooked Rice, Coffee and Tea
14.20 - 15.10	SA - 04	Budi Sustriawan, Rahma Purnama Sari	Study of lead contaminant on seafood at seafood restaurants in Purwokerto
	SA - 05	Laksmi Widajanti, Dina R. Pangestuti	Hygiene and sanitation of warung makan in Tembalang Sub-district, Semarang City, Central Java, Indonesia
	SA - 06	Dwi Sutiningsih, Eko Kurniasih	Survei Contamination of <i>Clostridium botulinum</i> at Sardines Product Which Sold at Some Traditional Market in Semarang
15.10 - 16.00	SA - 07	Sabaianah Bachok, Chemah Tamby Chik, Maaruf Abd Ghani A, Aliffaizi ArsatA, Jazziana JamilA & Suria Sulaiman	The Impac of Halal Logo Implementation on Malaysian Restaurant Operators
	SA - 08	Siti Nur Afifah Jaafar, Margaret Lumbers and Anita Eves	The Role of Food Quality in Determining Consumer Satisfaction, Post-purchase Attitudes and Behavioral Intentions in the Restaurants
	SA - 09	Hasnelly	Strategies of Market Based on Customer Loyalty of Green Food Products in Indonesia

Topic: <b>FUNCTIONAL FOOD AND HEALTH</b>			FRIDAY, OCTOBER 28 <sup>th</sup> , 2011
Paralel Session Room: A. 304 - Agustinus Building (3 <sup>rd</sup> floor)			
TIME	CODE	NAME	TITLE
13.30 - 14.20	FH - 01	Nurhayati, B. Sri Laksmi Jenie, Sri Widowati, Harsi D Kusumaningrum	Low glycemic index modified plantain flour as functional foods
	FH - 02	Jayus, Nuri and Andri Tilaqza	Anti-diabetic Activities of Ethanolic Extract of <i>Merremia mammosa</i> (Lour.) Hall. f. Tuber in Diabetic Rats by in vivo Glucose Tolerance Test
	FH - 03	Tejasari and Ali Santoso	Health Functional Effect of Nutrafosin Beverage Contained of Fructooligosaccharide and Inulin on Blood Glucose Level in Patient With Type-2 Diabetes
14.20 - 15.10	FH - 04	Judiono, RRJS Djokomoeljanto, and S Hadisaputro	Biomolecular Aspects of Plain Kefir ANTIDIABETIC POTENTIAL
	FH - 05	Lilis Nuraida	Evaluation of Probiotics Properties of Lactic Acid Bacteria Isolated From Breast Milk and Their Potency as Starter Culture for Milk Fermentation
	FH - 06	Rio Jati Kusuma, Sri Lestari, Finotia Astari, Fadhila Pratamasari, Susetyowati	Planting a hope from lactic acid bacteria: reducing the risk of cardiovascular disease in acute renal failure with black soygurt
15.10 - 16.00	FH - 07	Babji, A.S., Yusop, S. M., Ghassem, M. and Azhana, H.	Edible Bird Nest, The 21st Century's New Health Supplement
	FH - 08	Siti Baitul Mukarromah	Extra Fooding Intake and Levels Serum Iron of Athletes Women with Low Haemoglobin Problems in Central Java
	FH - 09	K. Nagendra Prasad, Zabidah AA, Azrina Azlan, Amin Ismail, & Zulfiki Bin Romli	Antioxidant capacity of <i>Nypha fruticans</i> Wurmb. Fruit
16.00 - 16.40	FH - 10	C. Hanny Wijaya, Idham F. Nurramdhan and Boy M. Bachtiar	Ability of cajuput candy in maintaining oral health: In vitro inhibition of cajuput candy flavor formula against <i>Streptococcus mutans</i> and <i>Streptococcus sobrinus</i>
	FH - 11	Muhammad Umair Arshad, Faqir Muhammad Anjum, Asma Arshad	Nutritional profiling of wheat germ oil for the value added baked products; Correlation with lipid profile management

### Antioxidant Capacity of *Nypa fruticans* Wurmb Fruit

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#### Abstract

Biodiversity has a vital role as a source of food and income for rural people and enormous communities depend on it for their livelihoods. In Malaysia, underutilised fruits are important sources for a better nutritional status and food security for rural communities. *Nypa fruticans* Wurmb. is one of the underutilized fruit of Malaysia. Antioxidant capacity of immature and mature fruits was evaluated. Total phenolic and flavonoid content of immature fruits were higher (6.08±0.1 mg GAE/g and 3.3±0.5 RE/g respectively), than mature fruits. Also, immature fruit showed high DPPH radical scavenging activity of 75.7±1.1% and antioxidant capacity (A=1.3), even higher compared with BHT and mature fruits. Utilizing biological assay, both immature and mature fruits exhibited excellent inhibition of RBC hemolysis of 82.4 and 61.8±4.2 % respectively. Both the fruits also inhibited moderate activity of hemoglobin oxidation. Hence, this fruit has the potential to be promoted as a natural source of antioxidant. Further studies are warranted for the identification of antioxidant compounds from this fruit.

**Keywords:** antioxidant, fruit, *Nypa fruticans*, maturity, underutilised

### Ability of Cajuput Candy in Maintaining Oral Health: In Vitro Inhibition of Cajuput Candy Flavor Formula against *Streptococcus mutans* and *Streptococcus sobrinus*

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<sup>1</sup>Department of Food Science and Technology, Faculty of Agricultural Technology, Bogor Agricultural University (IPB)

<sup>2</sup>Oral Care Research Institute, Faculty of Dentistry, University Indonesia

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#### Abstract

*Streptococcus mutans* and *Streptococcus sobrinus* are microorganisms commonly found and isolated from human mouth. The c serotype of *S. mutans* is a major pathogen causing dental caries in human. Cajuput oil has been reported for having antiseptic compound which being able to prevent dental caries. Cajuput oil contains 10% crystalline phenolic compound, 3,5-dimethyl-4,6-di-O-methylphloroacetophenon, which known as anti-microbial compound. This research aims to identify the ability of cajuput candy to prevent biofilm formation by *Streptococcus mutans* and *Streptococcus sobrinus* in vitro and observing the effect of cajuput oil inhibition ability in different concentration. This research has been conducted in vitro, by incubating the bacteria on 96 well tissue culture plates and then each well was added with the tested compounds. The analysis was done according to the method of Yamanka. There were 6 formulations of cajuput candy formula which had been observed, consisting of combined flavors as well as single flavor. Hedonic sensory evaluations were done to observe consumer acceptance of various cajuput oil concentrations those have been proven could inhibit the biofilm formation of *S. mutans* and *S. sobrinus*. Administration of cajuput candy formulation did not increase the biofilm formations by c serotype of *S. mutans*, whereas, it tended to reduce the film formation comparing to control. Cajuput candy formulation, however, could not suppress biofilm formation by d serotype of *S. mutans*. Peppermint oil as single flavor ingredient offered higher protection compared to cajuput oil. However, maximum protection against the tested microbes was achieved by combined flavor compound than its single flavor compound. The inhibition of cajuput oil concentrations on biofilm formation was concentration dependent, the higher the better. It showed that 0.5% concentration of cajuput oil has already been able to inhibit the biofilm formation by c and d serotype of *S. mutans*. The most accepted formulation with potential activities had hedonic score about 6.91 (slightly like to like) for aroma and 6.77 (slightly like to like) for taste. This formulation has significant difference result compared with the other formulations.

**Keywords:** cajuput candy, biofilm, *S. mutans* and *S. sobrinus*, oral health



**Department of Food Technology  
Faculty of Agricultural Technology  
Widya Mandala Catholic University Surabaya**



awarded this

# CERTIFICATE

to

*Christofora Hanny Wijaya*

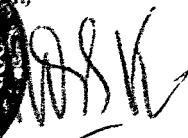
for participating in the

**International Food Conference 2011  
Widya Mandala Catholic University Surabaya, Indonesia**

**28-29<sup>th</sup> October 2011**

as

**Oral Presenter**

Organizing Committee,  
Faculty of Agricultural Technology,  
Widya Mandala Catholic University Surabaya  
  
Kuswardani, MP.

Faculty of Agricultural Technology,  
Widya Mandala Catholic University Surabaya  
  
Ir. Theresia Endang Widoeri Widyastuti, MP.

