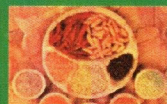
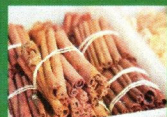
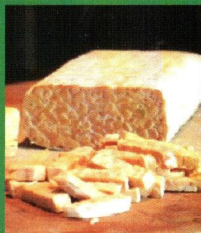
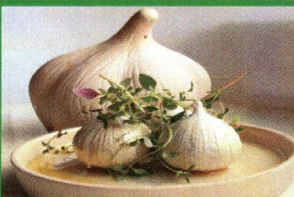
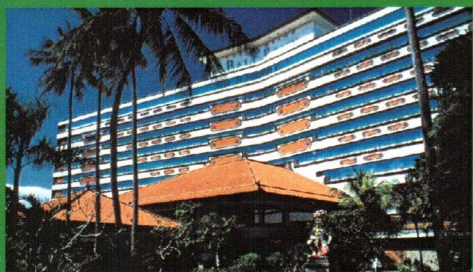
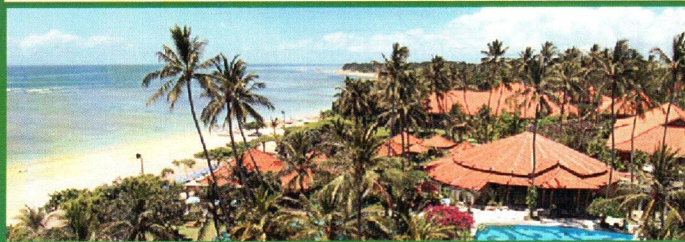


INTERNATIONAL CONFERENCE, EXHIBITION & SHORT COURSE ON
NUTRACEUTICALS
& FUNCTIONAL FOODS

Inna Grand Ball Beach
Ball Indonesia
October 11-15, 2010



Poster presentation

SHORT COURSE:
MON-TUE, OCTOBER 11th - 12th, 2010

CONFERENCE:
TUE-FRI, 12th - 15th, 2010



Indonesian Agency for Agricultural Research
and Development, Ministry of Agriculture



International Society for
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- P102. "JAMU" AS FUNCTIONAL FOOD AND NUTRACEUTICALS IN INDONESIA
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Foods with functional foods category are not something distant in the Indonesian diet. As things TCM in China and Ayurvedic in India, Indonesia has "jamu" or herbal medicine which is traditionally known as health maintainer. Nowadays, a thoughtful interest to use "jamu" along with the prescribed medicines is increasing. Inauguration of "Hari Jamu Nasional" (National Jamu Day) by the President of Indonesia in 2008, the establishment of national associations of jamu entrepreneurs, the availability of special regulation of jamu and herbal has shown the seriousness of government attention on the jamu development. Various products both modern and traditional claimed as "jamu" as well as functional foods fill supermarkets shelves. Many researches related to scientific investigation or product development are frequently conducted by universities, researchers and industries. National and international scientific meetings (seminars and conferences) and workshops are often conducted to expose regulations, ingredients related to "jamu" and also about technology implementation to support "jamu" quality. This presentation is an overview in "jamu" development as both functional foods and nutraceuticals in Indonesia.

- P103. INCREASING OF VITAMIN AND MINERAL IN CRACKERS WITH GREEN VEGETABLES FORTIFICATIONS
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Green vegetables contained vitamins, minerals and also have high fiber content. In general, consumption of green vegetables simply boiled, sauteed or treated with a little gravy in it. To enrich the processed food products, green vegetables can be added in the manufacture of *crackers*. The *Crackers* is one of biscuit that made from wheat flour with high protein, fat and salt are fermented with the aid of yeast and the dough is made in layers and then cut and baked (Manley, 1983). *Crackers* quality is determined by the color, flavor, texture, and nutritional value (Winarno, 1986). This study aims to find the right combination of treatment between the addition of the type and amount of green vegetables for the quality and panelist on the product's favorite *crackers*, which is resulted. The design of the study used two factors factorial pattern and arranged in a completely randomized (CRD), each of treatment combination was replicated two times. First factor: the type of green vegetables (i.e: spinach, kale, mustard greens and cassava leaves), and Factor II: the amount of green vegetables (5, 10, 15, and 20) grams. The results showed that the best treatment on the addition of spinach leaves 15 grams which produce *crackers* with a yield of 97.9%, water content 3.884%, 2.987% ash content, crude fiber content of 1.353%, 0.14 mg vitamin C, levels of β - carotene 4.484 μ g / g, the chlorophyll content of 1.539g/mL. The level of eagerness to 5.3 color (prefer) and a sense of 4.8 (neutral).



- P111. ANTIOXIDANT AND α -GLUCOSIDASE INHIBITOR ANALYSES OF SEVERAL COFFEE OF INDONESIA
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Indonesia has several regions of quite famous coffee producers, such as Lampung, Toraja, and Papua. It is suspected that different processing methods used by various regions may influence antioxidant activity in coffee. Beside antioxidants, coffee is believed to have an inhibitor compound, α -glucosidase that could hinder the absorption of glucose in the small intestine. The objective of this research was to know the antioxidant activity and inhibitor α -glucosidase in some coffees known in Indonesia. The coffee beans were obtained from five local regions and were processed using two methods. The antioxidant activity was tested by the 1,1-diphenyl-2-picrylhydrazyl (DPPH) method, whereas the α -glucosidase inhibition was tested with the substrate resembling p-nitrophenyl- α -D-glucopyranose. The coffee beans that came from each region with or without roasting applied showed antioxidant activity and α -glucosidase inhibition. The antioxidant activity and α -glucosidase inhibition of the coffee beans were affected by the content of the phenolic compound, chlorogenic acid.

- P112. ANTIOXIDANT ACTIVITY OF PHYTOCHEMICALS FROM BELUNTAS (*PLUCHEA INDICA* LESS) LEAVES EXTRACT AND ITS FRACTIONS
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Beluntas (*Pluchea indica Less*) is herb plant used as a food and a traditional medicine. Polyphenol is major phytochemical compound of beluntas leaves that has antioxidant activity, especially 2,2-diphenyl-1-picrylhydrazyl (DPPH) free radical scavenging activity. The activity is evaluated by the decrease in absorbance as the result of DPPH' color change from purple to yellow. This work aimed at assessing the total antioxidant activity of beluntas leaves extract and its fraction for comparison with the antioxidant activity of natural antioxidant (green tea and rosemary extracts and α -tocopherol succinate) and synthetic antioxidant (BHT), using a DPPH' free-radical. The results showed that beluntas extract and its fraction were good free radical-scavenging activity depending on the concentration used. Based on effective concentration (EC50), ethyl acetate fraction had the highest antioxidant activity. The parameter EC50 and the time needed to reach the steady state to EC50 concentration (EC50 T.) affected the antiradical capacity of the sample. The antiradical efficiency (AE) had been shown to be a more adequate parameter for selecting antioxidants than the widely used EC50. Based on AE, ethyl acetate fraction had stronger antiradical activity than beluntas extract and the other fractions (water and n-butanol fraction), but its activity was lower than BHT and green tea extract.



P114. ANTIOXIDANT ACTIVITY OF ANTHOCYANINS OF *SYZYGIUM CUMINI* FRUIT

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Jambolan (*Syzygium cumini*) fruit is a tropical fruit which rich in anthocyanin pigments especially in its peel part. Jambolan anthocyanins have been identified as 3,5-diglucoside derivatives of delphinidin, petunidin, malvidin, cyanidin, and peonidin. The aim of the present study was to determine the potency of jambolan anthocyanins as antioxidant by evaluating their antioxidant activity using *in vitro* assays. Several different assays of the antioxidant activity including DPPH radical-scavenging assay, hydroxyl radical-scavenging assay, superoxide radical-scavenging assay, and lipid peroxidation assay using human low density lipoprotein have been conducted. The phenolic compounds in methanolic extract were separated by using a solid phase extraction (C₁₈ Sep-Pak cartridge), providing: (1) anthocyanin-phenolic fraction and (2) non anthocyanin-phenolic fraction. The phenolic content and antioxidant activity of the fractions have been compared with that of the methanolic extract. The phenolic content of anthocyanin-phenolic fraction represented approximately 83% (w/w) to the phenolic content of methanolic extract. The antioxidant activity of anthocyanin-phenolic fraction was slightly higher than that of methanolic extract. The antioxidant activity of jambolan extract was mainly contributed by anthocyanin. Moreover, anthocyanins extracted from the jambolan pulp, jambolan peel and anthocyanin fraction were also evaluated their antioxidant activity. Jambolan pulp extract (JPuE), jambolan peel extract (JPeE), and jambolan anthocyanin fraction (JAF) exhibited significant antioxidant activities, in descending order: JAF > JPeE > JPuE. Among jambolan samples, jambolan anthocyanin fraction was the most effective as antioxidant and the antioxidant activity approached the activity of the standard compounds, quercetin, catechin, ascorbic acid. These results suggest that anthocyanins contained in the jambolan fruit with antioxidant properties are potential utilized for functional natural food colorants and nutraceutical.



P48. CAROTENE AND ANTHOCYANIN CONTENTS AND SENSORY ATTRIBUTES OF SWEET POTATO FROM WAMENA, PAPUA PROVINCE

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Wamena is known as a secondary center of genetic diversity of sweet potato in Indonesia because it has a very high diversity of cultivars, which is about 500 cultivars that have been cultivated by local people. This study aimed to determine total carotenoid and anthocyanin content of potato tubers from 15 cultivars of local origin Wamena, and attribute sensory of four method of cooking (fried, poached, grilled, and baked). Sweet potato tubers used is eight months after planting, originating from the highlands of Wamena, Papua Province, which consists of six cultivars of yellow tuber (Wortel, Elawut muluk, Pogot muluk, Wortel baru, Sabe, and Mikmak), five cultivars orange tuber (Yoban, Wortel airek, Welelom baru, Helaleke baru, and Dinda), and four cultivars of purple tuber (Tinta, Yaro one, Yunaiken, and Musaneken baru). Analysis of total carotene and anthocyanin using spectrophotometer, whereas the sensory test carried out sensory attributes. The results showed that the highest levels of total carotenoids yellow tuber are Wortel cultivar (545.64 µg/100g) followed Elawut muluk (390.34 µg/100g), Pogot muluk (355.29 µg/100g), and Sabe (320, 84 µg/100 g). The highest total anthocyanin purple tuber of Tinta cultivar (345.98 mg/100g), followed Yunaiken (317.12 mg/100g), Musaneken baru (310.34 mg/100g), Yaro one (302.36 mg/100g), and oranges tuber is Yoban (300.95 mg/100g). Dry matter of sweet potatoes ranged from 31-35%. Sensory characteristics influenced by the cooking method vary with the level of acceptance of flavors preferred by the level of sticky, sweet, tenderness and mealness so the potential to be developed as an industrial raw material source of antioxidant functional foods.

✓ P49. CHARACTERISTICS AND BIOLOGICAL ACTIVITIES OF INDONESIA SOYSAUCE FRACTION

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Concerning the nonenzymatic browning occurring during thermal processing of foods such as soysauce, surprisingly little should be known about its biology activity. The biology activity of Maillard reaction products is one of their interesting properties: others are antinutritional, mutagenic, antimutagenic and sensory attributes, such as aroma, flavour and colour. The objective of this study was to investigate biology activity of fractions in soy sauce based on molecular weight. Two products soysauce were made i.e. sauce with coconut sugar and soy sauce with cane sugar. Soy sauce were fractionated by ultrafiltration in a molecular weight ranging between 10 kDa to 100 kDa. The soysauce were evaluated for water contents, phenol, total solid, ω -amino, protein and pH and antioxidant activity include chemical and biological analytic. The characteristic of soysauce fractions showed content of phenol, total solid, ω -amino, protein larger in molecular weight < 10 kDa. The fractions of molecular weight <10 kDa and 10-30 kDa of soysauce retarded oil oxidation better than fractions with molecular weight > 30 kDa, whereas the fractions molecular weight 30-100 kDa and > 100 kDa had DPPH radical scavenging activity better than fractions with molecular weight < 30 kDa. The fraction >100 kDa of soy sauce with cane sugar retarded better erythrocyte hemolysis comparing to the fraction <10 kDa.