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produces 3.3 million tons equal as dry coconut. Coconut milk, as one of traditional processing products of coconut potentially becomes main ingredient for probiotics yoghurt making. As a source of medium chain triglycerides, mainly composed by lauric acid (C12), coconut milk has great potential as functional food. This research was conducted to have the right Lactic Acid Bacteria (LAB) combination to make cocogurt. Viscosity, pH, and titratable acidity were measured. Increasing of skim milk addition was increasing pH of cocogurt and decreasing of titratable acidity. Cocogurt viscosity was affected by lactic acid bacteria strain, final product acidity, and skim milk addition. Cocogurt with Lactobacillus casei subspecies Rhamnosus as a starter individually had a lower pH than cocogurt prepared with L. casei combined with Lactobacillus bulgaricus, L. casei with Streptococcus thermophilus, or the combination of three of them. Cocogurt viability ranged from 7 to 9 Log CFU/ml. In terms of color, odor, and rancidity, L. casei with 5% skim milk statistically was not different from control (α =0.005); however, for taste, texture, and viscosity, it was significantly different (α =0.005) from control. Proximate analysis shows that fat content of cocogurt was 9.09% which 46% composed by lauric acid. During storage, cocogurt show decrease of LAB viability and pH, however for viscosity and titratable acidity were increased.

Keywords: Cocogurt, Coconut milk, fermentation, Lactic Acid bacteria, Medium Chain Triglyceride

O-34 Potential of Sweet Potato (Ipomoea batatas) and Its Secondary Product as the Alternative for Healthy Street Food Production in Middle Class Industry in Cikarawang, Bogor, West Java, Indonesia

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Nutrition plays an important role in our daily lives. Food choice affects individual’s nutritional status, and food choice influenced by eating behavior that formed by hunger feeling, physiological, and psychological needs. People prefer consuming street food due to economic reason; cheap and sold in flexible quantities. Sweet potato has high productivity, high economic values, and the flour containing high nutritional values but less popular than any other carbohydrate source. On the one hand, street food stimulates the demand for traditional ingredients and produce, best provided by local enterprises and agriculture. Challenge to applied sweet potatoes as an alternative street food ingredient is to develop creative idea because sweet potato is less popular to consume than any other carbohydrate source.

The street food produced by “Kelompok Tani Hurip” in Cikarawang, Bogor, West Java,
Indonesia is mainly various kinds of Indonesian traditional cakes made of sweet potato. Related to the street food production from sweet potato and the nutrition value analysis of sweet potato, it is true if sweet potato and its flour can be as the alternative for healthy street food.

**Keywords:** *Ipomoea batatas*, street food, middle class industry, Cikarawang, Bogor, West Java.

**O-35 Laserpuncture Application for Synchronization Estrous of Garut’s Ewes**

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Garut’s sheep is one of the sheep in Indonesia that are really potential to be developed. But there are some problems in developing Garut’s sheep. One of the problem is low reproductive of ewes. Estrous synchronization is the technique to control estrous cycle so that estrous period can be happened at the same time for all ewes simultaneously. Laserpuncture methods had been used to synchronize estrous of Garut’s sheep ewes (*Ovis aries*). This device gives low power electricity which could increase hormone and enzyme tissues. This technique showed that laserpuncture which is treated at 17 reproduction’s accu-points during the luteal phase yielded 100% estrous. While the laser puncture treated at anytime yielded 95% estrous. Using artificial insemination (AI) with liquid semen, estrous was 64% and with frozen semen was 57%. The results of this experiments showed that laserpuncture technique can be used as an alternative technique for estrous synchronization besides hormone treatments. This technique has higher success and low cost.

**Keyword:** estrous synchronization, laserpuncture, Garut’s ewes, reproductive efficiency, hormone and enzim.

**O-36 Organic Farming in Malaysia**

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Malaysia, situated in the tropical region, has a population of approximately 20 million with diverse culture and heritage. Blessed with various natural resources, Malaysia has been rapidly developing since 1970s. Since the formation of Malaysia on 16th September 1963, Malaysia’s economy which initially depended on mining and agriculture had been slowly shifted to manufacturing sectors. However, in 2002, the 5th Prime Minister of Malaysia, Tun Abdullah Ahmad Badawi realized the decreasing of agricultural activities and also the issues of food security, he has allocated a huge budget to revitalize and modernize the agriculture sector of
Potential of Sweet Potato (*Ipomoea batatas*) and Its Secondary Product as the Alternative for Healthy Street Food Production in Middle Class Industry in Cikarawang, Bogor, West Java, Indonesia

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ABSTRACT

Nutrition plays an important role in our daily lives. Food choice affects individual’s nutritional status, and food choice influenced by eating behavior that formed by hunger feeling, physiological, and psychological needs. People prefer consuming street food due to economic reason; cheap and sold in flexible quantities.

Sweet potato has high productivity, high economic values, and the flour containing high nutritional values but less popular than any other carbohydrate source. On the one hand, street food stimulates the demand for traditional ingredients and produce, best provided by local enterprises and agriculture. Challenge to applied sweet potatoes as an alternative street food ingredient is to develop creative idea because sweet potato is less popular to consume than any other carbohydrate source.

The street food produced by “Kelompok Tani Hurip” in Cikarawang, Bogor, West Java, Indonesia is mainly various kinds of Indonesian traditional cakes made of sweet potato. Related to the street food production from sweet potato and the nutritional value analysis of sweet potato, it is true if sweet potato and its flour can be as the alternative for healthy street food.

Keywords: *Ipomoea batatas*, street food, middle class industry, Cikarawang, Bogor, West Java.

I. INTRODUCTION

1. Background

Nutrition has played a significant role in human life. It affects the whole biological process include metabolism, ingestion, digestion, absorption, transport and excretion (Rolfes 2008).

Every day, in several times a day, we make food choices that influence our body’s health for better or worse. Each day’s the choices we made may benefit or harm our health. At the beginning the effect may be only a little but when these choices are repeated over months and or years the results may become major. Therefore, pay more attention to a good eating habit can bring you health benefits in your future life. Conversely, carelessness about food choices can contribute many diseases. In short, a good food choice supports better nutrition.

Eating behavior is the way people fulfilling their meals needs, including belief and food choice (Khumaidi 1989). Eating behavior not only formed by hunger feeling, but also influenced by physiological and
psychological needs. Every group has its own pattern in getting, utilizing, and assessing food as their culture uniqueness. This culture influenced people in choosing and consuming food (Suhardjio 1989). Some factors that influence food choice and dietary quality are food preferences (taste, smell, color, texture, temperature, and similarity), nutrition knowledge and beliefs (health concerns, nutritional value, attitudes and values, education, and experience), culture (acceptable, customs, symbolism, and religious beliefs), and practical considerations (cost, convenience, level of hunger, availability, and health status) (Brown 2008).

Cikarawang is a village located in Bogor, West Java, Indonesia, near the campus of Bogor Agricultural University. People of Cikarawang mostly consist of middle to low economic class and has various kinds of occupation, from farmers to seller. This situation has opened a great opportunity for people to develop their own economic life, for example dormitory service, housekeeping service, and food industry. Food industry is one of the most promising sectors, especially street food production.

Street food is the product of crowded cities and means different things to different people, be it the schoolchildren on their way to school or the holidaymaker visiting a big city or the vendor selling the food. It has become a staple food for the commuters, workers, students and schoolchildren, migrants and tourists who find themselves far from home when hunger hits at mealtimes, because it is cheap and sold in flexible quantities.

The popularity of tasty meals like vadai (fried savoury lentil cakes) in India, beef broth in Kenya, nasi lemak (rice with eggs and savoury sambal sauce) in Malaysia, and kerupuk (Indonesian’s famous chips made of flour) prove that people prefer traditional street foods over equally accessible fast food options. Challenge to apply sweet potatoes as an alternative and or substitution for street food ingredient is to develop creative idea because sweet potato is less popular to consume than any other carbohydrate source.

2. Objectives
The objectives of the present study are to study the potential of sweet potato (Ipomoea batatas) and its secondary product as the alternative for healthy street food production in middle class industry in Cikarawang, Bogor, West Java, Indonesia.

II. METHODOLOGY
The methodologies of the present study are the following:

II.1. Analytic-constructive
Analyzing the problems related to Indonesian street food and then the study about sweet potato that has great productivity, economic, and health benefits. The next step is the study of processing sweet potatoes in producing healthy street food.

II.2. Using secondary data from literature study
Various sources such as journals, textbooks, newspaper, internet, and articles will be used for literature study.

II.3. Discussion
Based on the two methods above, the paper about mechanism of sweet potato in producing healthy street food is written.

III. DISCUSSION

1. About Street Food
Street food is ready-to-eat foods or beverages, which includes many types of foods ranging from cereal and fruits to cook meats and drinks. It is usually sold in busy public areas, such as: pavements, roadways,
back alleys of markets, school premises, bus and railway stations, beaches, parks and other public spaces (Unknown 2007).

Street food is served with the minimum amount of fuss in individual portions dished into take-away containers. These containers come in a variety of materials such as disposable plastic, paper and Styrofoam plates, bowls, cups and utensils. Street food has to be convenient (quickly available for people on the go), cheap (important for poor consumers who may not be able to afford a nutritious meal somewhere else), and tasty (authentic and culturally enriching - as opposed to eating the same fast food from food chains with outlets around the world) (Unknown 2007).

2. Potential of Sweet Potato

According to Food and Agriculture Organization (FAO) (2000), Indonesia has so many potential carbohydrate sources that come from plant and roots. There are more than 30 types of roots that commonly cultivated and consumed by the Indonesian. Culturing the roots is easier and cheaper than culturing the rice, for example, culturing the roots only costs one third from the rice. In other hand, the carbohydrate contain in roots is equal with rice.

Sweet potato is chosen from any kinds of roots, as the answer to fulfilling flour’s demand in Indonesia. The taxonomy of sweet potato according to School of Life Sciences and Technology, Bandung Technological Institute, Indonesia (2009); is as follows:

- **Kingdom**: Plantae
- **Division**: Spermatophyta
- **Subdivision**: Angiospermae
- **Class**: Dicotyledonae
- **Order**: Convolvulales
- **Family**: Convolvulaceae
- **Genus**: Ipomoea
- **Species**: Ipomoea batatas

Antarlinia & Sutomo (1999) stated that sweet potato has many varieties that include local types and some excellent variety. Every kind of it has differences in shape, size, color of the roots, color of the skin, self-life, chemical composition, processing type, and harvest age. But in general, sweet potato has round or oval shaped with rough skin that colored white, yellow, purple, or reddish purple depends on its variety (Rukmana 1997).

Woolfe (1992) explained that sweet potato’s skin contains pigment called carotenoid and anthocyanin that determines the color of the roots. The difference of combination and intensity from both pigments result white, yellow, orange, or purple color for the skin and the roots.

As any other kinds of roots, sweet potato can be found easily in Indonesia. Sweet potato has high productivity, high economic values, and the flour containing high nutritional values. On the one hand, street food stimulates the demand for traditional ingredients and produce, best provided by local enterprises and agriculture.

3. Nutritional Value Analysis

**Table 1 Nutritional values of sweet potato (per 100 grams)**

*(included)*

4. Sweet Potato Powder Processing (Flour Making)

Based on SNI 01-4493-1998, roots, especially sweet potato; can be preceded into the powder form. It also can be fortified with any kind nutrient needed to increase the nutritional value. The flour also can be keep longer than roots and it makes the cooking process become easier. The technology to process the roots to become the flour is simple and cheap. It can be produced by the middle class industry, and the result is as good as the one produced by bigger industrial company.

The making of sweet potato flour according to Rukmana (1997):
Prepared the tools and the materials

\[ \downarrow \]

Peeled off the skin cleanly

\[ \downarrow \]

Washed with clean water, then put it in the different place

\[ \downarrow \]

Filtered the water from the sweet potato, to separate the waste and the water

\[ \downarrow \]

Put the water into the basket for a night (24 hours)

\[ \downarrow \]

Sweet potato became dry and formed flour

5. Street Food Production from Sweet Potato and Its Secondary Product in Cikarawang, Bogor, West Java, Indonesia

Sweet potato as an alternative for ingredient in food is to develop creative idea for food production. Cikarawang Village has its own formal group named “Kelompok Tani Hurip”. This group consists of people who work as a farmer and a seller, and also their housewives. This group acts as the leader for people in Cikarawang who interest to develop sweet potato for street food production.

Firstly, they created the kinds of food by themselves. Due to the lack of idea, tools, and material, they only produce sweet potato flour in the low class industry. But as the industry grows, today, this group already forms middle class industry that produced street food.

The street food produced by “Kelompok Tani Hurip” is mainly cakes and such as brownies and various kinds of Indonesian traditional cakes named putu ayu, kue cucur, and nagasari. They also produce cookies and chips from sweet potato. Related to the street food production from sweet potato and the nutritional value analysis of sweet potato, it is true if sweet potato and its flour can be as the alternative for healthy street food.

This activity has problems related to safety and marketing of the food produced by “Kelompok Tani Hurip”. These problems are still in progress to be solved, helped by the experts from outside Cikarawang where Bogor Agricultural University’s role involved.

Marketing problems can be solved by solving the food safety problems first. Most people bear the consequence of consuming unhealthy food, especially street food. According to streetfood.org that project of the non-profit sector called Consumer International, things people concerned about street food are:

1. Vending area - is it clean, well ventilated and far from garbage and sewage?
2. Appearance of food handlers - do they have good personal hygiene, including clean clothes, shoes, hairnet and clean, trimmed fingernails?
3. Facilities - are there covers for food bins, utensils, clean water for washing and other amenities such as chairs, tables and toilet facilities?
4. Food - How does it smell and taste? If it smells or tastes unpleasant, it is probably not safe.

Further research about its application and commercial production begin with consumer preference test through sensory evaluation. Sensory evaluation is known as information that directly related with sensory quality of the product to meet consumer needs (Lawless and Heymann, 1999).
IV. CONCLUSION

Sweet potato (*Ipomoea batatas*) and its secondary product can be the alternative for healthy street food production as people do in middle class industry in Cikarawang, Bogor, West Java, Indonesia. The secondary products can be in form of flour that has high productivity. It can be processed into many kinds of foods such as cake, cookies, and chips that have more high economic values and containing high nutritional values.

V. REFERENCES


