

When the World needs “Green Packaging” for Sustainability, Are you ready to pay a little more to Go Green?

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Introduction:

In all business sectors are usually cooperate with a word “Tableware” or “Food Container”; Restaurant, Canteen, or places selling food are correctly tend to use alternative tableware to reduce cost of production and operation. As a result, the shift in using of utensil is shifted from permanent tableware to temporary tableware (such as plastic and foam). This is not occurring only in tableware uses but it involved in many kind of packaging. The examples are commonly and obviously seen various places such as university’s canteen, shop cart, visited tourist places, etc. However, the issue is on “what are they using for temporary tableware?” which followed by an answer of plastic and foam tableware. Therefore, the study propose an existing innovation of temporary tableware to be use in order to encourage and promote sustainable business which is biodegradable tableware that came from pulp or cassava (and many other green-utensil or packaging that could be replace the existing or current use of plastic and foam).

Green World Foundation said “Today, the production of foam waste on average in Thailand is 2.3 boxes per person a day. This implied that a day more than 138 million foam boxes are wasted. The foam boxes are not going anywhere but they leave as waste underground and took around a thousand year for degradation. While the foam boxes are used unsafely with high temperature food which creates styrene that make people involve in cancer slowly.” In term of consumer, we have few choices when purchasing food from canteen and shop cart that we have to take home or even we eat there some still offer us foam tableware. Because the bio-degradable foam for utensil is not commonly use today. MD. Weerachat Kittiratphaibune said “In foam uses, two things come along, Health and Environment, but in Thailand, it is not a behavior or concern by people much.” So when we shift the use of foam and plastic, we are not protecting and saving only our world but ourselves as well.

The study is illustrating the benefit of using biodegradable tableware or food container beside the only disadvantage of its price which is more than 2 times of cost when entrepreneur shift from using foam tableware to biodegradable tableware. Moreover study is suggesting the way to achieve sustainability development through several campaigns and policy an organization (Kasetsart University) could establish and promote.

Methodology:

The study is focus on the issue of using biodegradable tableware in Kasetsart University, Bangkok Campus canteen instead of foam and plastic tableware under the study question of “When the world needs “Green Packaging” for Sustainability, are you ready to pay a little more to Go Green?” The study is interview based study from people involve in tableware activities and combine with secondary resources.

The study is trying to suggest actions for university to go green beside the existing Green Policy.

Green Packaging defines in the study is the “biodegradable tableware” and focusing on foam cup and boxes. And Go Green is defined as the activities that considered as minimized or reduced the environmental impact for a sustainable development.

The model tableware for biodegradable is taken from Biodegradable Packaging for Environment Co, Ltd.

Problem of Waste and Garbage:

Garbage and waste overflowing the world is a serious environmental and health problem. The department of Pollution Control, Ministry of Natural Resources and Environment of Thailand reported that today Thailand produced solid waste or garbage more than 14 million tons a year but can manage for removal only 70 percentage of the total solid waste production. The solid waste removal is done mainly by landfill for degradation, combusting, using for energy production, recycle, and composting, respectively to the much proportion of removal. The most practice on solid waste management or removal is landfill that has more than 50 percentage of the total solid waste management proportion. However landfill has both limitation and disadvantages such as the against of community to build a landfill site and the affect on underground water that will be associate will the chemical and toxic from solid waste leaching from the rain.

Moreover, Thailand produced solid waste of plastic bag for more than 5,300 ton per day (450 years degradation) and foam more than 138 million boxes per day (more than a thousand year degradation). The total solid waste on plastic bag and foam boxes is 3 million ton a year which is about 1/5 solid waste production of Thailand.

With the limitation of locating landfill site makes us into consideration of reducing solid waste especially the foam boxes that take more than a thousand year for degradation. Therefore, the study proposes an existing idea of using biodegradable tableware that takes much little time for degradation which is about 45 days.

Today, Kasetsart University is producing waste and garbage around 6.3 ton per day, reported by Vehicle, Building and Physical Plant Division of Kasetsart University. And during the night, almost every cart in canteen is selling their food with foam which is unmanageable and unsustainable.

Problem of Health:

We all know that we are consuming toxic substances from foam and plastic tableware or food container, but we are all accepted. Styrene Monomer found in most common plastic and (styrene) foam tableware or container. According to many researches, long term exposure to small quantities of styrene is the cause of neurotoxin (fatigue, nervousness, difficulty sleeping), hematological (low platelet and hemoglobin values), cytogenetic (chromosomal and lymphatic abnormalities), and carcinogenic effects. Many said that styrene caused cancer, but the only proven is it caused cancer in animal, but in human, there is no exact evidence yet. Nevertheless, Dioxin which formed during the industrial process, is a potent, cancer-causing agent, and causes reproductive harm to human. Moreover, Vinyl Chloride Monomer found in plastic and foam tableware or container has number of studies showing it causes liver cancer.

Example of Existing Green Policy:

Currently, Kasetsart University has a green policy on energy. As the campus had produced a huge amount of food waste and garbage, it has to responsible for its pollution made to the society with existing sustainable technology. The university is using those food waste and garbage for biological gas production. The fermentation capacity is 13 cubic meters which can produce biological gas for 20,000-50,000 liters per day and eliminate food waste and garbage for 400 kilograms a day.

Another existing green policy that we would like to example is sorting out the garbage for recycle. This recycling program is mainly focus on plastic. However, by sort out waste and garbage university can also benefit on waste and garbage management for energy, recycle, land fill, degradation, etc.

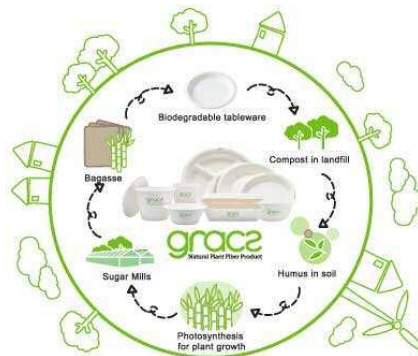
Green Packaging or Biodegradable Tableware:

The biodegradable tableware or food container has a fully renewable concept from the studies of Biodegradable Packaging for Environment Co, Ltd.



The green (bio) tableware or packaging is the green innovation toward sustainable development. This tableware or packaging has several outstanding features from a simple production where it uses fewer energy than plastic production, environment friendly, not use the pulp from trees and not use chlorine in bleaching pulp (called Elemental Chlorine Free ,ECF) which create a clean and safe pulp paper that sterilized with UV light before in consumer hand.

From Nature to Nature



Biodegradable Results



*Conducted by National Metal and Materials Technology Center (MTEC), Ministry of Science and Technology, Thailand

The sustainable of green innovation of bio tableware is biodegradable in 45 days (on average) where the plastic takes 450 years and foam takes a thousand year for degradation.



The benefit of bio utensil is also covered delivering food with a very high or low temperature without contaminants (carcinogenic) while foam and plastic do with many more contaminants and danger to consumers' health

Observation on Consumer:

From the observation within the campus, there are 2 main reasons that students in Kasetsart University is deciding to consume with the plastic and foam tableware.

The first finding is about consumer choice is limited. Students are known that eating food in the canteen with foam tableware is dangerous for health (not in deep information about affect on health). But the reason there are still purchase the food in the canteen with foam tableware is that there is no choice of biodegradable tableware. The further question was

asking that if there is alternative of biodegradable tableware would they buy. The finding said they would purchase the biodegradable one. This means if all entrepreneurs decided to sell food with biodegradable table, students would probably buy. But the price would be matter for purchasing adjustment as they suggested that if the between the two are not much different and only if there is biodegradable tableware sell in the market place meaning university canteen.

The second interesting finding is on consumer perception. As students are known that consuming food with foam tableware is dangerous for their health even they do not know in deep on the affect in health but they thought that the affect is something intangible. This means the affect is getting cancer but it takes time to go for years and most cases, the affect will be seen when they get old. So the affect is not so direct affect to them that they can see them right away and some think that they are not consume the food with foam and plastic tableware everything which makes them think it will have no or not much affect on their health. As a result, they are hesitate to concern on their health or decide to purchase biodegradable tableware for their health.

Another additional interest finding according to the consumer perception is about overflowing of the world garbage which is one of the main topics in most environmental and sustainable conference. This is like the affect on student health that they could not see the problem right away which makes them unaware the health. Similar to overflowing of the world garbage, that there is not thing about the overflow they can see in the campus. The affect of this problem is about both health and environmental problems but they are intangible as students can not perceive the required awareness.

Toward Sustainability Option:

If we compare the features of plastic, foam, and biodegradable tableware, we would see that university or organization has options to go green.

Product Benefit Comparison

	Plastic	Styrofoam	BIO
Variety of Models and Molds	√	√	√
Fully Microwavable	?	X	√
Fully Biodegradable within 45 days	X	X	√
Long Shelf Life	√	√	√
No Excessive Energy in Production	X	√	√
No Waste form Production	X	?	√
Temperature Resistance at -40 °C to 250 °C	?	X	√
Heat Resistance at 150 °C	?	X	√
No Pollution to Environment	X	X	√
Affordable Price	X	√	√
No Carcinogenic Substance In Packaging	X	X	√
Value Added to the Company Image	X	X	√

The table has shown that bio tableware is fit into all benefit comparison. We also can conclude that it should be use for both health and environmental sustainability.

Investment for Green:

Even the biodegradable tableware is environment and human friendly, but Kasetsart University Bangkok Campus in all canteens still not using biodegradable tableware. It is because the entrepreneur is focusing only on profit which is the result from minimizing its cost. The price of biodegradable tableware is 3-4 baht per tableware depend on size and design from Biodegradable Packaging for Environment Co, Ltd. While the price of foam and plastic table is only 1 baht on average. General entrepreneur might see that why they have to pay for biodegradable when the plastic and foam are a lot cheaper. This is the first reason that we still see business uses foam and plastic for their tableware. The cost of production is the only obstacle for sustainability development. But the study still believes that when the World needs Green Packaging (biodegradable tableware) for sustainability, we have to invest.

Moreover if we trust in economy of scale, from the statistics when Thailand first recognized the biodegradable technology, the price was 5-6 Baht Thai, but within 5 years, today biodegradable tableware is around 4.0-4.5 Baht Thai which is declining. The cause of declining in its price that opposite to the inflation increased is its economy of scale as the percentage of biodegradable tableware is increasing by 30% from the past 5 years.

Another reason is the serious campaign of using biodegradable tableware. Unlike in countries that took serious campaign on green tableware. The examples of serious campaign are putting fee on plastic bag in Taiwan, points giving for not request plastic bag in Japanese department store, tax on plastic bag in Ireland, no plastic bag campaign in Leaf Rapids city of Canada, Singapore hold free plastic bag campaign on Wednesday and many other countries. These are national and organizational promotes of reducing the use of plastic bag. However, the biodegradable table is another serious campaign that should be promote by both private and public sectors. This would imply an investment on developed countries that they are ready to go green and have a sustainable development.

Action to Go Green:

1. Kasetsart University should promote Green Policy and make public concern in the campus through various ways of public relation such as LCD monitor, Lecture Hall, Canteen, etc. via several differently interesting campaign. The campaign must go together with the lecture that concern on environmental and health problems in the campus.
2. Student Council, Student Administration Board, and Student Club and Association as the student organization must be aware on waste and garbage problem that would be the obstacle for sustainability development by implementing a policy of using biodegradable food box for every student activity.
3. Kasetsart University must enforce all shops and carts especially in the main canteens to use biodegradable tableware in case if they are not using permanent tableware as a requirement. This enforcement must not push the burden of cost of production in

canteen to students but the University must subsidize the amount increasing cost by being the host or the only seller of biodegradable tableware in the campus in order to facilitate the entrepreneur for accessing the products.

4. Kasetsart University must promote and extend the result to public in order to gain public concern on waste and garbage overflowing as environmental concerning and the people health affect after consuming food packaged by foam and plastic as health concerning in Thailand for the sustainability development.

Conclusion:

This study would suggest Kasetsart University Bangkok Campus hold a campaign on using biodegradable tableware to promote the policy of Green University Green Campus. If we look for a real sustainability this campaign should be invest to promote or implement not only in Kasetsart University or only in the universities, but all organization should be concern, implement, and go green together in order to save our life and our world.

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