

KERATAN AKHBAR-AKHBAR TEMPATAN
TARIKH: 15 DISEMBER 2014 (ISNIN)

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KERATAN AKHBAR
THE MALAY MAIL (TOP NEWS) : MUKA SURAT 4
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Top News

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Consumers are claiming retailers are cheating them by selling 'half-full' cylinders, aside from the hiked prices of cooking gas. (Inset) A pressure gauge can only detect pressure and the content. — Picture by Zuraneza Zulkifli



“Weigh or report it,” consumers told over cooking gas cheats

PETALING JAYA — Consumers who have doubts on the quantity of liquefied petroleum gas (LPG) in their cooking gas cylinders should weigh their tanks before making their purchase.

Zainal Azhar Ahmad, an expert from the oil and gas industry, said all cylinders come with a cap removable only upon first use at home and it would be checked by the officials from the Domestic Trade, Cooperatives and Consumerism Ministry to ensure it is properly filled before leaving the refineries.

“But while stringent quality control is carried out by the authorities to ensure it conforms to the prescribed specifications before leaving the refineries, like any other item of commercial value, liquefied petroleum gas which is mainly used in cooking gas tanks can be siphoned by depots or dealers,” said Zainal, who has been in the industry for 32 years.

“Consumers should request to weigh the cylinders from the retailers before purchasing it if they have doubts if the content was not according to specifications.”

By Ida Nadirah
ida@mmail.com.my

Zainal said consumers can identify the total amount of the cylinder with its contents by adding up the weight of the tank, which is written on the top body, with the weight of the gas.

The weight of an empty cylinder for 12kg cooking gas is 15.8kg, while an empty cylinder for 14kg is 16.5kg.

On Saturday, Malay Mail reported that while the government has set the ceiling price at RM22.80 (12kg tank) and RM26.60 (14kg tank), retailers had been selling them above the ceiling price on top of delivery charges. Several consumers had also raised concerns if the amount of gas were that stated on the cylinders.

Zainal, however, said using add-on pressure gauge to check the percentage of content of the cylinder, is not advisable as the device is not certified by the Industrial Research Institute of Malaysia (Sirim).

“Some pressure gauges may carry the

Sirim certification; but my hunch is the majority are not. In any event regardless whether it has a Sirim certification, if it is used with LPG cylinders, it is not likely certified.

“The gas in the cylinders is in liquid form and is never full as it needs room for expansion. Gas is sold by weight and the add-on devices can detect pressure but it is not the accurate measurement on the content of the cylinders.”

Domestic Trade, Cooperatives and Consumerism Ministry secretary general Datuk Seri Alias Ahmad said any suspicion of cheating should be reported to the ministry.

“If a retailer is found cheating consumers, the ministry can take action under the Weights and Measurements Act 1972,” he said.

He said a person found guilty for the offence jailed for up to three years, fined up to RM4,000 or both.

Alias had warned retailers who sell cooking gas above the ceiling price will see their licences revoked under the Control of Supplies Act 1961.

Sea of opportunities

Long harvested for use in the food industry, red seaweed is now being turned into pulp for making, among various things, paper. >2

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Red gold: Red seaweed being collected off the coast of El Jadida, about 100km south-west of Casablanca, Morocco. - AFP

By ALLAN KOAY
Photos by ONG SOON HIN
star2green@thestar.com.my

New uses for seaweed

THE Algae Research Lab in Universiti Malaya, Kuala Lumpur, smells like the sea. The salty odour and pungent scent of sea vegetation hang in the air like a cloud raised straight from the oceans. It's testament to the important work being done there over the past few years.

In a corner of the room are several contraptions that, together, resemble a mini-factory line. And they are, indeed, just that. The machines, all manufactured in South Korea, are for making pulp from a species of red seaweed, or red algae, also known by its scientific name, gelidium.

Prof Dr Phang Siew Moi, director of the university's Institute Of Ocean And Earth Sciences, and her colleagues and students

A Universiti Malaya research project is paving the way for commercial production of pulp from seaweed.

have been researching the properties of red algae as well as its capacity for being turned into pulp and bioethanol. They have brought the red algae, native to South Korea, to Malaysia to see if it can be successfully cultivated in our climate. All this is with the view to creating a viable seaweed pulp and bioethanol industry, a green endeavour with

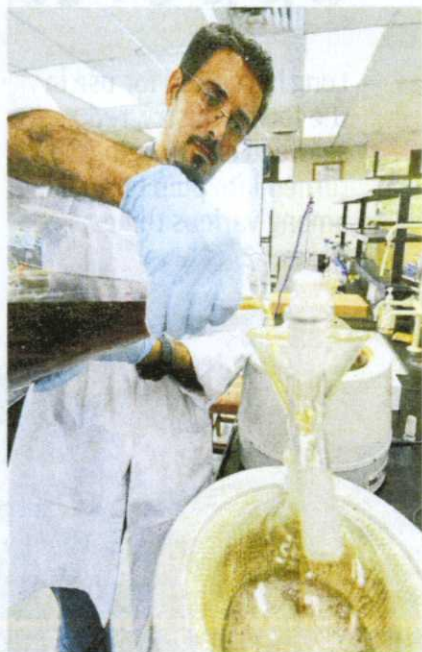
huge commercial potential.

"Our first objective was to see whether we could introduce this Korean species here and mass-cultivate it," said Phang, who is leading the project together with her colleague, Datin Seri Prof Dr Aishah Salleh. "The second objective was then to see whether we could produce paper from the fibres, and

to produce bioethanol from the agar."

Seaweed is known to absorb far larger quantities of carbon dioxide than land plants, and the process by which pulp is produced from it is far more environmentally friendly than the process of making wood pulp.

"You save on energy and the use of chemicals," Phang explained. "For wood pulp, you need to cook it at 180°C for eight hours, and you need to add sodium hydroxide. To get pulp from red seaweed, you only need to cook it at 100°C for two hours, and you use



It will be a few years yet before red seaweed can be used to produce bioethanol.



Studying seaweeds: Universiti Malaya's team that researched how red seaweed could be turned into pulp to make paper and bioethanol, (from left) Prof Dr Phang Siew Moi, Assoc Prof Lim Phaik Eem, PhD student Mohd J. Hessami and Dr Yeong Hui Yin. (Right) The different types of gelidium seaweed.

SAMBUNGAN...

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only water. The reason is the seaweed has no lignin.

"Wood pulp has to be bleached as it contains a lot of coloured compounds. It needs six to seven stages of bleaching. For seaweed pulp, you only need to bleach it twice."

The project is a joint research between Universiti Malaya, the Fisheries Department and South Korean company Pegasus International Inc that was established in 2004. It all started sometime in the mid-2000s when Pegasus founder You Hack Churl met Phang at a symposium on seaweed and aquaculture. He had been looking for interested parties to jointly realise the pulp-making potential of red algae.

You had, in 2003, stumbled upon the peculiar properties of red algae when he was advised to eat healthily due to his high blood pressure. He started consuming agar made from red algae of the gelidium species for lunch. One day he accidentally dropped a pot of the boiling jelly and while trying to scrape it off the floor, found that it had set into a thin, vinyl-like film.

"At that moment, I had an idea that it could be made into film or paper," said You in an e-mail interview from South Korea. "I carried out a simple experiment in my kitchen, then later applied for a patent and together with a friend, founded Pegasus."

Farming seaweed

The next step was to bring the species of red seaweed to Malaysia, acclimatise it and then cultivate it. Culture trials were carried out in nurseries in Pulau Pangkor and Pulau Langkawi, and a restricted trial in Sabah.

"We had to quarantine the seaweed before they could be taken out to sea," said Phang.

"And they come with a health certificate from South Korea, Dr Yeong (Hui Yin, the institute's research officer) and her students spent days and nights cleaning the seaweed, and the wastewater was sterilised with UV light before it was discharged.

"All the precautions were taken in case we transported some alien species from South Korea. And even after acclimatisation in Malaysia, the quality of the seaweed fibres did not change at all."

And it is all in the fibres. The seaweed fibres are fine, of equal lengths and smooth. Wood fibres are, in contrast, coarse, of unequal lengths and thick.

"When you make paper from (seaweed pulp), you get very smooth paper with high opacity," said Phang. "The paper from wood fibres is very coarse and you need to use fillers. With red seaweed, you don't need a filler because the material contains some agar."

Also, seaweed fibres contain hollow spaces internally, which makes them very absorbent. Thus, the fibres are especially good for making diapers. The material can also be used for making cigarettes, face-masks and speaker cones.

The seaweed project was identified by Agensi Inovasi Malaysia as one of 42 innovative business opportunities in 2012. A workshop was held in Universiti Malaya two months ago where 25 representatives from nine companies attended. The **Science, Technology And Innovation Ministry** was also involved.

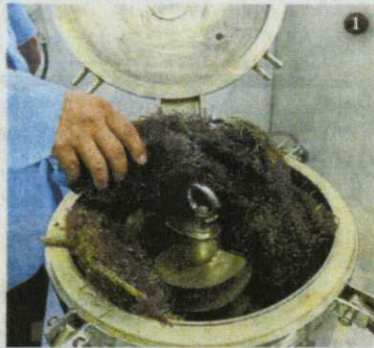
"You has set up a factory in South Korea and he wants us to grow the seaweed here and send it to South Korea," said Phang.

"Right now he is the only one producing seaweed pulp." In fact, You holds the patent in 41 countries.

You's plan is to build a big pulp-making factory possibly in Sabah, next to the cultivation farm. The pulp will then be sold to whomever wants to make paper, diapers or cigarettes.

A gelidium seaweed grows wild in South Korea. Naturally, the question is, why cultivate it in Malaysia then? The problem, said You, is that there are four seasons in South Korea.

"During winter, the seaweed disappears like leaves in autumn," said You. "It only grows from March to September because of water temperatures. The ideal temperature for growth is above 14°C. In a tropical climate, the seaweed can be cultivated all year round."



1. Red seaweed is first cooked in a boiler at 100°C at fairly high pressure. This separates the solids from the agar.

2. The pulp is then bleached to turn it white.

3. The pulp is placed between blotters and pressed with a roller to get rid of excess water and to produce a flat piece of material.

4. Finally, the material is rolled through a machine to produce a smooth piece of paper.



Seaweed fuel

After the seaweed is cooked, agar is obtained as a by-product. The agar from the gelidium species is of very high quality. It can then be sold as food-grade agar, such as the one You consumed for health purposes, or it can be converted into bioethanol.

"Producing bioethanol from seaweed is a bonus," said Phang. "But after carrying out a few years' research in bioethanol production, we feel that it is still a long way to go, although the standard technology has been there for sometime now. Cost-wise, it is still very expensive to produce bioethanol."

The fact remains that seaweed offers great potential for a green industry.

"Land is already in shortage because of population growth," said You. "Arable land is decreasing, as are forests. It is time to stop cutting down trees to make pulp and paper."

He called algae pulp the "material for the future".

"We can obtain methane gas and ethanol from seaweed," said You. "We have developed the technology and got a patent. Our new commercial factory is designed to self-generate energy through fermentation of methane gas from agar. And agar is a by-product of pulp production and therefore costs nothing."

Said Phang: "It is sustainable. There is no conflict with tropical rainforests because it grows in the sea. And as it grows, it photosynthesises and removes carbon from the environment. So if you have a business cultivating large areas of seaweed, you're removing carbon and can, in fact, sell carbon credits and make money. And seaweed is very good at removing (excessive) nutrients from water, which helps clean the sea."

According to Phang, the project has a third objective, which is to find a Malaysian equivalent of the South Korean gelidium species.

"And if we can find one, which I believe we have, then we can do hybridisation with the Korean species," she said. "So we will have a species that belongs to Malaysia and we can safely develop this made-in-Malaysia species, which may have very good properties."