A Spoonful Of Palm Oil

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Introduction

In this continuation of previous article “Make MY Palm Oil a Great Brand” I wrote for The Edge Malaysia Weekly, on March 25, 2019 - March 31, 2019, a review of the progress is now being made. It is recommended that the Ministry of Health updates the Malaysian Dietary Guidelines 2010. It is also proposed that the Council of Palm Oil Producing Countries initiate further research on the health impact of consuming palm oil.

Health and Nutrition

In March I wrote “Work needs to continue on health which I am confident will in due course be properly documented and substantiated but it will be generic to palm oil.” In the course of my investigations over the past year I discovered there is a lot more and important work that needs to be done and it needs to cover nutrition as well.

Dietary Guidelines

In April 2019 in the Dewan Rakyat when YBM Teresa Kok urged MPs to consume a spoonful of red palm oil to stay young and healthy, she drew laughter. She said correctly that red palm oil is rich in nutrients such as vitamin E, carotenoids, anti-oxidants and has no *trans* fat. Although she was teased on social media, she accepted it well because it helped to draw more public interest to the ‘Love MY Palm Oil’ campaign.

To be exact it is two US tablespoons of red palm oil. An authoritative source for two tablespoons of edible oil is the U.S. Department of Health and Human Services and U.S. Department of Agriculture. *2015–2020 Dietary Guidelines for Americans*. 8th Edition. December 2015. It provides nutritional advice for Americans. The Guidelines were established so as to provide dietary advice that would improve the health of Americans and reduce their risk for many chronic conditions and diseases, such as cancer, atherosclerosis, hypertension, heart disease, stroke, and renal disease. Whilst it is not perfect it is a model followed by many countries such as Canada, Australia and the UK which consume culturally similar diet. Guidelines were developed following a review of scientific evidence.

In Appendix 3 Table A3-1 under 'Oil' for a calorie level of 2000, only 27 g of oil is recommended. This equate to 2 tablespoons. Oils and fats provide an essential macronutrient and help to improve palatability, aid the release of flavours and aromas of meals and contribute to the feeling of satiety. The guidelines emphasize replacing saturated fats with unsaturated fats, particularly polyunsaturated fats, with the goal of preventing heart attack and stroke. It points out that palm kernel oil and palm oil contain the greatest amount of saturated fats. The development of the 2020–2025 Dietary Guidelines is currently in progress and if it is perceived there is no new scientific evidence the recommendation on saturated fats is unlikely to change.

Diseases such as heart and lung disease, cancer and diabetes are costly health conditions as well as leading causes of death and disability. The Malaysian Dietary Guidelines 2010 by the Ministry of Health should be updated to effectively address current local issues such as obesity and diabetes. It should also be made easily accessible as well as easy to understand and apply.

In 2020 Malaysia will introduce a free breakfast programme for children in primary schools and may in the future extend to lunches. In Japan school lunches score high for nutrition resulting in very low obesity rates. If we can prove the benefit in children after many years of a successful breakfast programme it will be manifested in these children as healthy adults. Parents and grandparents get educated too and it will be easier for them to embrace and apply the same dietary guidelines.

The programme will certainly refer to the Malaysian Dietary Guidelines for Children and Adolescents 2014 to formulate the meal patterns and nutrition. Issues of overweight incidence and obesity prevalence should be addressed. Under Key Message 10 "Include Appropriate Amounts and Types of Fats in the Diets" our nutritionists make the same recommendations as the USDA Dietary Guidelines to limit the intake of saturated fats and to "Cook food using a blended vegetable oil high in PUFAs (polyunsaturated fatty acids), e.g. palm oil with soya oil, palm oil with corn oil, or palm oil with sunflower oil." Our nutritionists appear to be only guided by international community norm. There is already much scientific evidence produced by not only by our scientists in Malaysia, Australia, China and others that show that saturated fatty acids in palm oil triglycerides are chemically positioned to be poorly absorbed so that the cholesterolemic effects for healthy adults are similar to extra virgin olive oil. This means the intake of palm oil can be higher than stipulated by US guidelines as moderate consumption by healthy individuals has been proven healthy. Malaysian nutritionists should take the lead in setting new guidelines for the intake of palm oil.

Scientific Evidence

The fear of saturated fats started in late 1950s when American physiologist Dr Ancel Keys reported the results of what came to be known as the Seven Countries Study, actually Six-Countries Study. Saturated animal fats became associated with increased cardiovascular risk and in 1990s animal fats, e.g. butter was replaced by margarines which required hydrogenation of vegetable oils. It was evident that the Keys study was flawed and based on cherry picking data from six countries but it was only after almost 50 years that this information was publicly released by the authorities. It is difficult for the US scientists and nutritionists to retract the huge documentation resulting from the false science of Keys as well the large number of scientists following this dogma.

Between 2000 and 2010 the truth had to be revealed to the public that *trans* fats from partial hydrogenation in the use of polyunsaturated oils had detrimental effects on health (cardiovascular as well as many other aspects). From the health perspective pressure on palm oil decreased but it has moved to deforestation and sustainability.

Modern nutrition however is still stuck on saturated fat intake, that it should not exceed 10% of the total energy intake. There are indications to warrant the gathering of more evidence for palm oil intake to be higher. Fats in food are composed of triglycerides which need to be hydrolyzed into fatty acids and glycerol before it is absorbed into the body. How the fatty acids are attached to the skeleton of the glycerol in the triglyceride molecule determines its absorption. As palm oil saturated fatty acids (SFA) are mostly in positions *sn*-1 and *sn*-3, SFA absorption is lower and hence its potentially negative effects for cholesterolemic parameters are also lower. Already, from previous research and more recently the randomized controlled trials with palm olein by Yang *et al* (2018) and Stonehouse *et al* (2019) demonstrated this in healthy young adults.

Therefore, scientific research including clinical trials must be done on:

1. The impact of consuming palm oil on non-communicable diseases (NCDs) such as cancer, atherosclerosis, hypertension, heart disease, stroke, renal disease, obesity, diabetes, etc.
2. The full nutritional data on palm oil
3. Health benefits of phytonutrients in palm oil
4. Fat requirements of infants and young children

Such research should be as numerous as possible and conducted by institutions that are independent and credible to populate the data base so as to assist countries to construct their dietary guidelines as well as to be used by food manufacturers. As the results will benefit palm oil producing countries the research should be initiated by the Council of Palm Oil Producing Countries (CPOPC). The current members of CPOPC are Indonesia Malaysia and Colombia.

One of the platforms to make these research results freely available is *PubMed*.

PubMed

PubMed is a free resource supporting the search and retrieval of peer-reviewed biomedical and life sciences literature with the aim of improving health–both globally and personally. The *PubMed* database contains more than 30 million citations and abstracts. Available to the public online since 1996, *PubMed* was developed and is maintained by the National Center for Biotechnology Information (NCBI), at the U.S. National Library of Medicine (NLM), located at the National Institutes of Health (NIH). As examples the two articles below can be found in *PubMed*.

Pascual *et al*. 2016 published a study 'Targeting metastasis-initiating cells through the fatty acid receptor CD36' showing that palmitic acid causes cancer in mice. Datuk Dr Kalyana Sundram, CEO of the Malaysian Palm Oil Council (MPOC) reviewed the study. He noted that it was a lard-soyabean oil combination fat source in the test diet. Lard is a rich source of saturated palmitic and stearic acids. Palm oil was not used in the study. He said, "Although the researchers did not in any way implicate palm oil, Worldwide Cancer Research and ScienceDaily were quick to unjustifiably associate palm oil with cancer due to its high palmitic acid content." Media reports frequently use facts to draw wrong conclusions.

In January 2019 an article "The Palm Oil Industry and Non Communicable Diseases" published in the World Health Organisation (WHO) Bulletin, in its conclusion drew parallels between the palm oil industry and tobacco and alcohol lobbyists. The WHO Representative to Malaysia, Brunei Darussalam and Singapore clarified that it was not a WHO study but refused to retract the article. The article remains and if you did not follow the news in Malaysia, you would believe it to be true. The palm oil community could write at least one counter article and have it published in *PubMed*.

The data submitted and accepted into the component data base structure stays available for a long time. There is little data available for palm oil and the various palm fractions and products. Much of the data was submitted before the advice on the declaration of *trans* fat was issued. The data on palm products covers the macro nutrients only, the exception seems to be data produced by individual researchers looking for other nutrients, e.g. vitamin K and tocotrienols.

Many of the formulation programs that guide businesses, not only in America but also in many Western Countries, are based on the data in the data bases. The programs also produce the labelling information based on the component parts. One product from palm oil which appears to feature is the 'Shortening' – saturated fats – used in pies and pastries. It is clearly more difficult to expand marketing in the Western Countries if the main nutrient of palm oil that features is the saturated fat part of the wide range of products that can be made from palm oil.

Also in PubMed can be found "Palm Oil on the Edge". Internationally recognized Spanish experts in the food industry, nutrition, toxicology, sustainability, and veterinary science met in Madrid on July 2018 to develop a consensus about palm oil (PO) as a food ingredient. Their review is positive showing a lot of work has been done to show that there is no evidence associating palm oil consumption with higher cancer risk, incidence or mortality in humans.

They lament that the absence of any pronouncement from the scientific community regarding the effects of palm oil on consumer health has meant that the message that reaches the general public is often skewed and incomplete.

Conclusion

Palm oil is a major fruit and seed oil source that is the most sustainable due to its highest yield, quality characteristics and mandatory adherence to certifications (mostly MSPO and also voluntarily RSPO and ISCC) to help feed the global population that will grow from 7.7 billion to 9.7 billion in 2050 with the world oils & fats consumption projected to increase from 180 million MT to 250 million MT. There should be no health or nutrition concerns about palm oil but like sustainability there must be continuing efforts to reinforce the facts about palm oil if it is to gain its rightful place as being essential to food security.

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