

*Editorial:***The Palm Oil Debate — Health Considerations**

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In the past few months considerable prominence has been given in the local media over the beneficial qualities of palm oil and in particular some of its health promoting properties. This has been a latent response to the campaign against palm oil by the American soyabean lobby as well as the aborted ASA proposed Tropical Oils Labelling Bill. The national concern over this issue is understandable in view of the importance of palm oil in the Malaysian economy. Palm oil production in Malaysia is presently over 4.6 million tonnes and accounts for 60% of the global output, generating about 3.5 billion ringgit in foreign exchange. It is the country's outstanding export and a source of income and employment for a relatively large proportion of the rural population.<sup>1</sup>

Trade and economic issues seem to have contributed to the present controversy. The struggle for dominance amongst vegetable oil producers probably has augured the launch of the anti palm oil campaign, in which aspersions are cast on its health promoting properties. It is noteworthy that this campaign has started at a time when palm oil is displacing soya bean oil and not earlier. Gleaming through the reports of the campaign, it appears that there is a general lack of awareness on the nutritional merits of palm oil and probably this has given rise to much misunderstanding and confusion. Partly this can be attributed to the inappropriate grouping of palm oil under the class of saturated fats and the over generalisation of the rule that all saturated fats raise blood cholesterol levels and therefore lead to adverse consequences, i.e. coronary heart disease (CHD).

It is a long held common belief that on the whole, the excessive and indiscriminate consumption of saturated fats poses a health hazard in terms of proness to heart disease. This has been given further credence by the dietary recommendations of the American Heart Association and its guidelines. High on the list of foods to be wary about include saturated fats including animal fats and vegetable oils such as palm and coconut oils.<sup>2</sup>

In this connection one has to be reminded of the multifactorial nature of CHD as well as the significant exceptions which do not fit simply with a dietary hypothesis. The data from the US on the benefit of a dietary change suggests that essential fatty acids or a high ratio of essential to saturated fatty acids confer a protective effect rather than a harmful effect of saturated fatty acids.<sup>3</sup>

Palm oil can be labelled saturated or unsaturated in its fat content because of its unique biochemical profile.<sup>4</sup> It would be presumptuous to say that it is harmful to health as there is no direct evidence to that effect. Honstra from Holland<sup>5</sup> reports that palm oil although containing some 50% saturated fatty acids, does not behave as a saturated oil. Dietary long chain saturated fatty acids promote arterial thrombosis in rats. Palm oil does not follow this general rule.<sup>5</sup>

Honstra's studies further showed that palm oil has anti-thrombotic effects in the rat (ie., the tendency to form thrombus is diminished) comparable to some of the polyunsaturated oils. The effects of palm oil on the formation of pro and anti-

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thrombotic prostanoids are likely to explain at least in part the anti-thrombotic and anti-atherosclerotic effect of palm oil. It has been claimed that in human feeding experiments, palm oil does not raise the levels of blood cholesterol. This claim however, merits further confirmation with better controlled studies.

Palm oil does not promote cancer development and progression in the chemically induced tumorigenesis of rodents. Palm oil also contains linoleic acid, an essential fatty acid for man. Crude palm oil is a rich source of  $\beta$  carotene (a precursor of vitamin A). However, this is normally removed during the refining process and so its availability restricted. Palm oil is also a rich source of vitamin E (tocopherols and tocotrienols) a powerful nutritional anti-oxidant necessary for protection against cellular damage.

Vitamin E as an anti-oxidant forms an essential component of the body's multi-level defense system against free radical damage. Vitamin E acting as an anti-oxidant arrests the oxidative deterioration of cellular membranes. An increase in free radicals has already been implicated in ischaemic, inflammatory and degenerative diseases including ageing, carcinogenesis and arterial injury.<sup>6</sup> The tocotrienols have also been observed to inhibit cholesterol synthesis in birds. Many of the beneficial properties of palm oil can be attributed to its high vitamin E content as well as other anti-oxidants.

It is imperative that to establish credibility in the scientific community as well as gain wide acceptance of palm oil and its derivatives by the general population, irrefutable evidence be sought on its beneficial properties, both by confirming the small number of studies done so far, as well as by extending these studies to additional aspects involving human subjects. Currently there is limited knowledge concerning the effects of palm oil on the cardiovascular risk profile, therefore, further studies designed to investigate the effects of dietary palm oil and palm oil based nutritional products in man are warranted.

This is all the more important, because it has been speculated that the increase in CHD in the last decade is related to food processing practices that disturb the ratio of polyunsaturated fatty acids to natural anti-oxidants in foods.<sup>6</sup> Additional areas of research that merit consideration would include the biochemical and physiological mechanisms involved in the effects of dietary fats (with reference to palm oil) on blood lipoprotein levels especially HDL. There is also the need to evaluate by epidemiological and clinical studies the possible long term health effects in subjects consuming diets with relatively high amounts of polyunsaturated fatty acids, trans fatty acids and palm oil and its derivatives. Further lines of research should include investigations into the nature and nutritional effects of by-products developed during fat frying again with reference to palm oil.

It is reassuring to know that the Palm Oil Research Institute of Malaysia (PORIM) has embarked on a number of projects in collaboration with a number of institutions both local and overseas. PORIM would be spending \$7.3 million dollars to fight the anti palm oil lobby. This money would be spent during the next two years to finance 19 research projects in eight countries. The projects are aimed at confirming and spreading information on the initial discoveries of the nutritional properties of several minor components of palm oil.

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Some of the projects proposed should yield exciting prospects and some merit closer scientific investigation nearer home. The onus of research on some of these aspects has to be principally on medical scientists from this country, as it is our problem and we have to apply our knowledge to confirming and extending some of the claims made.

One of the spinoffs from this upsurge of interest and activity would be the development of manpower resources for medical research, which is so essential for any meaningful research. However, by itself, it is an insufficient factor for making discoveries. We may have all the enthusiasm, knowledge and skills, but without proper guidance, encouragement, adequate funding and the right environment, valuable work might never be initiated. As such a more concerted effort is needed on the part of all concerned, to ensure greater success in our research efforts by according a higher priority for studies on palm oil by medical institutions and universities, as it concerns the health of the country and its people. Research efforts should not stop at countering the ASA claims, but should go a step further to explore new vistas. There is so much potential and we have to exploit it effectively.

## References

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