

COMMENTS ON DRAFT DOCUMENT:

DIET, NUTRITION AND THE PREVENTION OF CHRONIC DISEASES

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Mission: To improve the nation's health status and quality of life through relevant and excellent health research aimed at promoting equity and development
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I should like to compliment the Expert Consultation on *Diet, Nutrition and the Prevention of Chronic Diseases* for the huge task they have undertaken to put together such a comprehensive document.

I am, however, of the opinion that new scientific evidence relating to the health aspects of palm oil was not taken into account, hence the statement about "health concerns attached to it", and "palm oil in its present composition raises cholesterol and total/HDL ratio". These statements are contradictory to the published findings of Choudhury *et al.*, 1995; Sundram *et al.*, 1997; Farooq *et al.*, 1996; Zhang *et al.*, 1997; Ng *et al.*, 1991; and Marzuki *et al.*, 1991. Results from a recent feeding trial in nonhuman primates showed palm olein oil to be no different from animal fat or sunflower oil in its cholesterolaemic effect (Van Jaarsveld *et al.*, 2000). In addition, anti-atherogenic efficacy of a medium fat diet with palm olein, relative to sunflower oil and animal fat, was demonstrated in a nonhuman primate model of atherogenesis (Van Jaarsveld *et al.*, 2001).

A possible explanation of this behaviour of palm oil could be found in the position of the saturated and unsaturated fatty acid chains in a triacylglycerol backbone of the fat molecule which will determine whether the fat will elevate cholesterol levels in blood. Kritchevsky (1988, 2000) has shown that the presence of palmitic acid at the SN2 position of the triacylglycerol, renders the triacylglycerol more atherogenic. In palm oil

75% of the unsaturated fatty acid chains are found in position 2 of the triacylglycerol molecule. Increasing the unsaturated fatty acid chains at position 2 (without changing the overall fatty acid composition of the triacylglycerol) through randomisation renders the triacylglycerol more atherogenic. Atherogenicity of lard, on the other hand, could be reduced substantially by reducing the palmitic acid at the 2 position through randomisation.

It is thus unfortunate that palm oil has been stigmatised as a hypercholesterolaemic fat because of its palmitic acid content, despite human and primate studies which show it to not raise serum cholesterol levels, and primate studies showing palm oil to be no more atherogenic than sunflower oil. Against this background the statement regarding the health concerns attached to palm oil is contradictory to recent scientific reports and should be reconsidered.

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