

Palm oil: a healthful and cost-effective dietary component.

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Palm oil is an excellent choice for food manufacturers because of its nutritional benefits and versatility. The oil is highly structured to contain predominantly oleic acid at the sn2-position in the major triacylglycerols to account for the beneficial effects described in numerous nutritional studies. Oil quality and nutritional benefits have been assured for the variety of foods that can be manufactured from the oil directly or from blends with other oils while remaining trans-free. The oxidative stability coupled with the cost-effectiveness is unparalleled among cholesterol-free oils, and these values can be extended to blends of polyunsaturated oils to provide long shelf-life. Presently the supply of genetic-modification-free palm oil is assured at economic prices, since the oil palm is a perennial crop with unparalleled productivity. Numerous studies have confirmed the nutritional value of palm oil as a result of the high monounsaturations at the crucial 2-position of the oil's triacylglycerols, making the oil as healthful as olive oil. It is now recognized that the contribution of dietary fats to blood lipids and cholesterol modulation is a consequence of the digestion, absorption, and metabolism of the fats. Lipolytic hydrolysis of palm oil glycerides containing predominantly oleic acid at the 2 position and palmitic and stearic acids at the 1 and 3 positions allows for the ready absorption of the 2-monoacylglycerols while the saturated free fatty acids remain poorly absorbed. Dietary palm oil in balanced diets generally reduced blood cholesterol, low-density lipoprotein (LDL) cholesterol, and triglycerides while raising the high-density lipoprotein (HDL) cholesterol. Improved lipoprotein(a) and apo-A1 levels were also demonstrated from palm oil diets; an important benefit also comes from the lowering of blood triglycerides (or reduced fat storage) as compared with those from polyunsaturated fat diets. Virgin palm oil also provides carotenes apart from tocotrienols and tocopherols that have been shown to be powerful antioxidants and potential mediators of cellular functions. These compounds can be antithrombotic, cause an increase of the prostacyclin/thromboxane ratio, reduce restenosis, and inhibit HMG-CoA-reductase (thus reducing) cholesterol biosynthesis). Red palm oil is a rich source of beta-carotene as well as of alpha-tocopherol and tocotrienols.

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