

Crude palm oil contains approximately 1% minor components: carotenoids, vitamin E (tocopherols and tocotrienols), sterols, phospholipids, glycolipids, and other trace impurities. The most important are carotenoids and vitamin E, both of which possess important physiological properties. The orange red colour of crude palm oil is due to the presence of carotenoids with concentration ranging from 500 ppm to 800 ppm. The carotenoids are also a precursor of vitamin A and studies have shown that it possesses protective properties against certain types of cancer.

Cooking oils used today are commonly clear, light in colour, exhibit good cold stability and bland in taste. These oils are varying in their flavours and stability depending on the composition of the oils. Palm olein has excellent flavour and stability but becomes cloudy under cold conditions. Blending of palm oil products with other highly unsaturated vegetable oils could improve its cold stability and enable palm products to be exported to temperate countries such as US, Europe, Japan and South Korea. The demand of such products is expected to be higher in such countries compared to the local consumer market. There are a few premium cooking oil brands in the market having their own uniqueness such as red palm oil, *Smart Balance*TM and *Novelin*TM. This new technology produces premium cooking oil that contains natural phytonutrients with the desired fatty acid composition (FAC) and remains liquid at cold temperature.

TECHNOLOGY

Palm oil is blended with other unsaturated vegetable oils with ratios ranging from 9:1 to 5:5. The blended oil is subjected to dry fractionation process for the removal of higher melting glycerides. The filtrate which contains high unsaturated oil from the process is refined at mild conditions to get the final product with desired fatty acid compositions containing natural

phytonutrients. The flow diagram for the process is shown in *Figure 1*. *Figure 2* shows the premium oil from the dry fractionation process.

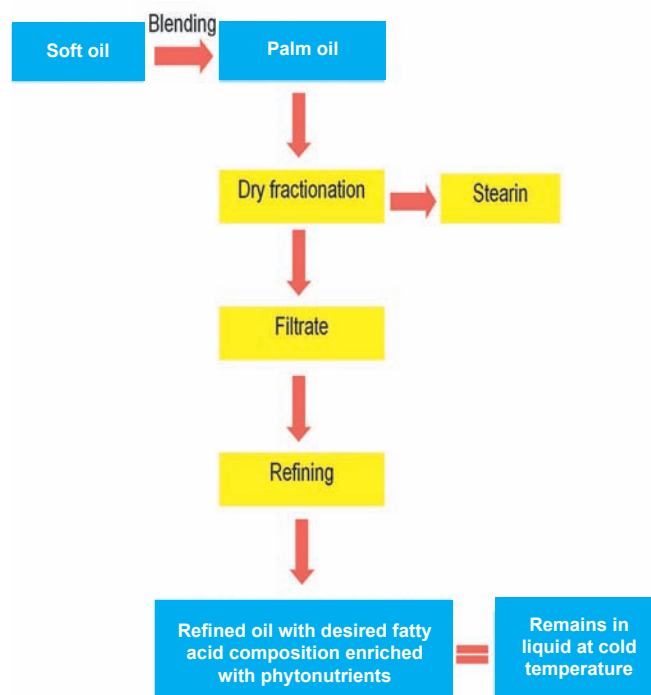


Figure 1. Process flow for the production of premium oil enriched with phytonutrients.

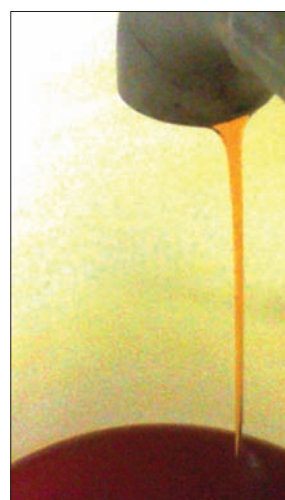


Figure 2. Premium oil from dry fractionation process.

COST ESTIMATE

The end product will be sold at a premium price depending on the selection of raw materials. Currently, commercial premium cooking oil is sold at RM 8 to RM 10 per kg.

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