

Functional beverage is a generic term for drinks containing active ingredients linked to health benefits. Commercially available functional beverages come with claims ranging from increased mental alertness, energy, protection against various degenerative diseases to weight management.

Beta carotene red olein drink or *BeCare* is a functional beverage formulated using a blend of red palm olein and other vegetable oils to meet the healthy fatty acid combination of saturated, monounsaturated and polyunsaturated ratio of 1:1:1, the ratio recommended by the American Heart Association. In addition, *BeCare* is also a source of vitamin A because red olein contains carotenoids, a vitamin A precursor.

Active ingredients in functional beverages are generally water-soluble because these can be easily incorporated into the drink. However, enriching a drink with oil soluble ingredients presents a challenge which has been overcome in the production of *BeCare*, a functional drink which addresses the need for consumption of a diet containing vitamin A and an oil with the desired 1:1:1 fatty acid ratio (Figure 1).

NOVELTY

Each packet of 110 ml *BeCare* contains approximately 9.3 mg carotene. While there is no recommended daily intake of such pro-vitamins, carotene, 3-6 mg daily intake could lower some of the chronic diseases risk.

PRODUCT PROPERTIES

BeCare, is specially formulated to contain an oil blend with omega-3 and red palm olein, a food conditioner, emulsifier and a flavouring agent.



BeCare
(beta carotene red olein drink).

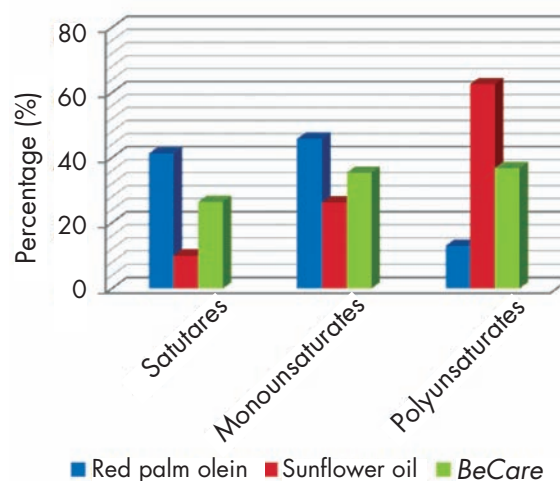


Figure 1. Fatty acid composition of red palm olein, sunflower oil, and BeCare.

TABLE 1. PHYSICAL PROPERTIES OF *BeCare* AND A COMMERCIAL MILK-BASED PRODUCT (control)

	Viscosity (cps)	Brix (°)	pH
<i>BeCare</i>	30.67 ± 2.31	30.27 ± 0.06	7.32 ± 0.11
Control	18.67 ± 2.31	17.20 ± 0.00	6.30 ± 0.02

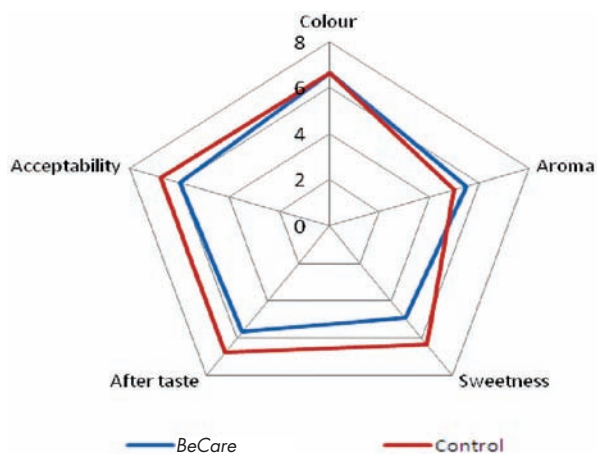


Figure 2. Sensory scores of samples.

The technology was developed to disperse these ingredients in water to produce an emulsion drink of desired flavour, viscosity and taste to suit all gender and age.

BeCare is formulated to be slightly different in its physical properties from a commercial milk-based product, which is also an emulsion drink (Table 1).

Despite the nature of the product, being an oil-in-water emulsion, the overall performance of *BeCare* is acceptable and perceived to be insignificantly ($P>0.05$) different from the commercial milk product by a 30-member sensory panel as shown in the sensory scores in Figure 2.

PRODUCTION POTENTIAL

BeCare is a simple product but requires appropriate technology to ensure acceptability, stability and product safety, through correct aseptic processing and packaging facilities.

Economic Evaluation

Capital investment, RM	1 545 000
Estimated plant capacity, 110 ml bottle	2 836 364
Price cost ratio	1.27
Payback period	3 yrs
Internal rate of return	26%
Net present value, RM	748 839
Return on investment	170 %

TARGET MARKET

The product is aimed at both domestic and international markets. With the increasing consumer awareness of healthy lifestyle and food, this product has good market potential.

For more information, kindly contact:

Director-General
MPOB
P. O. Box 10620
50720 Kuala Lumpur, Malaysia.
Tel: 03-8769 4400
Fax: 03-8925 9446
www.mpob.gov.my