



GOLDEN PALM OIL

Nutrolein is a nutritious and wholesome Golden Palm Oil pioneered through a combination of Malaysian & Danish expertise. This unique oil, developed by United Plantations Berhad, is the product of over 40 years of research in oil quality improvement through the breeding and selection of elite Oil Palms.

Our Nutrolein range of products are the world's richest natural source of Vitamin A (Carotene) and Vitamin E (Tocopherol & Tocotrienols). They are a healthy choice for cooking, baking and salads.

FEATURES

- Produced from selectively harvested fresh fruit bunches grown & processed under Good Agricultural and Good Manufacturing Practices
- 100% Natural & Pure, without colouring & additives
- Rich natural source of Carotenoids (Vitamin A) & Tocopherols & Tocotrienols (Vitamin E), two important anti-oxidants, essential for good health
- High in monounsaturated and polyunsaturated fatty acids
- Iodine value 64 to 70 or more
- Cholesterol free
- Zero Trans-Fatty Acids
- Not Genetically Modified (GMO Free)
- Certified Halal & Kosher
- Available in 125 ml, 250 ml, 500 ml & 1000 ml packaging



THE ORIGINAL



THE EXCLUSIVE



THE ROYAL

Pioneer Development of Nutrolein

United Plantations Berhad's R&D commitment to oil quality improvement saw a major breakthrough in 1988, when, in collaboration with its integrated refinery, Unitata, it pioneered the production of **Nutrolein – The Original Golden Palm Oil** from the African Oil Palm, *Elaeis guineensis*. Research into product improvement continued and our efforts were further rewarded with the recent development and launching of two new novel **Nutrolein** products namely **Nutrolein – 'Exclusive'** and **Nutrolein – 'Royal'**. Both these products are the result of meticulous work on cross-breeding of the African Oil Palm (*Elaeis guineensis*) with the Latin American Oil Palm (*Elaeis oleifera*).



The Elite Parents

Elaeis guineensis

This is the commonly cultivated West African Oil Palm, known for its highest oil yield amongst oil seed crops. We, in United Plantations, have been involved in its cultivation and R&D since 1918 and have in the process assembled a large germplasm collection from most of the important lineages used today.



Elaeis oleifera

Also known as the Latin American Oil Palm, it has a unique fatty acid profile that is rich in Monounsaturates (more than 60% Oleic fatty acid); has more than 2000 ppm of Carotenoids (mostly in the form of Beta-carotene) and over 1200 ppm of Tocopherols & Tocotrienols (Vitamin E). United Plantations Berhad has, over the years acquired a comprehensive germplasm collection from Colombia, Costa Rica, Panama and Brazil which is used in the breeding programs for oil quality improvement.

E. oleifera x *E. guineensis* (OxG) Hybrids

Selected superior lines have been used to hybridise the *E. oleifera* with *E. guineensis* to produce hybrid palms with inherent high oil quality compared to the conventional planting materials. Elite hybrids are then tissue-cultured to produce ramets for commercial cultivation.



Elaeis oleifera ♀

X



Elaeis guineensis ♂



OxG Hybrid Progeny

Production of OxG Clonal Planting Materials



Transfer operators in the laboratory



Quality control of proliferating oil palm cultures



Rooted plantlet

Nursery & Field Planting



General view of prenursery



1 year after planting



10-year old palms carrying a good crop of fruit bunches

Processing

The Fresh Fruit Bunches (FFB) from specially developed palm trees are selectively harvested and immediately delivered to the palm oil mill for oil extraction under strict supervision to avoid deterioration through hydrolysis and oxidation. The special crude palm oil of premium quality is refined, fractionated and deodorised under mild conditions to preserve the inherent qualities of the oil. The refined oil, packed with natural carotenoids (pro-vitamin A) and vitamin E (most of which is the beneficial tocotrienols), is then bottled under stringent hygienic conditions.



Rail transport of FFB to mill



Overview of the Palm Oil Mill



Unitata refinery



Deodoriser



Quality control



Bottling of Nutrolein Golden Palm Oil

Technical Specifications of Nutrolein

	The Original	The Exclusive	The Royal
FFA (Palmitic)	0.10 % max	0.10 % max	0.10 % max
Moisture & Impurities	0.10 % max	0.10 % max	0.10 % max
IV	64	64	70
Cloud Point	4° C max	4° C max	0.5° C max
Carotenoids (Pro-Vitamin A)	400 ppm min	525 ppm min	800 ppm min
Vitamin E (Tocopherols & Tocotrienols)	900 ppm min	900 ppm min	900 ppm min
Typical Profile:	ppm	ppm	ppm
alpha – Tocopherols	216	216	171
alpha – Tocotrienols	234	234	171
gamma - Tocopherols	9	9	-
gamma – Tocotrienols	315	315	432
delta - Tocotrienols	126	126	126
Typical Fatty Acid Composition %			
Saturates	39.7	39.7	31.1
Monounsaturates	46.0	46.0	51.4
Polyunsaturates	14.3	14.3	17.5

Nutritional Information per Serving

	The Original		The Exclusive		The Royal	
	1 tbsp 14g	100 g	1 tbsp 14 g	100 g	1 tbsp 14 g	100 g
Calories	120 Kcals	900 Kcals	120 Kcals	900 Kcals	120 Kcals	900 Kcals
Protein	0 g	0 g	0 g	0 g	0 g	0 g
Carbohydrates	0 g	0 g	0 g	0 g	0 g	0 g
Fat	14 g	100 g	14 g	100 g	14 g	100 g
Saturated Fat	5.6 g	39.7 g	5.6 g	39.7 g	4.35 g	31.1 g
Monounsaturated Fat	6.4 g	46.0 g	6.4 g	46.0 g	7.20 g	51.4 g
Polyunsaturated Fat	2.0 g	14.3 g	2.0 g	14.3 g	2.45 g	17.5g
Cholesterol	0 mg	0 mg	0 mg	0 mg	0 mg	0 mg
Carotenoids (Pro Vitamin A)	5.6 mg	40 mg	7.35 mg	52.5 mg	11.2 mg	80 mg
Vitamin E	12.6 mg	90 mg	12.6 mg	90 mg	12.6 mg	90 mg



Our Company

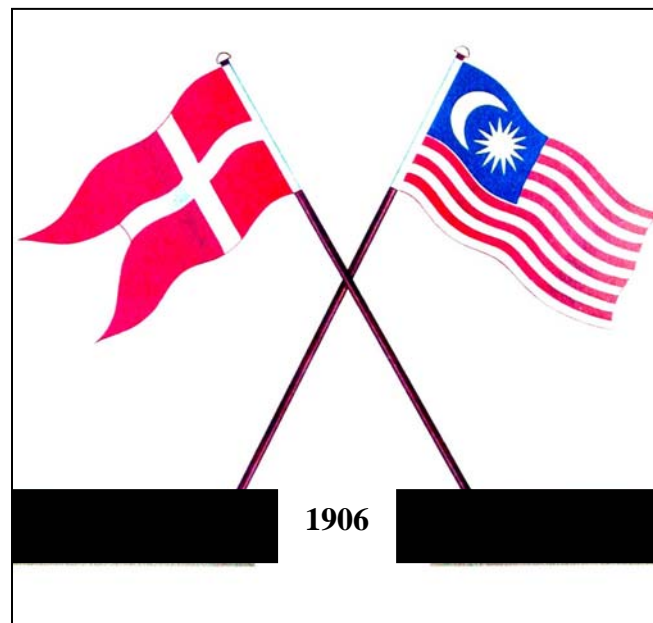
United Plantations Berhad is one of the major Plantation Groups in Malaysia listed on the Main Board of the Bursa Malaysia Securities Berhad and the NASDAQ OMX Copenhagen A/S. The Company's core business is in the cultivation and processing of oil palm and coconut. The group comprises of 12 Estates located in and around the Lower Perak District

Our Research Department

The Research Department located in Jendarata Estate is an integral component of the group, with a fully equipped commercial Tissue Culture laboratory. The Department's activities are applied research, advisory services and the production of quality planting materials of oil palms, coconuts and bananas.

Our Refinery

Unitata Berhad, a wholly owned subsidiary of United Plantations Berhad is a pioneer in palm oil refining in Malaysia. Initially a bulk producer of quality vegetable fats and soap products, it has evolved into a premium producer of specialty fats in collaboration with Aarhus United Group of Denmark. Constant investment in production facilities and on-going product development has enabled us to continue meeting customer demands. Our ISO and HACCP approved management systems reflect our commitment to quality and service, enabling us to meet total customer satisfaction and respect.



FOUNDED ON DANISH & MALAYSIAN EXPERTISE AND RESOURCES

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