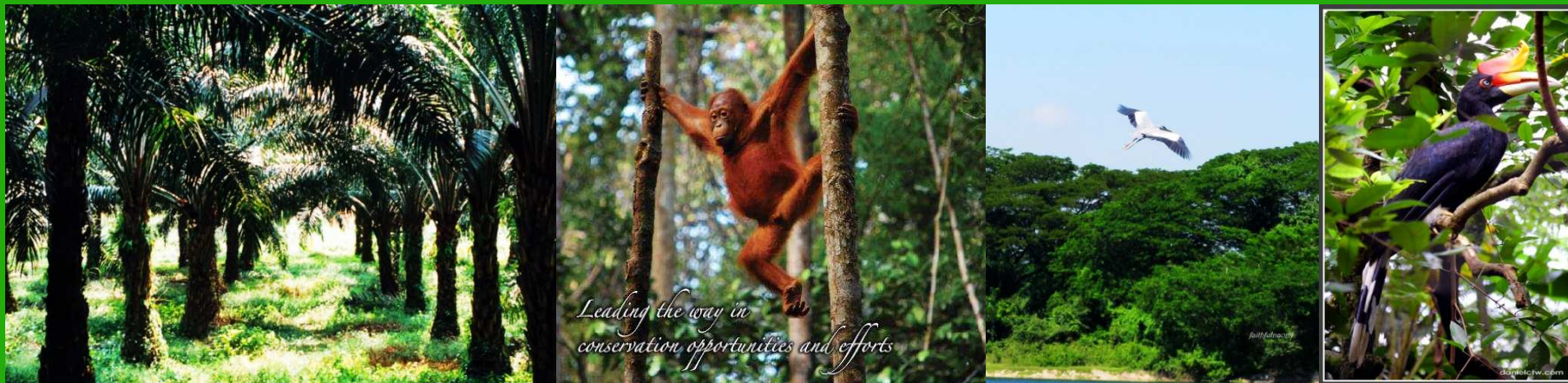


SUSTAINABILITY

Sustainable Palm Oil

Carotech's Commitment

WH Leong, Vice President, Carotech Inc.



Carotech - *Your Preferred Partner In Nutraceutical Excellence*

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Carotech

- Incorporated in Malaysia - July 1990.
- First in Malaysia (since 1994) to commercially extract tocotrienol complex (Tocomin[®]), mixed carotene complex (Caromin[®]), and phytosterols (Stelessterol[™]), from virgin crude palm oil (*Elaeis guineensis*).
- Largest and only GMP-Certified producer in the World
- Public-Listed Company in Malaysia
- Commitment to Quality & Safety
 - GMP certification by National Pharmaceutical Control Bureau
 - ISO 17025 accreditation
 - Kosher
 - Halal

Peninsular Malaysia (a satellite view)



Locations of Carotech Factories



The total forested area in Perak amounts to 1,050,225 ha. Of this, 884,205 ha are gazetted as Permanent Reserved Forest. (data source : SGS 2003, independent assessor to the Forestry Department of Perak)

Carotech's Commitment

- Carotech only purchases its feedstock – virgin crude palm oil from sustainable plantations in Peninsular Malaysia.
- These plantations are RSPO members committed to RSPO Principles and Criteria.
- Carotech is a member of the Roundtable on Sustainable Palm Oil (RSPO) organization since 2007.
- Committed to principles and criteria of sustainable plantation.
- Carotech does not purchase palm oil from Indonesia or Borneo.
- Plantations in Peninsular Malaysia are not newly deforested area but legally designated agricultural land that have been worked on for over three to four 25-year cycles (existing cropland)

Carotech's Commitment

- ✓ All our customers can be assured that our products do not come from palm trees grown on new plantations or plantations from recently cleared rainforest, which are more prevalent in Borneo & Indonesia.
- ✓ Carotech strives to ensure only sustainably produced crude palm oil from plantations within Peninsular Malaysia is used in the production of our products.
- ✓ Our guarantee as part of RSPO membership.

Roundtable On Sustainable Palm Oil

RSPO

- A not-for-profit association created by organisations carrying out their activities in and around the entire supply chain for palm oil.
- Established under Article 60 of the Swiss Civil Code on 8 April 2004 in Zurich, Switzerland.
- Objective: **promoting the growth and use of sustainable oil palm products through credible global standards and engagement of stakeholders.**
- RSPO members are expected to implement plans of actions to promote sustainable palm oil production.
- Apply better management practices including preservation of forest areas of high conservation value (HCVFs).

Roundtable On Sustainable Palm Oil

RSPO

- RSPO promotes sustainable palm oil production practices to help
 - Reduce deforestation
 - Preserve biodiversity
 - Respect the livelihoods of rural communities in oil-producing countries
- RSPO ensures that no primary forest or other high conservation value areas are sacrificed for palm oil plantations.
- RSPO aims to see all the world's palm oil produced in a sustainable way.

Source: www.rspo.org

Facts – Sustainability of Malaysian Palm Oil

- ▶ Oil palm's economic potential was first realized in the 1960s when the Malaysian Government embarked on a poverty eradication program through agricultural diversification by planting oil palm to complement rubber.
- ▶ Malaysia's oil palm can only be planted on idle land or conversion of other crop land – does not encroach into forest areas.
- ▶ In 2009, Malaysian crude palm oil production was 17.56 million tonnes. (MPOB, 2009 overview) Second place to Indonesia with estimated production of 20.3 million tonnes for 2009.
- ▶ In 2009, Malaysia oil palm planting area was 4,691,160 million hectares. (MPOB, 2009 overview)
- ▶ Currently, the Malaysian oil palm industry as a whole, including the downstream sectors, employs 860,000 people, both directly and indirectly.

Forest Areas in Selected Countries

Country	% Forest Area	Total Forest Area (mil ha)	Total Land Area (mil ha)
France	28.3	15.55	55.01
Sweden	66.9	27.53	41.16
Germany	31.7	11.08	34.9
Malaysia	63.6	20.89	32.86
UK	11.8	2.85	24.09
Brazil	57.2	477.7	835.56
Argentina	12.1	33.02	273.67
USA	33.1	303.09	915.89
Denmark	11.6	0.5	4.31

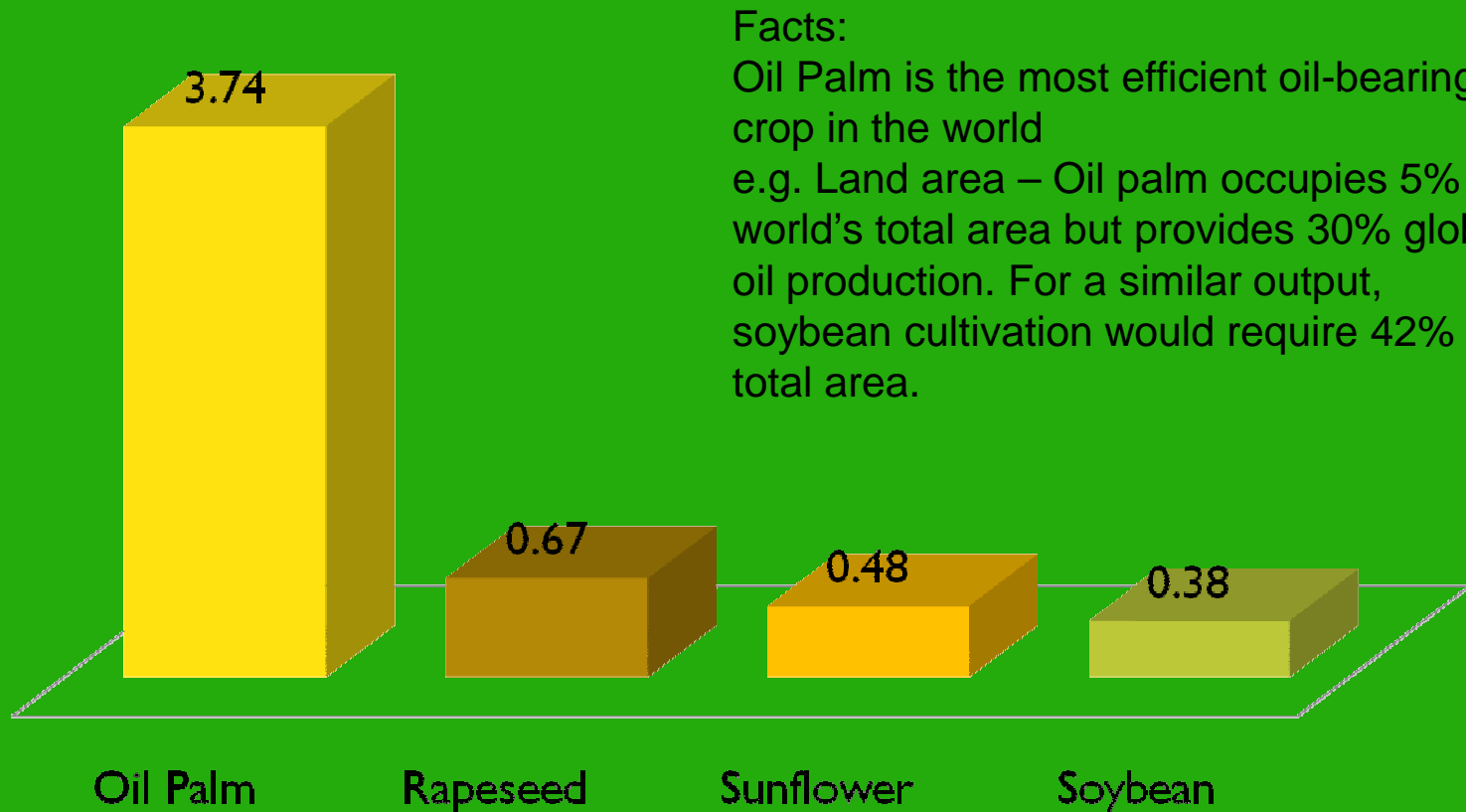
Source: FAO, Global Forest Resources Assessment 2005

Facts:

1. Oil palm plantations in Malaysia occupy less than 13% of Malaysia's land area.
2. Since 1990, Malaysian government has banned the opening up of new forest for agriculture.

Oil Palm vs Other Major Oil Crops

Average Oil Yield (t/ha/year)



Facts:

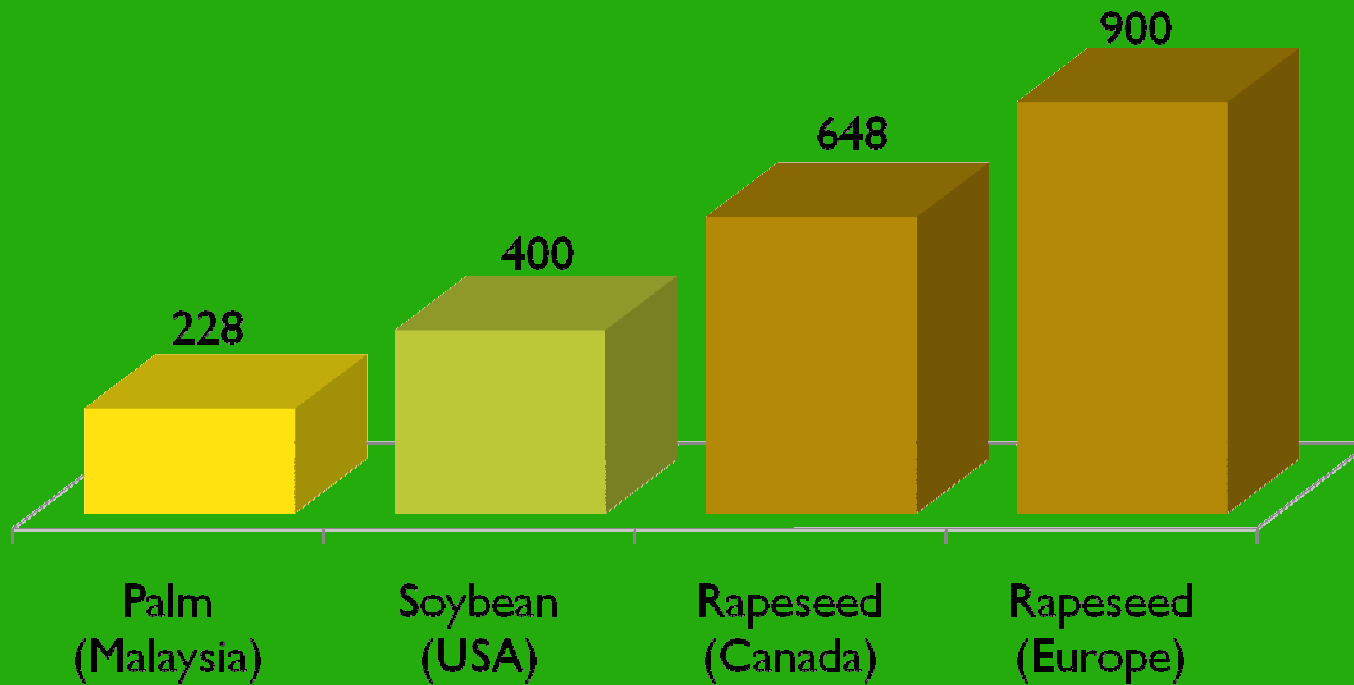
Oil Palm is the most efficient oil-bearing crop in the world

e.g. Land area – Oil palm occupies 5% world's total area but provides 30% global oil production. For a similar output, soybean cultivation would require 42% of total area.

Source: Oil World (2007)

Palm Oil is the Least Expensive Vegetable Oil to Produce

Production Cost (USD/tonne)



Source: MPOB (2005)

CO₂ Sequestration

Oil Crop	Total Global Planted Area in 2006 (mil ha)	O ₂ Released (mil tonnes)	CO ₂ Absorbed (mil tonnes)	Average O ₂ Released (t/ha)	Average CO ₂ Absorbed (t/ha)
Oil Palm	9.24	196.8	270.7	21.3	29.3
Soybean	92.40	236.5	325.2	2.56	3.52

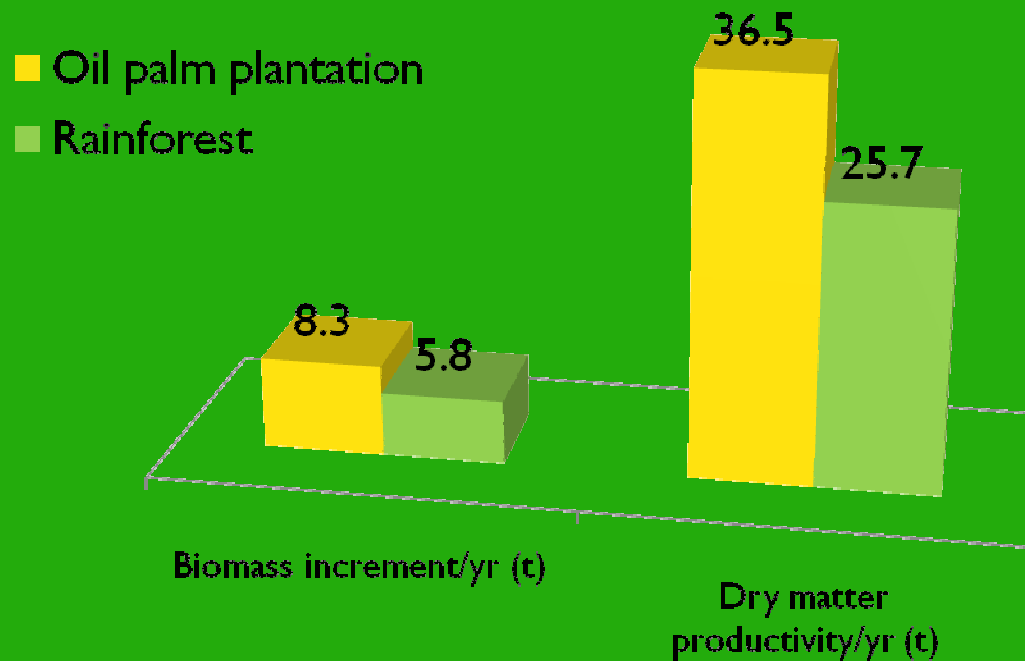
Source: Chan (2002), Oil World (2007)

Fact:

Oil palm oxygenates the atmosphere more efficiently.

Oil Palm Plantations – Carbon Sinks

Physiological Parameters of Oil Palm and Tropical Rainforest



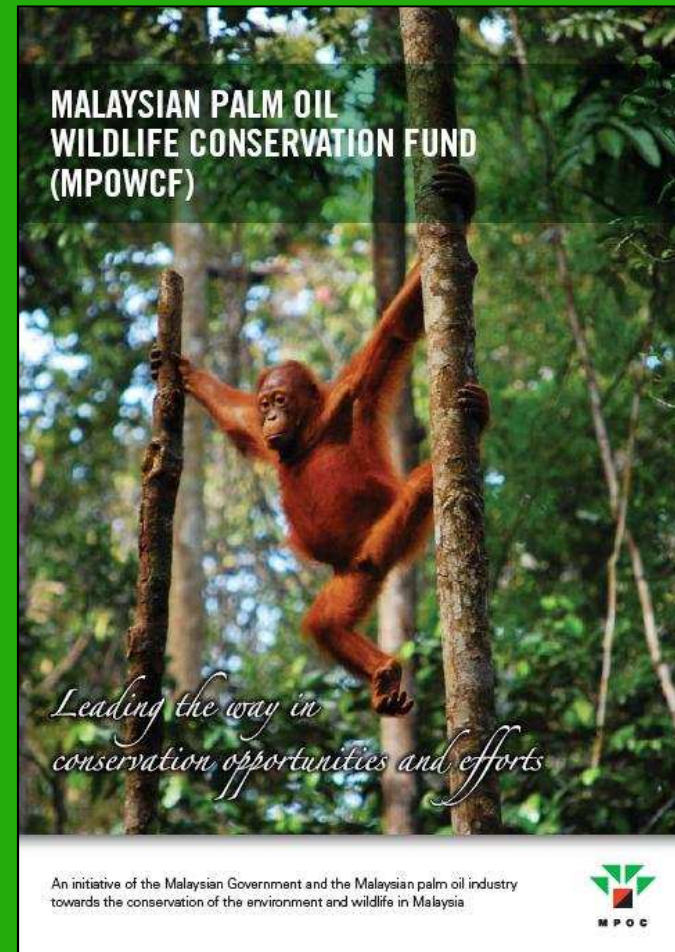
Facts:

1. Dry matters absorbed greenhouse gases.
2. Biomass can be further processed to produce ethanol (biofuel).

Source: Henson, 1999

Malaysian Palm Oil Wildlife Conservation Fund (MPOWCF)

- MPOWCF was launched by the Malaysian Palm Oil Council (MPOC) with an initial funding of RM20 million (US\$5.7 million) in 2006. RM10 million is a grant from the Malaysian government and the other RM10 million is provided by the palm oil industry.
- It is a revolving fund to support efforts to enhance biodiversity conservation and research related to palm oil production worldwide.



Malaysian Oil Palm Industry Sustainable Practices

- To ensure that the environment and biodiversity are not harmed by the cultivation of the crop.
- The industry adopts Good Agricultural Practices (GAPs)
 - Integrated Pest Management – minimizes the use of pesticides by depending more on biological control to protect the palm trees. (pest and insect controls)
 - Biological control on weed growth – by planting a leguminous cover – nitrogen fixation, prevents soil erosion, improves rainfall retention.
 - Practices Zero-burning during replanting – old palms are pushed over and shredded and left to decompose on site. Therefore, no air pollution, nutrients in the old crop are recycled into the new.
 - Mulching of plantation land with fronds and empty fruit bunches.

Source: MPOC

Subject to These Laws & Regulations

- ▶ The Malaysian oil palm industry is one of the most regulated industries in the world.
- ▶ Land Acquisition Act 1960
- ▶ Protection of Wildlife Act 1972
- ▶ Environmental Quality (Clean Air) Regulation 1978
- ▶ Pesticides Act 1974 (Pesticides Registration) Rules 1976
- ▶ Labour Law
- ▶ Workers' Minimum Standard of Housing and Amenities Act
- ▶ Hazard Analysis & Critical Control Points (HACCP)
- ▶ Occupational Safety and Health Act 1977

Carotech's Position

- Being a company established in Peninsular Malaysia and a member of the RSPO, Carotech is committed in upholding the codes of conduct of the oil palm industry.
- Carotech strives to ensure only sustainably produced crude palm oil is used in the production of our products.
- Our customers can be assured that Carotech's products are sustainable.

Resources:

1. RSPO www.rspo.org
2. MPOB www.mpob.gov.my
3. MPOC www.mpoc.org.my
4. Carotech www.carotech.net

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