

J.C. CHANG/CAROTINO GROUP

Enviromentally Sustainable Palm Oil Production

In harmony with nature, for a brighter future



The J.C. Chang/Carotino Group is principally based in Malaysia but has business interests all over the world. It covers plantations; palm oil mills; palm oil refining; manufacturing and marketing of biodiesel and world-wide exports.

Plantations form the core business of the J.C. Chang /Carotino Group. The Group's main asset is its dedicated and highly skilled staff, all of whom are experts in their respective fields. With visionary leadership and pragmatic management, the J.C. Chang/Carotino Group is poised to remain strong and vibrant.

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Chairman's Letter

Dear Reader,

Palm oil is a versatile vegetable oil with many applications in both food and non-food products. Its commercial cultivation only started about 80 years ago. In its short commercial history, oil palm cultivation has managed to fill the gap in demand for nutritious food created by the fast growing populations and their improving living standards.

Oil palm crop has the highest productivity per unit land area amongst all oil crops currently cultivated throughout the world. This means, for every hectare of land cultivated with oil palm, five to nine hectares of forest can potentially be saved from being converted to farm land.

Closer to home in Malaysia, the palm oil industry has provided employment and livelihood to thousands of people directly and indirectly. Oil palm cultivation has significantly improved the living standards of smallholders and the rural population. This has an important positive contribution on the country's social economic stability and development.

The J.C. Chang/Carotino Group is proud to have been involved in the palm oil industry since the 1960's. We are confident that palm oil will continue to provide nutritional and health benefits to the end-users of the Oil and Fats market worldwide.

We are glad that the concept of sustainability is now well recognized and widely accepted. The J.C. Chang/Carotino Group fully subscribes to this belief. Since the beginning, the Group has adopted and implemented good agricultural practices, soil and water conservation programmes, eco-friendly integrated pest control methods and maintained harmonious relationships with the local communities. With new advances in science and technology, there are exciting prospects for further improvement, particularly in the areas of higher productivity, waste elimination, alternative fuel, energy usage efficiency and many more.

The formation of the Roundtable for Sustainable Palm Oil (RSPO), of which we are a member, together with other members who are growers, processors and manufacturers, traders and retailers, as well as NGO's, provides a more focused perspective and comprehensive framework for sustainable operations. From our board members to our employees, we are all fully committed to achieve the sustainability mission.

Tan Sri Datuk J.C. Chang
P.S.M., P.S.D, D.K.J.P., PhD(h.c),

"As Chairman of the J C Chang/ Carotino Group, I am responsible to our shareholders, our employees and stakeholders. As such, I am committed to meeting the needs of the current and future generations through principles and activities that integrate environmental protection, economic prosperity and social advancement."



Tan Sri Datuk J.C. Chang
P.S.M., P.S.D, D.K.J.P., PhD(h.c), FEAE

Founder Chairman of the
J.C. Chang/Carotino Group

Corporate Environmental Policy

- ✦ Ensure compliance with all applicable national environmental legislation and regulations
- ✦ Ensure that land used for cultivation is in accordance with national regulations and planning
- ✦ Preserve soil fertility, prevent soil erosion and conserve soil moisture through Good Agriculture Practices
- ✦ Promote biodiversity and natural ecological balance in the environment
- ✦ Select non-polluting technologies, minimise waste and practise re-use/recycling through good agriculture/manufacturing practices
- ✦ Focus on energy efficiency and deployment of alternative energy to reduce fossil fuel usage
- ✦ Mitigate or eliminate any adverse environmental impacts arising from our operation
- ✦ Promote environmental awareness amongst employees, contractors and suppliers and empower them to act responsibly
- ✦ Continually improve our environmental programs

Introduction

In today's rapidly developing world, maintaining the delicate ecological balance and caring for the world around us has become increasingly important. At J.C. Chang/Carotino, care for the environment is at the heart of everything we do.

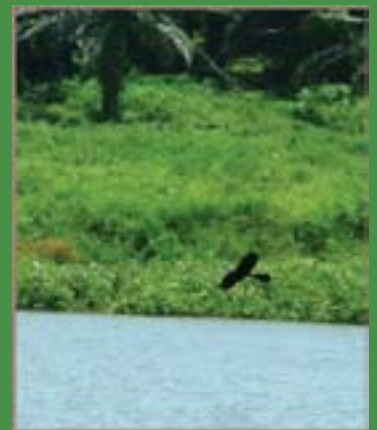
As a member of the RSPO with oil palm plantations in Malaysia, we constantly strive to make a positive contribution to both the local and wider environment. We also use every means at our disposal to promote a harmonious relationship with nature.

This commitment is reflected in J.C. Chang/Carotino's corporate environmental policy, which is an integral part of the company's business strategy.

We firmly believe that it is good business practice to conduct our operations in harmony with the environment and the community we serve. Our policy underlines this commitment.



A bumble bee hovering over a Tunera Flower



A cormorant hunting for fish over a water catchment pond



A common species of squirrel, living in our palm plantations



MAIN PICTURE: An attractive riverside nature reserve

J.C. Chang/Carotino - A Vertically Integrated Group

The J.C. Chang Group is the parent company of several thriving global businesses which are based on the environmentally friendly cultivation and manufacture of high quality palm oil.

The most well-known of these is Carotino and its biodiesel brand, Enffue, both of which have reputations for excellence in their respective fields and are equally committed to sustainable palm oil production.



carotino



Regular visitors to our oil palm plantations located adjacent to natural forests



Clear water flowing through a stony river with well protected river banks



Environmentally friendly combination of three-tiered vegetation of leguminous ground covers, oil palm and forest trees

Palm oil production is a highly energy efficient process as its energy ratio of output to input is 9.6 compared to 3.0 for rapeseed and 2.5 for soybean



Carotino Oil – Naturally Healthy

Carotino produces a range of red palm fruit oil products that are used everyday in millions of homes across Asia, Australia, Africa, America and Europe. Its flagship product is the delicious, natural, cholesterol-free, multi-purpose Carotino cooking oil. Carotino oil is sold worldwide and a number of additional culinary products derived from the oil are produced and sold in selected global markets.

The oil is made from the nutritious flesh of the red palm fruit, which is packed with natural alpha and beta carotenes, also known as Pro-Vitamin A. Carotino oil also contains a range of other nutrients including Vitamin E, Omega 3 and 6, Lycopene and Co-enzyme Q10 and it has a well-deserved reputation as a healthy product.

Numerous studies have been done on the nutritional value of Carotino oil, further information about which can be found later in this brochure.



Enffue Palm Biodiesel – For a greener future

Palm trees are extremely versatile crops and as well as producing premium quality oil for consumption, palm oil can be turned into a highly effective biodiesel.

Biodiesel is a bio-degradable, environmentally-friendly fuel derived entirely from renewable natural sources, such as vegetable oil and is viewed as a viable long-term alternative to traditional petroleum-based fuels.

Palm oil offers significant environmental advantages over other plant based biodiesel sources, such as soybean and rapeseed, and the impressive yield, productivity and efficiency factors associated with palm oil production make it a cost effective alternative.

As a major player in the palm oil industry, J.C. Chang is taking a leading role in the development of biodiesel and was the first company in the world to set up a fully integrated palm biodiesel plant.

J.C. Chang biodiesel brand – Enffue Environment Friendly Fuel – was launched in August 2006, by the Prime Minister of Malaysia, Dato' Seri Abdullah Haji Ahmad Badawi and is going from strength to strength.

The Enffue plant is leading the world in palm biodiesel development and was the first to produce winter grade palm biodiesel which can be used in temperate countries to meet the seasonal cold filter plugging point.

Enffue applies the same 'green' principles which guide every aspect of J.C. Chang's other business interests to produce ethically sourced, environmentally sustainable palm biodiesel to help meet the bio-fuel requirements of the 21st century.



Enffue is an environmentally friendly alternative to fossil fuel. Rail, road and marine transport can run successfully on Enffue biodiesel





Nephrolepis biserrata fern - a natural vegetation in our palm oil plantations



A self-protective pill millipede with digestive system that enriches the soil with natural excreta



Sparkling morning dew droplets forming on a Paspalum grass blade

Sustainable Production

J.C. Chang/Carotino is a vertically integrated group of companies with interests in palm plantations, palm oil mills and processing plants, which are located in Peninsular Malaysia and the state of Sabah.

All the plantations are located within non-peat areas designated by the Malaysian government as approved agricultural areas.

The Group is committed to Good Agricultural Practices (GAP) and its goal is to achieve sustainable production and distribution of premium quality palm products while adhering closely to its environmental principles.

It aims to do this by several means, including:

- ◆ Promoting biodiversity in its oil palm plantations
- ◆ Adopting an integrated pest management policy
- ◆ Following a robust forest and riparian conservation policy
- ◆ Embracing Best Management Practices



MAIN PICTURE: The palm canopies allow good sunlight penetration, which encourages plant biodiversity

Biodiversity in Oil Palm Plantations

Palm plantations are home to a wide variety of animal species, from the tiniest insects and spiders to larger mammals such as monkeys, as well as many other creatures including snakes, rats, birds, lizards, frogs and squirrels.

They also provide perfect habitats for a wide variety of different plants, flowers and fungi which thrive among the trees and add to the unique biodiversity of the palm environment.



ABOVE: Hunting and fishing are prohibited within our plantations





Palm plantations are home to millions of different insects



Egrets are well adapted to the oil palm environment



Grasshoppers add to the insect diversity of the oil palm plantations

MAIN PICTURE. Weaver birds nest among the palm fronds

We are committed to promoting biodiversity and natural ecological balance in the environment



RIGHT:
Signs of rat
damage on
fruitlets of a
developing
bunch



MAIN PICTURE: Barn Owls (*Tyto alba*), are natural predators of rats which can damage palm trees

Integrated Pest Management

The J.C. Chang/Carotino Group takes every possible step to encourage this natural diversity and protect the delicate ecological balance of the area.

Among the steps it takes is to implement an integrated pest management programme, which includes:

- ◆ Emphasising the use of both biological and cultural practises to judiciously reduce and minimize the use of pesticides.
- ◆ Encouraging natural pest control methods such as providing nesting boxes for barn owls and encouraging the proliferation of snakes, iguana and eagles to keep the rat population under control.
- ◆ Installing pheromone traps and cultivating leguminous covers to reduce and control attacks by the *Oryctes* rhinoceros beetle on immature plants.
- ◆ Planting species such as *Cassia cobanensis*, *Tunera subulata* and *Antigonon leptopus* to increase the number of predatory insects which control leaf-eating caterpillars and bag worms.
- ◆ Using only environmentally safe chemicals and methods of application whenever pesticides are necessary for supplementary control.



ABOVE: Nesting boxes are erected to enhance the breeding and growth of the Barn Owl population



Predatory insects are encouraged to reduce pests naturally



Tunera subulata plants are the host plants of several predatory insects



Wherever possible, natural solutions are found to deter pests

Good Agricultural Practices

As part of its commitment to promoting plant and animal diversity in its plantations, the J.C. Chang /Carotino Group follows Good Agricultural Practices to ensure that the land is responsibly managed and maintained. Adhering to Good Agricultural Practices ensures that the delicate eco-system of the palm plantations is maintained, helping to prevent soil erosion, preserve soil fertility and conserve moisture.

These practices include:

- ◆ Practising a zero burning policy and burying all felled and shredded trunk chips from old palm trees.
- ◆ Replacing felled palms with new and vigorous high yield seedlings to boost productivity.
- ◆ Maintaining balanced ground vegetation and soil conditions to stimulate natural soil flora and fauna.
- ◆ Optimizing soil fertility to encourage robust palm growth and yield.



RIGHT: Harvested bunches are removed from palm bases with buffalo and cart to reduce the use of fossil fuel

FAR RIGHT: The crown of a highly productive palm fully encircled with well formed bunches



We are committed to ensuring compliance with all national environmental legislation and regulations and where possible improving on it



Optimal ground and palm conditions for sustained high yields



Planting a seedling of optimal age and size in the field



Harvesting a mature palm with a sickle attached to a metal pole



MAIN PICTURE: Old palms are replanted with new high-yield seedlings

We are committed to preserving soil fertility, preventing soil erosion and conserving soil moisture through Good Agricultural Practices

MAIN PICTURE: Gently sloping lands are carefully terraced and planted with leguminous cover crops to prevent soil erosion and conserve water

Good Agricultural Practices

Adhering to Good Agricultural Practices ensures that the delicate eco-system of the palm plantations is maintained, helping to prevent soil erosion, preserve soil fertility and conserve moisture. These include:

- ◆ Constructing terraces, silt pits and cultivating *Mucuna bracteata* leguminous covers to minimise soil erosion and check weed competition.
- ◆ Ensuring that rain water running off road surfaces is diverted into channels which take it directly onto the terraces and fields.
- ◆ Encouraging the proliferation of desirable low soft grasses between rows of palm trees to increase water infiltration and reduce surface run-off.
- ◆ Spreading palm frond piles low and wide to conserve moisture and distribute organic carbon more evenly between palm rows.
- ◆ Placing pruned fronds along the natural contours of the slopes to reduce the speed of water flowing down hills.
- ◆ Turning all forms of palm waste from the mills into compost as an organic nutrient and carbon source for the palm trees.



ABOVE: Rainwater is channelled into drainage ditches to preserve water for irrigation



Drain sides are protected by luxuriant spread and growth of *Mucuna bracteata* ground covers



Planting of Guatemala grass to prevent roadside erosion and landslides



Beneficial grasses alternate with palm fronds to minimise soil erosion and maximise moisture conservation

Forest Conservation

All of J.C. Chang/Carotino's plantations are in government approved agricultural non-peat areas, some of which are located near designated forest reserves. As such, forest conservation is an essential part of the group's environmental policy.

The proximity to these natural forests compliments the biodiversity of the palm plantations and provides a visually stunning backdrop which J.C. Chang/Carotino is committed to preserving by several means, including:

- ◆ Abstaining from planting on all forms of peat swamps.
- ◆ Refraining from planting on government designated forest and wildlife reserves.
- ◆ Leaving excessively steep terrain uncultivated and retaining as forest nature reserves

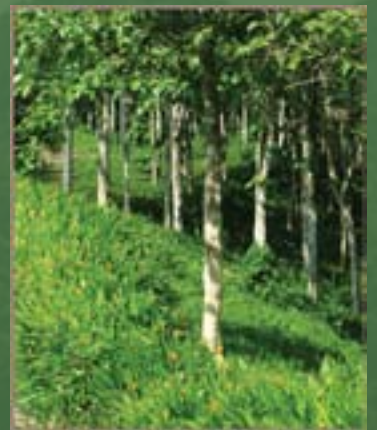


Above: Areas designated as forest reserves by the Government are strictly conserved and protected as mandated

**We are committed to ensuring that land used
for cultivation is in accordance with national
regulations and planning**



Steep lands are left
uncultivated and retained as
forest reserves



Teak trees planted around
ponds for water consumption



The gratifying result of
continous, conscious effort to
promote and practice
riparian conservation

**MAIN PICTURE: A scenic view of one
of our oil palm plantations**



Beautiful purple flowers on a spike of Woodland Basil (*Stachytarpheta indica*), found in our plantations



A variety of owl species, native to palm plantations



Bull-frogs are found in damp, low lying palm fields

Protecting Natural Habitats and Endangered Species

Malaysia is one of the world's leading producers of palm oil products and all plantations in Malaysia adhere to very strict environmental legislation.

The government takes a pro-active stand on environmental issues and has a dedicated Ministry of Environment and Natural Resources which is very robust in enforcing the law in this field.

The Malaysian palm oil industry not only works hard to minimise pollution and protect the habitats of all wildlife, it actively promotes biodiversity of flora and fauna in its oil plantations. It works closely in partnership with internationally renowned environmental organisations such as the World Wide Fund for Nature (WWF) to achieve these goals.

The red palm fruit oil used to make Carotino comes exclusively from Malaysia and is supplied by long established plantations which have been growing palm trees for many decades.

- ♦ All of J.C. Chang/Carotino's oil palm plantations are located on designated non-peat agricultural land that does not encroach on any orang-utan habitat.
- ♦ All palm oil downstream products produced by the group for both domestic and export markets originate in peninsular Malaysia which has never been an orang-utan habitat.
- ♦ The group contributes towards orang-utan rehabilitation and protection through the Malaysian Palm Oil Council, which has allocated a \$5.5 million US dollar Malaysian Wildlife Conservation Fund.

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 Resource Assessment, 2005



MAIN PICTURE: An orang-utan sanctuary

Malaysian Perspectives on Sustainable Palm Oil

Legislations to regulate the Malaysian Palm Oil industry:-

- Land Acquisition Act 1960
- Land Conservation Act 1960 revised in 1989
- National Land Code 1965
- Protection of Wildlife Act 1972
- Environmental Quality Act 1974 (Environmental Quality) (Prescribed Premises) (Crude Palm Oil) Regulation 1977
- Environmental Quality (Clean Air) Regulation 1978
- Workers' Minimum Standard of Housing & Amenities Act 1990
- Occupational Safety & Health Act 1977
- Pesticides Act 1974 (Pesticides Registration) Rules 1988
- Pesticides (Licensing for sale & storage) Rules 1988
- Pesticides (Labeling) Regulations 1984
- Factories & Machinery (Noise Exposure) Regulations 1989
- Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987
- The National Parks Act 1984

Malaysia is also a signatory to:

- The Convention on Biological Diversity 1992
- International Tropical Timber Agreement, and
- Charter of the Indigenous-Tribal Peoples of Tropical Forests



ABOVE: Orang-utans are protected in Malaysia

MAIN PICTURE: Workers living quarters on a palm plantation



Commitment to the Local Community

As well as being dedicated to its environmental responsibilities, J.C. Chang/Carotino is a caring employer, a responsible landowner and aims to be a conscientious corporate citizen.

The majority of the Group's agricultural employees live as well as work in the plantations and the health and welfare of staff and their families are of fundamental importance to the company.

To ensure that our plantations are harmonious places to live and work, J.C. Chang/Carotino has created thriving and dynamic communities which enhance the lives of employees and their families.

The company provides a host of facilities which meet their basic needs, such as providing good quality housing and catering for their educational, spiritual and social requirements.



ABOVE: Workers take great pride in their homes on the plantations



ABOVE: The interior of a typical worker's home

The amenities which J.C. Chang/Carotino provides for workers include:

- ◆ Comfortable 2 and 3 bedroom living accommodation in attractively landscaped settings
- ◆ Community halls for social functions
- ◆ Places of worship for spiritual fulfilment
- ◆ Good standard Humana schools and crèches for workers' children
- ◆ Games and sports facilities for leisure and relaxation
- ◆ Medical facilities for basic healthcare and emergencies
- ◆ Water treatment plants to provide clean, treated water

The group also works in partnership with neighbourhood communities to enhance the lives of the people who live in them.

One example of this is a mini hydro power generation project in collaboration with the Sabah Electricity Board. Another typical example is the donation of water tanks to the local community in Kampung Sir Darun.



ABOVE: This volleyball court is one of the many leisure facilities available to workers on J.C. Chang/Carotino Group plantations



An open multi purpose court for recreational activities and games



A water treatment plant to filter and treat water for consumption



A comfortable, modern school on one of our plantations

We are committed to promoting environmental awareness amongst employees, contractors and suppliers and empowering them to act responsibly



RIGHT: A well equipped clinic providing basic medical needs for staff and workers on our plantations



MAIN PICTURE: Workers are trained on the correct techniques of applying different types of fertilisers

Health and Safety - A Primary Concern

In addition to providing clean, comfortable and well-designed communities to live and work, J.C. Chang/Carotino ensures that all its staff are well trained in health and safety issues to create an excellent work environment.

We invest in personnel training and contribute socially and economically to local neighbourhood communities through:

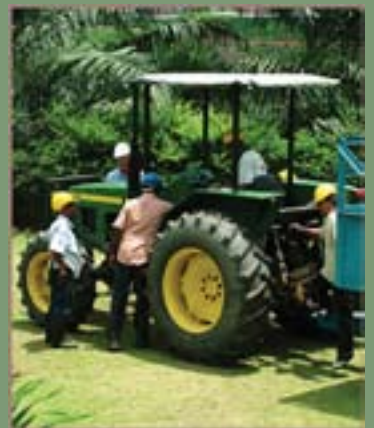
- ◆ Medical care for workers
- ◆ Training in Health, Safety and Food Safety measures to continually improve on productivity



ABOVE: A notice board in mill premises to advocate the basic safety measures to be observed and practised by our mill workers



A fuel spillage sump erected to contain any accidental spillage of diesel from the tanks



Tractor drivers are frequently refreshed on the proper ways to drive and look after the tractor well



Plantation and mill management personnel are periodically trained to upgrade their computer skills

Environmentally Responsible Mill Management

J.C. Chang/Carotino's commitment to the environment, nature and its employees is not confined to its plantations alone but it includes palm oil processing mills.

The mills are shining examples of good practice in the palm oil industry in terms of environmentally responsible manufacturing.

The mill environments are clean and well maintained and provide employment for numerous people from the surrounding areas.

The latest 'green' solvent-free technology is harnessed to produce an environment friendly product with minimal impact on nature.

JC Chang/Carotino's oil palm mills pride themselves on deploying state-of-the-art effluent treatment technology and any discharge conforms to international environmental standards. We are currently working towards achieving zero waste at the mills.

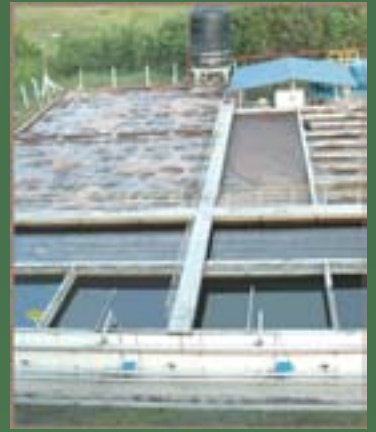
The mills also work in partnership with neighbourhood communities to enhance the lives of people who live nearby. One example of this is a mini hydro power generation project in collaboration with the Sabah Electricity Board. Another typical example is the donation of water tanks to the local community.

RIGHT:
Views of one
of J.C Chang/
Carotino's mills

FAR RIGHT:
Aerator system
to improve the
aerobic
digestion of
mill effluents



We are committed to minimising, mitigating or eliminating any adverse environmental impacts arising from our operation



A revolutionary effluent treatment technology which significantly improves the quality of treated mill waste water



Stainless steel oil vessels enhance food safety



Ascending a crude palm oil tank to carry out a routine daily inspection

MAIN PICTURE: A beautiful, scenic view of one of our mills from a distance



MAIN PICTURE: South African children taking part in the Carotino Muffin project

Caring for the Global Community

The J.C. Chang/Carotino Group is active in several nutrition intervention studies worldwide which aim to alleviate macro and micro nutrient deficiencies of millions of people in the developing world.

The Group's flagship product, Carotino Red Palm Fruit Oil, which is high in alpha and beta carotenes (Pro-Vitamin A) and other naturally occurring phytonutrients, has the potential to make a significant contribution towards improving the health of many people.

International Research Projects

In recent years, the J.C. Chang/Carotino Group has been actively involved in numerous other international scientific studies into the benefits of carotene-rich Carotino Red Palm Fruit Oil. These studies could have a profound impact in alleviating nutritional deficiencies or 'hidden hunger' in the developing world.

These studies have concentrated on the health benefits which arose after the diets of Vitamin A deficient groups of adults and children were supplemented with Carotino Red Palm Fruit Oil or Carotino-enriched food products.



Case Study - Carotino Enriched Biscuits/Muffins

Nutritional deficiencies pose a major problem in developing countries and this so-called 'hidden hunger' is highly detrimental to the health of the population – particularly children.

Vitamin A deficiency is a particular problem as it impacts general health, vision, immunity, growth, foetal development and cognitive and mental performance.

Carotino red palm fruit oil is considered to be the world's richest plant source of natural carotenes (Pro-Vitamin A) and natural tocotrienols.

The need for fortified food products to combat Vitamin A deficiencies prompted the South African Medical Research Council (MRC) to scientifically evaluate the use of red palm fruit oil in snack foods.

The Nutritional Intervention Research Unit (NIRU) of the South African MRC joined forces with Carotino to carry out a long term nutritional intervention study to prove the efficacy of Carotino red palm fruit oil baked biscuits. This landmark study has been well documented in the UN Food and Nutrition Bulletin.

Carotino and the Malaysian Palm Oil Council (MPOC) joined forces in a recent community development project in South Africa to develop a self sustaining bakery model to produce and sell carotene-rich muffins to local school children.

The aim was to combat Vitamin A deficiency in children and adults as well as giving the people running individual bakeries valuable life and business skills and generating funds for disadvantaged schools.

Mothers and children in Burkina Faso whose diets were supplemented with red palm fruit oil showed a 40 % reduction in the prevalence of vitamin A deficiencies.

Zagre N.M. et al., (2002), "Changes in vitamin A intake following the social marketing of red palm oil among children and women in Burkina Faso", Sante. 12(1):38-44

Pre-schoolers in Tamil Nadu, India whose diets were supplemented with 5-10 ml of red palm oil showed better gains in retinol and beta-carotene levels than children whose diets were supplemented with equivalent amounts of either retinol-fortified groundnut oil or pure groundnut oil.

Sivan Y.S. et al., (2002), "Impact of vitamin A supplementation through different dosages of red palm oil and retinol palmitate on preschool children", J. Tropical Pediatrics, Vol 48:24-28

Pre-school children in Hyderabad, India who consumed 5ml of red palm fruit oil per day showed marked improvements in their serum beta-carotene levels.

Sivan Y.S., et al. (2001), "Impact of beta-carotene supplementation through red palm oil", J. Tropical Pediatrics, Vol 47: 67-72

Carotino red palm fruit oil supplementation significantly improved the serum retinol and Hb levels of children under the age of five in rural Vietnam and that the Hb levels of the red palm fruit oil supplementation group were as high as those given vitamin A capsules.

Nguyen T.L. et al., (2001), "Effects of red palm oil supplementation on vitamin A and iron status of rural underfive children in Vietnam", Proceedings of Food Technology & Nutrition Conference, International Palm Oil Congress 2001, Kuala Lumpur, Malaysia

Bangladeshi children suffering from respiratory infections and other diseases showed significantly increased serum retinol levels after their diets were supplemented with biscuits made with Carotino red palm fruit oil.

Ali S.M.K. et al. (2001), "Beta carotene to combat acute respiratory tract infection and diarrhoea disease in slum children of Dhaka, Bangladesh", Proceedings of Food Technology & Nutrition Conference, International Palm Oil Congress 2001, Kuala Lumpur, Malaysia

Mothers in Honduras who consumed Carotino red palm fruit oil showed significant increases in alpha and beta carotene levels in their breast milk and the infants who were breast-fed by these mothers also had significantly higher serum retinol levels.

Canfield L.M. et al., (2000), "Red palm oil in the maternal diet improves the vitamin A status of lactating mothers and their

Conclusion

The J.C. Chang/Carotino Group takes its responsibilities to both the environment and the global community very seriously and has put this obligation at the heart of its corporate philosophy.

As a caring and responsible corporation, the J.C. Chang/Carotino Group balances the need to satisfy its customers with premium quality products produced using the latest state-of-the-art technology with a dedication to environmental sustainability in everything it does.



MAIN PICTURE: A waterfall flowing through a rocky section of a natural river in one of our plantations



Kingfishers are among the many bird species found in palm plantations



An iguana pictured in a shallow stream which runs through one of our plantations



Pink dragonflies, like the one above, add colour and diversity to the palm environment



International Endorsements & Certification

Carotino products are endorsed by several internationally recognised bodies for their natural nutrient content.

The carotene, tocopherol, tocotrienol and Co- Enzyme Q10 content of Carotino products are under the permanent control of the Swiss Vitamin Institute.

Other endorsements include the Heart Foundations of both Australia and South Africa and the Health Promotion Board of Singapore, all of which have endorsed Carotino Classic – the heart friendly cooking and salad oil.

- Carotino's manufacturing system is ISO 9002 certified.
- All Carotino products are certified Kosher and Halal.



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