PALM OIL technical bulletin

Vol. 5 No. 2
March - April 1999

In This Issue...

PHYTO-TOCOTRIENOL : AN EXCITING NEW PALM-BASED VITAMIN E

ISSN 1394 - 4983

A Publication of the Palm Oil Research Institute of Malaysia (PORIM) P.O. Box 10620, 50720 Kuala Lumpur, Malaysia

Phyto-Tocotrienol: An Exciting New Palm-Based Vitamin E

Tocotrienols have emerged as important phytonutrients. Palm tocotrienols in particular, may turn out to be the most potent of all lipid soluble antioxidants available commercially.

Vitamin E, a fat-soluble vitamin, is the generic name for the family of naturally occurring compounds – tocotrienols and tocopherols. The difference between tocotrienols and tocopherols is that the former possess double bonds in their isoprenoid side chains.

Vitamin E is the major chain-breaking antioxidant in body tissue. Its free radical quenching activity protects cell membranes against free radical attack and is generally recognised as the first line of defence against lipid peroxidation. While the vitamin E activity of tocopherols is well documented, there is growing interest in recent years in the nutritional benefits conferred by tocotrienols. Tocotrienols possess unique preventive and therapeutic potentials against free radical-mediated degenerative diseases such as atherosclerosis and certain types of cancer.

Tocotrienols occur largely in cereals such as barley, rice, rye, wheatgerm and in oil palm fruits. Crude palm oil is a rich natural source of these tocotrienols, making it a commercially viable source. Malaysia, with nearly three million hectares under oil palm cultivation, has developed the world's first commercial plant to extract and concentrate tocotrienols from the sun-basked oil palm fruits.[1]

Tocotrienols have emerged as important phytonutrients in their own right. With their growing commercial availability, these phytonutrients will continue to gain increasing importance as a preventive nutrient against various diseases. It can be incorporated into functional foods and drinks, and also as cosmetic ingredients protecting against free radical damage. Palm tocotrienols in particular may turn out to be the most potent of all lipid soluble antioxidants available commercially.

EVIDENCE OF TOCOTRIENOL EFFICACY

The nutritional/physiological efficacy of tocotrienols include:

Cholesterol Lowering Effect: One of the many beneficial effects of tocotrienols is their ability to suppress cholesterol biosynthesis by inhibiting HMG CoA reductase, a rate limiting enzyme responsible for cholesterol biosynthesis in the human liver. Studies have shown that dietary supplementation with palm tocotrienols for six weeks lowered lipid associated coronary heart disease (CHD) risk factors significantly (total serum cholesterol by 20 percent, LDL-cholesterol by 28 percent and apolipoprotein by 18 percent) in free living hypercholesterolemic humans.

Tumour Suppressive Activity, Especially Against Breast Cancer Cells: Studies have shown that palm tocotrienols play a beneficial role in suppressing certain types of cancer. They are especially effective against human breast cancer cells. It has been shown that palm tocotrienols are effective against both the estrogen receptor-positive and estrogen receptor-negative breast cancer cells. Gamma-tocotrienol is more potent in inhibiting the growth of cultured human breast cancer cells. It was also interesting to note that when used together with Tamoxifen, the growth inhibition of human breast cancer cells was more effective. In comparison, alpha-tocopherol was found to have no effect on human breast cancer cells.

[1] Carotech Sdn Bhd manufactures both phyto-tocotrienols (vitamin E) complex and phyto-carotenoids (mixed carotenes) complex, extracted and concentrated from oil palm fruits. Through a patented technology and process, Carotech produces commercially available products such as Tocomin™ (Phyto-tocotrienols complex) and Caromin™ (Phyto-carotenoids complex). These advanced phyto-nutrients are widely used as health supplements, functional foods and drinks, and lately, in cosmetics and personal care products.

W.H. Leong and T. Thiagarajan

Reversing Atherosclerosis: The Kenneth Jordan Heart Research and Foundation Centre investigated the antioxidant properties of palm tocotrienols in patients with carotid artery stenosis. Carotid stenosis was measured over 36 months in 50 patients. This study revealed significant regression of carotid arterial stenosis in the tocotrienol-fed group. None of the control groups exhibited improvements in their carotid artery stenosis. It appears that palm tocotrienols are beneficial against carotid atherosclerosis.

A More Potent Biological Antioxidant: Tocotrienols have been shown to exhibit a much stronger antioxidant activity than alpha-tocopherol. Alpha-tocotrienol showed better antioxidant activity than alpha-tocopherol (in the order of 40-60 times), in the rat microsomal membrane system. Another study showed the preferential absorption of alpha-tocotrienol compared to alpha-tocopherol. This effect may be due to its unsaturated side chain that allows more efficient and uniform distribution into the bilayer cell membranes and tissues.

Slowing of Skin Ageing & Protection Against Radiation-Induced Skin Damage: Palm tocotrienols were shown to reduce the harmful effects of the sun's UV radiation when used topically. Tocotrienols also accumulated preferentially at the strata corneum of the skin compared to alpha-tocopherol, suggesting that this unique distribution of tocotrienols in skin might confer superior protection against environmental stressors.

Tocotrienols topically applied to the exposed or affected skin areas or hair have also been shown to be effective for the prevention and treatment of radiation-induced skin damage, ageing of the skin and hair damage from sunlight and chemicals. Tocotrienols augment the efficacy of sunscreen containing compounds that reduce penetration or absorption of UV radiation.

Palm Oil Carotenoids: Saviour of the Beta-Carotene Debacle?

The nutritional attributes of palm oil carotenoids are excellent, and are not associated with the claims of ineffectiveness of commercially synthesised beta-carotene at relatively high doses.

One of the most promising micronutrients recommended for optimum health has been sent into a tailspin by recent media and scientific reports. There have been eye-catching captions such as "beta-carotene ineffective in forestalling cancer" and "beta-carotene takes a collective beating".

To those who have been following the almost meteoric rise (and now fall) of beta-carotene as a nutrient *par excellence*, this news is both deeply disappointing and of major concern. Nevertheless, the subject itself needs reexamination as the present debacle was precipitated by using commercially synthesised beta-carotene at relatively high doses with a view to ensuring maximum protection against carcinogenesis.

BETA-CAROTENE'S IMAGE

Historically, beta-carotene's image has been projected to the forefront through indirect observations from several major population studies. Epidemiologists were thrilled by their observations that populations routinely consuming more green leafy vegetables were better protected against certain types of cancers than those omitting them from their daily diets.

The search for this anti-cancer component was narrowed down to the carotenoids, especially the beta-carotene isomer found in appreciable quantities in green leafy vegetables. Striking negative correlations with incidence and mortality from degenerative diseases including cancer were shown in populations whose green leafy vegetable intake was highest. Heartened by these findings, several pharmaceutical giants began to produce beta-carotene synthetically and soon health outlets worldwide were distributing these preparations to the public keen to extend their longevity.

The scientific community itself has often been divided over the many claims attached to the beta-carotene story. Many believed that such a single compound could not possibly have all the therapeutic properties claimed for it. Several major trials were initiated and the results of these studies were largely contradictory to the anti-cancer properties hypothesised for beta-carotene.

For example, the Beta-Carotene Retinol Efficacy Trial (CARET) was an intervention trial in 18,000 men and

Kalyana Sundram and Yusof Basiron

Based on the article published in PORIM's Information Series 75 (September 1998)

women smokers and asbestos workers who were regularly supplemented with beta-carotene and vitamin A. The study was prematurely terminated when increases in the incidence and mortality from lung cancer became obvious. A similar Finnish trial (Alpha-Tocopherol and Beta-Carotene, ATBC, study) in 29,000 men, also reported increased incidences of lung cancer with beta-carotene consumption.

In response to these findings, two other major trials in the United States involving almost 66,000 men and women were also prematurely terminated. In contrast to these American studies, a study in Linxian, China involving 30,000 rural adults supplemented with beta-carotene, vitamin E and selenium resulted in 13 percent fewer cancer deaths.

STATUS OF BETA-CAROTENE

Do these results sound the death knell for beta-carotene as a nutrient supplement? We do not think so and the subject may have to be approached differently, probably from a natural source.

Carotenes are fat-soluble pigments found in leaves, vegetables and fruits. Although more than 600 different carotenoids are known to exist in nature, nutritionally the most exciting isomers are the alpha- and beta-carotenes. These isomers are converted to vitamin A in our body (provitamin A) which when deficient can result in night blindness.

Traditionally, we have been advised to consume regular portions of green leafy vegetables as part of our daily diet. Nevertheless, studies have shown that eating green leafy vegetables is not always a satisfactory method of overcoming night blindness induced by vitamin A deficiency. The concept of bioavailability (proportion of nutrients consumed in the diet usable by the body) plays an important role here. In the case of carotenes in the mixed diet, six parts of carotene are equivalent to one part of retinol (the vitamin A content of foods is termed retinol equivalent.)

Red palm oil: An antidote for blindness in children!

VITAMIN A DEFICIENCY

Vitamin A deficiency is widespread in many parts of the developing world and, as a result, almost three million children are blind from this nutritional deficiency at any given time. Many different approaches, including supplementation with megadoses of vitamin A, have been attempted to overcome this problem. Although the use of vegetables rich in vitamin A and carotene abounds, there are tremendous difficulties in incorporating these into the diet, especially the diet of young weaning children.

Studies in several parts of the world have compared beta-carotene bioavailability either from vegetables or from specially made beta-carotene enriched wafers. In all cases, the bioavailability of beta-carotene from the wafers was much higher. The lower bioavailability from vegetables has been suggested to result from the physical packing of carotene in vegetables, making them inaccessible to digestive enzymes. Beta-carotene is normally organised in a pigment-protein complex within the chloroplast. Light cooking increases bioavailability but extended heating destroys the carotenoids or transforms them into isomers with lower provitamin A activity.

The scare brought about by the ineffectiveness of commercial beta-carotene supplements in adults seems real enough for now. Nevertheless are the children at risk of becoming blind to be left alone?

Role of Red Palm Oil

From our point of view, this need not be so; we may already have the antidote for all the ailments in the form of red palm oil. Crude palm oil is nature's richest source of carotenoids with concentrations in the order of 700-1000 ppm. This is about 30 times more than that present in carrots, for example.

Moreover, it is well recognised that carotenoids are most stable and best absorbed in the presence of fat which acts as a carrier for it. Not all the carotenoids in palm oil are beta-carotene (which accounts for only 55%). It also contains a bouquet of other carotenoids which

have properties apart from their provitamin A activity. Alpha-carotene (35%), lycopene, phytoene and zeacarotene are the other major constituent carotenoids in palm oil.

Recent reports on the efficacy of red palm oil in overcoming vitamin A deficiency in children at risk is very encouraging. Studies in India have shown that a tablespoon of red palm oil (about five grammes) per day and administered for just 21 days was sufficient to protect a child at risk from blindness for the next six months. This suggests that the provitamin A carotenoids in red palm oil are absorbed, stored and slowly converted to the active retinol equivalent at the demands of the child's metabolic process.

This represents a great stride forward in the fight against vitamin A malnutrition if one considers that the major drawback in previous programmes was the logistics of reaching children in remote areas and ensuring that a continuous and adequate intervention with conventional provitamin A preparations was made available. Using red palm oil reduces these logistic nightmares since the child in a malnutritioned area needs to be visited only once every six months.

Several international agencies involved in this uphill battle against unwarranted blindness induced by vitamin A deficiency are showing a keen interest in this development. Of course, these effects are related to the striking efficiency with which the red palm oil can increase blood levels of vitamin A and carotene.

For example, in one study, administration of red palm oil caused serum vitamin A levels to be elevated 70 percent compared with pre-treatment levels. This was significantly superior to either a vitamin A concentrate or a vegetable-based diet that caused only marginal increases in serum vitamin A levels.

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BENEFITS FOR ADULTS

We think there are very few doubts on the efficacy of red palm oil in the above-mentioned efforts to overcome vitamin A blindness in children. But what about adult requirements in the light of recent studies associating beta-carotene and its ineffectiveness in preventing cancer. Before proceeding, we note that populations' intervened in some of the studies quoted i.e. CARET (USA), ATBC (Finland) were already at high risk considering their habitual practice of excessive smoking or exposure to environmental asbestos (a known carcinogen).

In these cases, beta-carotene failed to overcome the preconditioned risk factors for carcinogenesis. It did not provide a curative effect, something that would be difficult to ascribe to this simple micronutrient anyway. Moreover, the levels of beta-carotene "popping" may have been an important and influential factor.

Beta-carotene has proven singlet oxygen quenching properties besides its antioxidant effects. It is worth noting that a biological antioxidant when present in excess turns turtle and can assume the role of a prooxidant and become harmful. Oxidation of biological fluids and tissues has been hypothesised to increase risk factors associated with both coronary heart disease and cancer. Unfortunately, for the carotenes (beta-carotene included) and vitamin E, the experts are unable to recommend optimum levels for optimum nutrition.

This is illustrated in the ATBC Finnish study in which the high dosage of beta-carotene caused serum beta-carotene levels to increase by almost 17-fold compared with the pre-treatment value. This high dosage of beta-carotene now seems unwarranted and may have been an important factor contributing to the observed higher cancer incidence and mortality in the beta-carotene treated group.

Vitamin A available in commercial form

LEVEL OF CAROTENOIDS INTAKE

The beta-carotene anti-cancer hypothesis actually evolved on the basis that the consumption of vegetables high in carotenoids was protective against cancer incidence and development. But

actual availability of the carotenoids from green leafy vegetables is very small indeed; such diets have been noted to increase serum beta-carotene levels by approximately 10-15 percent only. Low but optimum levels of carotenoids intake may be the clue.

This fact holds much promise for red palm oil that usually contains about 500mg carotenoids per kilogram (500 ppm). In Malaysia for example, about 50g of dietary oil is consumed per day, mostly as cooking oil. If this were derived totally from red palm oil, our diet would contain 15-20mg of the bouquet of carotenoids present in red palm oil subtracting for some losses during cooking. The amount of beta-carotene available would be approximately 9-12mg.

It is prudent to note here that in the Linxian study in China that reported fewer cancer deaths, the 30,000 subjects were administered beta-carotene preparations at a low optimum dose of only 15mg; indeed provocative results that should be further clinically tested!

Palm vitamin E in the form of tocotrienols has been shown to have some exemplary nutritional properties

palm oil), but not beta-carotene, inhibited liver carcinogenesis in experimental mice. It was also more effective than beta-carotene in inhibiting chemically induced skin tumour progression.

If one considers the above nutritional arguments for red palm oil, it is easy to see that the product will have marketing advantages that can become a nightmare for the competition. And this is without even mentioning the other important micronutrient – palm vitamin E (about 600 ppm) that is also a constituent of this oil.

BOUQUET OF PALM CAROTENOIDS

Alpha-carotene is the other major carotenoid (38%) in red palm oil and modern technology permits its isolation and subsequent concentration for experimental purposes. Alpha-carotene too has provitamin A activity but its efficacy is much lower than beta-carotene. It often co-exists with beta-carotene and can be detected in blood and various tissues.

A recent animal study with alpha-carotene from palm oil demonstrated that it has potent inhibitory effects on the progression of certain types of cancers. Alpha-carotene (isolated from crude

In similar studies, the whole bouquet of palm carotenoids had greater inhibitory effects on skin and liver carcinogenesis than either alpha- or beta-carotene alone. These results have led the researchers to conclude that the natural carotenoids in palm oil have excellent chemopreventive activity and efforts should be directed at preserving these micronutrients in the oil.

The technology to produce these red palm oil and olein containing carotenoids on a commercial scale has already been made available to the industry by PORIM. If one considers the above nutritional arguments for red palm oil, it is easy to see that the product will have marketing advantages that can become a nightmare for the competition. And this is without even mentioning the other important micronutrient – palm vitamin E (about 600 ppm) that is also a constituent of this oil.

Palm vitamin E in the form of tocotrienols has been shown to have some exemplary nutritional properties including their ability to regulate cholesterol synthesis, and inhibit human mammary cancer cell proliferation. In red palm oil, Malaysia's golden oil has retained its distinct colour (due to the carotenoids) without the threatening disadvantages. ⬆

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RESEARCH HIGHLIGHTS

Trans Fats Seriously Implicated in US Study on Coronary Heart Disease

Hue, Willet and colleagues at the Harvard School of Public Health in Boston, Massachusetts had published the results from the US Nurses Study in the *New England Journal of Medicine*. They highlighted the damaging role of *trans* fats in coronary heart disease (CHD).

The Nurses Study is a large ongoing study initiated in 1976 with an enrolment of 80,000 women nurses. Since then there have been 939 incidents of coronary heart disease (CHD), fatal and non-fatal. Statistical analysis of the results showed that both *trans* and saturated fats were positively associated with CHD. Unsaturated fats were negatively associated with CHD.

The impact of the *trans* fats was much worse than the saturates and the researchers calculated that a reduction of 2 percent energy (en) from *trans* fat would lead to a 53 percent reduction in the risk of CHD, while a 5 percent en reduction from saturated fats would reduce the risk by 45 percent. This means that as far as CHD is concerned, 1 percent *trans* fat in the diet is equivalent to 2.9 percent saturated fat, and a 26.5 percent higher risk of CHD.

A particular merit of this study is that it measured the risk of heart disease directly, and not the cholesterol elevation which would then have to be translated to CHD risk with all the consequent uncertainties.

So when some food manufacturers state that *trans* fats are not important because their intake in the diet is very small (2% en on average), they are not being accurate. These latest findings show that replacing 1 percent en *trans* fat, even with saturated fat, would result in a 14 percent reduction of CHD risk. No one could call that unimportant.

Further, it would be very difficult to reduce the intake of saturated fat much below the present level without making unwelcome changes to our diet. Meat, dairy products, chocolate, sugar confectionery, ice cream, cakes and biscuits all rely on relatively saturated fats. They are very pleasurable foods which people are reluctant to forego or reduce significantly. Yet, we could reduce our *trans* intake to less than half of present levels with hardly anyone realising it. The biggest dietary sources of *trans* fats in Western diet are the hydrogenated oils used in margarines, spreads and shortenings which could be replaced by natural *trans*-free vegetable fats.

Robert Reeves, President of the US Institute of Shortenings and Edible Oils has been reported saying that the case against *trans* fat is not yet proven. Edward A. Emken, the Vice President of the AOCS and former staff of the US Department of Agriculture evidently disagrees. At a lecture in Chicago (Inform: 9:681-2, 1998), he stated that *trans* fat raised LDL- and reduced HDL-cholesterol.

The US Food and Drug Administration (FDA) also disagrees with Reeves. It is expected to publish proposals for mandatory labelling of *trans* fatty acids on processed food packaging. Following the customary 3-4 month period for public comment, the law could be implemented in early 2000.

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At present, only the content of saturated fats is declared on food labels in the US. On this matter, the European Union has been far ahead.

Their labels show total fat, saturates, monounsaturates and polyunsaturates. As only *cis*-isomers are counted, the consumers can find out the *trans* content by the difference. Assuming of course that the consumer knows that only the *trans* fat is missing!

Contributed by T.P. Pantzaris

MARKET UPDATE

Madagascar

Madagascar has the potential to increase imports and the use of palm oil in food products, especially in the warmer parts of the island. There is also scope to expand the use of palm oil products in laundry and toilet soaps.

Madagascar also has suitable land and climate for oil palm cultivation. The oil palm industry is underdeveloped and investment in oil palm plantations is encouraged.

Madagascar, an island located in the south west of the Indian Ocean between Africa and Asia, has a population of 13 million.

Agriculture, which represents more than 37 percent of the gross domestic product and contributes 80 percent of export revenue, plays a fundamental role in Madagascar's economy.

CULTIVATION AND PRODUCTION OF OIL CROPS

Some of the land allocated for agriculture is used for the cultivation of oil crops such as groundnut (about 50,000 hectares), cottonseed (28,000 hectares), oil palm and coconut.

Total oilseed production increased by 17 percent in 1997 over 1995. At 35,800 tonnes, groundnut is the major oilseed produced followed by cottonseed (16,200 tonnes) and soyabean (no figures available).

IMPORT AND CONSUMPTION OF OILS AND FATS

Madagascar has to import oils and fats to meet domestic requirements. About 42,200 tonnes of oils and fats are imported of which edible oils make up about 35,000 tonnes. The major oils and fats imported are soyabean oil and palm oil. Other oils and fats imported are cottonseed oil, sunflower oil, and tallow and grease (see *Table 1*).

The trend in total import of oils and fats has ben increasing but dipped slightly in 1995 and 1997. The import of palm oil has been fluctuating, reaching a peak of 19,300 tonnes in 1994 and declining to 11,900 tonnes in 1997. The major palm oil product imported is palm fatty acid distillate (PFAD) which is used in the production of soap.

Madagascar's per capita oils and fats consumption is estimated at a very low 2 kg per year. Most of it is consumed in the form of soyabean and sunflower cooking oil. A cooking oil blend of palm olein (to a maximum of 30%) with soft oils is sold in the country.

Other than cooking oil, margarines, mostly made from hydrogenated soft oils, are also available. Consumed in small amounts, these margarines are mainly imported from Europe and contain some proportion of palm oil products.

OIL PALM CULTIVATION

Since 1995, the area under oil palm cultivation has remained at about 3,900 hectares. Total production however has increased by 35 percent from 10,918 tonnes of clusters (FFB) in 1995 to 16,757 in 1997.

Oil palm plantations in Madagascar are not well developed. To address this situation, the Malagasy Government is trying to source funds to revive a big oil palm plantation project located in the north east coast in Antalaha.

***Table 1.* Madagascar's Import of Oils and Fats**

Oils and Fats	Year				
	1993	1994	1995	1996	1997
Soyabean oil	6700	2400	7000	15000	18600
Cottonseed oil	7400	8100	10200	7800	7500
Sunflower oil	–	4400	2300	1500	2300
Palm oil	11000	19300	12300	15000	11900
Tallow & Grease	2400	2900	3800	3700	1900
Total	27500	37100	35600	43400	42200

Based on a TAS Country Study by Isa Mansor and Abdullah Ariffin

UTILISATION OF PALM OIL PRODUCTS

While most of the cooking oil used is either sunflower oil or soyabean oil, a little palm olein (totalling about 500-600 tonnes per year) is also used in the coastal areas which are warmer. As stated earlier, palm oil is also consumed as part of imported blended cooking oil and margarines.

Toilet and Laundry Soaps

Palm oil products such as palm stearin, PFAD and, sometimes, a blend of PFAD/palm stearin (POs)/palm oil (PO), are also used as raw materials for the manufacture of toilet and laundry soaps.

While both toilet and laundry soaps are produced locally, a variety of imported soaps are also available. Of the 30,000 tonnes of soap required to cater for the needs of the population, about 10,000 tonnes are imported.

Some companies use a blend of cottonseed oil/PFAD for laundry soap. A 100 percent PFAD formulation is also employed to make laundry soap. The black laundry soap made out of soap stock from cottonseed oil refining and PFAD is very popular.

For toilet soap, some companies use palm oil blended with tallow. One company manufactures toilet soap using a blend of PFAD/POs/PO by continuous saponification.

One company imports about one to two containers of palm-based soap noodles a month.

BUYING MECHANISM

There are no restrictions on Madagascar companies importing oils and fats. Companies can buy them directly from overseas exporters or from local agents. Each company normally has its own specifications or will base it on standard contract/specifications.

Buyers prefer to source palm oil products locally from brokers or from South Africa which they claim can usually offer comparatively lower prices.

IMPORT TARIFFS

The import tariffs are as follows:

Item	Duty (%)
Crude edible oils	38
Refined oil and fat products	56
Raw materials for soap production	32
Finished soaps	56

Refined products are subjected to higher duty than crude edible oils.

CONCLUSION

Madagascar has the potential to increase imports and the use of palm oil in food products especially in the warmer north and north eastern parts of the island. There is also scope to expand the use of palm oil products in laundry and toilet soaps.

Madagascar also has suitable climate and land to cultivate oil palm. The oil palm industry is underdeveloped and investment in oil palm plantations is encouraged.

In Brief

EU considers release method of GM products

In early December 1998, the European Parliament had its first reading of proposals for an European Union-wide revision of the way in which genetically modified (GM) products are authorised for release on the European market. One suggestion was that GM crops should carry a genetic marker so that they can be traced if necessary from harvest through to consumption, in order that consumers can be informed about what they are buying, reports the February issue of *Oils and Fats International*.

Meanwhile, the debate continues on rules governing risk assessment and crop planting. In November last year, EU-wide risk assessment and monitoring rules for GM crops were said to be close to being finalised. But at the end of December, it appeared that a stalemate had developed at the quarterly meeting of environment ministers, with some countries still calling for a moratorium on commercial plantings of all GM crops.

In January 1999, the UK Government gave limited approval for the first farm-scale commercial plantings of herbicide-tolerant GM crops – with close monitoring. The announcement came with a raft of other restrictions including a three-year moratorium on planting insect-resistant GM crops.

USDA allocates US$7 million to ASA for market development

The American Soyabean Association (ASA) is reported to receive US$7 million from the US Department of Agriculture (USDA) under Foreign Market Development Allocations. The USDA will provide $33.5million to 26 trade organisations in fiscal 1999 under its foreign market development (FMD) programme. The FMD is designed to develop, maintain and expand long-term markets for US agricultural, fish and forest products.

Under the programme, USDA's Foreign Agricultural Service (FAS) enters into agreements with non-profit US trade organisations that are nationwide in membership and scope. In 1999, co-operators and industries will contribute resources totalling about 110 percent of the FAS funds.

FMD has mobilised private sector support and funding for market development activities in more than 100 countries worldwide. Trade organisations compete for FMD funds on the basis of past export performance, past demand expansion performance, future demand expansion goals and contribution levels. Together, they account for approximately $30.7 million, or just over 90 percent of the total FMD allocation. At $7 million, the ASA is the largest recipient of these funds.

Contributed by Mohd. Jaaffar Ahmad

Agreement to facilitate investments between G15 countries signed

The United Nations Conference for Economic Development has declared that 10 countries of G15 had signed bilateral agreements to facilitate the growth in investments amongst them, reports an article in an Egyptian newspaper. The signing took place at Ghellion in Switzerland on January 8-14, 1999.

Seven of the countries which signed the agreements were Egypt, India, Indonesia, Malaysia, Jamaica, Sri Lanka and Zimbabwe. This was considered an achievement as it was anticipated that this would take two or more years.

Contributed by Abdullah Ariffin

Pakistan eases trade policy

In January 1999, Pakistan's Ministry of Finance reduced the 30 percent advance cash L/C margin to 20 percent, and later to 10 percent, on the imports of vegetable oils including palm oil. This development has eased the import of vegetable oils as it reduces the expenses involved in the process. The 30 percent advance cash requirement was introduced by the authorities in the second half of 1998 as a result of the financial crunch after international sanctions against Pakistan were imposed.

Contributed by Iftikhar Ahmad

Chocolate update

The question of permitting the inclusion of 5 percent vegetable fats in chocolate is probably the longest running issue in European Union legislation. The end now appears in sight following a decision by Dutch manufacturers to drop their opposition to the use of vegetable fats.

The decision was announced by the Chairman of the Netherlands Cocoa Association at a trade conference in London last year, states a report in *Oils and Fats International*.

While the inclusion of the 5 percent vegetable fats was approved by the European Parliament in October 1997, the proposed directive was subsequently rejected by the EU Commission which objected to several clauses. Now the final decision is in the hands of the European Council of Ministers who are expected to approve it following the Netherlands' decision to drop their opposition.

Further, it is now expected that the vegetable fats will not even have to be mentioned prominently on the front of the wrapper. This indicates a total victory for the UK-led faction. When approval takes place, the demand for CBE in the EU could easily double even before other countries follow suit.

Contributed by T.P. Pantzaris

INVITATION

Palm Oil Familiarisation Programme 1999

Introduction

The 19th Palm Oil Familiarisation Programme, organised by the Palm Oil Research Institute of Malaysia (PORIM) will be held in Kuala Lumpur, Malaysia from September 13-23, 1999.

The aim is to familiarise and expose participants to the whole spectrum of the palm oil industry in Malaysia.

About The Programme

This 10-day programme will comprise lectures, demonstrations, briefings, field trips and interaction with the industry. A wide range of topics relating to production, versatility of applications, nutrition, handling and storage, techno-economics and commercial aspects of palm oil trading will be covered during lectures.

Field trips and visits to PORIM's R&D laboratories and plants will also be organised.

Who Should Attend

This programme is intended for overseas personnel who hold important positions in the utilisation, research, purchasing, distribution and handling of oils and fats, and are interested in palm or palm kernel oils and their products. Proficiency in English is required.

Registration

Participation is by **selection**. Only limited places are available. No fee will be levied! However, expenses such as return airfare, accommodation, food and other personal expenses will be borne by participants. *Completed registration form* together with a *Country Paper* on the oils and fats scenario of your country, or the opportunities and constraints for palm and palm kernel oils and their products, must reach the Institute by **July 15, 1999.**

Local Arrangements

The Institute will arrange hotel reservations for local accommodation. All participants will be accommodated in the same hotel during the entire programme to facilitate arrangements.

Certificate

A certificate of participation will be awarded upon completion of the programme.

Enquiries

Write, fax or e-mail to:

Ms Rosnah Hussin
Programme Manager
19th POFP, Technical Advisory Service, PORIM
P.O. Box 10620, 50720 Kuala Lumpur, Malaysia
Fax : **603-8259446**
E-mail : **tas@porim.gov.my**

REGISTRATION FORM – POFP 1999

Name : Mr/Ms/Dr/Prof* _____
(full name and underline family name)

Nationality : _____ Age : _____ Sex : _____

Organisation/Company : _____

1) Address : _____

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2) Background and Business : _____

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Meet PORIM Americas at Forthcoming Exhibition

PORIM's exhibition programme in the United States allows it to meet customers of the Malaysian palm oil industry and interested parties from North and South America, showcase the latest products and new developments, discuss needs, and answer queries. So visit us at PORIM Americas' booth at the following shows:

- IFT Annual Meeting & Expo, Chicago, Illinois
  July 24-28, 1999

The office of PORIM Americas which covers North, Central and South America, and the Caribbean is at:

1900, 24th Street NW,
Washington DC, 20008, USA
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E-mail: PORIMWDC@aol.com

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We invite readers to send in their comments, suggestions and technical news for publishing in this newsletter.

For more information, please contact:

Dr Hamirin Kifli
Tel: 03-8259155/775 Fax: 03-8259446
E-mail: hamirin@porim.gov.my