

## MEETING REPORT

**Cardiac health and dietary fat\***

This year the theme of the World Heart Day celebrated on 28 September 2008 was 'Know your risks'. Consumption of fats has been associated with the risk of coronary heart disease (CHD). The different types of fats – saturated, monounsaturated, polyunsaturated and trans-fats are all regarded as bad according to the conventional data. This is because fat in general is implicated in heart disease, stroke, obesity, diabetes or cancer. However, in recent years the public opinion in accordance with the latest research studies by nutritional experts is changing. This was the topic of discussion in the seminar on cardiac health and dietary fat.

K. S. Ray (President, Nutritional Society of India (NSI), Mumbai Chapter) welcomed the guests and speakers. G. Subbulakshmi (NSI) gave an introduction to the seminar. For the Indian population, she mentioned that, dietary management is difficult because of eating out, festivities and lifestyle. Indians have 3–4 times more risk of CHD than Americans, 6–7 times more than the Chinese and 20 times more risk of CHD than the Japanese. There are around 30 million cardiac patients at present in India and according to the WHO analysis, by 2010 there will be close to 100 million people affected with CHD.

Subbulakshmi stressed on the replacement of saturated and trans-saturated fats with unhydrogenated, monounsaturated and polyunsaturated fats, as these are more effective in preventing CHD than reducing overall fat intake. Talking about heart-healthy diets, she mentioned that the Mediterranean diet, which includes fruits, vegetables, whole grains, fish and nuts has relatively large amount of monounsaturated fats, which may do more good to the heart than a low-fat regimen. The Atkins diet includes a low-carbohydrate regimen that excludes bread and pasta, and increases the high density lipoprotein (HDL), i.e. the 'good' chole-

sterol. The DASH diet has been considered the gold standard of heart-healthy nutrition since it was pioneered in 1990. The original diet included carbohydrate-rich foods, fruits, vegetables and low-fat dairy products. The protein version and the unsaturated fat-rich version both reduced heart disease risk.

The keynote address was by B. Seshikaran (National Institute of Nutrition (NIN), Hyderabad). He gave an overview on the role of dietary fat in CHD, and also explained the types and composition of dietary fat. The fatty acids present in fats or oils are classified into saturated fatty acids (SFA), monounsaturated fatty acids (MUFA) and polyunsaturated fatty acids (PUFA). MUFA is of two types – cis MUFA and trans MUFA. PUFA can be classified into the  $n-3$  and  $n-6$  series. Most of the vegetable oils contain  $n-6$ , whereas  $n-3$  or omega-3 PUFA is present in select vegetable oils such as soybean oil, mustard oil and canola oil in the form of alpha-linolenic acid (Table 1).

Regarding the choice of oils to acquire health benefits, Seshikaran mentioned that use of more than one oil is beneficial. He suggested varied vegetable oil combinations for optimal health benefits. These include groundnut/sesame: mustard, 3:1; groundnut/sesame: canola, 2:1; groundnut/sesame: soybean, 2:1; palmolein: soybean, 1:1 and safflower: palmolein: mustard, 1:1:1.

Knowhow on the medical aspects of CHD was given by Nilesh Gautam (consultant cardiologist at the Asian Heart Hospital, Mumbai). He blamed diet and unhealthy lifestyle along with risk factors such as age, family history, smoking, high blood pressure, diabetes, obesity, high LDL levels and triglycerides for the rise in cardio vascular diseases. The latest in intervention techniques to clear the plaque-blocked arteries include angioplasty using metallic and drug-eluting stents. Healthy dietary practices with regular 30 min of aerobic exercises can help prevent CHD.

Janaki Srinathan (Nutrifit, Diet, Nutrition Therapeutic Lifestyle Management Centre, Mumbai) spoke about dietary management to improve the intake of omega-3 fatty acids for normal and car-

diac patients. She specified that not only fat but carbohydrates also have a role to play in causing CHD. She mentioned about the effects of fish consumption and fish oil and its positive correlation in lowering blood pressure. Inclusion of fish, mustard, Bengal gram, fenugreek seeds, chicken, poultry, skimmed milk, nuts and seeds such as flax seeds, sesame and poppy seeds, improves the health of the heart.

Delivery of  $n-3$  PUFA fats into foods can be done in many ways, stressed Janaki. Using bio-delivery, micro-encapsulation, feeding animals with  $n-3$  PUFA, genetic engineering and food fortification  $n-3$  PUFA-rich foods can be obtained.

Incorporating science into everyday food was discussed by Anna Sinha (Corporate Wellness and Consumer Services, Nestle India Ltd). Lifestyle-related diseases in India are on the rise and according to the WHO figures, by 2010, 60% of the world's heart patients will be in India, she mentioned. And the causes are attributed to high cholesterol, lack of physical activity, growing stress and faulty dietary habits. To manage cholesterol, Nestle has come out with a

**Table 1.** Fat contents in oils

Fat	Oil	Amount of fat in percentage
SFA	Coconut	90
	Palm	48
	Ghee	65
MUFA	Olive oil	70
	Groundnut	50
	Palm	40
	Rice bran	42.5
	Ghee	27
PUFA, $n-6$	Safflower	75
	Sunflower	55
	Corn	55
	Rice bran	39
	Groundnut	35
PUFA, $n-3$	Linseed	55
	Mustard	10
	Soybean	7
	Rice bran	1

\*A report on a seminar on 'Cardiac Health and Dietary Fat' organized by the Nutrition Society of India, Mumbai Chapter, at the Asian Heart Institute and Research Centre, Mumbai on 27 September 2008 and sponsored by Nestle.

pro-heart milk product fortified with omega-3 fats, which is said to be 98% fat-free.

Ahamed Ibrahim (NIN) presented the nutritional and regulatory aspects of trans-fatty acids (TFA) unsaturated fatty acids with at least one double in the trans configuration. The major sources of TFA are partially hydrogenated vegetable oils; vanaspati in India. Vanaspati is the major cooking medium for preparation of deep-fried fast foods and bakery products. The

TFA content of vanaspati ranges from 10 to 40%.

Ibrahim stressed that consumption of TFA results in potential harm. Hence avoiding TFA consumption is necessary to refrain from the adverse effects on CHD risk. The industry has a few challenges to reduce the TFA levels in vanaspati. These include improvement in the hydrogenation process and using vegetable oils containing low PUFA such as palm oil for hydrogenation. Modern

technologies to produce zero trans fat or to fix the TFA content of vanaspati to less than 10% will prove beneficial.

The programme ended with a vote of thanks from Niranjana Shah (NSI, Mumbai Chapter).

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## MEETING REPORT

### Restoration of coastal habitats\*

A two-day conference on 'Restoration of Coastal Habitats' was held recently. This was part of the United Nation's post-tsunami response under their coastal environment programme.

C. K. Shreedharan (The Principal Chief Conservator of Forests of Tamil Nadu) delivered the keynote address at the conference which was attended by scientists and agencies involved in ecological restoration and research from across the country and abroad. The deliberation identified challenges in restoration of coastal habitats, with a focus on the Coromandel coast. Learnings from practitioners and scientists into the roles of these habitats and strategies for their restoration and conservation were discussed. The participants identified four major areas of intervention:

(1) The use of technology for documenting and sharing information on coastal zone management, including information from the scientific community into working and management plans.

(2) Policy-level interventions to raise levels of awareness about the need for environmental flows along with the immediate formulation of joint proposals for completing detailed baselines of existing systems as part of a long-term monitoring framework.

(3) The need for scientific baselines and frameworks to monitor the status and health of coastal habitats.

(4) The need for strategies to bring existing fragments of coastal habitats under suitable protective frameworks.

Among the papers presented were the results of a baseline survey on the status of coastal habitats outside the jurisdiction of the Forest Department. The presentations highlighted the loss of tropical dry evergreen forests along the Coromandel coast and the failure of existing institutions to protect coastal habitats.

Andrew Baird (James Cook University) reviewed available data on the relationship between various environmental factors and the distance to the tsunami

run-up. He concluded that topography was the key variable in explaining inundation, whereas the presence of vegetation did not play a significant role. A discussion on this ensued, and it was suggested that interplanting the casuarina bio-shields with native species would be a way to enhance their ecological value.

S. Aurofilio (Pondicherry Coastal Action Network) made a compelling case for soft instead of hard options in controlling beach erosion. His presentation on coastal erosion around Puducherry illustrated the damage done to both people and coastal ecology by hard erosion control measures. Various officers from the Tamil Nadu Forest Department shared their experiences and challenges faced in restoring and conserving coastal habitats.

Presentations, selected photographs and details of the conference have been hosted on the website: <http://www.feralindia.org/?q=node/297>. The proceedings will soon be made available at the website.

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\*A report on the two-day conference on 'Restoration of Coastal Habitats' held on 20 and 21 August 2008 at Mahabalipuram and organized by the Foundation for Ecological Research, Advocacy and Learning, Puducherry along with the Tamil Nadu Forest Department, and the United Nations Development Programme.