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NOVEMBER 2011 - JUNE 2012

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S. K. Roy

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BOOK REVIEW

A book entitled "Advances in Fish Processing Technology" has been authored by Dr. D. P. Sen, an executive committee member of the OTAI (EZ), Calcutta. He is highly qualified with National and International recognition.

The contents of the book are ● Resources, Their Utilisation - Emerging Trends ● Chemical Composition and Their Technological Significance ● Fish Odours and Flavours ● Fresh Fish Handling and Chill Storage ● Modified Atmosphere Packaging of Seafoods ● Assessment of Freshness Quality ● Traditional Salted and Dried Fish Products ● Proteolysed Fish Products ● Minced Fish Technology ● Retort Pouch Processing Technology ● Surimi and Surimi-Based Products ● Irradiation in Fish Processing ● Antarctic Krill and its Processing ● Microwave in Fish Handling and Processing ● Fish Food Products ● Advance in Freezing Technology ● Shrimp Culture, Shrimp Feed, Melanosis and Moulting ● Selected By-products from sea ● W-3 Fatty Acids, Fish Oil and Fish in Health and Nutrition ● Fishborne Pathogens and Depuration ● Toxins, Pollutants and Contaminants ● Quality Management.

The book should be useful to a wide range of readers including ichthyologistics and researchers involved with the fish industry. The book has already been well appreciated among the scientific community.

Publisher : Allied Publisher Pvt. Ltd.
New Delhi ; Price : Rs. 1800/-

Offer by the Author on Book entitled

Advances in Fish Processing Technology
Each copy will cost Rs. 900/- (Rupees Nine Hundred only)
if directly purchased from the author

Author's Address : Dr. D. P. Sen, E13/3 Karunamoyee
Salt Lake City, Kolkata 700 091 West Bengal

The Author in his name will issue the receipt

Limited number of copies are available

S. K. Roy
Editor

FROM THE EDITOR'S DESK

We have our specific affinity towards colour & flavour especially in foods which include Oils & Fats. Producers & Traders encash this weakness to their favour by artificially colouring & flavouring the product even at the cost of serious damage to health. Normally common man which constitute the majority fall in the trap & become a victim to this vicious circle & long term damaging effects to their health.

DIACETYL, a naturally occoring by-product which imparts Butter & Clarified butter its charecteristic flavour. This flavour is specially liked by the Indians in particular and the world over in general.

Govt. of India however does not permit addition of the synthetic "Diacetyl" to vanaspati to resemble "Ghee" but unscrupulous producers take advantage of this synthetic product for commercial exploitation.

A new study by researchers from American Chemical Society is raising concern that chronic exposure to artificial butter flavouring ingredient used in some margarines, snack foods, baked goods intensifies the damaging effects of an abnormal brain protein linked to Alzeimer's disease.

Diacetyl is structurally similiar to a substance that makes beta-amyloid proteins clump together in the brain - a signal of Alzeimer Disease.

Let us not evaluate the product by its colour, flavour & pungency and consume; instead go for natural evaluated product to lead a Healthy life.

S. K. Roy
Editor

Ack : American Chemical Society Journal, Aug'12

* Like delayed Monsoon "Inadvertent" delayed publication of this News Journal is regretted. – S. K. R.

ABOUT OURSELVES

1. Two posters were presented by Ms. Surashree Sengupta and Ms. Moumita Pal, Ph.D. students of Dr. Mahua Ghosh in '103rd AOCS Annual Meeting and Expo, California, U.S.A., 2012'. One of the posters (M. Pal & M. Ghosh) obtained 'Best Overall Poster Award' in Health & Nutrition Section. A great achievement indeed !!

2. An oral presentation of the paper jointly authored by Dr. Mahua Ghosh & S. S. Saha was made by S. S. Saha in the 99th Indian Science Congress, in January '12 in Bhubaneswar.

3. Prof. D. K. Bhattacharyya former OTAI, President received the Prestigious "Best Teacher Award" from Calcutta University.

4. S. K. Roy was invited as Chairman in a lecture meeting cum seminar delivered by Dr. D. P. Sen to the members of AFST (India) and Centre for Medicinal Food & Applied Nutrition at Food Tech & Bio Engineering, Jadavpur University on the 7th July, 2012. Prof. Siddhartha Basu, Pro. V. C., Jadavpur University was the Chief Guest, Prof. Utpal Roychowdhury was the convener of the seminar.

5. S. K. Roy has been unanimously elected as one of the Vice Presidents of OTAI.

6. S. K. Roy has been elected Vice President of the Nutrition Society of India, Kolkata Chapter.

** Updated till July, 2012*

Legal Metrology (Packaged Commodities) Ammendment Rules, 2012

MINISTRY OF CONSUMER AFFAIRS, FOOD AND PUBLIC DISTRIBUTION
(Department of Consumer Affairs)

NOTIFICATION

New Delhi, the 5th June, 2012

G.S.R. 427(E). - In exercise of the powers conferred by sub-section (1) read with clause (j) and (q) of sub-section (2) of section 52 of the Legal Metrology Act, 2009 (1 of 2010), the Central Government hereby makes the following rules further too amend the Legal Metrology (Pack-aged Commodities) Rules, 2011, namely :-

1. (1) These rules may be called the **Legal Metrology (Packaged Commodities) Amendment Rules 2012.**
(2) Save as otherwise provided, these rules shall come into force on the date of their publication in the Official Gazette.

2. In the Legal Metrology (Packaged Commodities) Rules, 2011, -
(a) rule 5 shall be numbered as sub-rule (1) thereof and after sub-rule (1) as so numbered the following sub-rules shall be inserted, namely :-

"(2) When one or more packages intended for retail sale are grouped together for being sold as a retail package on promotional offer, every package of the group shall comply with provisions of rule 6.

(3) Notwithstanding anything contained in the Second Schedule, the manufacturer or importer may sell the value based package in terms of Re.1/-, Rs.2/-, Rs.3/-, Rs.4/-, Rs.5/-, Rs.6/-, Rs.7/-, Rs.8/-, Rs.9/- and Rs.10/- after making the other declarations specified in rule 6."

(b) in rule 6, -

(i) in sub-rule (1), for the words "Prevention of Food Adulteration Act, 1954 (37 of 1954)" the words "Food Safety and Standards Act, 2006 (34 of 2006)" shall be substituted.

(ii) after sub-rule (6), the following sub-rule shall be inserted, with effect from 1st day of January, 2013, namely :-

(7) Every package containing the genetically modified food shall bear at the top of its principal display panel the words "GM".'

(c) rule 33 shall be numbered as sub-rule (1) thereof and after sub-rule (1) as so numbered the following sub-rule shall be inserted, namely :-

"(2) The Central Government may, after ascertaining the genuineness of a case stated in the application permit a manufacturer or packer or importer to pack or sell of the packages other than specified in the Second Schedule for a maximum period of one year by relaxing the rules."

(d) for the Second Schedule, the following Schedule shall be substituted namely:-

"THE SECOND SCHEDULE"

(See rule 5)

Commodities to be packed in specified quantities.

The following commodities shall be packed in such quantities by weight, measure or number as are specified in the corresponding entries against them.

Sl. No. 1	Commodities 2	Quantities in which to be packed 3
1.	Baby food	25g, 50g, 100g, 200g, 300g, 350g, 400g, 450g, 500g 500g, 600g, 700g, 800g, 900g, 1kg, 2kg, 5kg. and 10 kg.
2.	Weaning food	Below 50g no restriction, 50g, 100g, 200g, 300g, 400g, 500g, 600g, 700g, 800g, 900g, 1kg, 2kg, 5kg and 10 kg.
3.	Biscuits	25g, 50g, 60g, 75g, 100g, 120g, 150g, 200g, 250g, 300g, thereafter in multiples of 100g up to 1 kg and thereafter in multiples of 500g up to 5kg.
4.	Bread including brown bread but excluding bun	50g and there after in the multiples 50g upto 500g and above 500g in the multiples of 100g.
5.	Un-canned package of g. butter and margarine	Below 25g no restriction, 25g, 50g, 100g, 200g, 500g, 1kg, 2kg, 5kg, and thereafter in multiples of 5 kg.
6.	Cereals and Pulses	Below 100g no restriction, 100g, 200g, 500g, 1kg, 2kg, 5kg and thereafter multiples of 5 kg.
7.	Coffee	Below 25g no restriction, 25g, 50g, 75g, 100g, 150g, 200g, 250g, 500g, 1kg, 1.5kg, 2kg and thereafter in multiples of 1kg.
8.	Tea	Below 25g no restriction, 25g, 50g, 100g, 125g, 250g, 500g, 1kg and thereafter in multiples of 1 kg.
9.	Materials which may be constituted or reconstituted after as bevarages	Below 50g no restriction, 50g, 75g, 100g, 200g, 250g, 400g, 450g, 500g, 750g, 1kg and there in multiples of 1kg. (56g and 61g for medical purpose only)
10.	**Edible Oils Vanaspati, ghee butter oil**	**50g, 100g, 200g, 250g, 500g, 1kg, 2kg, 3kg, 5kg, and thereafer in multiples of 5kg. If net quantity is declared by volume then 50ml, 100ml, 200ml, 500ml, 1 litre, 2 litre, 3 litre, 5 litre and thereafter in multiple of 5 litre and the net quantity must be declared by mass also in the same size of letters/numerals.**
11.	Milk Powder	Below 500g no restriction, 50g, 100g, 150g, 200g, 250g, 500g, 1kg and thereafter in multiples of 500g.
12.	Non-soapy detergents (powder)	Below 50g no restriction, 50g, 75g, 100g, 150g, 200g, 250g, 500g, 700g, 750g, 1kg, 2kg and thereafter, in multiples of 1 kg.

Sl. No. 1	Commodities 2	Quantities in which to be packed 3
13.	Rice (powdered), floor, atta, rawa and suji.	100g, 200g, 500g, 1kg, 1.25kg, 1.5kg, 1.75kg, 2kg, 5kg and thereafter in multiples of 5kg.
14.	Salt	Below 50g in multiples of 10g, 50g, 100g, 200g, 500g, 750g, 1kg, 2kg, 5kg and thereafter in multiples of 5kg.
15.	Soaps	
	(a) Laundry Soap	25g, 50g, 75g, 100g, 125g, 150g and thereafter in multiples of 50g.
	(b) Non-soapy detergent	Below 50g no restriction, 50g, 75g, 100g, cakes/bars, 125g, 150g, 200g, 250g, 300g and thereafter in multiples of 100g.
	(c) Toilet Soap including all	15g, 25g, 50g, 60g, 75g, 100g, 125g, 150g and thereafter in multiples of 50g.
16.	Aerated soft drinks, non-alcoholic bevarages.	65ml (fruit based drinks only), 100ml 125m (fruit based drinks only), 150ml, 160ml, 175ml, 180ml, 200ml, 240ml, 250ml, 300ml, 330ml (in cans only), 350ml, 400ml, 475ml, 500ml, 600ml, 750ml, 1 litre, 1.2 litre, 2.25 litre, 2.5 litre, 3 litre, 4 litre and 5 litre.
17.	Mineral water and drinking water	100ml, 150ml, 200ml, 250ml, 300ml, 500ml, 750ml, 1 litre, 1.5 litre, 2 litre, 3 litre, 4 litre, 5 litre and in multiples of 5 litre.
18.	Cement in bags	1kg, 2kg, 5kg, 10kg, 20kg, 25kg, 40kg, (for white cement only) and 50kg.
19.	Paint Varnish etc.	
	(a) Paint (other than paste paint or solid paint) Varnish, Varnish stains, enamels.	50ml, 100ml, 200ml, 500ml, 1 litre, 2 litre, 3 litre, 4 litre, 5 litre and thereafter in multiples of 5 litre.
	(b) Paste paint and solid	500g, 1kg, 1.5kg, 2kg, 3kg, 5kg, 7kg and thereafter multiple of 5 kg.
	(c) Base Paint :	100ml, 250ml, 400ml, 450ml, 500ml, 900ml, 925ml, 950ml, 975ml, 1 litre, 1.5 litre, 2.0 litre, 2.5 litre, 3.5 litre, 3.6 litre, 3.7 litre, 3.8 litre, 3.9 litre and 4 litre and no restriction above 4 litre.

(e) in the Fourth Schedule, against serial number 15, for the entry in column 3 the entry "weight or volume" shall be substituted.

RAJIV AGARWAL
Secretary

[F.No.WM-11(13) /2010]

Note : The principal rules were published in the Gazette of India, vide, notification number G.S.R. 202(E), dated 7th March, 2011 and last amended, vide, notification number G.S.R.784(E), dated 24th October, 2011.

Legal Metrology (Packaged Commodities) (Second Amendment) Ammendment Rules, 2012

MINISTRY OF CONSUMER AFFAIRS, FOOD AND PUBLIC DISTRIBUTION
(Department of Consumer Affairs)

NOTIFICATION

New Delhi, the 5th June, 2012

G.S.R. 427(E). - In exercise of the powers conferred by sub-section (1) read with clause (j) and (q) of sub-section (2) of section 52 of the Legal Metrology Act, 2009 (1 of 2010), the Central Government hereby makes the following rules further too amend the Legal Metrology (Packaged Commodities) Rules, 2011, namely :-

1. (1) These rules may be called the Legal Metrology (Packaged Commodities) (Second Amendment) Amendment Rules 2012.

   (2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Legal Metrology (Packaged Commodities) (Third Amendment) Rules, 2011:-

   (i) for sub-rule (2) of rule 1, the following sub-rule shall be substituted, namely:-

   *(2) Save as otherwise provided, these rules shall come into force from 1st July, 2012."

   (ii) In rule 2, for clause (a) the following clause shall be subsitituted, namely:-

   *(a) The provise to rule 5 shall be omitted from 1st November, 2012."

RAJIV AGARWAL
Secy.

[F.No.WM-11(13) /2010]

Note : The principal rules were published in the Gazette of India, vide, notification number G.S.R. 202(E), dated 7th March, 2011 and last amended, vide, notification number G.S.R.784(E), dated 24th October, 2011.

A RANDOMIZED TRIAL OF THE EFFECTS OF AN ALMOND ENRICHED, HYPOCALORIC DIET IN THE TREATMENT OF OBESITY[1–4]

GARY D. FOSTER

Kerri Leh Shantz, Stephanie S Vander Veur, Tracy L Oliver, Michelle R Lent, Amy Virus, Philippe O Szapary, Daniel J Rader, Babette S Zemel and AdamGilden-Tsai

ABSTRACT

Background : Increased consumption of nuts has been advocatedbecause of their health benefits, but the role of nuts in the treatment of obesity is unclear given their high energy density.

Objective : This study was designed to evaluate the effects of a hypocaloric, almond-enriched diet (AED) compared with a hypocaloric nut-free diet (NFD) on body weight and cardiovascular disease risk factors in the context of an 18-mo behavioral weight-management program.

Design : Overweight and obese individuals [n = 123; age = 46.8 y, BMI (in kg/m2) = 34.0] were randomly assigned to consume an AED or NFD and instructed in traditional behavioral methods of weight control. Anthropometric and metabolic measurements were made at baseline, 6 mo, and 18 mo.

Results : Those in the AED group lost slightly but significantly less weight than did those in the NFD group at 6 mo (25.5 compared with 27.4 kg; P = 0.04), but there were no differences at 18 mo. No significant differences in body composition were found between the groups at 6 or 18 mo. The AED, compared with the NFD, was associated with greater reductions in total cholesterol (P = 0.03), total:HDL cholesterol (P = 0.02), and triglycerides (P = 0.048) at 6 mo, and no differences were observed between the groups at 18 mo.

Conclusions : The AED and NFD groups experienced clinically significant and comparable weight loss at 18 mo. Despite smaller weight loss in the AED group at 6 mo, the AED group experienced greater improvements in lipid profiles. This trial was registered at clinicaltrials. gov as NCT00194428. Am J Clin Nutr doi: 10.3945/ajcn. 12.037895.

INTRODUCTION

The health benefits of nuts (1) have led policymakers to recommend their regular consumption as part of a healthy diet (2). Nut consumption has positive effects on various cardiovascular disease risk factors, including improvements in triglycerides, total cholesterol (TC)5, and LDL cholesterol (3–5).

Moreover, nut consumption in observational studies is associated with a lower risk of developing coronary artery disease, type 2 diabetes, and hypertension (6–11). Despite these benefits, many individuals attempting to lose weight may consciously avoid consuming nuts because of their high energy density.

Epidemiologic studies have shown a negative or inverse relation between nut consumption and body weight (12–15). Mechanisms underlying the relation between nut consumption and weight are unclear but may be related to altered resting energy expenditure, inefficient absorption of energy from nuts, or increased satiety (16–18). In addition to epidemiologic

Am J Clin Nutr doi: 10.3945/ajcn.112.037895. Printed in USA.

evidence, controlled feeding studies suggest that nuts do not promote significant weight gain (4, 18–21).

Only 3 randomized studies have evaluated the effect of nut consumption in the context of a weight-loss program.Wien et al (20) randomly assigned 65 participants to consume a liquid formula based low-calorie diet (LCD) enriched with almonds or a liquidbased LCD supplemented with complex carbohydrates and found greater reductions in weight in the almond-enriched group. Liet al (4) randomly assigned 59 participants following an LCD to enrich their diet with either pistachios or pretzels and found no differences in weight change between the groups. Finally, Pelkman et al (21) compared weight-reduction outcomes for 53 participants prescribed a hypocaloric, low-fat (20% of energy) diet or a hypocaloric, moderate-fat (35% of energy) diet enriched with peanuts and found no differences in weight loss between groups. Interpretation of previous findings, however, is limited by their short duration (10–24 wk) and small sample sizes (n = 53 - 65) (4, 20, 21).

In the context of an obesity pandemic (22) and a public health call for increased nut consumption (2), data from larger samples over longer durations are needed to assess the effects of nut consumption in the context of obesity treatment. The purpose of the current study was to compare the effects of an almond-enriched diet (AED) with those of a nut-free diet (NFD) on body weight, body composition, and cardiovascular disease risk factors in the context of an 18-mo behavioral weight-management program in overweight and obese participants. We hypothesized that the AED would be associated with greater weight loss and improvements in cardiovascular disease risk factors than would the NFD at 6 and 18 mo.

SUBJECTS AND METHODS

Participants

Participants were 123 adults (112 women, 11 men) with a mean (±SD) age of 46.8 ± 12.4 y and a BMI (in kg/m2) of 34.0 ± 3.6. Inclusion criteria were an age of 18 to 75 y and a BMI of 27–40. Participants were excluded if they had uncontrolled hypertension (defined as a blood pressure.180/100 mm Hg), established cardiovascular disease or an inflammatory condition (eg, lupus), diabetes or use of antihyperglycemic medications, dyslipidemia requiring prescription drug therapy as defined by the National Cholesterol Education Program Adult Treatment Panel III guidelines (23), or any known allergy or sensitivity to nuts. Additional exclusion criteria were the use of medications known to affect body weight

1 From Temple University, Center for Obesity Research and Education, Philadelphia, PA (GDF, KLS, SSVV, TLO, MRL,and AV); the Department of Medicine, University of Pennsylvania, Philadelphia, PA (POS and DJR); the Center for Weight and Eating Disorders, University of Pennsylvania, Philadelphia, PA (AG-T); and the Division of Gastroenterology, Hepatology, and Nutrition, The Children's Hospital of Philadelphia, Philadelphia, PA (BSZ).

2 Supported by The Almond Board of California through a competitive request for applications.

3 Current addresses: Wellness Coaches USA (KLS); Immaculata University (TLO); School District of Philadelphia (AV); University of Colorado, Denver (AG-T); and Janssen Research & Development, Malvern, PA (POS).

4 Address correspondence and reprint requests to GD Foster, Center for Obesity Research and Education, 3223 North Broad Street, Suite 175, Philadelphia, PA 19140. E-mail: gfoster@temple.edu.

5 Abbreviations used: AED, almond-enriched diet; LCD, low-calorie diet; NFD, nut-free diet; TC, total cholesterol; TC:HDL cholesterol, ratio of total to HDL cholesterol.

Received February 26, 2012. Accepted for publication May 14, 2012. doi: 10.3945/ajcn.112.037895.

or a weight loss of ≥ 5 kg in the preceding 6 mo. Baseline characteristics of the sample are described in Table 1.

Participant flow throughout the study is shown in Figure 1. Participants who appeared, by a scripted phone screen, to meet eligibility requirements were scheduled to meet with research staff, who described the study's nature and requirements, assessed suitability for participation, and obtained written informed consent. Study visits and treatment occurred at an outpatient division of The Hospital of the University of Pennsylvania. The study protocol was in accordance with the ethical standards of the University and was approved by The University of Pennsylvania and Temple University's Institutional Review Boards.

TABLE 1

Baseline characteristics of the subjects[1]

Variable	Almond-enriched diet (n = 61)	Nut-free diet (n = 62)
Sex [n (%)]		
Male	7 (11.5)	4 (6.5)
Female	54 (88.5)	58 (93.5)
Race-ethnicity [n (%)]		
White	34 (55.8)	32 (51.6)
Black	21 (34.4)	27 (43.6)
Asian	0 (0)	1 (1.6)
Hispanic	1 (1.6)	2 (3.2)
Other	5 (8.2)	0 (0)
Age (y)	47.0 ± 12.0[2]	46.7 ± 13.0
BMI (kg/m^2)	33.9 ± 3.5	34.0 ± 3.7
Weight (kg)	94.0 ± 13.1	91.5 ± 11.9
Triglycerides (mg/dL)[3]	104.9 ± 53.4	98.9 ± 54.7
Cholesterol[4]		
Total (mg/dL)	195.1 ± 30.7	195.0 ± 36.8
VLDL (mg/dL)	23.1 ± 15.6	22.4 ± 16.0
LDL (mg/dL)	115.1 ± 26.2	110.3 ± 28.2
HDL (mg/dL)	56.7 ± 13.3	61.2 ± 17.0
Total : HDL cholesterol	3.6 ± 0.8	3.4 ± 0.9
Systolic blood pressure (mm Hg)	123.8 ± 15.0	122.4 ± 17.6
Diastolic blood pressure (mm Hg)	72.2 ± 9.9	69.6 ± 9.6
Lean mass (kg)	56.2 ± 9.2	53.9 ± 6.9
Fat mass (kg)	37.8 ± 7.4	37.6 ± 7.4

[1] There were no statistically significant differences between the 2 groups.

[2] Mean ± SD (all such values).

[3] To convert values for triglycerides to mmol/L, multiply by 0.01129.

[4] To convert values for cholesterol to mmol/L, multiply by 0.02586.

Treatment groups

Common protocol

Participants were randomly assigned, with the use of a randomnumber generator, to follow either the AED or the NFD as described below. During the first week of treatment, all participants were instructed to maintain their usual eating and activity habits. Thereafter, all participants were prescribed an LCD providing 1200–1500 kcal/d for women and 1500–1800 kcal/d for men. Beginning in week 4, participants in both groups were encouraged to walk for 20 min 4 times/wk, progressing to 50 min 4 times/wk by week 19. Additionally, both groups were instructed in traditional behavioral methods of weight control, such as self-monitoring and stimulus control (24, 25). Groups met weekly for 20 wk, biweekly for the next 20 wk, and every 6 wk for the remainder of 18 mo. The NFD and AED participants attended separate treatment groups to promote adherence to the intervention.

Almond-enriched, low-calorie diet

Sixty-one subjects were assigned to receive the AED. Participants were provided two 28 g packages of almonds (~ 24 almonds per package) to consume daily throughout the study, which were distributed at their group meetings. Over the first 5 wk of treatment, participants received whole, raw almonds only. At week 6, roasted almonds were introduced and, over time, a variety of isocaloric, flavored almonds were used. This group was instructed to abstain from alternative nut consumption. The primary behavioral targets were adherence to the total energy intake goal and consumption of 56 g almonds/d.

Nut-free, low-calorie diet

Sixty-two subjects were assigned to receive the NFD. These participants were instructed to abstain from the consumption of nuts (eg, peanuts, peanut butter, cashews, macadamia nuts, walnuts, and pistachios). The primary behavioral target was adherence to the total energy intake goal.

Outcomes

To assess the short-term and long-term effects of an AED relative to an NFD, outcomes were collected at baseline, 6 mo, and 18 mo.

Weight

Body weight was measured on calibrated scales while the participants were wearing light-weight clothing and no shoes. Height was measured with a stadiometer at baseline only.

Plasma lipids and lipoproteins

Blood samples were obtained after subjects fasted overnight (12 h). Plasma lipids were analyzed in a lipid laboratory that participates continuously in the CDC Lipid Standardization

Program. Plasma HDL cholesterol and triglycerides were measured enzymatically on a Hitachi autoanalyzer with the use of reagents from Sigma Chemical Co. VLDL-cholesterol and LDLcholesterol concentrations were directly measured by “betaquantification” after ultracentrifugation at a density of 1.006 g/mL to separate VLDL.

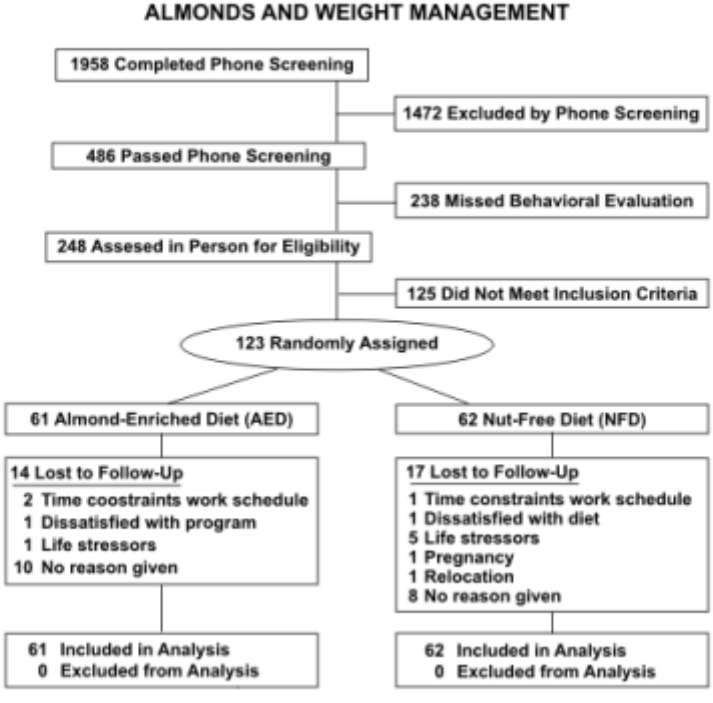

FIGURE-1 Participant flow throughout a randomized trial of the effects of an almond-enriched, hypocaloric diet in the treatment of obesity.

Blood pressure

Blood pressure was assessed by using automated instruments (Dinamap; GE Health Care) with cuff sizes based on measured arm circumference. After the participants sat quietly for 5 min, 2 blood pressure readings were made separated by a 1-min rest period. The average of the 2 readings was used to determine blood pressure.

Body composition

Body composition was assessed by using dual-energy X-ray absorptiometry (Hologic Discovery A, software 12.4) at baseline, 6 mo, and 18 mo.

Symptoms

We assessed symptoms with a checklist used in previous weight-loss studies (26). The checklist contains 26 symptoms rated as none, mild, moderate, or severe. Symptoms were categorized dichotomously as either absent (none) or present (mild, moderate, or severe) because most symptoms were rated as none; therefore, the data were not normally distributed.

Statistical analysis

Power and estimated sample size : To detect a 3% (SD = 5%) difference in body weight between groups with 80% power and a 2-tailed α of 0.05, 45 participants per group were required at the end of treatment.

Analyses

Between-group differences were assessed at baseline by using independent-samples

t ' tests or Wilcoxon's rank-sum tests, as appropriate, for continuous outcomes. Categorical outcomes were assessed by using chi-square tests.

The primary analysis was an intent-to-treat linear mixed-effects model, which assessed change in each outcome at 6 and 18 mo. These models, which included time, treatment, a time-by-treatment interaction, and the respective baseline value as principal explanatory variables, posited an unrestricted structure on the variancecovariance matrix of the residuals for all 123 participants. These analyses included all observed data for each variable on all participants, regardless of attrition. Several sensitivity analyses were conducted. The first was an analysis of covariance (initial values as covariates) performed on all randomly assigned participants who reached a particular visit (ie, 6 or 18 mo), regardless of whether they subsequently dropped out of the study (ie, a completers' analysis). The second sensitivity analysis was an intent-to-treat linear mixed-effects model performed on absolute values of the outcome, as opposed to changes in the outcome. The results from these sensitivity analyses were similar to those of the primary analysis in direction and significance. The results of the primary analysis and the completers' analysis are reported here. Analyses were conducted by using SAS 9.2 (SAS Institute) or SPSS 19.0 (SPSS).

RESULTS

Attrition

No statistically significant differences in attrition were found between the 2 groups at 6 ($P = 0.23$) or 18 ($P = 0.57$) mo. The attrition rates were 11.5% for the AED and 19.4% for the NFD at 6 mo and 23.0% and 27.4% at 18 mo, respectively.

Attendance

No statistically significant differences in attendance were found between the 2 groups at 6 ($P = 0.67$) or 18 ($P = 0.41$) mo. Participants attended a mean of 15.7 ± 5.9 of 22 sessions (71.4%) at 6 mo and 22.9 ± 10.3 of 35 sessions (65.4%) at 18 mo.

Body weight

The NFD group lost slightly but significantly more weight than did the AED group at 6 mo (–7.4 compared with –5.5 kg; $P = 0.04$) (Table 2). Both groups experienced small and similar (1%) increases in weight between 6 and 18 mo. No significant difference in weight loss was found between the NFD (-5.9 kg) and AED (3.7 kg) groups at 18 mo (Figure 2). Similarly, the completers' analysis ($n = 54$ AED; $n = 50$ NFD) indicated a significantly smaller weight loss in the AED ($5.5\% \pm 4.9\%$) than in the NFD ($7.5\% \pm 4.9\%$) group at 6 mo ($P = 0.047$). At 18 mo, the completers' analysis ($n = 47$ AED; $n = 45$ NFD) showed no significant difference in weight loss between the AED ($4.7\% \pm 7.1\%$) and NFD ($6.5\% \pm 7.1\%$) groups ($P = 0.2226$).

Body composition

No differences in changes in lean mass were found between the AED and NFD groups at 6 or 18 mo (Table 2). The greater reduction in fat mass observed in the NFD group was nearly statistically significant at 6 mo ($P = 0.06$), but no significant differences in changes in fat mass were found between the groups at 6 or 18 mo.

Blood pressure

Systolic blood pressure decreased with weight loss in both groups, but no between-group differences were found at 6 or 18 mo (Table 2). Similarly, no significant differences in diastolic blood pressure were found between the 2 groups at 6 or 18 mo.

Plasma lipids and lipoproteins

Significantly greater reductions in triglycerides and TC were found in the AED group than

in the NFD group at 6 mo but not at 18 mo (Table 2). No differences in VLDL cholesterol, LDL cholesterol, or HDL cholesterol were observed between the groups at 6 or 18 mo. The ratio of TC to HDL cholesterol (TC: HDL cholesterol) was significantly more improved in the AED group than in the NFD group at 6 mo but not at 18 mo.

TABLE 2

Adjusted mean changes by treatment condition from baseline to 6 and 18 mo[1].

Variable	Almond-enriched diet	Nut-free diet	*P* value[2]
Weight (kg)			
6 mo	−5.5 ± 0.6	−7.4 ± 0.7	0.04
18 mo	−3.7 ± 1.0	−5.9 ± 1.0	0.12
Triglycerides (mg/dL)			
6 mo	−12.1 ± 4.6	1.0 ± 4.6	0.048
18 mo	−4.1 ± 6.4	−10.3 ± 5.6	0.47
Total cholesterol (mg/dL)			
6 mo	−8.7 ± 2.8	−0.1 ± 2.8	0.03
18 mo	3.7 ± 3.5	5.8 ± 3.1	0.64
VLDL cholesterol (mg/dL)			
6 mo	−2.4 ± 1.5	1.4 ± 1.5	0.07
18 mo	2.3 ± 1.6	3.5 ± 1.4	0.58
LDL cholesterol (mg/dL)			
6 mo	−5.4 ± 2.9	−0.2 ± 2.9	0.21
18 mo	3.1 ± 2.7	−0.1 ± 2.5	0.41
HDL cholesterol (mg/dL)			
6 mo	0.4 ± 1.1	−0.6 ± 1.1	0.52
18 mo	4.6 ± 1.7	2.3 ± 1.6	0.32
Total:HDL cholesterol			
6 mo	−0.2 ± 0.1	0.04 ± 0.1	0.02
18 mo	−0.2 ± 0.1	−0.1 ± 0.1	0.52
Systolic blood pressure (mm Hg)			
6 mo	−3.9 ± 1.6	−5.7 ± 1.7	0.44
18 mo	−3.2 ± 2.1	−3.6 ± 2.0	0.89
Diastolic blood pressure (mm Hg)			
6 mo	−0.8 ± 0.9	−1.6 ± 1.0	0.56
18 mo	0.7 ± 1.1	−1.3 ± 1.0	0.19
Lean mass (kg)			
6 mo	−1.8 ± 0.3	−2.5 ± 0.3	0.22
18 mo	−1.4 ± 0.4	−2.4 ± 0.4	0.09
Fat mass (kg)			
6 mo	−3.7 ± 0.5	−5.0 ± 0.5	0.06
18 mo	−3.0 ± 0.8	−4.0 ± 0.8	0.39

[1] All values are adjusted means ± SEs. None of the variables had a significant time-by-treatment interaction. A priori analyses were conducted at 6 and 18 mo.

[2] P values are for between-group differences based on linear mixedeffects models; baseline values of the outcome, time, treatment, and a timeby treatment interaction were the principal explanatory variables.

Symptoms

The most common symptoms reported at 18 mo were sluggishness/tiredness (37.4%), difficulty sleeping (21.9%), and feeling tense (21.1%), but no significant differences in the presence of 26 symptoms were found between the groups at 6 or 18 mo.

DISCUSSION

There were several principal findings. First, both the AED and NFD groups experienced significant weight loss at 6 (7%) and 18 (5%) mo. These amounts of weight loss are similar to those observed in other studies (4, 21) but less than that in one study (20) that incorporated nuts into a weight-management program. The greater weight loss seen in that study (20) could have been the result of the inclusion of a portion-controlled (liquid formula) diet in both groups or a low-carbohydrate diet in the nut group only, both of which have been shown to have significant effects on short-term weight loss without the incorporation of nuts (27–29).

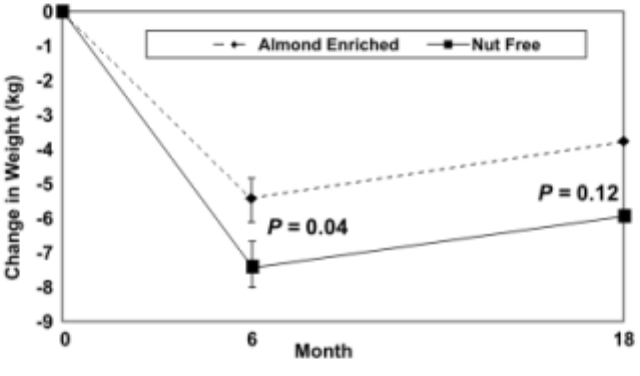

FIGURE 2. Mean (± SE) weight change at 6 and 18 mo in a weightmanagement population after a hypocaloric almond-enriched diet (n = 62) or a nut-free diet (n = 61). Weight change data were analyzed by using intentto-treat linear mixed-effects models. These analyses included all observed data on all participants, regardless of attrition.

The NFD group experienced slightly (1.9%) but significantly greater reductions in weight than did the AED group at 6 mo. These findings were in the opposite direction of our hypothesis and may be secondary to the NFD group choosing foods lower in calories for snacks than nuts, which resulted in slightly greater energy deficits. No statistically significant differences in body weight were found between the groups at 18 mo. Whereas the difference between the groups was approximately the same at 6 and 18 mo (1.5 kg compared with 1.8 kg), the variability was greater at 18 mo. The clinical significance of the small difference in weight between groups at 6 or 18 mo (~2%) is unclear, particularly given the lack of differences in body composition between the groups at either 6 or 18 mo. Both groups experienced minimal weight regain (1%) between 6 and 18 mo.

Given that the frequency of the group sessions decreased over time, adherence to both diets may have declined.

The second principal finding was that, despite the slightly smaller weight losses at 6 mo in the AED group, triglycerides, TC, and TC:HDL cholesterol improved more in the AED group than in the NFD group. Specifically, the AED group had a 4% greater reduction in TC and a 12% greater reduction in triglycerides than did the NFD group at 6mo. The changes are notable given that baseline lipid profiles were close to optimal ranges, which left a restricted range for improvement and/or differences between groups.

A trend toward a greater reduction in VLDL cholesterol in the AED group was observed at 6 mo, consistent with an effect (at 6 mo) of either reduced hepatic VLDL production or increased VLDL lipolysis. Finally, at 6 mo, TC : HDL cholesterol decreased significantly more in the AED group (-0.2 ± 0.1) than in the NFD group (0.04 ± 0.1), consistent with a cardioprotective effect. As in our study, Wien et al (20) found reductions in LDL cholesterol across groups but no differences between intervention groups. In our sample, the effects of almonds on LDL may have been attenuated by the effects of weight loss on LDL.

Furthermore, the elevated BMI in our sample may have limited the potential cholesterol-lowering effects of nut consumption, which pooled analyses suggest to be more effective in individuals with a lower BMI (5).

Mechanistically, the compositional properties of almonds that contribute to improvements in triglycerides and TC remain unclear; however, as above, they appear to be related to effects on VLDL metabolism. Almonds are rich in unsaturated fatty acids, which can influence VLDL metabolism (30, 31). The reduction in triglycerides and cholesterol might be expected to reduce cardiovascular disease risk if maintained over a long time (32).

To our knowledge, this was the longest and largest study to date on almond consumption in the context of a weight-management program. Both groups achieved significant short-term weight reduction, which was generally maintained at 18 mo. Our study was conducted primarily with female participants, so generalization to males should be conducted with caution. It was also conducted outside of a metabolic ward, precluding objective assessments of dietary adherence, except weight loss. Whereas adherence to intake and activity were discussed in groups, data were not collected in any standardized manner. Self-reported data have been shown to be invalid when compared with objective measures such as doubly labeled water (33). The differences in lipid profiles at 6 mo, in the context of comparable weight loss, suggested that patients adhered to the energy-deficit diet and

The authors' responsibilities were as follows—GDF, POS, DJR, and AG-T: designed the research; SSVV, KLS, TLO, and BSZ: conducted the research; MRL, GDF, SSVV, KLS, AV, TLO, BSZ, POS, and DJR: provided essential materials; GDF and MRL: wrote the manuscript; and GDF: had primary responsibility for the final content. GDF serves as a consultant to the Almond Board of California. None of the other authors reported a conflict of interest. The sponsor had input into the study design but had no input or involvement in the study implementation, data analysis, or interpretation of data.

to the instruction to consume almonds (AED) or avoid nuts (NFD). The lack of lipid differences at 18 mo suggests decreased adherence over time.

In conclusion, incorporating limited portions of almonds-an energy-dense food-into a behavioral weight-loss program still resulted in significantweight reduction.Moreover, despite a smaller weight loss at6mo in comparisonwith theNFDgroup, the AED group experienced greater improvements in cardiovascular disease risk factors. There were no differences in weight loss or cardiovascular disease risk factor outcomes between groups at 18 mo.

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FATS AND OILS IN HEALTH AND NUTRITION

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(lecture delivered on 7.7.12 to members of Association Food Scientists & Technologists (India), Calcutta Chapter and Centre for Medicinal Food & Applied Nutrition at FTBE Dept.,J.U., Kolkata)

It will be more appropriate if the title of my topic be described as w-6 & w-3 PUFA in health and nutrition Earlier it was considered that only of a fat & oil in a diet was to provide energy. In 1929,Burr & Burr, established the essential nature of certain polyunsaturated fatty acids (PUFA) in the nutrition of albino rats. Next landmark was the decisive studies in early fifties to establish that in man PUFAs lower high serum cholesterol which is a marker for coronary heart disease and atherosclerosis. In 1930-1960 a class of compounds named eicosanoids with varied physiologic and pharmacological functions was discovered. Eicosanoids consisting of prostaglandins,prostacyclines,thrmboxanes ,leucotrienes etc were discovered as metabolites of arachidonic acid (ArA) and eicosapentaenoic acid(EPA),these have strong regulatory functions.At present fats oils are important component of our food.

Dietary PUFA (DHA) are necessary for brain formation and nerve activity. Fats & oils also provide energy to heart. In our diet both w-3 &w-6 PUFA must be present in proper amounts and proper proportion,without w-3. in correct amount, only w-6 has serious adverse health consequences.

GENETICAL PERSPECTIVE

Man made his appearance on 2-3 lakh years ago. Since then human civilization has advanced to a stage which is beyond recognition compared to its hunter-gatherer life. Along with life style diet of a man also changed. First major change in diet took place 10000 years ago with the advent of agriculture practices.Second revolution took place 250=300 years ago with industrial revolution. Though human diet has changed with civilization, his genome has hardly changed. A mismatch between our diet and genome was created and this resulted in metabolic dysregulations of health consequences. To be remembered that our body expects to be nourished by dietary molecules within genetically determined ranges.

BASIC CONSIDERATIONS

(a) **Cell-membrane and its fluidity :** Cell membrane is made of phospholipids(PL). Fatty acids of PL are mainly PUFA. Proteins, cholesterol and antioxidants are embedded in membrane. There are receptors on the membrane Due to low melting point of a PUFA and a MUFA these make a membrane fluid. High melting point of a saturated fat (SFA) and trans fatty acids (TFA) make a membrane rigid. In vivo Peroxidized fatty acids also make a membrane rigid.Fluidity is essential for receptors

to function efficiently. A comparatively rigid membrane stands in the way of nutrients to enter a cell for metabolism. One of the causes for Type 2 diabetes and hypertension may be change in fluidity of cell membranes.

The "kinked" structure ie cis form of natural unsaturated fatty acids of a membrane prevents them from grouping together too tightly thereby promoting membrane fluidity. On the other hand, straight nature of SFA, TFA and cholesterol allows these molecules too tightly and thereby increasing membrane rigidity.

(b) **In vivo Peroxidation :** PUFA of a cell membrane and LDL are highly susceptible to be attacked by free radicals which are normally generated in body to a very minor extent. But under condition of stress these are produced excessively and attack PUFA. PUFAs are chemically more active than MUFA which are more active than SFA.

Once started by a free radical peroxidation goes on by chain reaction. Peroxidised PUFAs and other fatty acids may promote atherosclerosis and related diseases. Alzheimer's dementia may also be initiatedby peroxidation of PUFA.

(c) **Eicosanoids :** These are hormone-like mediators and consist of PGE, PGI, TXA, LTB and others with important functions of metabolic importance. These are produced enzymatically (COX & LOX) from (w-6) ArA and (w-3)EPA which in their turn are produced enzymatically from (w-6) LA and (w-3) ALA enzymatically. Eicosanoids from (w-3) EPA are anti-thrombotic (TXA-3), anti-inflammatory(LTB-5 and (pge-3) and anti-carcinogenic (PGE-3).Those from (w-6) ArA ie TXA-2, LTB-4 and PGE-2 have just the opposite effects. Genaration of these two series of eicosanoids in balanced amounts from their mother substances is a necessity for smooth regulation of diverse physiological processes.

Same enzymes are involved for the conversion of(w-6)LA to (w-6) ArA and (w-3)ALA to (w-3)EPA.Again another sets of same enzymes (COX and LOX) are involved for the conversion of (w-6)ArA and (w-3)EPA to their respective eicosanoids.So the ultimate effect is the resultant of two opposite effects and depends on relative amounts and proportion of dietary (w-6)LA or PUFA and (w-3)ALA or PUFA.

Mounting evidence suggests that the ratio of (w-6)LA to (w-3)ALA is more important than their absolute amounts. The optimal ratio may be 1 or 2 to 1, similar to diet of our HG forefathers.A ratio of 4 has also been suggested.

CHRONIC DISEASES AND IMBALANCED (W-3) & (W-6) PUFAs

Dietary (w-6) LA with insufficient or in absence of dietary (w-3) ALA and too much of SFA or TFA in a diet has serious adverse health consequences resulting in different chronic diseases such as cardiovascular disease,atherosclerosis,thrombosis,heart attack, stroke, arthritis,type-2 diabetes,Alzhiemer's dementia and cancer.Imbalance in (w-3) & (w-6) PUFA promotes blood clotting and associated diseases, obesity, cancer and arthritis. Table-1 indicates that in absence of (w-3)EPA, (w-6)ArA may be dangerous causing CHD related deaths (Ramsden).

Table-1: Plasma(w-6) ArA and (w-3)EPA as a percentage of total ArA+EPA,ArA:EPA ratioand Cardiovascular Disease Mortality.

Pophlation	w-6 ArA	w-3 EPA	ArA/EPA ratio	CHD related death
Caucasian American	96%	4%	22:1	very high
Japanese American	93%	7%	13:1	high
Quebecers (Urban Canadian)	93%	7%	13:1	high
Swedish	92%	8%	11:1	moderate
Spanish	87%	13%	7:1	moderate
Urban Japan	69%	31%	2:1	Low
Inuit Nunavik	67%	33%	2:1	low
Rural Japan (elders)	56%	44%	1:1	very low
Greenland Inuit (2001)	52%	48%	1:1	Very low
Greenland Eskimos (1975)	10%	90%	1:9	very very low

The table clearly indicates that without (w-3)PUFA, consequences of dietary (w-6) LA, mother substance of ArA may be undesirable.

ANTIOXIDANTS

To quench free radicals not one or two but a good number of diverse dietary antioxidantsare to be provided. An umbrella of antioxidants is necessary to minimize in vivo peroxidation of dietary PUFA and oxidation of cholesterol. Fruits are good sources of antioxidants. When one takes PUFA in his diet, he requires additional antioxidants for these; other requirement of antioxidants are to be separately considered.

UNBALANCED DIETS

Present day diet of many developed countries world sufficient or more than sufficient calories (energy). But the diet in many cases is unbalanced particularly with respect to its lipid components. USA is a highly developed country but its diet is most unbalanced. When the USDA of the USA in its guidelines to its people states : take more of this, less of that.This is only an indirect admission that the diet of the USA is not balanced. Its people takes excess of solid fat,saturated fat and less of vegetable oils,sea foods,fruits and vegetables According to Ramsden (2007), an authority of Applied Nutrition of the USA : The US population is in the midst of an unprecedented explosion of chronic diseases.These are mainly diet-relate(mainly fats & oils).

Indian diet varies considerably from that of the USA .Indian diet includes less of visible fat. But the quality of fat is poor and rich in (w-6)PUFA and insignificant in (w-3) PUFA.

DIETARY FATS OILS OF INDIA

Excepting ghee which is solid or semi-solid and of animal origin all other visible lipids of Indian diet are of vegetable kingdom and are liquid i,e. oil at room temperature. Our body can not synthesize (w-3) & (w-3) PUFA ie LA & ALA and so our diet is required to supply these. Natural unsaturation of MUFA & PUFA is in cis form. SFA, MUFA and PUFA contents of important vegetable oils of the world are given in Table-2. Needless to mention that (w-6)LAand (w-3) are ALA contents of these oils are important. As most dietary vegetable oils are highly rich in LA one should be particular about dietary ALA.

Table-2 : SFA, MUFA and (w-3) & (w-6) PUFA contents of important vegetable oils of the world (g/100g fatty acids).

Sl. No.	Vegetable oil	SFA	MUFA	PUFA (LA) (w-6))	PUFA (ALA) (w-3)	(w-6)/(w-3)
1	Canola	8	60	24	8	3
2	Coconut	92	6	2	-	>100
3	Corn	14	25	60	1	60
4	Cottonseed	26	25	49	-	>100
5	Flaxseed	10	20	14	56	0.25
6	Groundnut	19	50	31	-	>100
7	Musstard/Rapeseed	6	69	18	7	2.6
8	Olive	15	74	10	1	10
9	Palm	47	45	8	-	>100
10	Palm kernel	84	14	2	-	>100
11	Rice bran	20	44	34	2	17
12	Safflower	6	22	72	-	>100
13	Sesame	14	42	44	-	>100
14	Soybean	17	26	50	7	7.1
15	Sunflower	9	30	61	-	>100

All the above oils except canola and olive oil are commercially available in our country. Soybean oil, mustardseed/rapeseed oil and flaxseed (in India known as linseed) oil contain both (w-6)LA and (w-3) ALA All other oils have only (w-6) LA which without (w-3) ALA are not of good health consequences. Again, of three (w-3) ALA containing oils flaxseed oil

is not good for Indian system of cooking which in most dietary preparations involve heating. ALA gets polymerized, oxidized etc and these products are most undesirable for healh. ALA prepared with care and which is not subjected to heating for dietary preparations may be used as a diet. Health consequences of erucic acid of mustardseed / rapeseed oil have been raised in many scientific quarters.

CONCLUSION

Statutory authorities of India do not differentiate between specific polyunsaturated fatty acids. They are completely indifferent to the problem. This is to be recognized and necessary. dietary guidelines for the people at large are necessary. Scientists, medical world and Govt. officials related to the concerned ministry are aware of this. We must have dietary oils containing both (w-6) and (w-3) PUFA in proper amounts and in right proportion Many a scientists have given lectures on the subject for last a few years but without effect. Govt. should organize a seminar on the issue to formulate its policy. Matter is one of public health and should not be taken lightly.

Lok Sabha Starred Question No. 453 - Answered on 8th May 2012

PRICE OF EDIBLE OIL

Shri Sanjay Dhotre : Shri Anto Antony :

Will the Minister of Consumer Affairs, Food and Public Distribution be pleased to state :

(a) whether the price of edible oil has increased in the domestic market during each of the last three years and the current year;

(b) if so, the details thereof and the reasons therefor alongwith the reaction of the Government thereto, edible oil-wise;

(c) the details of the demand, supply and import of edible oil in the country during the said period, edible oil-wise and State-wise including Maharashtra; and

(d) the steps taken/being taken by the Government to keep a check on price rise and to ensure adequate availability of edible oil to the consumers?

Answer

Minister of State (Independent Charge) for Consumer Affairs, Food & Public Distribution- (Prof. K.V. Thomas).

(a) to (d) : A Statement is laid on the Table of the House.

Statement Referred to in Reply to parts (a) to (d) of the Starred Question No. 453 Due for Answer on 08.05.2012 in the Lok Sabha.

(a) and (b) : The wholesale domestic prices of major edible oils viz, mustard oil, groundnut oil, soyabean oil, sunflower oil and RBD palmolein had increased during 2008. The prices of these oils declined during 2009 and increased during 2010, 2011 and current year. The details of average wholesale domestic prices (oil-wise) during the last three years and current year are as under :

Rate Rs. per quintal

Oil	Year (January-December)				
	2008	2009	2010	2011	2012 (Jan-March)
Mustard Oil	6172	4984	5141	6390	7687
Groundnut Oil	6752	6058	7515	8693	10834
Soyabean Oil	5746	4526	4697	6253	6825
Sunflower Oil	6329	4249	5009	6498	6342
RBD Palmolein	4882	3752	4397	5645	5840

Source : The Solvent Extractors' Association of India.

The reasons for increase in prices of edible oils have been (i) consumption of edible oils in the country has been increasing steadily whereas the production of oilseed is not increasing as compared to demand. The production of oilseed, during 2008-09 (November-October) had been 277.19 lakh tons as compared to 297.55 lakh tons during previous year, which further declined to 248.83 lakh tons during 2009-10. However, there has been increased in the production of oilseeds during 2010-11 to 324.79 lakh tons, but as per the 3rd advance estimates declared by the Ministery of Agriculture, the estimated production of oilseeds during 2011-12 is 300.62 lakh tons, i.e., 24.17 lakh tons lower than 2010-11. (ii) Another reason is increased in prices of edible oils in the International market. There is gap between demand and supply of edible oils in the country and about half of the demand of edible oils is met through imports. The domestic prices of edible oils are susceptible to Internal prices of edible oils. During the last three years, the wholesale international prices (as on 2.5.2012) of major edible oils, viz, crude palm oil, soyabean oil, sunflower oil, and RBP palmolein have increased by 63.12%, 59.09%", 49.38%, 48.03% respectively, (iii) Depreciation of rupee as compared to US $.

(c) : The details of oil-wise demand, production / supply and import of edible oils in the country during the last three years and current year are annexed at Annexure-I and Annexure-II. The detail of State-wise production of oilseeds, including Maharashtra is at Annexure-III. However, data for State-wise demand and import of edible oils is not maintained by the Department.

(d) : In order to meet the requirement of edible oils in the country and to keep the prices under control, Government has taken the following steps :

(i) Import duties on crude and refined oils have been reduced to nil and 7.5% respectively.

(ii) Export of edible oils has been banned except coconut oil, edible oils from minor forest produce and branded oils in small consumer packs within a quantitative limit.

(iii) State Governments have been authorized to impose stock limits on edible oils and oilseeds.

(iv) In order to provide relief to consumers from rising prices and the augment availability of edible oils, since 2008, Government has introduced a "Scheme for distribution of subsidized imported edible oils through states/Union Territories" for distribution to ration card holders with a central subsidy of Rs. 15/- per Kg. The Scheme has been extended upto September, 2012. The scheme is expected to moderate the prices of edible oils in the domestic market.

Annexure Referred to in Reply to Part (c) of the Starred Question No. 453

ANNEXURE - I

Estimated Domestic Production, Import and Total Availability of Edible Oils (Oils-wise) during the years 2008-09 to 2010-11 & Current Year (2011-12)

(November to October)
(Quantity in lakh tons)

	2008-09		2009-10		2010-11*		2011-12**	
Name of Oilseed	Oilseed	Oil	Oilseed	Oil	Oilseed	Oil	Oilseed	Oil
A. PRIMARY SOURCE								
Rapessed/Mustard	72.01	22.32	66.08	20.48	81.79	25.35	69.62	21.58
Soyabean	99.05	15.85	99.65	15.94	127.36	20.38	122.39	19.58
Groundnut	71,68	16.48	54.29	12.49	82.65	19.01	69.49	15.98
Sunflower	11.58	3.82	8.51	2.81	6.51	2.15	5.35	1.77
Sesame	6.40	1.98	5.86	1.82	8.93	2.77	7.31	2.27
Niger Seed	1.17	0.35	1.00	0.30	1.08	0.32	0.96	0.29
Safflower Seed	1.89	0.57	1.79	0.54	1.50	0.45	0.90	0.27
Castor	11.71	4.68	10.09	4.04	13.50	5.40	23.15	9.26
Linseed	1.69	0.51	1.54	0.46	1.47	0.44	1.45	0.44
Sub Total	277.19	66.56	248.83	58.88	324.79	76.27	300.62	71.44
B. SECONDARY SOURCE								
Coconut	4.50		4.50	-	4.00	-	4.00	
Cottonseed	7.60		8.00	-	10.89	-	11.62	
Rice Bran	7.70		7.20	-	7.20	-	7.50	
Solvent Extracted Oils	4.00		4.20	-	4.20	-	4.10	
Tree & Forest Origin	1.20		1.20	-	1.20	-	1.20	
Sub Total	25.00		25.10	-	27.49	-	28.42	
Total (A+B)	91.56		83.98	-	103.76	-	99.86	
C. Less : Export & Industrial Use	7.00		4.52	-	5.94	-	9.36	
D. Net Domestic Availibility	84.56		79.46	-	97.82	-	90.50	
E. Import of Edible Oils $	81.83		88.23	-	83.71	-	37.06 (Nov-Mar.)	
F. Total Availability Consumption of Edible Oils from Domestic and Import Source	166.39		167.69	-	181.53	-	-	

* Based on Final Estimate (declared by Ministry of Agriculture on 03.02.2012)

** Based on Third Advance Estimate (declared by Ministry of Agriculture on 23.04.2012)

$ Source : The Solvent Extractors Association of India, Mumbai

ANNEXURE - II

Annexure Referred to in reply to part (c) of the Starred Question No. 453

Import of Edible Oils from 2008-09 to 2010-11 and Current year 2011-12 (from November 2011 to March 2012)

(Qty. in MTS)

Year (Nov-Oct) Oil Year	Refined RBD Palmolein	Crude Oil								
		Crude Palm Oil	Crude Olein	Sunflower Oil	Canola Rape Oil	Soyabean Oil (degummed)	Cotton Seed Oil	Coconut Oil	Crude Palm Ker. Oil	Total
2011-12 (Nov'11 to March)	821.960	2,079,212	500	477,583	38,731	241,689	---	1,000	45,064	3,705,739
2010-11	1,081,686	5,374,333	6,501	803,593	11,122	1,006,691	---	2,967	84,566	8,371,459
2009-10	1,213,409	5,169,445	4,428	630,005	13,950	1,666,492	9,438	4,198	111,973	8,823,338
2008-09	1,240,018	5,187,063	745	590,175	46,362	989,613	5,069	16,693	107,622	8,183,360

Source : The Solvent Extractors' Association of India.

ANNEXURE - III

Annexure referred to in reply to part (c) of the Starred Question No. 453 Due for Answered on 08.05.2012 in the Lok Sabha.

Statewise Production of Oilseeds - (Oil Year, Nov-Oct)

(Quantity in lakh tons)

State / UT	2008-09	2009-10	2010-11
Andhara Pradesh	21.89	15.0	19.96
Assam	1.38	1.4	1.54
Bihar	1.39	1.4	1.36
Chhattisgarh	1.94	-	2.17
Gujarat	40.16	31.0	48.96
Haryana	9.33	8.8	9.64
Himachal Pradesh	-	-	0.08
Jammu & Kashmir	0.50	-	0.53
Jharkhand	0.73	-	1.14
Karnataka	12.12	10.1	12.70
Kerala	-	-	0.02
Madhya Pradesh	69.77	76.4	80.35
Maharashtra	34.10	28.1	50.40
Orissa	1.80	1.7	1.80
Punjab	0.76	0.8	0.72
Rajasthan	51.78	44.1	66.05
Tamil Nadu	10.43	9.4	9.33
Uttar Pradesh	11.65	8.2	9.19
Uttarkhand	-	-	0.28
West Bengal	5.83	7.3	7.04
Others	1.65	5.2	1.54
All India	277.20	248.9	324.8

Source : Directorate of Economics & Statistics, Dept. of Agriculture & Cooperation.

Rajya Sabha Unstarred Question No. 3113 Answered on 04.05.2012

PRODUCTION OF OILSEEDS

Shrimati Naznir Faruque

Will the Minister of Agriculture be pleased to state :

(a) the quantum of oilseeds estimated to be produced in the country during the current year as compared to the production in the preceding three years;

(b) the shorfall between demand and supply; and

(c) the incentives proposed to be given to farmers to increase production of oilseeds ?

Answer

Minister of State in the Ministry of Agriculture, Food Processing Industries and Parliamentary Affairs - Shri Harish Rawat.

(a) Details of estimated production of oilseeds in the country during 2011-12 and the earlier three years are as under :

Year	Production (Million Tonnes)
2008-09	27.72
2009-10	24.88
2010-11	32.48
2011-12*	30.06

*3rd Advance Estimates released on 23.04.2012

(b) The details of demand of oilseeds projected by Working Group of Planning Commission constituted for 11th Five Year Plan vis-a-vis their production alongwith shortfall/gap between demand and production during 2011-12 and the earlier three years are as under:

Year	Estimated Production	Projected Demand	Shortfall/Gap
2008-09	27.72	47.43	19.71
2009-10	24.88	49.35	24.47
2010-11	32.48	51.34	18.86
2011-12*	30.06	53.39	23.33

*3rd Advance Estimates released on 23.04.2012

(c) In order to incentivise farmers to increase production and productivity of oilseeds, the Government of India is implementing a Centrally Sponsored Integrated Scheme of

Oilseeds, Pulses, Oil Palm & Maize (ISOPOM) in 14 major oilseeds growing States in the country. Under the scheme, incentives are given to the States for implementation of Annual Action Plan under ISOPOM for Oilseeds and Maize Crops. Under the scheme, financial assistance is provided for purchase of breeder seed, production of foundation seed, production and distribution of certified seed, distribution of seed minikits, distribution of plant protection chemicals, plant protection equipments, weedicides, supply of macro nutrients & improved agriculture implements, supply of rhizobium culture/phosphate solubilising bacteria, distribution of gypsum/pyrite/liming/dolomite, distribution of sprinkler sets and water carrying pipes, training, publicity etc. to encourage all type of farmers including small and marginal farmers to grwo them crops.

Further, the Government of India also provides assistance for oilseeds development under the Macro Management of Agriculture (MMA) scheme in the States not covered under ISOPOM and the State can also undertake oilseeds development programme under Rashtriya Krishi Vikas Yojana (RKVY). In order to encourage farmers for cultivation of oilseeds, their Minimum Support Prices (MSPs) have also been increased significantly.

Lok Sabha Unstarred Question No. 5142 - Answered on 8th May 2012

MNCs IN EDIBLE OIL PRODUCTION

Shri Nama Nageswara Rao

Will the Minister of Consumer Affairs, Food and Public Distribution be pleased to state :

(a) whether the Government has allowed / proposes to allow the multinational companies to set up their business in edible oil production sector in Andhra Pradesh; and

(b) if so, the details thereof and the reasons thereof ?

Answer

Minister of State (Independent Charge) for Consumer Affairs, Food & Public Distribution Prof. K. V. Thomas.

(a) & (b) As per information received from Department of Industrial Policy & Promotion, Ministry of Commerce & Industry in the extant policy, FDI, upto 100%, under the automatic route, is permitted in manufacture of edible oils, subject to applicable laws/sectoral rules/regulations/security conditions.

PRICES OF OIL PALM

Shri K. J. S. P. Reddy

Will the Minister of **Agriculture** be pleased to state :

(a) whether the prices of oil palm has increased manifold in the country during the last five years;

(b) if so, the details thereof;

(c) whether the Government proposes to stock enough quantity of oil palm as a measure to check increase in its prices;

(d) if so, the details thereof; and

(e) if not, the measures taken by the Government to check the increasing prices of oil palm ?

Answer

Minister of State in the Minstry of Agriculture, Food Processing Industries and Parliamentary Affairs - Shri Harish Rawat.

(a) & (b) The cultivation of oil palm crop produces Fresh Fruit Bunches (FFBs) which are used for the production of Crude Palm Oil (CPO) and refined palmolein. FFBs of oil palm are perishable in nature and crushed within 24 hours of harvest by the processors. As per the guidelines of centrally sponsored “Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM)”, the prices of FFBs are fixed by a Price Fixation Committee constituted by the State Governments. In Andhra Pradesh which is the major producer of Fresh Fruit Bunches (FFBs) of oil palm, prices of FFBs have increased from Rs. 4,778 per metric tonne in the month of February-April, 2007 to Rs. 7,758 per metric tonne in April, 2012. As regards the prices of refined palmolein are concerned, the Department of Food and Public Distribution, Government of Indian has informed that the average wholesale prices of refined palmolein in the domestic market increased during 2008 as compared to previous year. Thereafter, the prices declined during 2009 and again increased in 2010 and 2011. The details of average wholesale domestic prices of refined palmolein during the last five years is noted below :-

Year	**2007**	**2008**	**2009**	**2010**	**2011**
Prices (in Rupees per quintal	4621	4882	3752	4397	5645

(c) & (d): The import of edible oils is under Open General License (OGL). In order to

control the price and availability of edible oils in the country, since 2008 Government has implemented scheme for distribution of subsidized imported edible oils (RBD palmolein and soybean oil) with a subsidy of Rs. 15/- per kg through States/UTs for distributio to ration card holders. The scheme was extended from time to time and at present the scheme has been extended for a period of one year from October, 2011 to September, 2012 for import of upto 10 lakhs tons of edible oils. So far, from October 2011, about 6.64 lakh tons to RBD palmolein and 0.18 lakh tons of soybean oil have been allocated to different States.

(e) Various measures taken to contain the prices of edible oils are as follows :

(i) Import duties on crude and refined edible oils have been reduced to nil and 7.5% respectively.

(ii) Export of edible oils has been banned except coconut oil, edible oils from minor forest produce and branded oils in small consumer packs within a quantitative limit.

(iii) State Governments have been authorized to impose stock limits on edible oils and oilseeds in order to provide relief to consumers from rising prices and to augment availibility of edible oils since 2008, Government has introduced a "scheme for distribution of subsidized imported edible oils through States/Union Territories" for distribution to ration card holders with a central subsidy of Rs. 15/- per kg.

Rajya Sabha Unstarred Question No. 4069 - Answered on 14th May 2012

SUBSIDIZED EDIBLE OIL IN PDS

Shri Mohd. Alikhan

Will the Minister of Consumer Affairs, Food and Public Distribution be pleased to state :

(a) whether the Ministry has decided to extend subsidized edible oil through PDS till September, 2012; and

(b) If so, the details of the quantity of edible oil kept for this purpose, State-wise ?

Answer

Minister of State (Independent Charge) for Consumer Affairs, Food & Public Distribution Prof. K. V. Thomas.

(a)&(b): Government has extended the scheme for distribution of subsidized edible oils for further period of one year from 1.10.2011 to 30.09.2012 for import of upto 10 lakh tons of edible oils with a subsidy of Rs. 15/- per kg. There is no State-wise quota within the approved quantity. However, allocations of edible oils are made as per demand received from the States.

Lok Sabha Unstarred Question No. 7552 - Answered on 22nd May 2012

IMPORT OF EDIBLE OIL

Shri Mansukhbhai D. Vasava, Shri Prataprao Ganpatrao Jadhao

Will the Minister of **Consumer Affairs, Food and Public Distribution** be pleased to state :

(a) whether edible oil is being imported into the country from abroad.

(b) if so, the reasons therefor;

(c) the value of edible oil imported during each of the last three years;

(d) whether the said import is having an adverse effect on edible oil producers and the farmers;

(e) if so, the reaction of the Government thereto; and

(f) the corrective/reformative steps taken in this regard by the Government ?

Answer

Minister of State (Independent Charge) for Consumer Affairs, Food & Public Distribution Prof. K. V. Thomas.

(a) and (b): Yes, Madam. There is gap between demand and supply of edible oils in the country and about half of the demand is met through imports. Though production of oilseeds has increased in recent years, the gap between demand and supply from domestic sources has not been bridged because of increase in demand and consumption due to increase in population and purchasing power of people.

(c): The value of edible oils imported during the last three years is listed below :

Year (Nov.-October)	Production (Million Tonnes)
2008-09	27034.81
2009-10	34676.99
2010-11	46059.30

(d), (e) and (f) : No Madam, there is no such report about adverse impact of imports of edible oils rather imports have increased availability of edible oils in the country and has helped the edible oil refining industry as well as the Consumers. In order to further augment the availability of edible oils, since 2008 Government has Implemented a shceme for distribution of subsidized imported edible oils through States/UTs to ration card holders. The scheme was extended from time to time and for further period for import of 10 lakh tons of edible oils from October, 2011 to September, 2012.

Prof. D. K. Bhattacharyya

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A REVIEW

*The book entitled **"A treatise on Analysis of Food, Fats and Oils"** is an example of unique competence and contribution of the authors, S. K. Roy, N. K. Pramanik and A. R. Sen.*

The book is the first of its kind in India. It covers the traditional and modern analytical methods for the characterization and quality of fats, oils as well as other food items.

The authors are well reputed and qualified and they have applied their collective wisdom and expertise in including and presenting more appropriately and meticulously the analytical methods.

The book can also be viewed as a rarer type as it deals with the statutory and industrial aspects of fats, oils and their products, and pollution control in vegetable oil industry.

In fact these aspects are of extreme use and importance to those concerned with these issues.

The book is already well received by the readers and users in the academic and industiral circles throughout India because of the highly relevent and benefficial methodologies and basic-cum technological information. The book will be recognised in due course of time as one of the top quality analytical books in the area of food, fats and oils.

Prof. D. K. Bhattacharyya
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BOOK REVIEW

A book entitled “Perfumery Materials, Production and Applications” has been authored by an very eminent Professor (Dr) D. K. Bhattacharyya, Emeritus Fellow (AICTE), Adjunct Professor Bengal Engineering and Science University, former President, O.T.A.I and a Scientist of National and International repute.

The book speaks for itself about his mastery and competence in the discipline of “Perfumery Materials”.

“The book demonstrates the scopes of certain specific reactions and raw materials in producing new synthetics. The enormous scopes of biotechnology involving bio-conversion processes’, with isolated enzymes and by fermentation biotechnology involving selective microorganisms has been indicated in making synthetics. The applications of natural aromatic oils in aromatherapy, food, cosmetics/toiletries, imitation perfumery and allied sector have been included.

Standardisation and evaluation of natural aromatic (essential oils and incidence of their adulteration have been elaborated in order to ascetain their quality and authenticity for sustaining the business in the industry” says Prof (Dr) R.N. Mukherjee, Former, Professor and Head, Deptt of Chemical Engg, University of Jadavpur. The book will fulfill a long felt want in the discipline of Essential Oils and will cater to the various categories of Scholars, Scientists and Technologists. The book has already been well appreciated in India and abroad, though published by the Stadium Press L.L.C., USA.

Those interested to procure a copy of this Valued book on Essential Oils may contact Professor D. K. Bhattacharyya at Phone No (033) 2461 9662.

(S. K. Roy)
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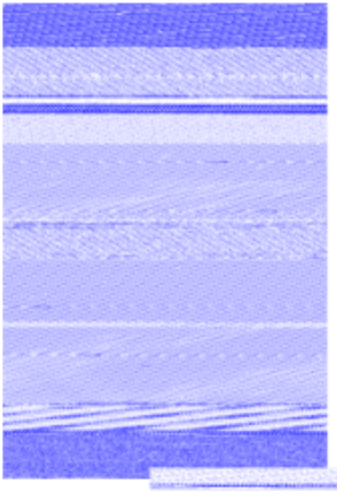

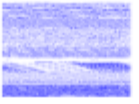

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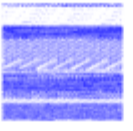

Fried Food Retains Less Oil

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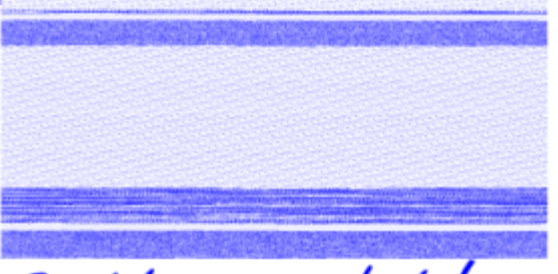

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