Palm Oil Prospects in the US

Gerald McNeill
Food Use of palm oil in USA

USDA stats

Loders Croklaan North America

The Choice for Palm
"THE POISONING OF AMERICA!"
Phil Sokolof: 1986

- Heart attack at age 41, blamed on saturated fats including coconut, palm and tallow
- $15 million advertising campaign
- Joined by American Soybean Association
The Fall of Palm Oil

Palm oil, coconut oil and tallow eliminated from retail foods and fast food chains (McDonalds)

Replaced by partially hydrogenated vegetable oil

The food label “Nutrition Facts” panel was born – showed content of saturated fat but not trans fat

Endorsement by CSPI

“You're better off choosing products made with hydrogenated soybean, corn, or cottonseed oil than those containing butter, lard, beef fat, or palm, palm kernel, or coconut oil“

Nutrition Action Newsletter, Mar 1988

Media Frenzy - “poisonous” Saturated Fat
Poisoning of America campaign

USDA stats
The Rise of Palm Oil

Landmark nutrition study by Mensink and Katan (1990) – trans fat may be worse than saturated fat because it lowers HDL (good) cholesterol

CSPI condemns trans fat

Petitions FDA to include trans fat on the nutrition facts panel (1994)

2003 – FDA announces trans labeling regulation effective Jan 1 2006

Petition FDA to revoke GRAS status of hydrogenated vegetable oil (2004)

*Media Frenzy* – “hidden” Trans Fat
The New Nutrition Facts Panel

Nutrition Facts
Serving Size 3 Cookies (34g)
Servings per container About 15

<table>
<thead>
<tr>
<th>Amount per Serving</th>
<th>%Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories 170</td>
<td>Calories from fat 60</td>
</tr>
<tr>
<td>Total Fat 7g</td>
<td>11%</td>
</tr>
<tr>
<td>Saturated Fat 1.5g</td>
<td>8%</td>
</tr>
<tr>
<td>Cholesterol 0mg</td>
<td>0%</td>
</tr>
<tr>
<td>Sodium 125mg</td>
<td>5%</td>
</tr>
<tr>
<td>Total Carbohydrate 24g</td>
<td>8%</td>
</tr>
<tr>
<td>Dietary Fiber Less than 1g</td>
<td>3%</td>
</tr>
<tr>
<td>Sugars 12g</td>
<td></td>
</tr>
<tr>
<td>Protein 2g</td>
<td></td>
</tr>
</tbody>
</table>

INGREDIENTS: ENRICHED FLOUR (WHEAT FLOUR, MÄCIN, SUGAR, PARTIALLY HYDROGENATED SOYBEAN OIL, HIGH FRUCTOSE CORN SYRUP, COCOA, CORNSTARCH, SALT, BAKING SODA, SOY LECITHIN, NATURAL AND ARTIFICIAL FLAVOR, WHEAT STARCH, CARAMEL COLOR,
Poisoning of America campaign

FDA trans fat label announced

FDA trans fat label implanted

Year

(000) MT

USDA stats

Loders Croklaan North America

The Choice for Palm
Replacing partially hydrogenated vegetable oil

*Barriers to palm oil usage*

- Public perception – “Poisoning of America”
- Nutrition – high in saturated fats
- Functionality – single natural product
Public perception – “Poisoning of America”

**Consumer Research on Palm Oil**

- Internet wave
- ca. 1000 subjects – heads of household
- 4 surveys over 3 years (2003 – 2006)
Ingredients’ affect on negative purchase interest

Saturated Fats, Trans Fats and Partially Hydrogenated Vegetable Oil negative purchase levels are significantly higher in 2006 (Wave 4) than 2003 (Wave 1). In 2006, there is no statistical difference between avoiding Trans Fats and Saturated Fats; both are leading turn offs.

Avoidance of Palm Oil has not changed significantly over the years. In 2006, just under a third of consumers report it deters them from purchasing; a significantly lower level of avoidance than for the other 3 ingredients.

### Bottom Two Box

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Wave 4</th>
<th>Wave 3</th>
<th>Wave 2</th>
<th>Wave 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated Fats</td>
<td>65%CD</td>
<td>64%</td>
<td>63%</td>
<td>60%</td>
</tr>
<tr>
<td>Trans Fats</td>
<td>64%CD</td>
<td>58%</td>
<td>55%</td>
<td>52%</td>
</tr>
<tr>
<td>Partially Hydrogenated Veg Oil</td>
<td>41%D</td>
<td>37%</td>
<td>37%</td>
<td>34%</td>
</tr>
<tr>
<td>Palm Oil</td>
<td>31%</td>
<td>30%</td>
<td>34%</td>
<td>32%</td>
</tr>
</tbody>
</table>

Q3. When you find the ingredient (listed below) on a label or package of a food product, would it encourage you to buy that product – or discourage you from buying it? This is, would the presence of that ingredient make you want to buy the product – or would you avoid buying the product that had that ingredient in it? **(Select one for each)**

A/B/C = Upper case tested with 95% confidence. a/b/c = Lower case tested with 90% confidence.

Boxes = Wave 4 and Wave 1 tested with 95% confidence. Underline = Wave 4 and Wave 1 tested with 90% confidence.
Participants educated about sats, trans, Palm oil and Hydro-oil

In full knowledge of what these terms mean – more like the knowledge environment that we can expect when the FDA action goes into place – trans fats take the lead in consumer concerns…although saturated fats and hydrogenated fats are right up there as well.

Palm oil, confirming data reported before the survey explanation, still shows much lower levels of consumer concern.

Q7. How concerned are you about the effects of each of the following in your diet? Very concerned/Somewhat concerned/Neither concerned nor unconcerned/Not very concerned/Not at all concerned. Capital letters reflect stat testing at a 95% confidence interval; lower case letters at a 90% confidence interval.
Q3. When you find the ingredient (listed below) on a label or package of a food product, would it encourage you to buy that product – or discourage you from buying? That is, would the presence of that ingredient make you want to buy the product – or would you avoid buying the product that had that ingredient in it? Definitely want to buy Somewhat likely to buy/doesn’t affect my decision to buy/Feel a bit less like buying/Entirely avoid buying.

Consumers report highest levels of indifference to simple oils including palm oil
Comparison of Trans Fat Solutions

Palm oil preferred trans solution
‘Interesterifed Soybean Oil’ least popular.

A 35%
B 22%
C 43%
Top Reasons for Label Choices
Open End Response

Q2. Why did you say that?
Public perception – “Poisoning of America”

Consumer Research Conclusions

• “Poisoning of America” campaign forgotten
• Consumers resistant to chemical processing
• Palm oil perceived as natural
Nutrition – high in saturated fats

• Letter from 11 senators to head of FDA and Health and Human Services (2004)

“We are concerned by reports that some food manufacturers may replace trans fats with other fats and oils, such as palm oil, that are high in saturated fats and thus may be almost as conducive to heart disease as partially hydrogenated oils."
Nutrition – high in saturated fats

American Heart Association (AHA)

- Reduced recommendation for saturated fat intake from 10% of diet to 7% of diet (2005)
- AHA Trans Fat Conference (2006): Theme: “How to reduce trans fat in foods without increasing saturated fat”
- Created new AHA website dedicated to dietary saturated fat reduction (2007)
Nutrition – high in saturated fats

From AHA Website
Nutrition – high in saturated fats

Program to Promote Recent Scientific Data on Saturated fats

- Literature review
- Symposia at trade shows
- Expert panels
- Promote to industry, nutrition community
Saturates and Cholesterol
(meta-analysis of 60 studies)
Mensink et al., Maastricht University, Am J Clin Nutr 2003;77:1146–55

1g of trans fat is equivalent to 7g of saturated fat
RETHINKING Dietary Saturated Fat

biofilms and food safety
fresh ideas for mealtime beverage flavors in food analyzing for melamine

A Publication of the Institute of Food Technologists
Nutrition – high in saturated fats

**Saturated fat conclusions**

- Growing body of evidence that saturated fat is not as bad as was previously believed
- Saturated fat has little effect on risk of heart disease
- Trans fat is 7 times worse than saturated fat
- Saturated fat is a suitable alternative to trans fat
Functionality – single natural product

- Many variants of partially hydrogenated vegetable oil developed
- Palm oil is single natural product
- Solution – fractionation
Palm oil versatility: Fractionation

- Palm Oil
- Soft Solid
- Hydraulic Press
- Fractions
- Hard solid
- Liquid
- D
- O
- U
- B
- A
- C
- T
- I
- O
- N
- S
Palm oil versatility: Blending

Fractions

A → B → C → D → Products “SansTrans”
Reduced Saturated Fat Products

Palm Fractions
High Stability
Solid Texture

Polyunsaturated Oils
Poor Texture & Stability
Low saturates

Reduced Saturates
Good Stability & Texture
Who is already using Palm Oil ?

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Brand</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>ConAgra</td>
<td>Orville Redenbacher</td>
<td>Microwave Popcorn</td>
</tr>
<tr>
<td>Flowers Bakeries</td>
<td>Various</td>
<td>Doughnuts and Honey Buns</td>
</tr>
<tr>
<td>General Mills</td>
<td>Grands</td>
<td>Refrigerated Biscuits</td>
</tr>
<tr>
<td>George Weston</td>
<td>Entenmanns</td>
<td>Cookies, Cakes</td>
</tr>
<tr>
<td>Kellogg</td>
<td>Cheezit</td>
<td>Crackers</td>
</tr>
<tr>
<td>Kraft</td>
<td>Oreo</td>
<td>Cookies</td>
</tr>
<tr>
<td>McKee</td>
<td>Little Debbie</td>
<td>Snack Cakes</td>
</tr>
<tr>
<td>Peperidge Farm</td>
<td>Various</td>
<td>Cookies, Cakes</td>
</tr>
<tr>
<td>Ralcorp</td>
<td>Various</td>
<td>Cookies</td>
</tr>
<tr>
<td>SaraLee</td>
<td>Various</td>
<td>Pies, Cakes</td>
</tr>
<tr>
<td>Schwans</td>
<td>Edwards</td>
<td>Pies, Cakes</td>
</tr>
<tr>
<td>Toms Foods</td>
<td>Various</td>
<td>Pies, Cakes</td>
</tr>
<tr>
<td>Utz</td>
<td>Various</td>
<td>Crackers</td>
</tr>
<tr>
<td>Whitewave</td>
<td>International Delight</td>
<td>Creamer</td>
</tr>
</tbody>
</table>
Palm Oil USA
Future Prospects

• Food Service - trans fat ban in restaurants in many cities and State of California
States and Localities with Trans Fat Proposals for Restaurants – as of 5/29/08

- States with active proposals restricting trans fats in restaurants
- Cities with active proposals restricting trans fats in restaurants
- Cities and counties that have adopted proposals restricting trans fats in restaurants.
- Cities or states where proposals failed to pass
Palm Oil USA

- Food Service - trans fat ban in restaurants in many cities and State of California
- National ban on trans fat? CSPI and American Medical Association
- Supermarket Chains – Walmart eliminates trans fat
- Economic Downturn – less food service; more prepared foods; lower cost

*Palm Oil will Remain an Integral Part of US Food Supply*