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# **An Industry Perspective on Current Dietary Fat Issues**

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# INFLUENCES TO REDUCE TRANS FAT IN U.S. DIET

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- FDA regulation (effective 1-1-06)
- FDA consideration of nutrient content claims (“trans fat free,” “reduced trans fat”)
- Consumer advocacy groups (petitions to FDA, press releases, websites)
- Congressional pressure (Sen. Harkin letter to colleagues)
- Litigation
- Consumer sensitivity to health issues
- 2005 dietary guidelines
  - “Limit intakes of fats and oils high in saturated and/or trans fats”
- Industry desire to improve product healthfulness
- Health advisory groups (WHO, IOM/NAS)

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# FOOD MANUFACTURER LABELING CONSIDERATIONS

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- Nutrition Facts Panel:
  - Trans fat declaration
    - ✓ State existing level (no reformulation)
    - ✓ Reduce trans fat by reformulation (no label advantage)
    - ✓ Eliminate trans fat to “0”
  - Saturated fat declaration
- Ingredient Label:
  - Presence of “hydrogenated” or “partially hydrogenated”
  - Use of higher saturate oils/fats (palm, animal fats)
- Front Panel Label:
  - Zero trans fat per serving



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# INDUSTRY ACTIONS TO REDUCE TRANS FAT CONTENT

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## Food Manufacturers:

- Reformulation of products

## Restaurants:

- Switch to frying oils and food ingredients low or free of trans fats

## Retail Food Stores:

- Concentrate sales of “low/free” trans-containing products

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# CHALLENGES TO OIL/FAT INDUSTRY REGARDING TRANS FAT ALTERNATIVES

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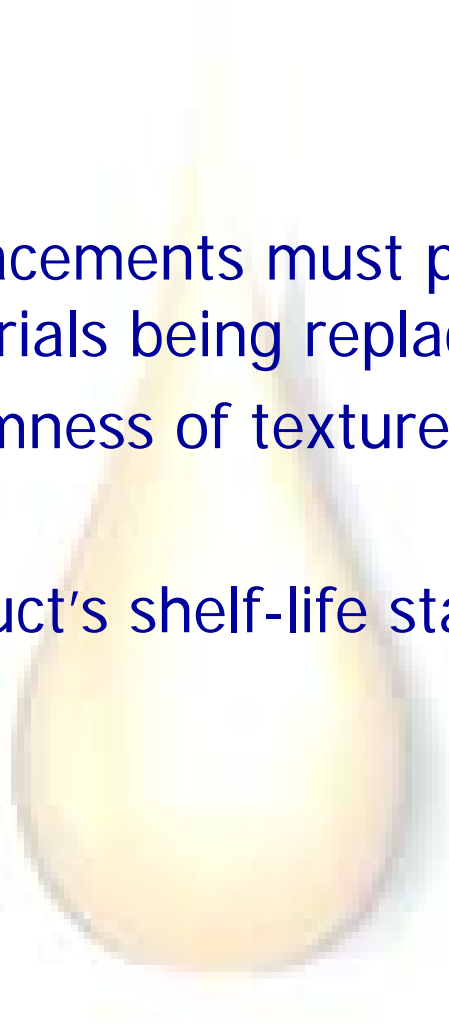
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- Functionality
  - Availability
  - Economics
  - Logistics

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# FUNCTIONALITY

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- Replacements must provide functional characteristics of materials being replaced  
(firmness of texture, flakiness, crispness, appearance)
- Product's shelf-life stability must be maintained



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## AVAILABILITY

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- Major consumer markets (restaurants, food manufacturers) require reliable and significant source availability.
- New trait-enhanced oils require commitment by food industry to use such oils.
- Trait-enhanced oilseed varieties development periods lengthy (6-8 years)

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# ECONOMICS

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- Trans fat replacements must be price competitive (consumer may not buy new products if too expensive).
- New technology costly (interesterification, modified partial hydrogenation, special fatty acid composition oils).
- Premiums for trait-enhanced oils?

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# LOGISTICS

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- No single solution – multiple ingredient alternatives, multiple inventories, multiple suppliers
- Regional supply bases, not national (no geographically diverse suppliers)
- Utilization of existing manufacturing facilities if possible

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# TRANS FAT REPLACEMENT OPTIONS

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- Naturally stable oils/fats
  - palm, palm kernel, coconut, corn, cottonseed, high oleic canola and sunflower, animal fats
- Interesterification (re-arrangement of fatty acids)
  - chemical and enzymatic methods
- Modified partial hydrogenation
  - alteration of variables: time, temperature, catalyst
- Trait-enhanced oils
  - (fatty acid modification through plant breeding)
  - mid-oleic sunflower and soybean, low linolenic soybean and canola, high oleic sunflower and canola
- Expeller expressed and physically refined oils
  - Preservation of naturally occurring antioxidants

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# STABLE OILS/FATS CURRENTLY AVAILABLE

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- Animal Fats
  - Canola (high oleic)
  - Coconut
  - Corn
  - Palm
  - Palm Kernel
  - Soybean
    - low linolenic\*
    - expeller expressed
  - Safflower (high oleic)
  - Sunflower (mid and high oleic)

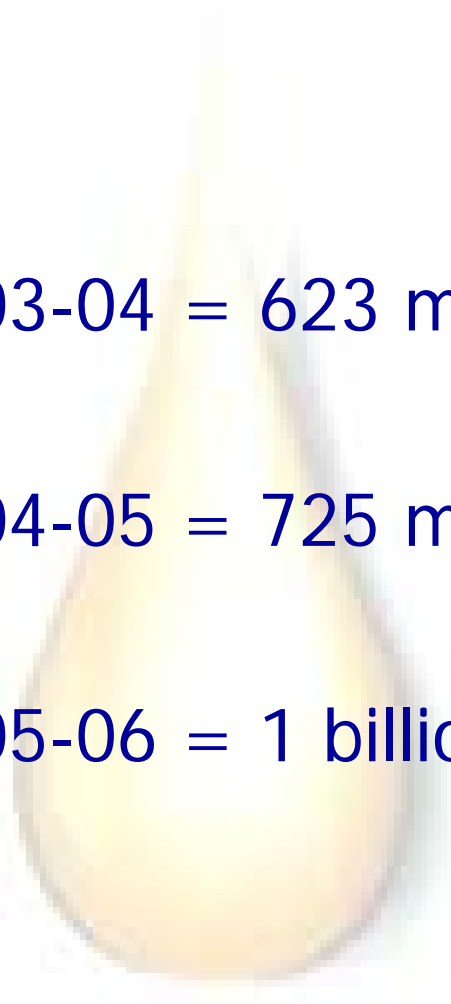
\* Available in limited quantities (75-80M lbs. in 2005)

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## PALM OIL IMPORTS INTO U.S.

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- 2003-04 = 623 million lbs.
- 2004-05 = 725 million lbs.
- 2005-06 = 1 billion lbs. ?



# STABLE OILS AVAILABLE IN FUTURE

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## Projected Availability

- Soybean  
(low linolenic,  $< 3\%$ )  
2005- 2008
- Soybean  
(low linolenic,  $< 3.5\%$ ;  
mid oleic  $\geq 50\%$ )  
2009 – 2012
- Soybean  
(high stearic,  $> 30\%$ )  
2008 - 2012
- Canola  
(high stearic,  $> 30\%$ )  
2008 - 2012

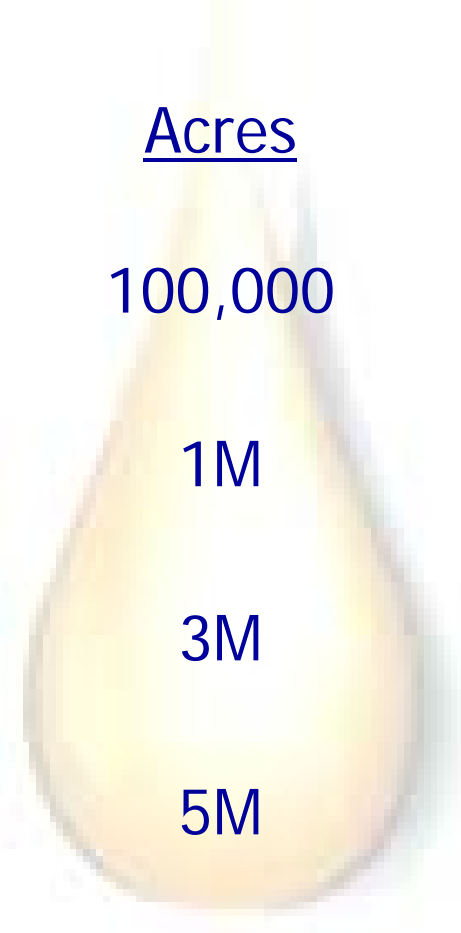
## LOW LINOLENIC SOYBEANS PROJECTED AVAILABILITY\*



<u>Year</u>	<u>Acres</u>	<u>Production (Bu)</u>	<u>Oil Production (Lb)</u>
2005	200,000	8M	80M
2006	1M	40M	400M
2007	3M	120M	1.2B
2008	5M	200M	2B

\* Includes Dupont (Nutrium), Monsanto (Vistive), Iowa State (Asoyia) varieties

# MID OLEIC SOYBEANS PROJECTED AVAILABILITY



<u>Year</u>	<u>Acres</u>	<u>Production (Bu)</u>	<u>Oil Production (Lb)</u>
2007	100,000	4M	40M
2008	1M	40M	400M
2009	3M	120M	1.2B
2010	5M	200M	2B

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# KEY MARKETPLACE CHALLENGES

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- Availability of TFA replacements
- Meeting existing product's functionality requirements (texture, taste, appearance, stability)
- Economics of TFA replacements
- Logistics: utilizing existing manufacturing facilities/efficient distribution of replacements
- Meeting 1-1-06 trans fat labeling deadline

# Fats and Oils Used in Edible Products 2002-2003



	Thousands of Pounds	
<b>Soybean</b>	<b>17,603,526</b>	<b>85.06%</b>
<b>Canola</b>	<b>873,213</b>	<b>4.22%</b>
<b>Palm</b>	<b>433,000</b>	<b>2.09%</b>
<b>Cottonseed</b>	<b>426,821</b>	<b>2.06%</b>
<b>Coconut</b>	<b>305,254</b>	<b>1.47%</b>
<b>Peanut</b>	<b>296,000</b>	<b>1.43%</b>
<b>Tallow</b>	<b>237,415</b>	<b>1.15%</b>
<b>Lard</b>	<b>216,370</b>	<b>1.05%</b>
<b>Sunflower</b>	<b>178,864</b>	<b>0.86%</b>
<b>Corn</b>	<b>125,000</b>	<b>0.60%</b>

Source: USDA/Economic Research Service estimate using data from Census Bureau

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# FDA'S QUALIFIED HEALTH CLAIMS FOR FATS AND OILS

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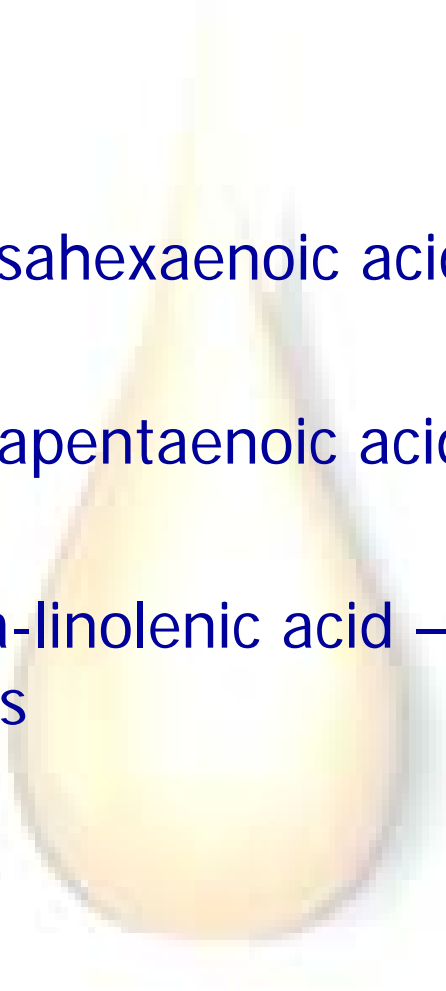
- Omega-3 fatty acids and reduced risk of heart disease
- Monounsaturated fatty acids from olive oil and reduced risk of heart disease
- Significance – indicative that FDA is recognizing health benefits of specific fatty acids. Opens door to future Qualified Health Claims:
  - Conjugated linoleic acid (CLA) and reduced risk of heart disease? Cancer?
  - Phytosterols and reduced risk of heart disease?

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## OMEGA-3 FATTY ACIDS: NUTRIENT CONTENT CLAIMS

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- Docosahexaenoic acid (DHA) – “High” claim
- Eicosapentaenoic acid (EPA) – “High” claim
- Alpha-linolenic acid – “High,” “Good Source,” and “More” claims



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# BIOTERRORISM ACT REGULATIONS

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- Food Facility Registration
- Prior Notification of Imports
- Establishment and Maintenance of Records
- Administrative Detention

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# INTERNATIONAL MARITIME ORGANIZATION (IMO) REGULATIONS

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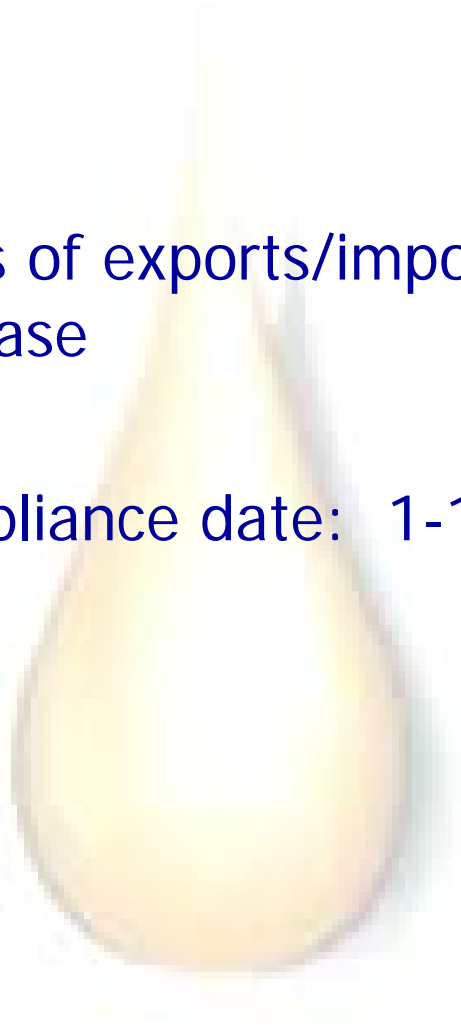
- IMO International Convention for prevention of pollution from ships
- Update of chemical cargo lists include edible fats and oils
- Edible fats/oils restricted to ships of certain configurations and equipment
- Capacity of ships meeting classification requirements appears inadequate for world trade in edible oils/fats

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# IMO REGULATION IMPACT ON TRADE

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- Costs of exports/imports of edible fats/oils will likely increase
- Compliance date: 1-1-07



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## CODEX ALIMENTARIUS COMMISSION: Recent Actions Affecting Edible Fats and Oils

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- Broadening the range of loading and unloading temperatures for palm kernel and coconut oils on transport vessels advanced to step 5/8 in Codex Committee on Fats and Oils (CCFO)
- Established definition of "*trans* fatty acids" in CCFO
- Codex Commission voted to establish "fatty acid modified edible oils" naming method before approving new standards for oilseed varieties