Labeling of foods derived from GM plants and animals

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Overview

- Principles of U.S. food labeling
- Mandatory versus voluntary
- Arguments for mandatory labeling
  1. Public opinion
  2. Consumer choice
  3. Right to know
- Case study: AquAdvantage salmon
The World Health Organization, the National Academy of Sciences, AMA and more than 300 independent medical studies on the health and safety of genetically modified foods have reached the same determination that foods made using GM ingredients are safe, and in fact are substantially equivalent to conventional alternatives.

June 2012. The American Medical Association (AMA) adopted a formal statement explicitly opposing the mandatory labeling of genetically modified foods. "there is no scientific justification for special labeling of genetically modified bioengineered foods, as a class, and that voluntary labeling is without value unless it is accompanied by focused consumer education."
The principles of food labeling in the U.S. are the same, whether or not the food is made from a GM source (plant or animal).

1. Labels cannot be false
2. Labels cannot be misleading
3. Label must describe basic nature of the food (e.g. fish)
4. FDA cannot require labels include information about production methods if there is no material difference in the products due solely to the production process

Source: http://www.fda.gov/Food/LabelingNutrition/FoodLabelingGuidanceRegulatoryInformation/Topic-SpecificLabelingInformation/ucm222608.htm
What is a “material” difference?

Definition(s) of material (adjective)

– Of substantial import; of much consequence, important

– Directly relevant to a matter (especially a law case)
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4. FDA cannot require labels include information about production methods if there is no material difference in the products due solely to the production process
5. Voluntary labeling is allowed if not false or misleading

Source: http://www.fda.gov/Food/LabelingNutrition/FoodLabelingGuidanceRegulatoryInformation/Topic-SpecificLabelingInformation/ucm222608.htm
Voluntary labeling is allowed if it is not false or misleading

Non-misleading

“Cholesterol-free oil”

– Such claims are forbidden in the USA because they imply other vegetable oils have cholesterol, when in fact, none do.
Although some labels do exist that are both false and misleading!!
FDA cannot mandate that labels include information about production methods if there is no material difference in the products.

FDA cannot require additional labeling about production methods unless it is necessary to ensure that the labeling is not false or misleading. Another way of stating this point is that FDA cannot require labeling based solely on differences in the production process if the resulting products are not materially different due solely to the production process.

http://www.fda.gov/Food/LabelingNutrition/FoodLabelingGuidanceRegulatoryInformation/Topic-SpecificLabelingInformation/ucm222608.htm#Background
Voluntary production method labeling
rBST Labeling: Voluntary labeling stating the milk is from cows not treated with r-BST must also have a disclaimer of similar font next to it stating the FDA has found no significant difference between milk from treated and untreated cows.
Legal opinion regarding mandatory production method labeling

The Second U.S. Circuit Court of Appeals ruled that a labeling mandate grounded in consumer perception, rather than in a product's measurable characteristics, raises serious constitutional concerns – namely, that it violates commercial free speech. The court held that food labeling cannot be mandated merely because some people would like to have the information, and ruled mandatory rBST labeling unconstitutional because they forced producers to make involuntary statements contrary to their views when there was no material reason to do so.

http://www.public.iastate.edu/~jwcwolf/Papers/IDFA_Amestoy.pdf
Voluntary labels have provided the US consumer with a wide range of production method choices - including GM free
Three main arguments for mandatory GM labeling

1. **Public opinion**: Polls show an overwhelming majority of people support mandatory labeling of GM foods

2. **Consumer choice**: People should have a choice in what types of products they purchase and consume

3. **Right to know**: People have the right to know what is in their food
“Opinion polls show an overwhelming majority of people support mandatory labeling of GM foods”

- It all depends on how the question is asked

Environmental groups and critics of biotechnology claim that >95% of consumers responding to surveys indicate that they want GM labeling, but other surveys show that consumers rarely put forward GM labeling unless they are prompted.

The results depend on how the questions are worded.

http://www.flickr.com/photos/azrainman/1004637156
Thinking about your diet over the past few months, are there any foods or ingredients that you have avoided or eaten less of?? (n=750)

What foods or ingredients have you avoided? [OPEN ENDED]

- Sugars/Carbs: 52
- Fats/Oils/Cholesterol: 26
- Salt/Sodium: 17
- Animal products: 22
- Snack Foods/Fast…: 17
- Artificial/Additives: 3
- Spices/Spicy Foods: 12
- Processed…: 4
- Genetically modified: 0
- Other: 12

Numbers do not add up to 100% due to multiple answers provided by respondents

May 2012 survey data


American Bar Association 7/31/2012
Can you think of any information that is not currently included on food labels that you would like to see on food labels? (n=750)

Yes: 24%
No: 76%

What types of information would that be? [OPEN ENDED]

Nutritional Information: 36
Other: 9
Ingredients (General): 19
Don’t Know: 10
Source/Processing Information: 12
Genetically modified: 3
Food Safety Information: 12

May 2012 survey data

American Bar Association 7/31/2012

Alison Van Eenennaam, Ph.D., UC Davis
Please indicate whether you strongly agree, somewhat agree, somewhat disagree or strongly disagree (n=1,001)

- **Food products made from genetically engineered animals should be labeled as such**
  
  95 percent agreed or strongly agreed

Over 90% agreed with **all** of the labeling questions asked

- Processed or packaged foods should be labeled by country of origin
- Meat treated with carbon monoxide should be labeled as such
- Meat and dairy products from cloned animals should be labeled as such
- Meat that contains any irradiated components should be labeled as such
- Specialty meat/fish stores should label their products by country of origin
- Country-of-origin labeling for products should always be available at point of purchase

[http://www.consumersunion.org/pub/core_food_safety/006298.html](http://www.consumersunion.org/pub/core_food_safety/006298.html)
Modern agriculture uses many technologies to increase productivity. Do you think the words _item below_ should appear on the label of a food product where one or more ingredients were from crops which were...

http://www.cspinet.org/new/labeling_gefoods.html

_April 2001
survey data_

n = 1,017
Does the experience in the U.S. show consumers avoiding GE?

- In experimental and real world market tests in North America, the presence of GE-food has not had a significant impact on actual purchase decisions.
- If 90% plus of North American consumers wanted products free of GE, then organic food and food labeled as GE-free would be a much larger share of US market.

Labeling about genetically engineered ingredients could increase the cost of food. Would you be willing to pay for such labeling if labeling increased the cost of your family’s food by...

- Over $250 a year 7%
- $250 per year 5%
- $50 per year 16%
- $10 per year 17%
- Nothing 44%
- Don’t know 11%

http://www.cspinet.org/new/labeling_gefoods.html
Cost estimates of mandatory GM labeling for food

Increase in consumer prices from 0.5-15% (Australia/New Zealand)


Increase of 9-10% processed foods (Canada)


Canola segregation increase relevant food costs by 13-15%

1. Public opinion pros and cons

- **Pro:** Polls show an overwhelming majority of people support mandatory labeling of GM foods.
- **Con:** Majority (99%) of consumers don’t ask for mandatory labeling of GM (unless specifically prompted by the question).
- Imposes substantial economic costs along the entire food supply chain and puts costs of labeling onto all consumers – including majority who are not concerned about GM.
Arguments for mandatory labeling

1. **Public opinion**: Polls show an overwhelming majority of people support mandatory labeling of GM foods

2. **Consumer choice**: People should have a choice in what types of products they purchase and consume

3. **Right to know**: People have the right to know what is in their food
Does mandatory labeling provide choice?

- Experience with mandatory labeling in the European Union, Japan, and New Zealand has not resulted in consumer choice. Rather, retailers have eliminated GM products from their shelves to avoid being targeted by NGOs.

- “A real concern is that mandatory labeling could force GM foods out of the market. Mandatory labeling in Europe virtually eliminated any ability to choose GM foods, because there were fewer than 10 acknowledged GM products.”

Is labeling being sought to provide consumer choice?

“Following the launch of the European labeling requirement, Greenpeace announced it would summon thousands of volunteers across Europe to police grocery stores and ensure they were not stocking food with GM labels”


“Proponents of mandatory GM labeling make no secret that mandatory labeling is not their final goal.”


“Personally, I believe GM foods must be banned entirely, but labeling is the most efficient way to achieve this. Since 85 percent of the public will refuse to buy foods they know to be genetically modified, this will effectively eliminate them from the market just the way it was done in Europe.”

Dr. Mercola, http://vtdigger.org/2012/04/17/wanzek-genetically-modified-food-is-perfectly-healthy/
What about when the GM product is materially-different? e.g. Labels for Golden Rice

- Method-based label
  - “This product has been genetically modified”

- Product-based label
  - “This product contains high levels of vitamin A”

- Which label enables consumers to make an informed choice?
2. Consumer choice pros and cons

- **Pro:** People should have a choice in what types of products they purchase and consume.
- **Con:** Implementation of mandatory labeling has not resulted in consumer choice. In fact, it has been used as a weapon to demonize GM food and prevent the availability of that option to consumers.
- What information does labeling as “Contains GMO” provide to enable informed choice – GM for WHAT and how does the product differ?
Arguments for mandatory labeling

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3. **Right to know**: People have the right to know what is in their food
Do other production methods that do not “materially” affect the product qualify for right to know?

“When artificial insemination (AI) was first introduced into cattle breeding there were concerns that AI was not natural, and would lead to abnormal outcomes”

Do consumers who are opposed to eating products from animals that were produced through artificial insemination have a mandatory right to know that information on product labels?

Our cows are allowed to get pregnant the old-fashioned way.

Alison Van Eenennaam, Ph.D., UC Davis
Or label for people who object to double-muscled cattle breeds....
Should there be mandatory “right to know” labeling about all aspects of the food production process?

CROSSBRED (ANGUS X HEREFORD) STEER
PRODUCT OF AN ARTIFICIAL SPECIES SELECTIVELY 
BRED FROM THE NOW-EXTINCT AUROCHS, 
CONCEIVED IN A PETRI DISH AFTER MULTIPLE 
OVULATION OF DAM, ARTIFICIALLY INSEMINATED 
BY THE OFFSPRING OF A CLONE, FOLLOWED BY 
EMBRYO TRANSFER, GESTATED IN A SURROGATE 
COW, CASTRATED IN THE ABSENCE OF 
ANAESTHETIC, IMMUNIZED WITH A RECOMBINANT 
DNA VACCINE, TREATED FOR PINK EYE WITH AN 
ANTIBIOTIC TO PREVENT BLINDNESS, FINISHED ON 
A DIET CONTAINING GENETICALLY-ENGINEERED 
CORN AND AN IONOPHORE FOR 90 DAYS, 
HUMANELY KILLED WITH A CAPTIVE BOLT, NOT- 
IRRADIATED. DO NOT EAT RAW.
3. Right to know pros and cons

- **Pro**: People have the right to know what is in their food

- **Con**: Singles out GM technology for right to know, not other production methods.

   “There is no prima facie case that consumers have a right to know everything through mandated labels or at any cost.”

FDA Public Hearing on the Labeling of Food Made from the AquAdvantage Salmon, September 21st, 2010

Conclusion
- Variables such as nutritional content of feed, feeding conditions, and fish size will result in nutritional differences in all types of farmed salmon.
- Under similar conditions, AquAdvantage salmon are nutritionally equivalent to conventional salmon.
“We are not willing to settle for making other labels do double duty. We're not going to settle for country of origin labeling being used as code for how we're somehow supposed to educate people which countries are producing genetically engineered salmon this year. That is not acceptable. That's not a label that discloses what we need”.

Patricia Lovera, Food and Water Watch, Washington, D.C.
Question from FDA panel: I would like for you, if you could, to elaborate a little more on really what the messaging is in terms of how to use the food, what specific attributes may be changed in the food if the food says genetically engineered. I mean, through your presentation you mentioned things like allergens. ... But if the food simply says, genetically engineered, how does that convey that to a consumer?

MS. LOVERA: “Well, we've heard a lot about education, and I assume that the industry is going to be trying to educate or market this product in a way”

“There are many production methods for food products and many production methods for salmon. Identifying this production method without requiring all the other production methods to be identified would needlessly discriminate against genetic engineering and not provide the consumer with information about the “material” differences in this particular salmon... Providing information without education about what that information means is not particularly helpful to the consumer.”

Conclusions

• Mandatory labeling is not a simple matter of putting some additional ink on a package

• There are several reasons put forward for mandatory labeling which can be argued either way
  1. Public opinion/depends on question
  2. Consumer choice/lack of choice
  3. Right to know/scope of methods to include

• Labeling GM is not a food safety issue and developers are understandably wary of the additional costs of supply chain segregation – and having their brand targeted by opponents