

A Comparison of Process and Ingredient Claims on US and EU Foods

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Abstract

Significant research has been conducted to identify the extent to which consumers use label information. Much of this relates to nutrition labeling, yet increasingly foods are being marketed with ever more ingredient and process claims such as all natural or organic. Key studies consider the determinants of label use, debates over mandatory labeling, the label formats preferred by consumers, and the effect of nutrition label use on purchase patterns and dietary behavior. However, much less research has been attempted that tracks the claims actually made on food labels. This paper addresses this gap by comparing claims across the US and EU. The objective of this paper is to compare and identify All Natural, Organic and Vegetarian package claims that are actually made on 32,289 food labels in 2009 and to compare the results between the US and the EU.

Keywords: All natural claims, organic claims, Vegetarian claims, packaging, labels

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Introduction

While a considerable amount of money is spent globally on advertising, greater consumer brand exposure is obtained from food labels. Each consumer walking through any food store is exposed to the huge variety of labels throughout the store. In many cases branded food companies create a "billboard effect" by carefully planning the packing and shelf layout to maximize this exposure.

While significant attention is given to measuring the effectiveness of advertising little attention has been given to the promotional value of on product packaging. This paper provides an initial step in this process as it identifies which ingredient and process claims are made on foods and whether these claims vary between the US and EU. This study focuses on s All Natural, Organic and Vegetarian claims.

Significant research has been conducted to identify the extent to which consumers use label information. Much of this relates to nutrition labeling, yet increasingly foods are being marketed with ever more ingredient and process claims such as all natural or organic. Key studies consider the determinants of label use, debates over mandatory labeling, the label formats preferred by consumers, and the effect of nutrition label use on purchase patterns and dietary behavior. (Drichoutis, 2006)

Consumers gather information about the foods they purchase from a wide variety of sources. Family knowledge, education, the media and advertising all convey messages about different food characteristics. This information may also be found on the food product label. From a diet and health standpoint, the information on those labels about the nutritional content and health benefits of food is particularly important. Two types of such information appearing on food products are “nutrition labels” and “health claims” (see Van Camp et al., 2010 for a recent review of such claims on foods in the UK). Claims which relate to the person who eats the product are considered health claims and include foods which may support reduced serum cholesterol. (Stanton, 1987) In addition, claims may focus on the source and characteristics of key ingredient(s) or the manner in which they are grown or processed. Key among such “ingredient” or “process” claims are All Natural, Organic and Vegetarian. Differences in definitions and institutional arrangements governing the use of such claims exist between the US and EU. All Natural, Organic and Vegetarian claims are credence claims (Caswell and Mojduszka, 1996). Although they do not refer to specific nutrients they do suggest that something may be "absent" from the food due to ingredient or process characteristics which cannot be easily verified by the consumer without the use of a claim.

Label information creates brand awareness as well as actionable information. Various types of claims on foods have the potential to contribute to the achievement of public health objectives as well as personal health and life style objectives. Labeling provides consumers with information about the nutritional properties of a food and health claims (statements connecting a food, food component or nutrient to a state of desired health) provide information to consumers about the nutritional and health advantages of particular foods or

nutrients. Ingredient and process claims may address ethical, ease of use or sustainability benefits and thus fit with life style choices.

Much research in this area from a wide range of countries suggest that many consumers use label information when making food choices, especially when buying a product for the first time. People who read labels tend to use them to compare the nutritional profile of products - to find out how much fat and calories the food contains, for example. Nutrition labels have also been shown to encourage more healthful diets among people who read labels. However, the benefits of label information may be broader and can affect the entire population if nutrition labeling regulations encourage food companies to develop more foods with lower quantities of less healthy nutrients.

While several studies have tracked the use of nutrition and health claims the authors are not aware of studies which do so for ingredient or process claims for foods launched in the US and EU. This paper therefore reviews the global regulatory environment for such claims by focusing on "All Natural," "Organic" and "Vegetarian" foods. The paper provides a clear overview, and compiles and categorizes existing international regulations and national regulations for the US and European Union. The objective of this paper is to compare the use of claims actually made on food packaging and to compare the results between the US and the EU.

Literature review

Most of the existing studies attempted to explore the determinants of the use (by firms and consumers) of nutritional labels in general. A small number of these made a distinction between ingredient lists and nutrition panels (Bender and Derby, 1992), or explored the use of specific nutrient information (Drichoutis, Lazaridis, and Nayga, 2005; Nayga, 1996).

Nutrition labeling as a policy tool is appropriate and particularly valuable because consumers have no other way to evaluate the nutritional value of their food. Nutrition information provided through a food label may reduce consumer's uncertainty (Zarkin and Anderson, 1992) or transform credence attributes of food into search attributes (Caswell and Mojduszka, 1996).

At an international level, nutrition labelling and health claims are contained in the *Codex Alimentarius*, a set of international standards, guidelines and related texts for food products developed by the *Codex Alimentarius Commission* a Joint FAO/WHO Food Standards Programme. The aim of the *Codex Alimentarius* is to protect consumer health and encourage fair practice in international food trade. Although the implementation of the *Codex*

Alimentarius is voluntary, the World Trade Organization has recognized it as a reference in international trade and trade disputes.¹

National regulations mandate different label formats. Some countries follow *Codex Alimentarius* recommendations for which energy, fat, protein and carbohydrate are listed on a label and where a claim is made. *Codex* guidelines now recommend that national governments should decide whether *trans* fatty acids should be labelled; thus an increasing set of countries are now choosing this option. Countries also have developed different methods of quantifying the nutrients on the label (Hawkes, 2010). However, *Codex* is less clear and uniform on the use of ingredient or process claims. Indeed, much debate has encircled the use of standards defining acceptable production processes with key examples being dolphin-friendly tuna, genetically modified grains and oilseeds or animal welfare measures.

The US Food and Drug Administration (FDA) Food Labeling web-site addresses the labeling requirements for foods under the *Federal Food Drug and Cosmetic Act* and its amendments.² Food labeling is required for most prepared foods, such as breads, cereals, canned and frozen foods, snacks, desserts, drinks, etc. Nutrition labeling for raw produce (fruits and vegetables) and fish is voluntary.

The Food Safety and Inspection Service (FSIS) of the US Department of Agriculture (USDA) develops and provides labeling guidance, policies and inspection methods and administers programs to protect consumers from misbranded and economically adulterated meat, poultry, and egg products which ensure that all labels are truthful and not misleading.³

In the European Union (EU) the Directorate General for Health and Consumers ensures that food and consumer goods sold in the EU are safe, that the EU's internal market works for the benefit of consumers and that Europe helps protect and improve its citizens' health. It works with other EU institutions, national governments and agencies, consumer organizations, health interest groups, business groups, scientists, researchers and experts.⁴

The European Food Safety Authority (EFSA) is the keystone of EU risk assessments regarding food and feed safety. In close collaboration with national authorities and in open

¹ [ftp.fao.org/codex/Publications/understanding/Understanding_EN.pdf](ftp.fao.org/codex/Publications/understanding/Understanding_EN.pdf)

² www.fda.gov/food/labelingnutrition/default.htm

³ www.fsis.usda.gov/Regulations_& Policies/Labeling_Guidance/index.asp

⁴ ec.europa.eu/food/index_en.htm

consultation with its stakeholders, EFSA provides independent scientific advice and clear communication on existing and emerging risks.⁵

These various agencies provide labeling directives and regulations, monitor the appropriate use of such claims, and thereby help to promote a more effective and efficient marketing process for foods with significant credence attributes (such as nutrition, ethical and humane treatment of workers and animals, and environmental sustainability).

Methodology

Data was collected from official web-sites of USDA- FSIS), the FDA), the European Commission (more precisely of the Directorate General for Health and Consumers), EFSA and from the official web-site of the *Codex Alimentarius*. This data was used to characterize the various possible claims.

Additional information collected for this study came from Mintel's Global New Product 2009 Database (www.gnpd.com). GNPD collects and records innovations in the food and beverage industry with up to 62 data elements for each product. Examples include: product name, product category, ingredients, price (in US\$ & Euros), patent numbers, company address, and several package pictures. There were 25,433 product labels analyzed in the EU database from Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Spain, Sweden and the UK. There were 6,856 product labels from the US.

There were 64 different claims identified (and a category entitled "no claim") from the US and EU databases. This research focused on only 3 of the claims that available: All Natural, Organic and Vegetarian. These are particularly important today as sales of products with these claims are increasing annually. Growth in retail sales has equaled 20 percent or more annually since 1990 for organic products for example (see Batte et al., 2007). Organic products are available in nearly 20,000 natural foods stores in the US, and are sold in 73 percent of all conventional grocery stores. (Dimitri, 2002)

Analysis

The data was analyzed using a z-statistic to determine whether there are significant differences between the US and EU data (see Table 1).

When one examines the “**AllNatural Product**” claim there is a significant difference between the US and EU, as can be seen in Table 1. The proportion of products claiming to

⁵ www.efsa.europa.eu/en/aboutefsa.htm

be “All-Natural” are 1.7% in EU and 13.7% in US, with a z value of 43.5 that demonstrates a statistically significant difference beyond 0.001. This claim is used when a product clearly states that it is all-natural. Also used with the following on-pack terms - Ayurvedic, 100% natural, or free from artificial ingredients. Products that claim to be made with certain natural ingredients, are not necessarily all natural and in this case do not use this claim.

Presumably, the main reason for this disparity lies in differences in legislation between the EU and US. To be precise in the lack of it in the US. Neither FDA nor USDA has precise or consistent rules for “natural.” Further, the food-and-beverage industry, represented by the Grocery Manufacturers Association, has no consensus. The *Food, Drug, and Cosmetic Act* prohibits labeling that is false or misleading, but does not give any specifics. (IFT, 2008). Because there is no legal definition for natural foods, food manufacturers in the US don’t have restrictions to put this claim on the products. They can include ingredients that may not be considered natural by some consumers. Therefore, firms can easily sell their products using the attractive “All-Natural” claim.

In the EU there formal definitions for natural claims, definitions by process and by product which include tight restrictions of the criteria for use of terms such as Fresh, Pure, Natural, etc. in food labeling (controlled by EFSA). The guidance, in general, restricts the use of natural to foods that have “ingredients produced by nature, not the work of man or interfered with by man”.⁶ Hence, food manufactures don’t have as much freedom in using the claim “All-Natural” as they have in the US.

Although often confused with natural, the organic claim is also significantly different in the EU and US. “**Organic**” claims appear on 9.6% of products in the EU and 8.5% in the US with a z value of 6.97. The larger quantity of organic claims in the EU may be related to a longer history of national, regional and third party process and ingredient standards for these claims.

US sales of organic food and beverages have grown from \$1 billion in 1990 to \$24.8 billion in 2009. Sales in 2009 represented 5.1 percent growth over 2008 sales. Experiencing the highest growth in sales during 2009 were organic fruits and vegetables, up 11.4 percent over 2008 sales. Food and beverage sales represented approximately 3.7 percent of overall food and beverage sales in 2009. Leading were organic fruits and vegetables, now representing 11.4 percent of all U.S. fruit and vegetable sales. Organic non-food sales grew 9.1 percent in 2009, to reach \$1.8 billion. Total U.S. organic sales, including food and non-

⁶ <http://www.food.gov.uk/multimedia/pdfs/markcritguidance.pdf>

food products, were \$26.6 billion in 2009, up 5.3 percent from 2008. Mass market retailers (mainstream supermarkets, club/warehouse stores, and mass merchandisers) in 2009 sold 54 percent of organic food. Natural retailers were next, selling 38 percent of total organic food sales. In 2008, mass market retailers represented 45 percent of sales, while natural food channels represented 43 percent of sales. Other sales occur via export, the Internet, farmers' markets/ Community Supported Agriculture, mail order, and boutique and specialty stores. (*Organic Trade Association, 2010*) Meanwhile, according to Organic Monitor estimates, global organic sales reached \$50.9 billion in 2008, double the \$25 billion recorded in 2003. (*The World of Organic Agriculture, 2010*) *The EU organic market has experienced similar growth over the last ten years.* Finally, the claim “**Vegetarian**” has similar differences. It appeared in 10.20% of observed products in the EU and in 2.15% in the US with difference 21.2 with a z value of 21.17. This difference may be explained by difference in proportions of vegetarian population in the EU and the US.

The “Vegetarianism in America” study, published by Vegetarian Times (vegetariantimes.com) in 2008, shows that 3.2 percent of U.S. adults, or 7.3 million people, follow a vegetarian-based diet. In Western Europe the number of vegetarians varies between 2% and 4% of the population. (Mintel, 2006), with the United Kingdom as the exception. The UK is shown as having the highest per capita vegetarians in Western Europe at 6% of the population. The growth rate of the meat-free foods market exceeded the five-year average in both 2007 and 2008. In 2008, the market is estimated to reach £739 million. Meat substitutes account for £170 million of this. Active new product development and the promotion of the products to a broader consumer base are the main reasons for this impressive growth.(Mintel ,2008) The large number of vegetarians in the UK is accounted for to some extent by real and perceived health scares relating to mad cow disease and foot and mouth disease.

Taken together, the growing use of ingredient and process claims in both the US and EU may be related to the fact that while only 55% of those aged 55-64 state that they are “somewhat interested” or “very interested” in all-natural products, 75% of those aged 25-34 and 74% of 18-24s state that they have interest. This is one of several findings that indicate that demand for all-natural, organic and vegetarian products is high among young adults and will remain relatively strong in the years to come, as these young people mature, start families and gain greater influence.

More than six in 10 respondents (62%) who use at least some natural/organic products agree that “It’s worth paying more for natural products for some types of items, but not for others” and 59% agree that “It’s worth paying more for organic for some products but not for

others.” These findings indicate that many are tolerant of price premiums with these items, and thus worth promoting the attribute on the product package. (Mintel, 2010) Indeed, Li and Hooker (2009) using a similar data set found evidence of a significant 5 cent premium per ounce for a “preservative free” claim in spoonable yogurts. The authors found no statistically significant impact for “*E. coli* free” messages on meat and poultry products but find a significant price premium (approximately 20 cents per ounce) for “antibiotic free” claims in this category.

Summary

Given the growth of ingredient and process claims on foods in the in both the US and EU, the importance of understanding the use of these claims within marketing mixes is of increasing importance. The emerging relevance of front of package labeling as a marketing tool makes understanding the differences pertinent. This paper marks the first systematic comparison of US and EU trends for three key ingredient and process claims. It appears that the extent to which a companies in the various countries use the All Natural, Organic and Vegetarian claims is influenced by both legislation and eating habits with each region.

While the EU organic market has previously been considered to be more mature, it appears that the US market may be approaching this level, perhaps characterizing a “global” organic market, as opposed to regional natural and vegetarian markets.

It would be interesting to further compare the use of these ingredient and process claims by individual global and regional brands to determine if the decision to employ a particular product differentiation strategy is made at a national, regional or global level. Further, the price premium assigned to such claims should be assessed at an individual product level and compared to national level consumer behavior measures to identify potential growth opportunities for new products.

Table 1: Prevalence of Ingredient and Process Claims

	All Natural claim %	Organic claim %	Vegetarian claim %
US	13.7%	8.5%	2.15%
EU	1.7%	9.6%	10.2%
z-value	43.5	6.59	21.17

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