FSIS Case No. 2019-_____
Total No. of Pages: ___

BEFORE THE
UNITED STATES DEPARTMENT OF AGRICULTURE, FOOD SAFETY AND INSPECTION SERVICE (FSIS)

In the matter of

BEEF LABELING REQUIREMENTS: TO ADDRESS "MADE IN USA" CLAIMS

PETITION FOR THE IMPOSITION OF BEEF LABELING REQUIREMENTS: TO ADDRESS "MADE IN USA" OR "PRODUCT OF USA" CLAIMS

Petitioner:

THE U.S. CATTLEMEN'S ASSOCIATION (USCA)

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Date: October 23, 2019

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PETITION FOR THE IMPOSITION OF BEEF LABELING REQUIREMENTS: TO ADDRESS "MADE IN USA" CLAIMS

FSIS Docket Clerk
Department of Agriculture
Food Safety and Inspection Service (FSIS)
Room 2534 South Building
1400 Independence Ave., SW
Washington, DC 20250-3700

Re: Petition to Establish Beef Labeling Requirements: To Address "Made in USA" Claims

Dear Docket Clerk,

The U.S. Cattlemen's Association (USCA) respectfully submits this petition requesting that the Department of Agriculture, Food Safety and Inspection Service (FSIS) establish certain beef labeling requirements. Our request is consistent with FSIS's current policy towards the labeling of beef, but further addresses specific additional concerns.

USCA has long advocated for additional beef labeling requirements to better inform consumers where beef is of U.S. origin. Though there is currently no beef labeling requirement mandated by law, beef voluntarily labeled as "Made in USA," "Product of the USA," or "USA beef" should be limited to cattle born, raised, and harvested in the United States.

The USCA believes that existing labeling practices are causing consumer confusion. The Federal Trade Commission applies an "all or virtually all" standard to "Made in the USA" claims based upon the assumption that consumers understand U.S. origin to mean that the product is "all or virtually all" made in the United States. *See* **Collective Exhibit 1** attached hereto (documents outlining the FTC's "all or virtually all" standard). However, there are currently no parameters dictating which beef products may be permissibly labeled as "Made in the USA," resulting in potential consumer confusion in the market place where beef which is not born, raised and harvested in the United States is nonetheless voluntarily labeled as though it were a product of the U.S.

A number of prior studies addressing consumer perceptions of beef labels confirm that consumers care about the origin of beef products and are willing to pay a premium for U.S. beef. *See* **Collective Exhibit 2** attached hereto (prior studies addressing consumer perceptions with respect to country of origin beef labeling); *see also* Section III.C.ii., *infra*. Preferences for source and origin information, patriotism, health and safety concerns, and the perception that U.S. beef is of higher quality have been consistently cited in these studies as reasons for consumers' support for country of origin labeling requirements. *See id.*

There are currently few labeling requirements for beef products. Since the repeal of county of origin labeling (COOL) requirements in 2015, there has been no official definition of U.S. beef, nor any specific "Made in USA" labeling requirements for beef products that are so labelled. USCA is concerned that voluntary "Made in USA" labeling for beef products, without a clear definition of what constitutes "Made in USA" or "Product of USA" or other such similar designations will lead to consumer confusion if products that are not born, raised and harvested in the US are nonetheless so marked.

There are presently many beef products being presented as of U.S. origin being sold in grocery stores across the country. Indeed, multiple designations indicating U.S. origin are applied to different meat products in the same store. For example, beef products are being labelled "Made in USA," "Made with 100% American Beef," "Product of the United States" and "Beef Products of USA" within the same store, but there is no indication found as to what is meant by these different but similar terms and whether they each in fact designate a product where the beef is from a cow born, raised and harvested in the United States or is merely harvested in the U.S. or some other combination. *See* **Collective Exhibit 3** attached hereto (recent photographs illustrating labeling claims for beef products in various stores across the country).

Because of the large number of cattle from Canada and Mexico that enter the United States each year and are slaughtered in U.S. packing facilities, the possibility of beef products which are not born and raised as well as harvested in the United States carrying a label indicating "Product of USA" or some such other claim of U.S. origin is very real. It is our understanding that all products advertised or sold in the U.S., including food products like beef, must meet the FTC's "all or virtually all" standard if "made in USA" or "product of USA" (or similar labeling) is to be applied. Without clear guidance from USDA FSIS, product either is already or will likely be mislabeled and cause confusion to consumers who are purchasing beef products in the United States.

To eliminate the likelihood of confusion and to better inform consumers, USCA contends that voluntary labels indicating "Made in USA," "Product of USA" or similar content should be limited to beef from cattle born, raised, and harvested in the United States.

Pursuant to the statutory and regulatory procedures for filing a petitions with the FSIS, the required information and supporting documentation are provided herein and below. *See* 5 U.S.C. § 553(e); *see also* 7 C.F.R. § 1.28; 9 C.F.R. § 392 & §§ 392.3-392.4.

I. STATEMENT OF THE ACTION REQUESTED

The USCA requests that FSIS limit its definition of U.S. beef to cattle born, raised, and harvested in the United States. Specifically, FSIS should require that any beef product labeled as "Made in the USA," "Product of the USA," "USA beef," or otherwise indicated to be U.S. beef, come from cattle that have been born, raised, and harvested in the United States.

The above definition should be added to the FSIS' Food Standards and Labeling Policy Book. The Policy Book, which may be updated to reflect current policy developments, is "intended to be guidance to help manufacturers and prepare product labels that are truthful and not misleading." *See* "Food Standards and Labeling Policy Book," U.S. Department of Agriculture, Food Safety and Inspection Service, Office of Policy, Program and Employee Development (Aug. 2005) at Preface, excerpt included in **Exhibit 4** attached hereto.

II. STATEMENT OF INTEREST

USCA is a national organization committed to presenting an effective voice for the U.S. cattle industry and promoting ranching in the United States. USCA is committed to promoting the interests of cattlemen in the United States on issues including the creation and maintenance of the Country of Origin Labeling program, the implementation of a national system of animal disease traceability, and ongoing work to address necessary reforms within the mandatory Beef Checkoff program. USCA is a non-profit corporation registered in Montana with members nationwide.

USCA's members include, among others, cow-calf operators, backgrounders, and independent feedlots. Cow-calf operators are ranchers and farmers who have herds of mother cows and who handle calves from birth to the weaning stage, typically five to ten months. Backgrounders, also known as stocker/yearling operators, are ranchers and farmers who handle cattle after the cow-calf stage up to the point of having cattle ready for final finishing at a feedlot, typically until twelve to twenty months of age. Feedlots finish cattle in terms of weight gain for the final three to five months and hold cattle until purchase by slaughterers. Some ranchers are involved in more than one stage (*e.g.*, may raise a calf from birth to fully finished and ready to go to the packing plant). In a born/raised/slaughtered information system, USCA members are involved in the born and/or raised phases.

The USCA has participated in the COOL rulemaking, submitting information and comments to the agency on the proposed regulations, including on the 2013 revisions. USCA believes that there is value in distinguishing product of exclusive U.S. origin at the retail level and, as testified by Leo McDonnell, Director Emeritus of USCA at the Senate Agriculture Committee Hearing on COOL and Trade Retaliation in June 2015, has continued its advocacy for COOL "to ensure this distinction is not lost." Without clear guidance from FSIS as to what constitutes U.S. beef, the distinction will be lost and consumers will be misled and confused when shopping for beef.

III. STATEMENT OF THE GROUNDS FOR GRANTING THE PETITION

A. Legal Basis for Requested Actions

U.S. citizens have the right to petition the government to add, amend, or repeal rules under the Administrative Procedure Act. *See* 5 U.S.C. § 553(e). Citizens may petition to amend U.S. Department of Agriculture (USDA) rules specifically under 7 C.F.R. § 1.28 and 9 C.F.R. § 392.

FSIS has primary responsibility for the regulation of food labeling for meat and poultry producers under the Federal Meat Inspection Act (FMIA). The FMIA states that meat or meat food product shall be "misbranded" if its "labeling is false or misleading in any particular." *See* 21 U.S.C. § 453(h)(1).

Currently, FSIS regulations require that modifications to the labeling requirements be submitted to the FSIS for approval. *See* 9 C.F.R. §§ 412.1 – 412.2. The FSIS considers labeling claims on meat on a case-by-case basis.

Pursuant to this legal authority, USCA requests that the Secretary of Agriculture make the addition to the Food Standards and Labeling Policy Book outlined in the Statement of Action Requested above. *See* Section I, *supra*.

B. Background Information

In order to demonstrate the need for beef labeling, the USCA first discusses the background of the issue, including the repeal of COOL regulations and the relevant statutory provisions and regulations that remain in effect.

i. Repeal of the COOL Regulations

COOL requirements were signed into law under Title X of the Farm Security and Rural Investment (FSRI) Act of 2002 (also known as the 2002 Farm Bill), codified at 7 U.S.C. § 1638a as Notice of Country of Origin. The law required retailers to provide country of origin labeling for, *inter alia*, fresh beef, pork, and lamb. Additional regulations were implemented on August 1, 2008 (73 Fed. Reg. 45106), August 31, 2008 (73 Fed. Reg. 50701), and May 24, 2013 (78 Fed. Reg. 31367).

The initial COOL regulations required that meat packagers provide information about where animals were born, raised and slaughtered. Under the 2003 rule, the label on a cut of beef, for example, could potentially read as follows: "Born in the U.S.A., raised in Canada, slaughtered in Mexico."

In 2008 and 2009, the Mexican and Canadian governments respectively launched challenges to the COOL regulation at the World Trade Organization (WTO), arguing that it put imported meat at an unfair disadvantage in the U.S. market. The WTO Appellate Body (AB) ultimately ruled against COOL requirements for imported cuts of beef and pork on May 18, 2015. *See United States — Country of Origin Labelling Requirements: Recourse to Article 21.5 of the DSU By Canada and Mexico*, AB-2014-10, Reports of the

Appellate Body (WT/DS384/386) (May 18, 2015) at 169-72 (Canada) and 173-75 (Mexico). Specifically, the AB concluded that mandatory COOL violated U.S. trade obligations and imposed a disproportionate burden in record-keeping and verification requirements on meat producers and processors. *Id.*

As a result of the adverse WTO ruling, the United States withdrew the COOL requirements on meat packaging and, on December 18, 2015, Congress repealed the COOL law as part of the Omnibus Budget Bill.

ii. Labeling Requirements that Remain In Effect

Notwithstanding the repeal of the COOL rule in 2015, certain statutes and regulations applicable to beef labeling remain in effect.

Pursuant to the Federal Meat Inspection Act (FMIA), FSIS may deem "any carcass, part thereof, meat or meat food product" to be "misbranded," and thus unmarketable, where, amongst other things, "its labeling is false or misleading in any particular." *See* 21 U.S.C. § 601(n)(1).

Other FSIS regulatory requirements provide that "{n}o product shall be wholly or partly enclosed in any wrapper, packaging, or other container that is so made, formed, or filled as to be misleading." *See* 9 C.F.R. § 317.8(a). This includes "false or misleading marking, label, or other labeling . . . which conveys any false impression or gives any false indication of origin or quality." *Id.* FSIS specifically provides that "{t}he term 'meat" and names of particular kinds of meat, such as beef{,} shall not be used in such manner as to be false or misleading." *See* 9 C.F.R. § 317.8(b)(12).

C. Consumer Perceptions With Respect to Beef Labels

Current beef labeling practices are likely to cause consumer confusion in the marketplace without guidance from FSIS as to what constitutes "Product of USA" or "Made in USA" or similar labeling. To demonstrate consumer perceptions with respect to "Made in USA" beef labels, we first explain the Federal Trade Commission's "all or virtually" all standard, which is based upon the FTC's finding that consumers understand U.S. origin claims to mean that the product is "all or virtually all" made in the United States. We next illustrate consumer preference for U.S. beef and willingness to pay a premium for U.S. labeled beef product over unlabeled or imported ones. To supplement the study, we include recent photographs taken by USCA in grocery stores around the country showing that a variety of labels indicate product is "US" product, sometimes with different types of labels in the same meat department. To the extent that any of these labels pertain to beef which is not born, raised, and harvested in the United States, the survey indicates consumers will be misled. This confusion for consumers will continue absent more specific guidance, as requested, from FSIS.

i. Applicability of the FTC's "All or Virtually All" Standard

The Federal Trade Commission (FTC) has adopted an "all or virtually all" standard for "Made in USA" claims and provides insight into consumer perceptions of U.S labeled beef. *See* **Collective Exhibit 1** attached hereto (documents outlining the FTC's "all or virtually all" standard).

With respect to substantiating U.S. origin claims the FTC explains:

> Based on its review of the traditional use of the term *Made in USA,* and the record as a whole, the Commission concludes that consumers are likely to understand an unqualified U.S. origin claim to mean that the advertised product is "all or virtually all" made in the United States. Therefore, when a marketer makes an unqualified **claim that a product is *Made in USA***, it should, at the time the representation is made, possess and rely upon a reasonable basis that **the product is in fact all or virtually all made in the United States**.

See Complying with the Made in USA Standard, Federal Trade Commission Publication (Dec. 1998) at 23 (italics in original; bold added), part of **Collective Exhibit 1**.

Though the FTC emphases that "there is no single 'bright line' to establish when a product is or is not 'all or virtually all' made in the United States, there are a number of factors that the Commission will look to in making this determination" including the site of final processing, the proportion of U.S. manufacturing costs, and the remoteness of foreign content. *Id.* at 24. The FTC conducts its inquiries "on a case-by-case basis," balancing the various factors and "taking into account the nature of the product and consumers' expectations{.}" *Id.* at 25.

The FTC standard applies to "*all* products advertised or sold in the U.S.," including agricultural and food products like beef. *See id.* at 2 (emphasis added), part of **Collective Exhibit 1**. Food and drink products such as vanilla ice cream and ground coffee are specifically cited in the FTC Policy as examples of products to which "Made in USA" claims may apply. *Id.* at 35, n. 19. In the past, the FTC standard has been applied to a wide range of products, including food products like shrimp, tuna, and other seafood products. *See, e.g.*, "Industry Guidance of Best Practices for Addressing Seafood Fraud," Better Seafood Board and National Fisheries Institute Task Force (2016) at Appx. 3 & 4 (pgs. 21, 26-27, 35), excerpts included as part of **Collective Exhibit 1**; Jeanine Stewart, "Starkist defends 'Made in America' tuna claim," Undercurrent News (Aug. 6, 2013), part of **Collective Exhibit 1**. The standard also applies to food nutrition labels and dietary supplements. *See, e.g.*, John E. Villafranco, "Substantiating 'Made in USA' Claims for Dietary Supplements," Nutritional Outlook (Aug. 15, 2013), part of **Collective Exhibit 1**; Karen Duester, "Food nutrition facts labels – 'Made in the USA,'" Foodlabelnews.net (Jul. 10, 2012), part of **Collective Exhibit 1**.

The FTC's "all or virtually all" standard, if applied to beef products, supports USCA's position with respect to consumer expectations. Specifically, consumers expect that

product labeled "Made in USA" denotes that "all or virtually all" of the product is in fact made in the United States. Therefore, where a product is born, raised, or harvested elsewhere, "any claim of U.S. origin should be adequately qualified to avoid consumer deception about the presence or amount of foreign content." *Complying with the Made in USA Standard*, Federal Trade Commission Publication (Dec. 1998) at 28, part of **Collective Exhibit 1**.

ii. Market Research Surveys and Studies

USCA's position is further supported by market research surveys and other studies regarding consumer perceptions, which confirm the importance of COOL labeling to U.S. consumers and the confusion resulting from current labeling practices.

A number of prior studies have also addressed the related question of consumer demand and preference for U.S. beef. These studies further indicate consumer's perceptions of COOL and their willingness to pay a premium for "Certified U.S." beef. *See* **Collective Exhibit 2** attached hereto (prior studies addressing consumer perceptions with respect to country of origin beef labeling).

Historically, various studies have found that U.S. consumers distinguish U.S. beef from unlabeled or imported beef in the market place. *See, e.g.*, Kar H. Lim, et al., *Willingness to Pay for Imported Beef and Risk Perception: An Application of Individual-Level Parameter*, Agricultural & Applied Economics Association's 2011 AAEA & NAREA Joint Annual Meeting at 1-2, 16-17 (Jul. 2011), part of **Collective Exhibit 2**.

In 2016, a Consumer Reports study found that 87% of consumers want labels on meat to reflect the country of origin, with the majority of consumers (60%) further confirming that they want the label to include information on where the animal was born, raised, and slaughtered. *See Food Labels Survey: 2016 Nationally-Representative Phone Survey*

Consumer Reports National Research Center at 3, 9 (Apr. 6, 2016), part of **Collective Exhibit 2**.

A 2016 meta-analysis of 20 primary studies additionally found that consumers preferred COOL of U.S. beef products and were willing to pay more for domestic than imported product. *See* Xiaohua Yu, et al., *Consumer preferences for US beef products: a meta-analysis*, 2 Rivista di Economia Agraria 177, 178 (2016), part of **Collective Exhibit 2**. Indeed, comprehensive studies have indicated that U.S. consumers are willing to pay a $0.20 per pound or 2.9% premium for U.S.-labeled beef, while regional studies have indicated premiums of up to 58% for "Certified U.S." steak and hamburger. *See* Maria L. Loureiro, *Assessing Consumer Preferences for Country-of-Origin Labeling*, 33 Journal of Agricultural and Applied Economics 49, 51 & 59 (Apr. 2005), part of **Collective Exhibit 2**.

"Food-safety concerns regarding imported beef, a preference for labels and more information about the source and origin of products, a strong desire to support U.S. producers, and beliefs that U.S. beef {is} of higher quality" have been consistently cited as reasons for consumers' preference for COOL. *See, e.g.,* Wendy J. Umberger, et al., *Country-of-Origin Labeling of Beef Products: U.S. Consumers' Perceptions*, 34 Journal of Food Distribution Research 103, 107 (Nov. 2003), part of **Collective Exhibit 2**.

In sum, these studies indicate that U.S. consumers care about the country of origin of beef products for a variety of reasons and are willing to pay a premium in order to have COOL information.

iii. Misleading Labeling of "Made in USA" Beef in the Market Place

The absence of a definition of "beef" or specific rules and parameters as to what constitutes "U.S. beef" has likely and will likely result in consumer confusion in the market place.

There is a large volume of cattle that are born and raised in Canada and slaughtered in the United States. There is also a large volume of cattle born and partially raised in Mexico and further raised and slaughtered in the United States. And there are large volumes of cattle which are born, raised and slaughtered (harvested) in the United States. Voluntary labels may presently classify any and all of the resulting beef products as "Product of USA" as at least a final stage occurred in the U.S. Without more stringent guidance as to what constitutes U.S. beef, consumers will not know if their purchases of beef are in fact of product that is born, raised and harvested in the United States without FSIS policy guidance.

The attached photographs, which were taken across the U.S. by USCA representatives in January 2018, generally illustrate that there is large amount of beef being sold as a product of the United States without any specific guidance as to what that means. *See* **Collective Exhibit 3** attached hereto (recent photographs illustrating labeling claims for beef products in various stores across the country).

Examples of labels on beef products and display product information are illustrated in the following photographs:

Photograph #1.	"Product of USA" (Tyson Fresh Meats, Inc., Dakota Dunes, SD)
Photograph #2.	"Product of United States" (Reese & Rays, Laurel, MT)
Photograph #3.	"Product of United States" (Reese & Rays, Laurel, MT)
Photograph #4.	"Made with 100% American Beef" (Family Dollar, Lemmon, SD)
Photograph #5.	"Our Meat Selections are Products of: Beef Products of USA. These products were born, raised and harvested in the USA."; "Ground Beef Products of USA, Canada. These products were born, raised and harvested in the USA & Canada." (VA)
Photograph #6.	"Product of USA" (Walmart, Mandan, ND)
Photograph #7.	"Made in USA" (Walmart, Mandan, ND)
Photograph #8.	"Product of USA" (Walmart, Mandan, ND)
Photograph #9.	"Product of USA" (Wegmans, VA)
Photograph #10.	Listing four beef product categories: (1) "Wegmans Beef": "Product of USA"; (2) "Wegmans '*Food You Feel Good About'* Beef (Choice and Prime)": "Product of USA"; (3) "Wagyu Beef: "Product of Australia," and (4) "Organic Beef": "Product of Uruguay." (Wegmans, VA)

See **Collective Exhibit 3** attached hereto.

Some labels (*e.g.*, Photograph #5) appear to follow the type of labeling that was required under COOL and should not create consumer confusion (assuming, of course, that the basis for the label is accurate). For other labels in other photographs, as there is no policy, one has no way of knowing if the beef is actually from an animal born, raised and slaughtered in the USA. Indeed the label "Made with 100% American beef" should be singled out for potential confusion as the term "American beef" could mean product from all three countries of North America (or also product of countries from Central and South America), despite the likelihood that consumers would understand the label to mean a product from the United States.

Without a policy directive from the FSIS, it is unclear whether these labels meet the FTC standard for "Made in USA" claims. *See* Section III.C.i., *supra*. Such diverse labeling may contradict consumers' expectations that beef labeled "Made in USA" is "all or virtually all" produced in the U.S. – *i.e.*, born, raised, and harvested in the U.S. *See* **Collective Exhibit 1** (documents outlining the FTC's "all or virtually all" standard).

In addition, prior studies have highlighted the importance of consistency and standardization in product labeling for retail sale. *See, e.g.,* Emily Broad Leib, *et al.*, *Consumer Perceptions of Date Labels: National Survey*, Harvard Food Law and Policy Clinic, National Consumers League, and John Hopkins Center for a Livable Future at 2, 4 (May 2016), part of **Collective Exhibit 2**. Food labels are intended to help consumers make educated purchasing decisions, but purchasers cannot make those decisions without a clear understanding of what labels mean. *Id.* Because of the apparent widespread use

of voluntary labels of different sorts claiming beef is "US" or "American", the FSIS can ensure that those choosing to label their beef do so in a way that prevents consumer confusion.

The proposed definition provided in Section I would guarantee that voluntary labeling of beef as "Product of USA", "Made in USA" or similar language is "all produced in the US" and is thus consistent with both consumer perceptions and the FTC's existing standard for non-misleading labeling claims.

IV. CONCLUSION

USCA has long advocated for additional beef labeling requirements to better inform consumers when beef is of U.S. origin.

There is currently no beef labeling requirement mandated by law. Existing, voluntary labeling practices, however, coupled with the source of cattle from which beef is derived from packing facilities in the U.S., create the high probability of consumer confusion as to whether a product labeled as from the US is actually born, raised and slaughtered in the US. This potential confusion stems from a lack of a definition of what constitutes "U.S." beef.

As such, USCA requests that FSIS limit its definition of U.S. beef to cattle born, raised, and harvested in the United States. The revised definition should be included in the Food Standards and Labeling Policy Book.

Respectfully submitted,

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Counsel for the U.S. Cattlemen's Association (USCA), Petitioner

Dated: October 23, 2019

LIST OF EXHIBITS

1. **Documents outlining the FTC's "all or virtually all" standard:**
    - *Complying with the Made in USA Standard*, Federal Trade Commission Publication (Dec. 1998)
    - "Industry Guidance of Best Practices for Addressing Seafood Fraud," Better Seafood Board and National Fisheries Institute Task Force (2016) (excerpts)
    - Jeanine Stewart, "Starkist defends 'Made in America' tuna claim," Undercurrent News (Aug. 6, 2013)
    - John E. Villafranco, "Substantiating "Made in USA' Claims for Dietary Supplements," Nutritional Outlook (Aug. 15, 2013)
    - Karen Duester, "Food nutrition facts labels – 'Made in the USA,'" Foodlabelnews.net (Jul. 10, 2012)

2. **Prior studies addressing consumer perceptions with respect to country of origin beef labeling:**
    - Kar H. Lim, et al., *Willingness to Pay for Imported Beef and Risk Perception: An Application of Individual-Level Parameter,* Agricultural & Applied Economics Association's 2011 AAEA & NAREA Joint Annual Meeting (Jul. 2011)
    - *Food Labels Survey: 2016 Nationally-Representative Phone Survey*, Consumer Reports National Research Center (Apr. 6, 2016)
    - Xiaohua Yu, et al., *Consumer preferences for US beef products: a meta-analysis,* 2 Rivista di Economia Agraria 177 (2016)
    - Maria L. Loureiro, et al., *Assessing Consumer Preferences for Country-of-Origin Labeling*, 33 Journal of Agricultural and Applied Economics 49 (Apr. 2005)
    - Wendy J. Umberger, et al., *Country-of-Origin Labeling of Beef Products: U.S. Consumers' Perceptions,* 34 Journal of Food Distribution Research 103 (Nov. 2003)
    - Emily Broad Leib, *et al*., *Consumer Perceptions of Date Labels: National Survey*, Harvard Food Law and Policy Clinic, National Consumers League, and John Hopkins Center for a Livable Future (May 2016)

3. **Recent photographs illustrating labeling claims for beef products in various stores across the country:**
    - "Product of USA" (Tyson Fresh Meats, Inc., Dakota Dunes, SD)

- "Product of United States" (Reese & Rays, Laurel, MT)
- "Product of United States" (Reese & Rays, Laurel, MT)
- "Made with 100% American Beef" (Family Dollar, Lemmon, SD)
- "Our Meat Selections are Products of: Beef Products of USA, The products were born, raised and harvested in the USA" (VA)
- "Product of USA" (Walmart, Mandan, ND)
- "Made in USA" (Walmart, Mandan, ND)
- "Product of USA" (Walmart, Mandan, ND)
- Listing four beef product categories: (1) "Wegmans Beef": "Product of USA"; (2) "Wegmans '*Food You Feel Good About'* Beef (Choice and Prime)": "Product of USA"; (3) "Wagyu Beef: "Product of Australia," and (4) "Organic Beef": "Product of Uruguay." (Wegmans, VA)

4. "Food Standards and Labeling Policy Book," U.S. Department of Agriculture, Food Safety and Inspection Service, Office of Policy, Program and Employee Development (Aug. 2005) (excerpts)

Exhibit 1

Complying with the

MADE IN USA STANDARD

Federal Trade Commission | **business.ftc.gov**

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Introduction

fte Federal Trade Commission (FTC) is charged with preventing deception and unfairness in the marketplace. fte FTC Act gives the Commission the power to bring law enforcement actions against false or misleading claims that a product is of U.S. origin. Traditionally, the Commission has required that a product advertised as *Made in USA* be "all or virtually all" made in the U.S. After a comprehensive review of *Made in USA* and other U.S. origin claims in product advertising and labeling, the Commission announced in December 1997 that it would retain the "all or virtually all" standard. fte Commission also issued an Enforcement Policy Statement on U.S. Origin Claims to provide guidance to marketers who want to make an unqualified *Made in USA* claim under the "all or virtually all" standard and those who want to make a qualified *Made in USA* claim.

ftis publication provides additional guidance about how to comply with the "all or virtually all" standard. It also offers some general information about the U.S. Customs Service's requirement that all products of foreign origin imported into the U.S. be marked with the name of the country of origin.

ftis publication is the Federal Trade Commission staff's view of the law's requirements. It is not binding on the Commission. fte Enforcement Policy Statement issued by the FTC is at the end of the publication.

Basic Information About *Made In USA* Claims

Must U.S. content be disclosed on products sold in the U.S.?

U.S. content must be disclosed on automobiles and textile, wool, and fur products (*see page 15*). ftere's no law that requires most other products sold in the U.S. to be marked or labeled *Made in USA* or have any other disclosure about their amount of U.S. content. However, manufacturers and marketers who choose to make claims about the amount of U.S. content in their products must comply with the FTC's *Made in USA* policy.

What products does the FTC's *Made in USA* policy apply to?

fte policy applies to all products advertised or sold in the U.S., except for those specifically subject to country-of-origin labeling by other laws (*see pages 15-17*). Other countries may have their own country-of-origin marking requirements. As a result, exporters should determine whether the country to which they are exporting imposes such requirements.

What kinds of claims does the Enforcement Policy Statement apply to?

fte Enforcement Policy Statement applies to U.S. origin claims that appear on products and labeling, advertising, and other promotional materials. It also applies to all other forms of marketing, including marketing through digital or electronic mechanisms, such as Internet or e-mail.

A *Made in USA* claim can be express or implied.

> **Examples** of express claims: *Made in USA*. "Our products are American-made." "USA."

In identifying implied claims, the Commission focuses on the overall impression of the advertising, label, or promotional material. Depending on the context, U.S. symbols or geographic references (for example, U.S. flags, outlines of U.S. maps, or references to U.S. locations of headquarters or factories) may convey a claim of U.S. origin either by themselves, or in conjunction with other phrases or images.

> **Example:** A company promotes its product in an ad that features a manager describing the "true American quality" of the work produced at the company's American factory. Although there is no express representation that the company's product is made in the U.S., the overall — or net — impression the ad is likely to convey to consumers is that the product is of U.S. origin.

Brand names and trademarks

Ordinarily, the Commission will not consider a manufacturer or marketer's use of an American brand name or trademark by itself as a U.S. origin claim. Similarly, the Commission is not likely to interpret the mere listing of a company's U.S. address on a package label in a non-prominent way as a claim of U.S. origin.

> **Example:** A product is manufactured abroad by a well-known U.S. company. fte fact that the company is headquartered in the U.S. also is widely known. Company pamphlets for its foreign-made product prominently feature its brand name. Assuming that the brand name does not specifically denote U.S. origin (that is, the brand name is not "Made in America, Inc."), using the brand name by itself does not constitute a claim of U.S. origin.

Representations about entire product lines

Manufacturers and marketers should not indicate, either expressly or implicitly, that a whole product line is of U.S. origin ("Our products are made in USA") when only some products in the product line are made in the U.S. according to the "all or virtually all" standard.

Does the FTC pre-approve *Made in USA* claims?

fte Commission does not pre-approve advertising or labeling claims. A company doesn't need approval from the Commission before making a *Made in USA* claim. As with most other advertising claims, a manufacturer or marketer may make any claim as long as it is truthful and substantiated.

The Standard For Unqualified *Made In USA* Claims

What is the standard for a product to be called *Made in USA* without qualification?

For a product to be called *Made in USA*, or claimed to be of domestic origin without qualifications or limits on the claim, the product must be "all or virtually all" made in the U.S. fte term "United States," as referred to in the Enforcement Policy Statement, includes the 50 states, the District of Columbia, and the U.S. territories and possessions.

What does "all or virtually all" mean?

"All or virtually all" means that all significant parts and processing that go into the product must be of U.S. origin. ftat is, the product should contain no — or negligible — foreign content.

What substantiation is required for a *Made in USA* claim?

When a manufacturer or marketer makes an unqualified claim that a product is *Made in USA*, it should have — and rely on — a "reasonable basis" to support the claim at the time it is made. ftis means a manufacturer or marketer needs competent and reliable evidence to back up the claim that its product is "all or virtually all" made in the U.S.

What factors does the Commission consider to determine whether a product is "all or virtually all" made in the U.S.?

fte product's final assembly or processing must take place in the U.S. fte Commission then considers other factors, including how much of the product's total manufacturing costs can be assigned to U.S. parts and processing, and how far removed any foreign content is from the finished product. In some instances, only a small portion of the total manufacturing costs are attributable to foreign processing, but that processing represents a significant amount of the product's overall processing. fte same could be true for some foreign parts. In these cases, the foreign content (processing or parts) is more than negligible, and, as a result, unqualified claims are inappropriate.

> **Example:** A company produces propane barbecue grills at a plant in Nevada. fte product's major components include the gas valve, burner and aluminum housing, each of which is made in the U.S. fte grill's knobs and tubing are imported from Mexico. An unqualified *Made in USA* claim is not likely to be deceptive because the knobs and tubing make up a negligible portion of the product's total manufacturing costs and are insignificant parts of the final product.

Example: A table lamp is assembled in the U.S. from American-made brass, an American-made Tiffany-style lampshade, and an imported base. fte base accounts for a small percent of the total cost of making the lamp. An unqualified *Made in USA* claim is deceptive for two reasons: fte base is not far enough removed in the manufacturing process from the finished product to be of little consequence and it is a significant part of the final product.

What items should manufacturers and marketers include in analyzing the percentage of domestic content in a particular product?

Manufacturers and marketers should use the cost of goods sold or inventory costs of finished goods in their analysis. Such costs generally are limited to the total cost of all manufacturing materials, direct manufacturing labor, and manufacturing overhead.

Should manufacturers and marketers rely on information from American suppliers about the amount of domestic content in the parts, components, and other elements they buy and use for their final products?

If given in good faith, manufacturers and marketers can rely on information from suppliers about the domestic content in the parts, components, and other elements they produce. Rather than assume that the input is 100 percent U.S.-made, however, manufacturers and marketers would be wise to ask the supplier for specific information about the percentage of U.S. content before they make a U.S. origin claim.

Example: A company manufactures food processors in its U.S. plant, making most of the parts, including the housing and blade, from U.S. materials. fte motor, which constitutes 50 percent of the food

processor's total manufacturing costs, is bought from a U.S. supplier. fte food processor manufacturer knows that the motor is assembled in a U.S. factory. Even though most of the parts of the food processor are of U.S. origin, the final assembly is in the U.S., and the motor is assembled in the U.S., the food processor is not considered "all or virtually all" American-made if the motor itself is made of imported parts that constitute a significant percentage of the appliance's total manufacturing cost. Before claiming the product is *Made in USA*, this manufacturer should look to its motor supplier for more specific information about the motor's origin.

Example: On its purchase order, a company states: "Our company requires that suppliers certify the percentage of U.S. content in products supplied to us. If you are unable or unwilling to make such certification, we will not purchase from you." Appearing under this statement is the sentence, "We certify that our___have at least____% U.S. content," with space for the supplier to fill in the name of the product and its percentage of U.S. content. fte company generally could rely on a certification like this to determine the appropriate country-of-origin designation for its product.

How far back in the manufacturing process should manufacturers and marketers look?

To determine the percentage of U.S. content, manufacturers and marketers should look back far enough in the manufacturing process to be reasonably sure that any significant foreign content has been included in their assessment of foreign costs. Foreign content incorporated early in the manufacturing process often will be less

significant to consumers than content that is a direct part of the finished product or the parts or components produced by the immediate supplier.

> **Example:** fte steel used to make a single component of a complex product (for example, the steel used in the case of a computer's floppy drive) is an early input into the computer's manufacture, and is likely to constitute a very small portion of the final product's total cost. On the other hand, the steel in a product like a pipe or a wrench is a direct and significant input. Whether the steel in a pipe or wrench is imported would be a significant factor in evaluating whether the finished product is "all or virtually all" made in the U.S.

Are raw materials included in the evaluation of whether a product is "all or virtually all" made in the U.S.?

It depends on how much of the product's cost the raw materials make up and how far removed from the finished product they are.

> **Example:** If the gold in a gold ring is imported, an unqualified *Made in USA* claim for the ring is deceptive. ftat's because of the significant value the gold is likely to represent relative to the finished product, and because the gold — an integral component — is only one step back from the finished article. By contrast, consider the plastic in the plastic case of a clock radio otherwise made in the U.S. of U.S.-made components. If the plastic case was made from imported petroleum, a *Made in USA* claim is likely to be appropriate because the petroleum is far enough removed from the finished product, and is an insignificant part of it as well.

Qualified Claims

What is a qualified *Made in USA* claim?

A qualified *Made in USA* claim describes the extent, amount or type of a product's domestic content or processing; it indicates that the product isn't entirely of domestic origin.

> **Example:** "60% U.S. content." "Made in USA of U.S. and imported parts." "Couch assembled in USA from Italian Leather and Mexican Frame."

When is a qualified *Made in USA* claim appropriate?

A qualified *Made in USA* claim is appropriate for products that include U.S. content or processing but don't meet the criteria for making an unqualified *Made in USA* claim. Because even qualified claims may imply more domestic content than exists, manufacturers or marketers must exercise care when making these claims. ftat is, avoid qualified claims unless the product has a significant amount of U.S. content or U.S. processing. A qualified *Made in USA* claim, like an unqualified claim, must be truthful and substantiated.

> **Example:** An exercise treadmill is assembled in the U.S. fte assembly represents significant work and constitutes a "substantial transformation" (a term used by the U.S. Customs Service — *see pages 13-14*). All of the treadmill's major parts, including the motor, frame, and electronic display, are imported. A few of its incidental parts, such as the handle bar covers, the plastic on/off power key, and the treadmill mat, are manufactured in the U.S. Together, these parts account for approximately three percent of the total cost of all the parts. Because the value of the U.S.-made parts is negligible compared to the value of all the parts, a claim on the treadmill that it is "Made in USA of U.S. and Imported Parts" is deceptive. A

claim like "Made in U.S. from Imported Parts" or "Assembled in U.S.A." (*see page 13*) would not be deceptive.

U.S. origin claims for specific processes or parts

Claims that a particular manufacturing or other process was performed in the U.S. or that a particular part was manufactured in the U.S. must be truthful, substantiated, and clearly refer to the specific process or part, not to the general manufacture of the product, to avoid implying more U.S. content than exists.

Manufacturers and marketers should be cautious about using general terms, such as "produced," "created" or "manufactured" in the U.S. Words like these are unlikely to convey a message limited to a particular process. Additional qualification probably is necessary to describe a product that is not "all or virtually all" made in the U.S.

In addition, if a product is of foreign origin (that is, it has been substantially transformed abroad), manufacturers and marketers also should make sure they satisfy Customs' markings statute and regulations that require such products to be marked with a foreign country of origin (*see page 14*). Further, Customs requires the foreign country of origin to be preceded by "Made in," "Product of," or words of similar meaning when any city or location that is not the country of origin appears on the product.

> **Example:** A company designs a product in New York City and sends the blueprint to a factory in Finland for manufacturing. It labels the product "Designed in USA — Made in Finland." Such a specific processing claim would not lead a reasonable consumer to believe that the whole product was made in the U.S. fte Customs Service requires the product to be marked "Made in," or "Product of" Finland since the product

is of Finnish origin and the claim refers to the U.S. Examples of other specific processing claims are: "Bound in U.S. — Printed in Turkey." "Hand carved in U.S. — Wood from Philippines." "Software written in U.S. — Disk made in India." "Painted and fired in USA. Blanks made in (foreign country of origin)."

Example: A company advertises its product, which was invented in Seattle and manufactured in Bangladesh, as "Created in USA." ftis claim is deceptive because consumers are likely to interpret the term "Created" as *Made in USA* — an unqualified U.S. origin claim.

Example: A computer imported from Korea is packaged in the U.S. in an American-made corrugated paperboard box containing only domestic materials and domestically produced expanded rigid polystyrene plastic packing. Stating *Made in USA* on the package would deceive consumers about the origin of the product inside. But the company could legitimately make a qualified claim, such as "Computer Made in Korea — Packaging Made in USA."

Example: fte Acme Camera Company assembles its cameras in the U.S. fte camera lenses are manufactured in the U.S., but most of the remaining parts are imported. A magazine ad for the camera is headlined "Beware of Imported Imitations" and states "Other high-end camera makers use imported parts made with cheap foreign labor. But at Acme Camera, we want only the highest quality parts for our cameras and we believe in employing American workers. ftat's why we make all of our lenses right here in the U.S." ftis ad is likely to convey that more than a specific product part (the lens) is of U.S. origin. fte marketer should be prepared to substantiate the broader U.S. origin claim conveyed to consumers viewing the ad.

Comparative Claims

Comparative claims should be truthful and substantiated, and presented in a way that makes the basis for comparison clear (for example, whether the comparison is to another leading brand or to a previous version of the same product). ftey should truthfully describe the U.S. content of the product and be based on a meaningful difference in U.S. content between the compared products.

> **Example:** An ad for cellular phones states "We use more U.S. content than any other cellular phone manufacturer." fte manufacturer assembles the phones in the U.S. from American and imported components and can substantiate that the difference between the U.S. content of its phones and that of the other manufacturers' phones is significant. ftis comparative claim is not deceptive.
>
> **Example:** A product is advertised as having "twice as much U.S. content as before." fte U.S. content in the product has been increased from 2 percent in the previous version to 4 percent in the current version. ftis comparative claim is deceptive because the difference between the U.S. content in the current and previous version of the product are insignificant.

Assembled in USA Claims

A product that includes foreign components may be called "Assembled in USA" without qualification when its principal assembly takes place in the U.S. and the assembly is substantial. For the "assembly" claim to be valid, the product's last "substantial transformation" (*see page 14*) also should have occurred in the U.S. ftat's why a "screwdriver" assembly in the U.S. of foreign components into a final product at the end of the manufacturing process doesn't usually qualify for the "Assembled in USA" claim.

Example: A lawn mower, composed of all domestic parts except for the cable sheathing, flywheel, wheel rims and air filter (15 to 20 percent foreign content) is assembled in the U.S. An "Assembled in USA" claim is appropriate.

Example: All the major components of a computer, including the motherboard and hard drive, are imported. fte computer's components then are put together in a simple "screwdriver" operation in the U.S., are not substantially transformed under the Customs Standard, and must be marked with a foreign country of origin. An "Assembled in U.S." claim without further qualification is deceptive.

The FTC and The Customs Service

What is the U.S. Customs Service"s jurisdiction over country-of-origin claims?

fte Tariff Act gives Customs and the Secretary of the Treasury the power to administer the requirement that imported goods be marked with a foreign country of origin (for example, "Made in Japan").

When an imported product incorporates materials and/or processing from more than one country, Customs considers the country of origin to be the last country in which a "substantial transformation" took place. Customs defines "substantial transformation" as a manufacturing process that results in a new and different product with a new name, character, and use that is different from that which existed before the change. Customs makes country-of-origin determinations using the "substantial transformation" test on a case-by-case basis. In some instances, Customs uses a "tariff shift" analysis, comparable to "substantial transformation," to determine a product's country of origin.

What is the interaction between the FTC and Customs regarding country-of-origin claims?

Even if Customs determines that an imported product does not need a foreign country-of-origin mark, it is not necessarily permissible to promote that product as *Made in USA*. fte FTC considers additional factors to decide whether a product can be advertised or labeled as *Made in USA*.

Manufacturers and marketers should check with Customs to see if they need to mark their products with the foreign country of origin. If they don't, they should look at the FTC's standard to check if they can properly make a *Made in USA* claim.

fte FTC has jurisdiction over foreign origin claims on products and in packaging that are beyond the disclosures required by Customs (for example, claims that supplement a required foreign origin marking to indicate where additional processing or finishing of a product occurred).

fte FTC also has jurisdiction over foreign origin claims in advertising and other promotional materials. Unqualified U.S. origin claims in ads or other promotional materials for products that Customs requires a foreign country-of-origin mark may mislead or confuse consumers about the product's origin. To avoid misleading consumers, marketers should clearly disclose the foreign manufacture of a product.

> **Example:** A television set assembled in Korea using an American-made picture tube is shipped to the U.S. fte Customs Service requires the television set to be marked "Made in Korea" because that's where the television set was last "substantially transformed." fte company's World Wide Web page states "Although our televisions are made abroad, they always contain U.S.-made picture tubes." ftis statement is not deceptive. However, making the statement "All our

picture tubes are made in the USA" — without disclosing the foreign origin of the television's manufacture — might imply a broader claim (for example, that the television set is largely made in the U.S.) than could be substantiated. ftat is, if the statement and the entire ad imply that any foreign content or processing is negligible, the advertiser must substantiate that claim or net impression. fte advertiser in this scenario would not be able to substantiate the implied *Made in USA* claim because the product was "substantially transformed" in Korea.

Other Statutes

What are the requirements of other federal statutes relating to country-of-origin determinations?

Textile Fiber Products Identification Act and Wool Products Labeling Act — Require a *Made in USA* label on most clothing and other textile or wool household products if the final product is manufactured in the U.S. of fabric that is manufactured in the U.S., regardless of where materials earlier in the manufacturing process (for example, the yarn and fiber) came from. Textile products that are imported must be labeled as required by the Customs Service. A textile or wool product partially manufactured in the U.S. and partially manufactured in another country must be labeled to show both foreign and domestic processing.

On a garment with a neck, the country of origin must be disclosed on the front of a label attached to the inside center of the neck — either midway between the shoulder seams or very near another label attached to the inside center of the neck. On a garment without a neck, and on other kinds of textile products, the country of origin must appear on a conspicuous and readily accessible label on the inside or outside of the product.

Catalogs and other mail order promotional materials for textile and wool products, including those disseminated on the Internet, must disclose whether a product is made in the U.S., imported or both.

The Fur Products Labeling Act requires the country of origin of imported furs to be disclosed on all labels and in all advertising. For copies of the Textile, Wool or Fur Rules and Regulations, or the new business education guide on labeling requirements, call the FTC's Consumer Response Center (202-382-4357). Or visit the FTC online at **www.ftc.gov**. Click on Consumer Protection.

American Automobile Labeling Act — Requires that each automobile manufactured on or after October 1, 1994, for sale in the U.S. bear a label disclosing where the car was assembled, the percentage of equipment that originated in the U.S. and Canada, and the country of origin of the engine and transmission. Any representation that a car marketer makes that is required by the AALA is exempt from the Commission's policy. When a company makes claims in advertising or promotional materials that go beyond the AALA requirements, it will be held to the Commission's standard. For more information, call the Consumer Programs Division of the National Highway Traffic Safety Administration (202-366-0846).

Buy American Act — Requires that a product be manufactured in the U.S. of more than 50 percent U.S. parts to be considered *Made in USA* for government procurement purposes. For more information, review the Buy American Act at 41 U.S.C. §§ 10a-10c, the Federal Acquisition Regulations at 48 C.F.R. Part 25, and the Trade Agreements Act at 19 U.S.C. §§ 2501-2582.

What To Do About Violations

What if I suspect noncompliance with the FTC's *Made in USA* standard or other country-of-origin mislabeling?

Information about possible illegal activity helps law enforcement officials target companies whose practices warrant scrutiny. If you suspect noncompliance, you may file a complaint online with the FTC Complaint Assistant at ftc.gov/complaint or send an e-mail to **MUSA@ftc.gov**. If you know about import or export fraud, file a complaint with U.S. Customs and Border Protection at **https://apps.cbp.gov/eallegations/**. Examples of fraudulent practices involving imports include removing a required foreign origin label before the product is delivered to the ultimate purchaser (with or without the improper substitution of a *Made in USA* label) and failing to label a product with a required country of origin.

You also can contact your state Attorney General and your local Better Business Bureau to report a company. Or you can refer your complaint to the National Advertising Division (NAD) of the Council of Better Business Bureaus by calling (212) 754-1320. NAD handles complaints about the truth and accuracy of national advertising. You can reach the Council of Better Business Bureaus on the web at **adweb.com/adassoc17.html**.

Finally, the **Lanham Act** gives any person (such as a competitor) who is damaged by a false designation of origin the right to sue the party making the false claim. Consult a lawyer to see if this private right of action is an appropriate course of action for you.

For More Information

fte FTC works for the consumer to prevent fraudulent, deceptive, and unfair business practices in the marketplace and to provide information to help consumers spot, stop, and avoid them. To file a complaint or to get free information on consumer issues, visit **ftc.gov** or call toll-free, 1-877-FTC-HELP (1-877-382-4357); TTY: 1-866-653-4261. fte FTC enters consumer complaints into the Consumer Sentinel Network, a secure online database and investigative tool used by hundreds of civil and criminal law enforcement agencies in the U.S. and abroad.

Your Opportunity to Comment

fte National Small Business Ombudsman and 10 Regional Fairness Boards collect comments from small businesses about federal compliance and enforcement activities. Each year, the Ombudsman evaluates the conduct of these activities and rates each agency's responsiveness to small businesses. Small businesses can comment to the Ombudsman without fear of reprisal. To comment, call toll-free 1-888-REGFAIR (1-888-734-3247) or go to **www.sba.gov/ombudsman**.

Enforcement Policy Statement on U.S. Origin Claims

I. Introduction

fte Federal Trade Commission ("FTC" or "Commission") is issuing this statement to provide guidance regarding its enforcement policy with respect to the use of *Made in USA* and other U.S. origin claims in advertising and labeling. fte Commission has determined, as explained below, that unqualified U.S. origin claims should be substantiated by evidence that the product is all or virtually all made in the United States. ftis statement is intended to elaborate on principles set out in individual cases and advisory opinions previously issued over the course of many years by the Commission. ftis statement, furthermore, is the culmination of a comprehensive process in which the Commission has reviewed its standard for evaluating U.S. origin claims. ftroughout this process, the Commission has solicited, and received, substantial public input on relevant issues. fte Commission anticipates that from time to time, it may be in the public interest to solicit further public comment on these issues and to assess whether the views expressed in this statement continue to be appropriate and reflect consumer perception and opinion, and to determine whether there are areas on which the Commission could provide additional guidance.

fte principles set forth in this enforcement policy statement apply to U.S. origin claims included in labeling, advertising, other promotional materials, and all other forms of marketing, including marketing through digital or electronic means such as the Internet or electronic mail. fte statement, moreover, articulates the Commission's enforcement policy with respect to U.S. origin claims for all products advertised

or sold in the United States, with the exception of those products specifically subject to the country-of-origin labeling requirements of the Textile Fiber Products Identification Act,[1] the Wool Products Labeling Act,[2] or the Fur Products Labeling Act.[3] With respect to automobiles or other passenger motor vehicles, nothing in this enforcement policy statement is intended to affect or alter a marketer's obligation to comply with the requirements of the American Automobile Labeling Act[4] or regulations issued pursuant thereto, and any representation required by that Act to appear on automobile labeling will not be considered a deceptive act or practice for purposes of this enforcement policy statement, regardless of whether the representation appears in labeling, advertising or in other promotional material. Claims about the U.S. origin of passenger motor vehicles other than those representations required by the American Automobile Labeling Act, however, will be governed by the principles set forth in this statement.

II. Background

Both the FTC and the U.S. Customs Service have responsibilities related to the use of country-of-origin claims. While the FTC regulates claims of U.S. origin under its general authority to act against deceptive acts and practices, foreign-origin markings on products (*e.g.*, "Made in Japan") are regulated primarily by the U.S. Customs Service ("Customs" or "the Customs Service") under the Tariff Act of 1930. Specifically, Section 304 of the Tariff Act, 19 U.S.C. § 1304, administered by the Secretary of the Treasury and the Customs Service, requires that all products of foreign origin imported into the United States be marked with the name of a foreign country of origin. Where an imported product incorporates materials and/or processing from more than one country, Customs considers the country of origin to be the last country in which a "substantial transformation"

took place. A substantial transformation is a manufacturing or other process that results in a new and different article of commerce, having a new name, character and use that is different from that which existed prior to the processing. Country-of-origin determinations using the substantial transformation test are made on a case-by-case basis through administrative determinations by the Customs Service.[5]

fte FTC also has jurisdiction over foreign origin claims in packaging insofar as they go beyond the disclosures required by the Customs Service (*e.g.*, claims that supplement a required foreign origin marking, so as to represent where additional processing or finishing of a product occurred). In addition, the Commission has jurisdiction over foreign-origin claims in advertising, which the U.S. Customs Service does not regulate.

Where Customs determines that a good is not of foreign origin (*i.e.*, the good undergoes its last substantial transformation in the United States), there is generally no requirement that it be marked with any country of origin. For most goods, neither the Customs Service nor the FTC requires that goods made partially or wholly in the United States be labeled with *Made in USA* or any other indication of U.S. origin.[6] fte fact that a product is not required to be marked with a foreign country of origin does not mean that it is permissible to promote that product as *Made in USA*. fte FTC will consider additional factors, beyond those considered by the Customs Service in determining whether a product is of foreign origin, in determining whether a product may properly be represented as *Made in USA*.

ftis statement is intended to address only those issues related to *U.S.* origin claims. In developing appropriate country-of-origin labeling for their products, marketers are urged also to consult the U.S. Customs Service's marking regulations.

III. Interpreting U.s. Origin Claims: The FTC's Deception Analysis

fte Commission's authority to regulate U.S. origin claims derives from Section 5 of the Federal Trade Commission Act ("FTC Act"), 15 U.S.C. § 45, which prohibits "unfair or deceptive acts or practices." fte Commission has set forth its interpretations of its Section 5 authority in its Deception Policy Statement,[7] and its Policy Statement Regarding Advertising Substantiation Doctrine.[8] As set out in the Deception Policy Statement, the Commission will find an advertisement or label deceptive under Section 5, and therefore unlawful, if it contains a representation or omission of fact that is likely to mislead consumers acting reasonably under the circumstances, and that representation or omission is material. In addition, objective claims carry with them the implication that they are supported by valid evidence. It is deceptive, therefore, to make a claim unless, at the time the claim is made, the marketer possesses and relies upon a reasonable basis substantiating the claim. ftus, a *Made in USA* claim, like any other objective advertising claim, must be truthful and substantiated.

A representation may be made by either express or implied claims. "*Made in USA*" and "Our products are American made" would be examples of express U.S. origin claims. In identifying implied claims, the Commission focuses on the overall net impression of an advertisement, label, or other promotional material. ftis requires an examination of both the representation and the overall context, including the juxtaposition of phrases and images, and the nature of the transaction. Depending on the context, U.S. symbols or geographic references, such as U.S. flags, outlines of U.S. maps, or references to U.S. locations of headquarters or factories, may, by themselves or in conjunction with other phrases or images, convey a claim of U.S. origin. For

example, assume that a company advertises its product in an advertisement that features pictures of employees at work at what is identified as the company's U.S. factory, these pictures are superimposed on an image of a U.S. flag, and the advertisement bears the headline "American Quality." Although there is no express representation that the company's product is *Made in USA,* the net impression of the advertisement is likely to convey to consumers a claim that the product is of U.S. origin.

Whether any particular symbol or phrase, including an American flag, conveys an implied U.S. origin claim, will depend upon the circumstances in which the symbol or phrase is used. Ordinarily, however, the Commission will not consider a marketer's use of an American brand name[9] or trademark,[10] without more, to constitute a U.S. origin claim, even though some consumers may believe, in some cases mistakenly, that a product made by a U.S.-based manufacturer is made in the United States. Similarly, the mere listing of a company's U.S. address on a package label, in a nonprominent manner, such as would be required under the Fair Packaging and Labeling Act,[11] is unlikely, without more, to constitute a *Made in USA* claim.

IV. Substantiating U.S. Origin Claims: The "All Or Virtually All" Standard

Based on its review of the traditional use of the term *Made in USA,* and the record as a whole, the Commission concludes that consumers are likely to understand an unqualified U.S. origin claim to mean that the advertised product is "all or virtually all" made in the United States. fterefore, when a marketer makes an unqualified claim that a product is *Made in USA,* it should, at the time the representation is made, possess and rely upon a reasonable basis that the product is in fact all or virtually all made in the United States.[12, 13]

A product that is all or virtually all made in the United States will ordinarily be one in which all significant parts[14] and processing that go into the product are of U.S. origin. In other words, where a product is labeled or otherwise advertised with an unqualified *Made in USA* claim, it should contain only a *de minimis*, or negligible, amount of foreign content. Although there is no single "bright line" to establish when a product is or is not "all or virtually all" made in the United States, there are a number of factors that the Commission will look to in making this determination. To begin with, in order for a product to be considered "all or virtually all" made in the United States, the final assembly or processing of the product must take place in the United States. Beyond this minimum threshold, the Commission will consider other factors, including but not limited to the portion of the product's total manufacturing costs that are attributable to U.S. parts and processing; and how far removed from the finished product any foreign content is.

A. Site of Final Assembly or Processing

fte consumer perception evidence available to the Commission indicates that the country in which a product is put together or completed is highly significant to consumers in evaluating where the product is "made." ftus, regardless of the extent of a product's other U.S. parts or processing, in order to be considered all or virtually all made in the United States, it is a prerequisite that the product have been last "substantially transformed" in the United States, as that term is used by the U.S. Customs Service — *i.e.*, the product should not be required to be marked "made in [foreign country]" under 19 U.S.C. § 1304.[15] Furthermore, even where a product is last substantially transformed in the United States, if the product is thereafter assembled or processed (beyond *de minimis* finishing processes) outside the United States, the Commission is unlikely to consider that

product to be all or virtually all made in the United States. For example, were a product to be manufactured primarily in the United States (and last substantially transformed there) but sent to Canada or Mexico for final assembly, any U.S. origin claim should be qualified to disclose the assembly that took place outside the United States.

B. Proportion of U.S. Manufacturing Costs

Assuming the product is put together or otherwise completed in the United States, the Commission will also examine the percentage of the total cost of manufacturing the product that is attributable to U.S. costs (*i.e.*, U.S. parts and processing) and to foreign costs.[16] Where the percentage of foreign content is very low, of course, it is more likely that the Commission will consider the product all or virtually all made in the United States. Nonetheless, there is not a fixed point for all products at which they suddenly become "all or virtually all" made in the United States. Rather, the Commission will conduct this inquiry on a case-by-case basis, balancing the proportion of U.S. manufacturing costs along with the other factors discussed herein, and taking into account the nature of the product and consumers' expectations in determining whether an enforcement action is warranted. Where, for example, a product has an extremely high amount of U.S. content, any potential deception resulting from an unqualified *Made in USA* claim is likely to be very limited, and therefore the costs of bringing an enforcement action challenging such a claim are likely to substantially outweigh any benefit that might accrue to consumers and competition.

C. Remoteness of Foreign Content

Finally, in evaluating whether any foreign content is significant enough to prevent a product from being

considered all or virtually all made in the United States, the Commission will look not only to the percentage of the cost of the product that the foreign content represents, but will also consider how far removed from the finished product the foreign content is. As a general rule, in determining the percentage of U.S. content in its product, a marketer should look far enough back in the manufacturing process that a reasonable marketer would expect that it had accounted for any significant foreign content. In other words, a manufacturer who buys a component from a U.S. supplier, which component is in turn made up of other parts or materials, may not simply assume that the component is 100% U.S. made, but should inquire of the supplier as to the percentage of U.S. content in the component.[17] Foreign content that is incorporated further back in the manufacturing process, however, will often be less significant to consumers than that which constitutes a direct input into the finished product. For example, in the context of a complex product, such as a computer, it is likely to be insignificant that imported steel is used in making one part of a single component (*e.g.*, the frame of the floppy drive). ftis is because the steel in such a case is likely to constitute a very small portion of the total cost of the computer, and because consumers purchasing a computer are likely, if they are concerned about the origin of the product, to be concerned with the origin of the more immediate inputs (floppy drive, hard drive, CPU, keyboard, etc.) and perhaps the parts that, in turn, make up those inputs. Consumers are less likely to have in mind materials, such as the steel, that are several steps back in the manufacturing process. By contrast, in the context of a product such as a pipe or a wrench for which steel constitutes a more direct and significant input, the fact that the steel is imported is likely to be a significant factor in evaluating whether the finished product is all or virtually all made in the United States. ftus, in some circumstances, there

may be inputs one or two steps back in the manufacturing process that are foreign and there may be other foreign inputs that are much further back in the manufacturing process. ftose foreign inputs far removed from the finished product, if not significant, are unlikely to be as important to consumers and change the nature of what otherwise would be considered a domestic product.

In this analysis, raw materials[18] are neither automatically included nor automatically excluded in the evaluation of whether a product is all or virtually all made in the United States. Instead, whether a product whose other parts and processing are of U.S. origin would not be considered all or virtually all made in the United States because the product incorporated imported raw materials depends (as would be the case with any other input) on what percentage of the cost of the product the raw materials constitute and how far removed from the finished product the raw materials are.[19] ftus, were the gold in a gold ring, or the clay used to make a ceramic tile, imported, an unqualified *Made in USA* claim for the ring or tile would likely be inappropriate.[20] ftis is both because of the significant value the gold and the clay are likely to represent relative to the finished product and because the gold and the clay are only one step back from the finished articles and are integral components of those articles. By contrast, were the plastic in the plastic case of a clock radio that was otherwise all or virtually all made in the United States found to have been made from imported petroleum, the petroleum is far enough removed from, and an insignificant enough input into, the finished product that it would nonetheless likely be appropriate to label the clock radio with an unqualified U.S. origin claim.

V. Qualifying U.S. Origin Claims

A. Qualified U.S. Origin Claims Generally

Where a product is not all or virtually all made in the United States, any claim of U.S. origin should be adequately qualified to avoid consumer deception about the presence or amount of foreign content. In order to be effective, any qualifications or disclosures should be sufficiently clear, prominent, and understandable to prevent deception. Clarity of language, prominence of type size and style, proximity to the claim being qualified, and an absence of contrary claims that could undercut the effectiveness of the qualification, will maximize the likelihood that the qualifications and disclosures are appropriately clear and prominent.

Within these guidelines, the form the qualified claim takes is up to the marketer. A marketer may make any qualified claim about the U.S. content of its products as long as the claim is truthful and substantiated. Qualified claims, for example, may be general, indicating simply the existence of unspecified foreign content (*e.g.*, "Made in USA of U.S. and imported parts") or they may be specific, indicating the amount of U.S. content (*e.g.*, "60% U.S. content"), the parts or materials that are imported (*e.g.*, "Made in USA from imported leather"), or the particular foreign country from which the parts come ("Made in USA from French components").[21]

Where a qualified claim takes the form of a general U.S. origin claim accompanied by qualifying information about foreign content (*e.g.*, "Made in USA of U.S. and imported parts" or "Manufactured in U.S. with Indonesian materials"), the Commission believes that consumers are likely to understand such a claim to mean that, whatever foreign materials or parts the product contains, the last assembly, processing, or finishing of the product occurred in the United States. Marketers therefore should avoid using such

claims unless they can substantiate that this is the case for their products. In particular, such claims should only be made where the product was last substantially transformed in the United States. Where a product was last substantially transformed abroad, and is therefore required by the U.S. Customs Service to be labeled "Made in [foreign country]," it would be inappropriate, and confusing, to use a claim such as "Made in USA of U.S. and imported parts."[22]

B. Claims about Specific Processes or Parts

Regardless of whether a product as a whole is all or virtually all made in the United States, a marketer may make a claim that a particular manufacturing or other process was performed in the United States, or that a particular part was manufactured in the United States, provided that the claim is truthful and substantiated and that reasonable consumers would understand the claim to refer to a specific process or part and not to the general manufacture of the product. ftis category would include claims such as that a product is "designed" or "painted" or "written" in the United States or that a specific part, *e.g.*, the picture tube in a television, is made in the United States (even if the other parts of the television are not). Although such claims do not expressly disclose that the products contain foreign content, the Commission believes that they are normally likely to be specific enough so as not to convey a general claim of U.S. origin. More general terms, however, such as that a product is, for example, "produced,"or "manufactured" in the United States, are likely to require further qualification where they are used to describe a product that is not all or virtually all made in the United States. Such terms are unlikely to convey to consumers a message limited to a particular process performed, or part manufactured, in the United States. Rather, they are likely to be understood by consumers as

synonymous with *Made in USA* and therefore as unqualified U.S. origin claims.

fte Commission further concludes that, in many instances, it will be appropriate for marketers to label or advertise a product as "Assembled in the United States" without further qualification. Because "assembly" potentially describes a wide range of processes, however, from simple, "screwdriver" operations at the very end of the manufacturing process to the construction of a complex, finished item from basic materials, the use of this term may, in some circumstances, be confusing or misleading to consumers. To avoid possible deception, "Assembled in USA" claims should be limited to those instances where the product has undergone its principal assembly in the United States and that assembly is substantial. In addition, a product should be last substantially transformed in the United States to properly use an "Assembled in USA" claim. ftis requirement ensures against potentially contradictory claims, *i.e.*, a product claiming to be "Assembled in USA" while simultaneously being marked as "Made in [foreign country]." In many instances, this requirement will also be a minimum guarantee that the U.S. assembly operations are substantial.

C. Comparative Claims

U.S. origin claims that contain a comparative statement (*e.g.*, "More U.S. content than our competitor") may be made as long as the claims are truthful and substantiated. Where this is so, the Commission believes that comparative U.S. origin claims are unlikely to be deceptive even where an unqualified U.S. origin claim would be inappropriate. Comparative claims, however, should be presented in a manner that makes the basis for the comparison clear (*e.g.*, whether the comparison is being made to another leading brand or to a previous version of the same product). Moreover, comparative

claims should not be used in a manner that, directly or by implication, exaggerates the amount of U.S. content in the product, and should be based on a meaningful difference in U.S. content between the compared products. ftus, a comparative U.S. origin claim is likely to be deceptive if it is made for a product that does not have a significant amount of U.S. content or does not have significantly more U.S. content than the product to which it is being compared.

D. U.S. Customs Rules and Qualified and Comparative U.S. Origin Claims

It is possible, in some circumstances, for marketers to make certain qualified or comparative U.S. origin claims (including claims such as that the product contains a particular amount of U.S. content, certain claims about the U.S. origin of specific processes or parts, and certain comparative claims) even for products that are last substantially transformed abroad and which therefore must be marked with a foreign country of origin. In making such claims, however, marketers are advised to take care to follow the requirements set forth by the U.S. Customs Service and to ensure, for purposes of Section 5 of the FTC Act, that the claim does not deceptively suggest that the product is made with a greater amount of U.S. parts or processing than is in fact the case.

In looking at the interaction between the requirements for qualified and comparative U.S. origin claims and those for foreign origin marking, the analysis is slightly different for advertising and for labeling. ftis is a result of the fact that the Tariff Act requires foreign origin markings on articles or their containers, but does not govern claims in advertising or other promotional materials.

ftus, on a product label, where the Tariff Act requires that the product be marked with a foreign country of origin, Customs regulations permit indications of U.S. origin only

when the foreign country of origin appears in close proximity and is at least of comparable size.[23] As a result, under Customs regulations, a product may, for example, be properly marked "Made in Switzerland, finished in U.S." or "Made in France with U.S. parts," but it may not simply be labeled "Finished in U.S." or "Made with U.S. parts" if it is deemed to be of foreign origin.

In advertising or other promotional materials, the Tariff Act does not require that foreign origin be indicated. fte Commission recognizes that it may be possible to make a U.S. origin claim in advertising or promotional materials that is sufficiently specific or limited that it does not require an accompanying statement of foreign manufacture in order to avoid conveying a broader and unsubstantiated meaning to consumers. Whether a nominally specific or limited claim will in fact be interpreted by consumers in a limited matter is likely to depend on the connotations of the particular representation being made (*e.g.*, "finished" may be perceived as having a more general meaning than "painted") and the context in which it appears. Marketers who wish to make U.S. origin claims in advertising or other promotional materials without an express disclosure of foreign manufacture for products that are required by Customs to be marked with a foreign country of origin should be aware that consumers may believe the literal U.S. origin statement is implying a broader meaning and a larger amount of U.S. content than expressly represented. Marketers are required to substantiate implied, as well express, material claims that consumers acting reasonably in the circumstances take from the representations. fterefore, the Commission encourages marketers, where a foreign-origin marking is required by Customs on the product itself, to include in any qualified or comparative U.S. origin claim a clear, conspicuous, and understandable disclosure of foreign manufacture.

Endnotes

1. 15 U.S.C. § 70.
2. 15 U.S.C. § 68.
3. 15 U.S.C. § 69.
4. 49 U.S.C. § 32304.
5. For goods from NAFTA countries, determinations are codified in "tariff shift" regulations. 19 C.F.R. § 102.
6. For a limited number of goods, such as textile, wool, and fur products, there are, however, statutory requirements that the U.S. processing or manufacturing that occurred be disclosed. *See, e.g.*, Textile Fiber Products Identification Act, 15 U.S.C. § 70(b).
7. Letter from the Commission to the Honorable John D. Dingell, Chairman, Committee on Energy and Commerce, U.S. House of Representatives (Oct. 14, 1983); *reprinted in Cliffdale Associates, Inc.*, 103 F.T.C. 110, appendix (1984).
8. 49 Fed. Reg. 30,999 (1984); *reprinted in Thompson Medical Co.*, 104 F.T.C. 648, appendix (1984).
9. ftis assumes that the brand name does not specifically denote U.S. origin, *e.g.*, the brand name is not "Made in America, Inc."
10. For example, a legal trademark consisting of, or incorporating, a stylized mark suggestive of a U.S. flag will not, by itself, be considered to constitute a U.S. origin claim.
11. 15 U.S.C. § 1451 *et seq*.
12. For purposes of this Enforcement Policy Statement, "United States" refers to the several states, the District of Columbia, and the territories and possessions of the United States. In other words, an unqualified *Made in USA* claim may be made for a product that is all or virtually all manufactured in U.S. territories or possessions as well as in the 50 states.
13. In addition, marketers should not represent, either expressly or by implication, that a whole product line is of U.S. origin (*e.g.*, "Our products are Made in USA") when only some products in the product line are, in fact, made in the United States. Although not the focus of this Enforcement Policy Statement, this is a principle that has been addressed in Commission cases both within and outside the U.S. origin context. *See, e.g., Hyde Athletic Industries*, FTC Docket No. C-3695 (consent order December 4, 1996) (complaint alleged

that respondent represented that all of its footwear was made in the United States, when a substantial amount of its footwear was made wholly in foreign countries); *New Balance Athletic Shoes, Inc.*, FTC Docket No. 9268 (consent order December 2, 1996) (same); *Uno Restaurant Corp.*, FTC Docket No. C-3730 (consent order April 4, 1997) (complaint alleged that restaurant chain represented that its whole line of thin crust pizzas were low fat, when only two of eight pizzas met acceptable limits for low fat claims); *Häagen-Dazs Company, Inc.*, FTC Docket No. C-3582 (consent order June 7, 1995) (complaint alleged that respondent represented that its entire line of frozen yogurt was 98% fat free when only certain flavors were 98% fat free).

14. fte word "parts" is used in its general sense throughout this enforcement policy statement to refer to all physical inputs into a product, including but not limited to subassemblies, components, parts, or materials.

15. It is conceivable, for example, that occasionally a product imported into the United States could have a very high proportion of its manufacturing costs be U.S. costs, but is nonetheless not considered by the U.S. Customs Service to have been last substantially transformed in the United States. In such cases, the product would be required to be marked with a foreign country of origin and an unqualified U.S. origin claim could not appropriately be made for the product.

16. In calculating manufacturing costs, manufacturers should ordinarily use as their measure the cost of goods sold or finished goods inventory cost, as those terms are used in accordance with generally accepted accounting principles. Such costs will generally include (and be limited to) the cost of manufacturing materials, direct manufacturing labor, and manufacturing overhead. Marketers should also note the admonishment below that, in determining the percentage of U.S. content, they should look far enough back in the manufacturing process that a reasonable marketer would expect that it had accounted for any significant foreign content.

17. For example, assume that a company manufactures lawn mowers in its U.S. plant, making most of the parts (housing, blade, handle, etc.) itself from U.S. materials. fte engine, which constitutes 50% of the total cost of manufacturing the lawn mower, is bought from a U.S. supplier, which, the lawn mower manufacturer knows, assembles the engine in a U.S. factory. Although most of the parts and the final

assembly of the lawn mower are of U.S. origin and the engine is assembled in the United States, the lawn mower will not necessarily be considered all or virtually all made in the United States. ftis is because the engine itself is made up of various parts that may be imported and that may constitute a significant percentage of the total cost of manufacturing the lawn mower. ftus, before labeling its lawn mower *Made in USA*, the manufacturer should look to its engine supplier for more specific information as to the engine's origin. For instance, were foreign parts to constitute 60% of the cost of producing the engine, then the lawn mower would contain a total of at least 30% foreign content, and an unqualified *Made in USA* label would be inappropriate.

18. For purposes of this Enforcement Policy Statement, the Commission considers raw materials to be products such as minerals, plants or animals that are processed no more than necessary for ordinary transportation.

19. In addition, because raw materials, unlike manufactured inputs, may be inherently unavailable in the United States, the Commission will also look at whether or not the raw material is indigenous to the United States, or available in commercially significant quantities. In cases where the material is not found or grown in the United States, consumers are likely to understand that a *Made in USA* claim on a product that incorporates such materials (*e.g.*, vanilla ice cream that uses vanilla beans, which, the Commission understands, are not grown in the United States) means that all or virtually all of the product, except for those materials not available here, originated in the United States. Nonetheless, even where a raw material is nonindigenous to the United States, if that imported material constitutes the whole or essence of the finished product (*e.g.*, the rubber in a rubber ball or the coffee beans in ground coffee), it would likely mislead consumers to label the final product with an unqualified *Made in USA* claim.

20. Nonetheless, in these examples, other, qualified claims could be used to identify truthfully the domestic processing that took place. For example, if the gold ring was designed and fabricated in the United States, the manufacturer could say that (*e.g.*, "designed and fabricated in U.S. with 14K imported gold"). Similarly, if the ceramic tile were manufactured in the United States from imported clay, the manufacturer could indicate that as well.

21. ftese examples are intended to be illustrative, not exhaustive; they do not represent the only claims or disclosures that would be permissible under Section 5 of the FTC Act. As indicated, however, qualified claims, like any claim, should be truthful and substantiated and should not overstate the U.S. content of a product. For example, it would be inappropriate for a marketer to represent that a product was "Made in U.S. of U.S. and imported parts" if the overwhelming majority of the parts were imported and only a single, insignificant part was manufactured in the United States; a more appropriate claim would be "Made in U.S. of imported parts."

22. On the other hand, that the last substantial transformation of the product takes place in the United States may not alone be sufficient to substantiate such a claim. For example, under the rulings of the U.S. Customs Service, a disposable razor is considered to have been last substantially transformed where its blade is made, even if it is thereafter assembled in another country. ftus, a disposable razor that is assembled in Mexico with a U.S.-made blade and other parts of various origins would be considered to have been last substantially transformed in the United States and would not have to bear a foreign country-of-origin marking. Nonetheless, because the final assembly of the razor occurs abroad, it would be inappropriate to label the razor "Made in U.S. of U.S. and imported parts." It would, however, likely be appropriate to label the razor "Assembled in Mexico with U.S.-made blade," "Blade made in United States, razor assembled in Mexico" or "Assembled in Mexico with U.S. and imported parts."

23. 19 C.F.R. § 134.46. Specifically, this provision provides that:

    In any case in which the words "United States," or "American," the letters "U.S.A.," any variation of such words or letters, or the name of any city or locality in the United States, or the name of any foreign country or locality other than the country or locality in which the article was manufactured or produced appear on an imported article or its container, and those words, letters or names may mislead or deceive the ultimate purchaser as to the actual country of origin of the article, there shall appear, legibly and permanently, in close proximity to such words, letters or name, and in at least a comparable size, the name of the country of origin preceded by "Made in," "Product of," or other words of similar meaning.

    In a *Federal Register* notice announcing amendments to this provision, the Customs Service indicated that, where a product has a foreign

origin, any references to the United States made in the context of a statement relating to any aspect of the production or distribution of the product (*e.g.*, "Designed in USA," "Made for XYZ Corporation, California, U.S.A.," or "Distributed by ABC, Inc., Colorado, USA") would be considered misleading to the ultimate purchaser and would require foreign country-of-origin marking in accordance with the above provision. 62 Fed. Reg. 44,211, 44,213 (1997).

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Industry Guidance of Best Practices for Addressing Seafood Fraud

Developed by a Task Force of
Better Seafood Board and
National Fisheries Institute Members

2016

NATIONAL
FISHERIES
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Industry Guidance of Best Practices for Addressing Seafood Fraud

Introduction

The following guidance, developed by a task force of Better Seafood Board and National Fisheries Institute members, is intended to outline best practices for addressing seafood fraud. The task force was composed of seafood industry members who are actively engaged in the buying, selling and processing of seafood products and are knowledgeable about current practices. The guidance provides information to help ensure that sellers are not committing fraud and helps buyers ensure they are receiving the product they want.

The guidance is organized to address four areas of fraud:

- Products are correctly labeled for weights and counts;
- Products are correctly labeled for identity and species are not substituted in any manner;
- Products are correctly labeled for country of origin; and
- Products adhere to all other labeling laws.

Additional background information is included in the four appendices which address each specific area.

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Appendix 3 – Country of Origin Labeling

(Version 04.13.2016)

Background

Country of Origin Labeling (COOL) is required under several laws. The Tariff Act of 1930 mandates country of origin labeling for all imported products, and the 2002 and 2008 Farm Bills and the 2002 Supplemental Appropriations Act mandate COOL labeling for certain agricultural commodities, including seafood. The intent of the laws was to provide consumers with additional information on which they can base their purchasing decisions. Fish and shellfish were added to COOL in 2004.

Other U.S. laws also have an indirect mandate on COOL statements. FDA's Food, Drug, and Cosmetic Act addresses misbranding of food products and the Federal Trade Commission (FTC) Act addresses false or misleading claims that a product is of U.S. origin.

USDA COOL

The Agricultural Marketing Service (AMS) of USDA acts as the regulatory agency for USDA COOL requirements as mandated by the Farm Bills. The intent of these regulations is to define when a product may be labeled as "Product of the U.S.(A.)" and require COOL labeling for products sold at retail.

"Any person" subject to be licensed as a retailer under the Perishable Agricultural Commodities Act (PACA) of 1930 must label certain commodity products for the country of origin. A "retailer" is defined as a firm with an invoice cost of fresh and frozen fruits and vegetables that exceeds $230,000 annually. Food service establishments, seafood shops and retailers selling less than the requisite amount of fruits and vegetables are exempt.

The following commodities are covered by USDA COOL:

- Fish and shellfish
- Fresh and frozen fruits and vegetables
- Meat muscle cuts and ground meats: lamb, chicken and goat (beef and pork were repealed in late 2015)
- Peanuts, pecans, macadamia nuts
- Ginseng

Provisions for fish and shellfish

The Final Rule definitions for fish and shellfish include:

- *Farm-raised fish and shellfish*
- *Wild fish and shellfish*
- *Commingled covered commodities*
- *Pre-labeled*
- *Processed food items*

Farm-raised and wild fish

Farm-raised fish and shellfish are covered and defined by regulation to include:

- Those harvested in controlled environments
    - Including ocean-ranched (e.g., penned) fish
    - Including shellfish harvested from leased beds that have been subjected to production enhancements such as providing protection from predators, the addition of artificial structures, or providing nutrients
- Fillets, steaks, nuggets, and any other flesh from a farm-raised fish or shellfish.

Wild fish and shellfish are covered and defined by regulation to include:

- Naturally-born or hatchery-originated fish or shellfish released in the wild, and caught, taken, or harvested from **non-controlled waters or beds** (An example is net-gathered fish.)
- Fillets, steaks, nuggets, and any other flesh from wild fish and shellfish

Commingling

When commingling non-processed fish and/or shellfish for retail sale that are sourced from different origins, the declaration of origin shall indicate all of the countries from which the product contained in the package are sourced as well as the method of production (farmed or wild). Processed food items are exempt from the regulations.

Pre-labeled

Pre-labeled is defined by the regulation as a covered commodity that has the commodity's country of origin and the name and place of business (at a minimum, the city, state or other acceptable locale designation) of the manufacturer, packer, or distributor on:

- The covered commodity itself,
- On the package in which it is sold to the customer, or
- On the master shipping container.

Processed food items

Processed food items are exempt from USDA COOL labeling. Processed food items include those with a change of character (except for filleting) or combined with another food component. Substantial transformation (change in character) occurs when a new and different article of commerce emerges from a process with a new name, character, or use different from that possessed by the article prior to processing.

Examples of a change in character include:

- Cooking (e.g., frying, broiling, grilling, boiling, steaming, baking, roasting) Examples include cooked shrimp, canned tuna, canned salmon, canned oysters, crab legs, and seafood medley.
- Curing (e.g., salt curing, sugar curing, drying) Examples include pickled herring.
- Smoking (hot or cold) Examples include smoked trout, smoked salmon, salmon jerky, and fish jerky.
- Restructuring (e.g., emulsifying and extruding, compressing into blocks and cutting into portions).

Examples of exempted seafood products as a result of being combined with another food component include stuffed flounder, breaded tilapia, salmon burgers, clams or mussels in tomato sauce, and Cajun catfish. Value added products are those that have one or more additional preparation step(s) that changes the nature of the product adding value at the time of sale. Examples include seafood medley, coconut shrimp, soups, stews and chowders, sauces, pates, marinated fish filets, crab salad, shrimp cocktail, and breaded shrimp.

Determining Country of Origin Labeling

The origin of the product must be determined, whether it is of U.S. origin, foreign origin, or multiple countries of origin.

When the fish or shellfish is imported and not substantially changed in the United States, another country of origin would be stated on the label such as “Product of Country X.” The label should state “From Country X, Processed in the U.S.” or something similar when the product has been imported AND then has been substantially transformed in the United States.

The U.S. country of origin label would apply only for:

- Farm-raised fish and shellfish hatched, raised, harvested, and processed in the United States,
- Wild fish and shellfish harvested in waters of the United States or by a U.S. flagged vessel, and
- Fish and shellfish that have **not** undergone substantial transformation **outside** the United States.

Method of Production

In addition to requiring country of origin, the USDA COOL regulation also requires that the "method of production" be included for fish or shellfish. **Fish and shellfish must list both the country of origin AND method of production on the label.**

The method of production refers to the manner in which the fish are raised in either controlled or non-controlled environments.

Acceptable terms on the label for method of production include:

- Farm-raised
- Farmed
- Wild-caught
- Wild

Terms not acceptable on the label for method of production include:

- Ocean caught
- Line caught
- Farmed in the wild
- Fresh water caught
- Fresh land raised

COOL Final Rule References (Final Rule 7 CFR Part 60)

- Farm-raised fish and shellfish – CFR Part 60.106
- Wild fish and shellfish – CFR Part 60.133
- Commingled Covered Commodities – CFR 60.103
- Pre-labeled – CFR Part 60.118
- Processed Food Item – CFR 60.119

U.S. Customs Rules of Origin

Processed food items are generally exempt from USDA AMS COOL regulations but are not exempt from U.S. Customs requirements. All products, including processed foods that enter the United States as such must be marked with the Country of Origin. Processed foods made in the United States may be exempt from COOL requirements but Customs marking requirements will apply if they are processed in the United States from imported ingredients. If the covered commodity undergoes a substantial transformation after arriving in the United States, then the foreign origins would not need to be marked. If the product is simply repackaged, the country of origin at the time of import would need to be stated on the label.

Example: Alaska flounder shipped to Thailand for filleting becomes a product of Thailand. Russian sockeye salmon filleted in the United States may be labeled without any customs requirement for foreign origin declaration, but would still be subject to USDA AMS COOL labeling requirements, e.g. “Product of Russia, Processed in USA”.

U.S. Customs regulations on what constitutes “substantial transformation” can be complex. The agency maintains a searchable database on official rulings. Companies are encouraged to understand past rulings for seafood products. The database is available at: http://rulings.cbp.gov/.

Some examples of past rulings related to substantial transformation include:

Product	Processing Steps Taken	Ruling by U.S. Customs	Reference
Headed and gutted fish	Thawing, skinning, boning, trimming, freezing and packaging to become quick-frozen fillets	Ruled as substantial transformation because of a change of the appearance and quality	CROSS Ruling: NY 851778
Shrimp	Beheading, peeling, de-veining, freezing, repackaging	Not a substantial transformation	CROSS Ruling: N247131
Shrimp	Peeling, de-veining and repackaging foreign-origin shrimp	Not a substantial transformation	CROSS Ruling: HRL 731472

Product	Processing Steps Taken	Ruling by U.S. Customs	Reference
Shrimp	Freezing and packaging headed (without heads) shrimp	Not a substantial transformation	CROSS Ruling: HQ 563123
Crab	Thawing, sorting, blending with domestic product, canning and pasteurization	Not a substantial transformation	CROSS Ruling: HQ 732337
Crab	Crab meat was not largely or wholly removed from the shell	Not a substantial transformation	CROSS Ruling: HRL 109504
Crab	Blending foreign crab meat with U.S. crab meat	Not a substantial transformation	CROSS Ruling: HQ 561208
Crab	Cleaning, cutting the legs from the body, boiling, blast freezing and packaging	Not a substantial transformation	CROSS Ruling: HQ 560322
Calamari (squid)	Imported frozen, raw calamari (squid) tenderized in the United States	Not a substantial transformation	CROSS Ruling: N107816

FTC "Product of USA" or "Made in the USA"

The use of "Product of USA" or "Made in the USA" statements are subject to Federal Trade Commission (FTC) rules. According to the FTC and "Made in the USA" standards, the product must "all or virtually all" be made in the USA, with only a negligible amount of foreign material ingredients.

Claims for "Made in the USA" can be either express or implied. The Federal Trade Commission considers that, "depending on the context, U.S. symbols or geographic references (for example, U.S. flags, outlines of U.S. maps, or references to U.S. locations of headquarters or factories) may convey a claim of U.S. origin either by themselves, or in conjunction with other phrases or images. The Commission is not likely to interpret the mere listing of a company's U.S. address on a package label in a

non-prominent way as a claim of U.S. origin." (https://www.ftc.gov/tips-advice/business-center/guidance/complying-made-usa-standard)

Additional information on the FTC compliance guidelines can be found at: https://www.ftc.gov/tips-advice/business-center/guidance/complying-made-usa-standard and https://www.ftc.gov/tips-advice/business-center/guidance/complying-made-usa-standard.

FDA Geographical Label Designations

The U.S. Food and Drug Administration allows the use of geographical label designations as long as they are truthful representation of the origins of the food. FDA regulations 21 CFR 101.18 defines the **misbranding** of food as:

> ***(c)*** *Among representations in the labeling of a food which render such food misbranded is any representation that expresses or implies a geographical origin of the food or any ingredient of the food except when such representation is either:*
>
> > ***(1)*** *A truthful representation of geographical origin.*
> >
> > ***(2)*** *A trademark or trade name provided that as applied to the article in question its use is not deceptively misdescriptive. A trademark or trade name composed in whole or in part of geographical words shall not be considered deceptively misdescriptive if it:*
> >
> > > ***(i)*** *Has been so long and exclusively used by a manufacturer or distributor that it is generally understood by the consumer to mean the product of a particular manufacturer or distributor; or*
> > >
> > > ***(ii)*** *Is so arbitrary or fanciful that it is not generally understood by the consumer to suggest geographic origin. (e.g., "Moon Pie")*
> >
> > ***(3)*** *A part of the name required by applicable Federal law or regulation.*
> >
> > ***(4)*** *A name whose market significance is generally understood by the consumer to connote a particular class, kind, type, or style of food rather than to indicate geographical origin. (e.g., "Country Fried Fish")*

Appendix 4 – Label Claims

(Version 08.01.2016)

Introduction

Labels provide needed information for consumers to make informed decisions. U.S. laws, as well as individual state laws, mandate certain information that must be on labels. Additional information may be provided on the product label, but it is important that all label statements and claims be truthful and not misleading.

Labeling requirements are defined by:

- Fair Packaging and Labeling Act
- Food Drug and Cosmetic Act
- FDA regulations
- State laws and regulations

In the United States, the federal Food and Drug Administration (FDA) regulates food labels and labeling.[1] FDA has also taken the position that information about a food conveyed on a website, under defined circumstances, may be regulated as labeling rather than considered as advertising. By listing a seller's website on the label, all statements made on the website are therefore considered to be part of the label.[2]

For example, if a company promotes a food on its website and allows customers to order directly from the website, the website information would likely be considered as labeling. In contrast, information presented on a third-party website and similar to what FDA has generally considered as advertising would not be considered to be labeling.

[1] Note: Siluriformes fish (catfishes) are under the regulatory jurisdiction of USDA Food Safety and Inspection Service (FSIS) and may have different labeling requirements. For example, FSIS safe handling instructions and establishment number and inspection legend will be required on master packaging for food service items and individual packaging for retail sales. The USDA FSIS labeling requirements are defined by the Federal Meat Inspection Act and FSIS regulations.

[2] FDA has stated "in certain circumstances, information about FDA-regulated products that is disseminated over the Internet by, or on behalf of, a regulated company can meet the definition of labeling in section 201(m) of the FDCA" in its response from the Associate Commissioner for Policy to the Washington Legal Foundation regarding a petition denial. https://www.regulations.gov/document?D=FDA-2001-P-0321-0003

Required Label Elements

Food label regulations are enforced by FDA and dictate the type of information that must be on the label and where the label can be placed on the package. In addition, some states may enforce labeling laws which in some cases may require additional components. Before printing labels, make sure you have met all labeling requirements. All food packages must display the following information:

- Name of the food
- Net quantity of contents
- Name and location of the food business
- List of ingredients including allergens in accordance with Food Allergen Labeling and Consumer Protection Act (FALCPA) requirements, and
- Nutrition Facts Panel (for packaged products sold at retail).

It is common to have two distinct label areas on the container, the principal display panel (PDP) and the information panel that includes all of the required information. The name of the food and the net quantity of contents are required to be on the principal display panel. The remaining three items may be provided on the information panel.

The net quantity statement gives the actual weight, volume, or number of pieces of food in the package and should be located on the bottom 30 percent of the PDP. Weights and volumes must be displayed in both U.S. and metric units--for example, 1 lb 8 oz (680 g) or 1 gal (3.79 L).[3]

Product Name and Ingredient Statements

Product names and ingredients listed on the label must fall within guidelines established by FDA.

- Guidance from FDA on food labeling and naming is available at: http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm064872.htm
- Guidance from FDA on ingredient lists is available at: http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm064880.htm
- All ingredients, even additives and dips such as phosphates and other moisture

[3]FDA regulations allow for an exemption for net weight labeling of products with non-uniform weight. More information on this exemption is provided in the Appendix for Net Weight Determination for Seafood.

retention agent (MRA) ingredients, must be listed in the ingredient statement.

Some examples of fish mislabeling related to required label elements, according to FDA, include:

- *Inaccurate food weight or including the ice glaze as part of the weight*
- *Undeclared preservatives or color treatments*
- *Undeclared moisture retention agents (MRAs)*
- *Undeclared added water*
- *Species substitution*
- *Labeling salad containing surimi as "crab" salad*
- *Short-weights*
- *Color enhancements*

Unfortunately, the principal reason for mislabeling is financial gain, i.e., economic fraud. If an acceptable market name is not used, FDA may consider the product mislabeled. Product labeling and invoices should be reviewed regularly for accuracy to monitor and prevent fraud.

The FDA *Seafood List* found at http://www.accessdata.fda.gov/scripts/fdcc/?set=seafoodlist lists acceptable market names for fish sold in interstate commerce and *Appendix 2 - Seafood Names* provides guidance on using the list.

Voluntary Label Statements and Claims

Each statement or claim used should be truthful and not misleading to avoid misbranding the product. Some claims, such as "low fat" have specific regulatory requirements while other claims, such as "raised without antibiotics" or "chemical free," should be evaluated so as to be truthful, not misleading and not disallowed. Examples of potentially misleading voluntary label statements and claims include:

Fresh

Care should be taken when using the term "fresh." The term implies the food is unprocessed and

- In a raw state
- Has not been frozen or subjected to any form of thermal processing, and

- Has not been subjected to any other form of preservation, e.g., smoking or pickling.

The terms “fresh frozen” or “frozen fresh” may be used when the food was quickly frozen while still fresh. These terms can be used on retail packaging for frozen seafood as long as they can be substantiated by processing guidelines and documented.

“Previously frozen” refers to product that has been frozen and thawed and then sold in a thawed state. In this case, it must be labeled as “previously frozen.” The use of these terms are regulated by 21 CFR (Code of Federal Regulations) 101.95 may be found at: http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/cfrsearch.cfm?fr=101.95.

All Natural

The “all natural” claim can be confusing for both marketers and consumers because the phrase has not been defined by FDA for regulatory purposes. However, FDA adheres to the policy that the agency will not object to the use of “all natural” if the food does not contain:

- Added color (of any type, whether natural or artificial)
- Artificial flavors, or
- Synthetic substances

FDA’s definition does not include the words “minimally processed” but the USDA FSIS definition includes the phrase “the product and its ingredients are not more than minimally processed.”

Fat Free or Low Fat

Low fat claims in food are defined by regulation (21 CFR 101.62). “Low fat” is considered to be an expressed Nutrient Content Claim while “healthy, contains 2 g of fat” is considered an implied Nutrient Content Claim. In order to meet fat content claims, the following criteria must be met, according to 21 CFR 101.62:

> The terms “fat free,” “free of fat,” “no fat,” “zero fat,” “without fat,” “nonfat,” “trivial source of fat,” “negligible source of fat,” or “dietarily insignificant source of fat” may be used on the label or in labeling of products, provided that:
>
> (i) The product contains less than 0.5 gram (g) of fat per reference amount customarily consumed and per labeled serving size or, in the case of a meal-type product or a main-dish product, less than 0.5 g of fat per labeled serving size;

(ii) The product contains no added ingredient that is a fat or is generally understood by consumers to contain fat unless the listing of the ingredient in the ingredients statement is followed by an asterisk that refers to the statement below the list of ingredients, which states: “Adds a trivial amount of fat,” “adds a negligible amount of fat,” or “adds a dietarily insignificant amount of fat”; and

(iii) If the product meets these conditions without the benefit of special processing, alteration, formulation, or reformulation to lower the fat content, it is labeled to disclose that fat is not usually present in the food (e.g., “broccoli, a fat free food”).

Omega-3

Care should be taken when including implicit nutrient content claims. A statement such as “contains DHA and EPA Omega-3” implies that the food is a good source of omega-3 fatty acids and is not allowed. Rather, a statement such as “contains X mg of DHA and EPA Omega-3s” is stating a fact and not a nutrient content claim, and therefore allowed.

Chemical-Free

The term “chemical free” is a misleading claim and should not be used on a food label because it implies a product is better than another when all food products are made up of chemicals of some sort. This mislabeling claim is sometimes used to imply that a non-phosphate blend used to retain moisture is preferred over using a phosphate blend. Non-phosphate blends are added ingredients and are required to be listed in the ingredient statement. Labels may cite specific chemicals or additives that are purposely not included, e.g. “no MSG.”

No Preservatives

A label may not claim that a food item “contains no preservatives” or is “preservative free” if it does, in fact, contain “any chemical that, when added to food, tends to prevent or retard deterioration thereof, but does not include common salt, sugars, vinegars, spices or oils extracted from spices, substances added to food by direct exposure thereof to wood smoke, or chemicals applied for their insecticidal or herbicidal properties,” according to 21 CFR 101.22, which may be found at https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/cfrsearch.cfm?fr=101.22. All food ingredients should be stated on the label. Some food ingredients may perform different functions depending on how they are used. A “No preservative” claim should be carefully considered.

No Antibiotics or Antibiotics Free

The statement “raised without antibiotics” would be appropriate for aquacultured species only. A statement claiming “no antibiotics” or “antibiotics free” would be misleading for a food item for which no antibiotics have been approved (e.g., shrimp) or are not used as with wild caught species. In this case, for the statement for shrimp to not be misleading, it would need to state that the product was “raised without antibiotics” qualified by a statement such as “FDA has not approved antibiotics for use in raising shrimp.”

Phosphate Free

Phosphates are used in foods as direct additives to retain moisture and protect the flavor. All ingredients must be stated on the label. A phosphate-free claim on a seafood product would be misleading because seafood naturally contains phosphates. A non-misleading claim would be “No added phosphates.” Proper labeling for non-phosphate blends would fall under the section for “chemical free labeling.”

Sustainably Raised or Harvested

Sustainability is a subjective term. When making a claim of sustainability, it must be supported by documentation or certification. Some independent groups have developed standards for sustainability certification for seafood.

Nutrient Content Claims

Nutrient content claims are covered by FDA in 21 CFR 101.13 which may be found at: https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=101.13.

FDA guidance about label claims for conventional foods and dietary supplements may be found at:
http://www.fda.gov/food/ingredientspackaginglabeling/labelingnutrition/ucm111447.htm.

This information covers:

- Health claims, including Nutrition Labeling and Education Act Authorized Health Claims, Health Claims Based on Authoritative Statements and Qualified Health Claims
- Nutrient Content Claims
- Structure Function Claims and Related Dietary Supplement Claims

Additional guidance may be found in Guidance for Industry: A Food Labeling Guide (10. Appendix B: Additional Requirements for Nutrient Content Claims) at:

http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm064916.htm.

Made in the USA

The use of “Product of USA” or “Made in the USA” statements are subject to Federal Trade Commission (FTC) rules. According to the FTC and “Made in the USA” standards, the product must “all or virtually all” be made in the USA, with only a negligible amount of foreign material ingredients.

Claims for “Made in the USA” can be either expressed or implied. The FTC considers, “depending on the context, U.S. symbols or geographic references (for example, U.S. flags, outlines of U.S. maps, or references to U.S. locations of headquarters or factories) may convey a claim of U.S. origin either by themselves, or in conjunction with other phrases or images. The Commission is not likely to interpret the mere listing of a company’s U.S. address on a package label in a non-prominent way as a claim of U.S. origin.” (https://www.ftc.gov/tips-advice/business-center/guidance/complying-made-usa-standard)

Additional information on the FTC compliance guidelines can be found at: https://www.ftc.gov/tips-advice/business-center/guidance/complying-made-usa-standard and https://www.ftc.gov/tips-advice/business-center/guidance/complying-made-usa-standard.

Starkist defends ‘Made in America’ tuna claim

By JeaThiThe Stewart

Aug. 6, 2013 16:51 GMT

Credit: Commons.wikimedia.org

Starkist’s claim that its new brand of tuna is 'Made in America' elicited some questioning tweets from tuna company American Tuna and US seafood enthusiast Jonathan Gonzalez recently.

“What’s up with the new StarKist Made in America label,” Jonathan Gonzalez, a US seafood blogger who is seeking a position on one of the Pacific Fishery Management Council's (PFMC) subpanels, tweeted on Friday.

“Foreign flag vessels, using who knows what gear type, no traceability, canned in Samoa. Hilarious,” replied American Tuna, a US seafood company that fishes and cans albacore from the North Pacific.

The exchange was directed at Starkist’s launch of 'Made in America'-labeled 12 ounce cans of "chunk light" tuna in mid-July, to celebrate its 50th anniversary in American Samoa.

Is Starkist's product made America?

Starkist, a US subsidiary of the Korea-based tuna giant Dongwon, runs up against a key requirement in the US Federal Trade Commission (FTC)’s Bureau of Consumer Protection’s requirements for complying with the "Made in USA" standard.

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According to the FTC, a product should be “all or virtually all” made in the United States in order to be an accurate “Made in USA” claim. That means if the raw material makes up a significant part of the product's worth, the raw material must be of US origin. A gold ring, for instance, is not Made in the USA if the gold is not from the US, says the FTC. It also means the processing must be done in the US.

Under this regulation, goods produced in US territories including American Samoa, are entitled to the Made in USA label.

"The select Starkist products branded as Made in America adhere to Made in America labeling requirements as they only contain fish from US flagged vessels and are produced in American Samoa, a US territory," Starkist's corporate affairs director Mary Sestric told *Undercurrent* in an email.

Sestric added that Starkist's "Made in America" fish is caught in US waters as well as other parts of the South Pacific.

While it may seem important to know whether the majority of the fish is caught -- in US waters or outside of them -- it is not, as far as the US government is concerned. As long as a US-flagged vessel catches the fish, the US government considers it to be US fish, Peter Flournoy, a lawyer for commercial marine harvesters, told *Undercurrent*. This includes fish caught outside of US waters, he said.

Safe from questioning?

If Starkist's claims are correct, the brand's "Made in America" claim is accurate by US law.

If uncertainty arises on whether their claims are in fact accurate, the Food and Drug Administration (FDA) would be tasked with investigating the claim, although it is not clear what criteria it would use.

"FDA has not defined 'Made in America', but when evaluating such a statement, FDA would consider its general misbranding provisions that state that a label cannot be false or misleading," a spokesperson for the FDA told *Undercurrent*. "FDA considers the particular circumstances involved when making a determination as to whether or not a food is properly labeled."

It is not clear whether the FDA would turn to the US Federal Trade Commission (FTC)'s guidelines on such a case, but for the purposes of considering whether a brand is Made in America, *Undercurrent* finds it helpful to consider the FTC's guidelines on what it takes to be considered "Made in USA", which are mapped out clearly on its website.

Canned tuna does not have as strict of labelling laws as fresh and frozen seafood, which are subject to the Country of Origin Labeling (COOL) requirement, enforced by the US department of agriculture (USDA), sources told *Undercurrent*.

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Gonzalez, the blogger who called into question the brand's integrity on Twitter, hopes Starkist's claim gets investigated.

"I do believe the government should find out if Starkist's Made in America tuna is in fact caught by US flagship vessels," Gonzalez told *Undercurrent*. "Just like I believe the government should make the COOL [Country of Origin Labelling] program mandatory for all canned tuna brands."

Negligible Impact on competitors

The Western Fishboat Owners Association (WFOA) fishes albacore on the US west coast, catching on average 15,000 metric tons in June through October.

It would seem that Starkist's Made in America chunk light tuna would go head to head in competition with Wild Planet Foods and American Tuna, which provide albacore caught from the US west coast.

But Wayne Heikkila, executive director of WFOA, said that competition is not likely to develop since it uses albacore, whereas Starkist uses, skipjack.

"I don't think it hurts us because it's a whole different species — it's white meat," Heikkila said. "We'd probably make a fuss about it if they did albacore, but skipjack is caught in the Western Pacific Ocean and Indian Ocean — we don't really have cross-marketing. They're so different."

Bumble Bee's introduction of Marine Stewardship Council (MSC) certified albacore tuna, however, is a target for the WFOA members, who hope to gain a piece of that pie. The product is currently Fijian albacore, which just gained MSC certification; but West Coast albacore would suit the brand as well, since it is also MSC certified, said Heikkela.

Currently, 70% of WFOA's members' catch volume gets shipped overseas, largely to Europe and Japan, where customers have a preference for tuna with high oil content.

WFOA has increased its domestic sales from 10% ten years ago to 30% today, and it hopes to increase it more. But for now, most tuna caught directly off the US west coast is sent overseas while "Made in America" tuna gets shipped in from a US territory.

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Nutritional OUTLOOK

Substantiating "Made in USA" Claims for Dietary Supplements

By John E. Villafranco

Thursday, August 15, 2013

Magazine, Magazine

Like other product beneft claims, the Federal Trade Commission (FTC) has jurisdiction to act against deceptive acts and practices over any U.S. origin claim (e.g., “Made in USA”) that is expressly or impliedly conveyed in product labeling or advertising. U.S. origin claims can be conveyed not only by statements regarding the domestic origin of products and product components, but through the use of U.S. symbols, geographic references, or other symbols or statements that suggest a connection between the product and domestic origin (e.g., U.S. fags, outlines of U.S. maps, patriotic symbols, etc.). A U.S. origin claim, like any other objective advertising claim, must be truthful and substantiated.

In order to make an *unqualifed* U.S. origin claim, the FTC has long held that an advertiser must “possess and rely upon a reasonable basis that the product is in fact all or virtually all made in the United States.”[1] The FTC has issued guidance regarding how it will apply this standard, but the guidance is heavily focused on electronics, tools, sports equipment, household appliances, and other products with

manufacturing processes that are very different from the manufacturing processes for dietary supplements;[2] therefore, it may be more diffcult for dietary supplement companies to determine whether a U.S. origin claim will be considered deceptive.

FTC's Standard for "Made in USA" Claims

The "all or virtually all" standard for unqualifed U.S. origin claims has three essential requirements: (1) the last substantial transformation must have taken place in the United States; (2) the fnal assembly or processing, except for *de minimis* fnishing, must have taken place in the United States; and (3) the amount of foreign content must be negligible or non-existent.

If a product is not "all or virtually all made in the United States," advertisers can still make claims regarding U.S. origin for certain components, processes, or both, provided the claim is "adequately qualifed to avoid consumer deception about the presence or amount of [U.S. or] foreign content."[3] These *qualifed* claims may be general, indicating simply the existence of unspecifed foreign content (e.g., "Made in USA of U.S. and Imported Ingredients"), or more specifc to limit the claim to specifc components or processes (e.g., "60% U.S. content," "Made in USA from Imported Leather," "Made in France from U.S. Ingredients," "Packaged in USA").

Substantial Transformation

"Substantial transformation" is a term used by the U.S. Customs and Border Protection (CBP) to determine the country of origin. Under the Tariff Act of 1930, imported goods, including dietary supplements, must be marked with a foreign country of origin (e.g., "Made in China").[4] When an imported product contains components or ingredients from more than one country, the country of origin is determined to be the country where the last "substantial transformation" took place. Substantial transformation is defned as a "manufacturing process that results in a new and different product with a new name, character, and use that is different from that which existed before the change."[5] Determining where a product was last substantially transformed is very fact-specifc and will be made on a case-by-case basis by the CBP. The FTC has advised that advertisers should check with the CBP to determine if their product should be marked with a foreign country of origin.

Where U.S. processing does not substantially transform a product, an advertiser may be able to make a qualifed U.S. origin claim; but in order to use a statement that implies general U.S. origin, even if the statement is qualifed to explain that some components are imported (e.g., "Made in USA of U.S. and Imported Ingredients"; "Assembled in USA of Imported and Domestic Ingredients"), the FTC has stated that the product must have undergone its last substantial transformation and its fnal assembly or processing in the United States. The FTC considers terms such as "manufactured" and "produced" to also convey general U.S. origin. Dietary supplement companies whose products were not last substantially transformed in the United States could explain the specifc processes that took place in the United States (e.g., "Bottled in the U.S. from Imported Ingredients"; "Encapsulated in the U.S. from Imported Ingredients") or the

specifc amount of U.S. content (e.g., “60% U.S. content”).

On the other hand, if a product is last substantially transformed in the United States, the FTC has indicated that a general U.S. origin claim that discloses the presence of imported content (and does not overstate the amount of U.S. content), such as “Made in USA of Imported Ingredients,” would be appropriate—even for products with a minimal amount of U.S. components.[6] Thus, for dietary supplement products that undergo substantial processing in the United States, an advertiser likely can still make a fairly broad claim touting the amount of U.S. processing because of the signifcant manufacturing and assembly work that took place in the United States.

Final Assembly or Processing

In addition to the requirement that a product must be last substantially transformed in the United States, the FTC has indicated that an unqualifed “Made in USA” claim for a product is deceptive if that product undergoes its last assembly or processing (beyond *de minimis* fnishing processes) outside of the United States.[7] For example, the FTC has stated that for a disposable razor, where the blade and other parts are made in the United States, but the fnal screwdriver assembly takes place abroad, an unqualifed “Made in USA” claim would not be appropriate.[8] Based on this example, it is likely that the FTC could fnd an unqualifed “Made in USA” claim deceptive where fnal bottling of a dietary supplement, for example, took place abroad—even where other processing and ingredients are of domestic origin. A qualifed claim still could be made regarding the extent of the U.S. content, such as “Finished in [name of country] with U.S. Ingredients.”

Domestic Content

The third prong of the FTC’s “all or virtually all” standard to make an unqualifed U.S. origin claim requires that the amount of foreign content must be negligible or non-existent. Important factors in determining the amount of foreign content include the following: (1) the proportion of the product’s total manufacturing costs that are attributed to U.S. parts/ingredients or processing; and (2) the remoteness of foreign content from the fnished product.

To calculate manufacturing costs, advertisers should use generally accepted accounting principles and can include the total cost of all manufacturing materials, direct manufacturing labor, and manufacturing overhead in the calculation.[9] Advertisers should look far enough back in the manufacturing process to be reasonably sure that any signifcant foreign content is included in the assessment of costs.[10] For dietary supplements, this will generally require advertisers to know not only the origin of the ingredients they acquire to make fnished dietary supplements, but also the origin of the sub-components of those ingredients.

The FTC has recognized that where a raw material is not indigenous to the United States or available in commercially signifcant quantities, an unqualifed “Made in USA” claim could still be made because

“consumers are likely to understand that a ‘Made in USA’ claim on a product that incorporates such materials means that all or virtually all of the product, except for those materials not available here, originated in the United States.”[11] For example, the FTC has indicated that this exception may apply to the vanilla beans in vanilla ice cream; thus, a vanilla ice cream product could be marketed with an unqualifed “Made in the USA” claim if all or virtually all other components are of U.S. origin.[12] But, the FTC also has cautioned that this consideration is not applicable where the imported raw material “constitutes the whole or essence of the fnished product (e.g., the rubber in a rubber ball…).”[13]

This exception to the FTC’s “all or virtually all” standard appears to only apply to the amount of domestic content, not the substantial transformation test; thus, if a product is not last substantially transformed in the United States, the FTC would still consider an unqualifed “Made in USA” claim to be inappropriate. Given these limitations, this guidance is most helpful for advertisers whose dietary supplement products are last substantially transformed in the United States and contain multiple ingredients—all of which are of domestic origin except for one or two ingredients that cannot be produced domestically. While not stated in FTC’s guidance, it would be advisable to possess evidence that an ingredient is not available domestically, or only available in limited quantities, to help defend a claim if challenged.

There is no bright-line rule regarding the amount of foreign content that the FTC will consider too high to support an unqualifed “Made in USA” claim, but the FTC has indicated that this type of claim for a product with at least 15 to 20% foreign content would not be appropriate.[14] As discussed above, if a product does not meet the domestic content standard for an unqualifed U.S. origin claim, an advertiser still may be able to make a qualifed U.S. origin claim.

Other Considerations

When making a U.S. origin claim, advertisers should not forget the effect of state law on their marketing practices, as U.S. origin claims could trigger consumer class actions under state consumer protection statutes or state enforcement. While most states follow a standard that is similar to the FTC, California has created a standard that is even more stringent than the FTC’s “all or virtually all” standard. California prohibits unqualifed “Made in USA” claims “when the merchandise or any article, unit, or part thereof, has been entirely or substantially made, manufactured, or produced outside of the United States.”[15] Companies should account for compliance, not only with FTC standards, but with standards that are more stringent under state law.

References

1. Federal Trade Commission, “Enforcement Policy Statement on U.S. Origin Claims,” December 1997, at 63756, 63768, http://www.ftc.gov/os/1997/12/epsmadeusa.htm. In addition to the 50 states and the District of Columbia, the product may be made in U.S. territories or possessions.

2. FTC Bureau of Consumer Protection, “Complying with the Made in USA Standard,” December 1998, http://business.ftc.gov/documents/bus03-complying-made-usa-standard.
3. FTC, “Enforcement Policy,” at 63769.
4. 19 U.S.C. 1304, “Marking of Imported Articles and Containers,” Washington, DC: Government Printing Offce, 2006.
5. FTC Bureau of Consumer Protection, “Complying with the Made in USA Standard,” at 15.
6. FTC Bureau of Consumer Protection, “Complying with the Made in USA Standard,” at 10. (Explains that a treadmill that is made almost entirely of foreign parts, but where those parts underwent signifcant processing to be last substantially transformed in the United States, could be marketed as “Made in U.S. from Imported Parts”).
7. FTC, “Enforcement Policy,” at 63678.
8. FTC, “Enforcement Policy,” at 63770, n. 120.
9. FTC Bureau of Consumer Protection, “Complying with the Made in USA Standard,” at 7.
10. FTC, “Enforcement Policy,” at 63679.
11. FTC, “Enforcement Policy,” at 63679, n. 117.
12. FTC, “Enforcement Policy,” at 63679, n. 117.
13. FTC, “Enforcement Policy,” at 63679, n. 117.
14. FTC Bureau of Consumer Protection, “Complying with the Made in USA Standard,” at 14.
15. California Business & Professions Code 17533.7. See e.g., Kwikset Corp. v. Superior Court, 52 Cal. 4th 310, 317-318 (2011), fnding that various lock sets were deceptively advertised as “Made in USA” because the products “either contained screws or pins made in Taiwan or involved latch subassembly performed in Mexico.”

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Food nutrition facts labels – “Made in the USA”

By KAREN DUESTER | *Published:* JULY 10, 2012

Creating food nutrition facts labels and other label copy to comply with the “Made in USA” standard is not as straightforward as it may seem. There are regulations that make clear when and where you can say “Made in the USA” on food labels. When ingredients are sourced and manufacturing takes place in the USA, the impact for food nutrition facts labels and other label copy is pretty straightforward. But what are the implications for food nutrition facts labels and other label copy if ingredients are foreign sourced but the formula is manufactured in the USA? What if the majority of food components are from the USA?

Clear and informative food nutrition facts labels“Made in USA” is considered to be a marketing claim that applies to products and food labels, advertising, and other promotional materials. FTC (and not FDA) regulates this U.S. origin claim to prevent deception and unfairness on food labels and packaging in the marketplace.
To include “Made in USA” or “Product of USA” on food labels, FTC has required that the product be “all or virtually all” made in the U.S. The term U.S. includes the 50 states, the District of Columbia, and the U.S. territories and possessions, such as Puerto Rico, Guam or the Mariana Islands.

When products contain foreign components but are packaged or assembled in the U.S. the concept of “substantial transformation” becomes relevant for food nutrition facts labels and other food label copy. U.S. “Substantial transformation” occurs when a new article emerges with a new name, use and character. For example, coffee beans that are imported from Brazil but ground, flavored and packaged in the U.S. can include “Product of USA” on the food label.

Here are some additional nuances to keep in mind when contemplating the “Made in USA” or “Product of USA” claim for your food labels. See FTC’s “Complying with the Made in USA Standard” for more information.
• “All or virtually all” means that all significant parts and processing that go into

the product must be of U.S. origin. The product should contain no – or negligible – foreign content.
• The food product's final processing must take place in the U.S.
• Consider the overall impression of the food labels or advertising. Symbols or images such as the U.S. flag or outline of the U.S. map may imply a made in the U.S. claim.

Separate and distinct regulations for food nutrition facts labels in Canada

The Canadian corollary to "Made in USA" and "Product of USA" is "Product of Canada" on food labels is covered by separate Canadian regulations. "Product of Canada" can be claimed on food labels if all major ingredients originate in Canada and non-Canadian ingredients total less than 2%. Canadian products of domestic and foreign materials may say "Made in Canada from imported ingredients" or "Made in Canada from domestic and imported ingredients" (but cannot claim "Product of Canada" on the food label) provided the last "substantial transformation" of the product took place in Canada. Other truthful Canadian processing claims such as "packaged", "prepared", "processed", "refined", "roasted", "distilled", "canned" may also be made.

About the author

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Karen Duester founded Food Consulting Company in 1993 to deliver nutrition analysis, and food nutrition facts labels, and food labels regulatory support to ensure 100% compliance with FDA regulations. With over 1,500 clients worldwide, Food Consulting Company functions as the virtual food label department for start-up and established food manufacturers, distributors, food importers, brokers, and restaurateurs. The company's promise is to deliver accurate, timely service providing everything that's needed to go from recipe to retail – all with the confidence that it's done right. Company information and a free email newsletter are available at http://www.foodlabels.com.

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« *Food nutrition facts labels – Reducing your regulatory risk*

Food label nutrition facts – 5 Food label mistakes rookies make »

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Exhibit *2*

WILLINGNESS TO PAY FOR IMPORTED BEEF AND RISK PERCEPTION: AN APPLICATION OF INDIVIDUAL-LEVEL PARAMETER

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Willingness to Pay for Imported Beef and Risk Perception: An application of Individual-Level Parameter

Abstract

The controversy surrounding the Mandatory Country-of-Origin Labeling (COOL) has attracted research attentions. A number of studies have reported consumers are willing to pay more for beef labeled with U.S. origin versus beef from unknown or other origins. Despite that, relatively little is known about what motivates consumers' preference for origin-labeled food products (Lusk et al 2006). Using Individual-Level Parameters following a mixed logit model, we found that U.S. consumers were willing to pay significantly less for imported steak from Australia and Canada compare to U.S. steak. Further, we found that the negative willingness to pay is associated strongly with consumers' perception of food safety on the exporting country.

Keywords: beef, country of origin, mixed logit, individual-level parameters, stated choice experiment

JEL Code: Q13, Q18

Introduction

The controversy surrounding the Mandatory Country-of-Origin Labeling (COOL) has attracted research attentions. A number of studies have reported consumers are willing to pay more for beef labeled with U.S. origin versus beef from unknown or other origins. Despite that, relatively little is known about what motivates consumers' preference for origin-labeled food products (Lusk et al 2006).

Background on COOL

The Country-of-Origin-Labeling provision of the 2002 and 2008 Farm Bill caused a stir in food exporting nations to the United States. The final ruling effective on March 16, 2009, requires information regarding country of origin to be labeled on a number of fresh food including vegetables, fruits and meat. On beef, the law mandates only products derived from cattle born, raised, and processed in the U.S. can be labeled

as U.S. origin (USDA 2009). The law, in essence, differentiates imported beef from domestic beef at the retail level, which could have widespread consequences on demand of imported food. This prompted the governments of Canada and Mexico to challenge the legitimacy of COOL in accordance with the World Trade Organization's principle of *national treatment* (Suppan 2009).

The importance of the U.S. market for many beef exporting countries cannot be understated. The exports to the U.S. market account for about 30% total beef and veal production of Canada, New Zealand and Nicaragua. Cattle exports from Canada and Mexico were almost exclusively destined to the U.S. market (USDA 2010). Trade representatives of Canadian cattle and beef industry claimed the law is "devastating the Canadian livestock industry" and could result in a "glut of meat on store shelves in Canada" (Wyld 2009). The probable adverse effects of COOL are paramount to the welfare of Canadian ranchers and beef exporters.

Proponents of COOL argue that consumers have a right to know where food comes from. With COOL, consumer can use the information to infer quality and safety of the products. Some domestic producers also maintain that COOL may reduce search cost of those preferred or wanted to support domestic food products (Lusk et al 2006). Because origin of food products is a credence attribute, without COOL, supports contended that consumers who wish to consume domestic food products could not do so, because they lack the necessary information regarding the origin of the product. Under these conditions, the absence of a country-of-origin labeling law could be made a case for market failure (Caswell 1998; Darby and Karni 1973).

Critics of COOL contested the role of COOL as a food safety measure. Ikenson (2004) contended the Food Safety and Inspection Service would not allow importation of any unsafe foods; COOL also exempts restaurants and smaller butcher shops, which diminishes the effectiveness of COOL's role as a food safety measure. Further, Krissoff et al (2004) noted that foods are rarely voluntarily labeled with sources of origin, which cast doubt on the true appeal of domestic origin to consumers; they argued, profit

maximizing retailers, processors, and producers would voluntarily indicate products origin with labels if they deem the benefits exceed the cost.

Whether COOL is warranted depends heavily on consumers' preference, as well as the extent that COOL might penalize imported food. By examining consumer preference for origin-differentiated beef, this study contributes to the debate on COOL.

PREVIOUS RESEARCH AND OBJECTIVES OF THIS STUDY

Previous studies suggested consumers may use country-of-origin as an extrinsic cue in evaluation of the quality of the product (Grunert 2005; Hoffmann 2000; Lusk et al 2006; Northen 2000). Country of origin may invoke consumers' knowledge and beliefs regarding the place of production of the products. Additionally, in cases of repeated purchase on products without a strong brand, as with most fresh food, consumers may use the origin to re-identify the quality that they have found appealing.

Increased international competition from trade liberalization incentivized producers to use country-of-origin information to differentiate their products. Marette et al (2008) argued that with imperfect information and imperfect competition, domestic producers may gain from geographical-indication labels. When faced with the choice of familiar domestic products and unfamiliar imported products, domestic products inevitably emerge as the choice when the lack of knowledge or information regarding the quality of the imported products could induce uncertainty in consumers.

The country-of-origin effects gained research attention following introductions of mandatory origin-labeling law in the European Union, and more recently in the United States. Studies conducted on European consumers reveal consumers used country of origin to predict the eating quality and safety of beef (Becker 2000; Davidson et al 2003). In its U.S. counterpart, Schupp and Gillespie (2001) found a vast majority of the surveyed indicated support for mandatory labeling of origin on fresh and frozen beef sold in retail market. Further, 83% of the respondents rated U.S. beef higher quality and safer than

imported beef. Multiple studies indicated European consumers are willing to pay more for domestic meat than imported meat (Alfnes 2004; Alfnes and Rickertsen 2003; Mørkbak et al 2010).

In an U.S. nation-wide survey, Loureiro and Umberger (2007) found a positive WTP for beef labeled as U.S. products compare to unlabeled products. Further, they suggested that the WTP for USDA food- safety-inspection certifications is higher than U.S.-labeled beef, but the WTP for tenderness assurance and traceability is lower than U.S.-labeled beef. However, the difference in WTP for domestic versus imported beef is absent. In addition, the rankings of the attributes, which were estimated through a Conditional Logit framework[1], could be further scrutinized using estimators capable of discerning unobserved taste heterogeneity.

Consumers' perception of food safety risk, or any risk in general, is inherently subjective. The perception depends on a wide array of factors. Although the actual risk may be of interest to policymakers, it is often not the dominant factor in consumers' behaviors (Schroeder et al 2007; Slovic 1987; Yeung and Morris 2006). Instead, consumers' risk perception for food products are found be greater in product they have little control over the exposure to the risk (Zepeda et al 2003). Consumers' perceive food safety risk is also found to be influenced by socioeconomic characteristics, trust in various sources of information, knowledge, previous family history of food safety events and culture (Baker 2003; Dosman et al 2001).

Previous studies point strongly to the connection between consumers' perception and country-of-origin effect. As such, we explore the linkage between perception of food safety and willingness to pay for imported beefsteaks. This is achieved by utilizing Individual-Level willingness to pay in a SUR model.

SUMMARY STATISTICS AND RESEARCH DESIGN

[1] Loureiro and Umberger (2007) attempted Mixed Logit but found the model failed to detect significant unobserved heterogeneity.

We conducted an online survey through TNS Global in May 2010. The sample was randomly selected through the vast panelist network of TNS Global. Respondents below age 17 were restricted from participation[2]; We designed and tested the survey following general guidelines given in Dillman (2007). The survey is divided into two sections; the first part included questions pointed to consumers preference on beef adapted from related literature and demographic information; the second section included a choice experiment to assess consumer WTP for imported beef and the aforementioned attributes. Consistent with previous literature (e.g., Tonsor et al 2009), the target responses were set as 1,000. The online survey closed with 1079 responses. We did not pursue mail survey after taking into account the challenges in targeting and obtaining a national sample. Nonetheless, Olsen (2009) suggested that internet surveys are viable alternative to mail surveys in estimation of consumer WTP.

The validity of stated preference analysis, such as choice experiments, is debated for its potential downfall of *hypothetical bias*- where the lack of incentive-compatibility in the experimental nature of stated preference may lead to overstatement of WTP. Nonetheless, for new or hypothetical attributes such as the attributes examined in our study, the lack of reveal preference data necessitate the use of stated preference method. Other stated WTP elicitation methods, such as contingent valuation may be used, but a choice experiment is well-suited for multiple-attributes setting as in this study (Adamowicz et al 1998). In an overview, Loomis (2011) concluded that no widely accepted methodology exists to control for hypothetical bias. Additionally, Lusk and Schroeder (2004) and List et al (2006) suggest that the marginal WTP on private goods produced by choice experiments is comparable to WTP measures from experimental auctions, which are revealed preference alternatives to choice experiments and are often used to investigate the behavior of a small group of consumers. Nevertheless, readers should be aware of the contentions on the WTP elicitation methods.

[2] The respondents were not limited to only meat consumers.

Table 1 presents the summary statistics. Eighty-three percent of the respondents identified themselves as the primary shopper in their household. The mean household income was a little over $52,000 and the median education level of the respondents was some college (including community college or technical training). Our sample compared closely to the U.S. population in terms of gender, education, and income, but it heavily represented older consumers; the higher portion of older respondents could be due to the length of the survey deterring participation of younger age groups who may have more time constraints. Heavy representation of older population in online consumer surveys is not uncommon in the literature. For instance, Hu et al (2005) and Loureiro and Umberger (2007) reported mean age of higher than national average in their surveys. Nevertheless as with all surveys, readers should be cautious about the ability of the sample to represent the entire consumer population.

As in Tonsor et al (2009), we chose strip loin steak as the representative product for its well-defined and relatively homogenous properties. The choice profiles consisted of attributes from five categories: *price*, *country of origin*, *production practices*, *tenderness*, and *food-safety assurance*. Table 2 provides the description of these attributes. Four levels of prices were chosen ranging from $5.50 to $16.00, which reflected the low-end and high-end prices that could be observed in actual grocery store settings for steak at the time of the this study.

In conjunction with domestic beef, Australian and Canadian beef were used, as these two nations are the biggest volume exporters of beef to the United States. Canadian beef is noted for its similarity to US beef in terms of breed, marbling and feed. In contrast, Australian beef are typically grass-fed, which differs in eating quality to U.S. and Canadian beef (Brester et al 2004; Mutondo and Henneberry 2007). While there may be notable difference in characteristics and eating quality between U.S., Canadian and Australian steak, it is not clear how much typical consumers in the U.S. are aware of these differences especially given the lack of clear indication of origin prior to COOL.

Levels of all other attributes were determined by examining the related literature as well as discussing with beef experts and focus group members. The phrase *natural* steak refers to steak derived from cows raised without synthetic growth hormones and antibiotics, as opposed to *approved standards*, which means the cow is raised using government-approved growth hormones and antibiotics. In the choice experiment, steak may be "assured tender" or not specified. In the food-safety-assurance category, a steak can be traceable, meaning that steak products on the market can be traced back to an animal from a specific farm/producer. A steak can be BSE-tested which suggests that the cattle where the steak is from was tested and verified free of BSE by the appropriate government agency. A steak can also be both BSE- tested and traceable. Notice that for these quality attributes, no specific agency was indicated as the organization who may issue the guarantees/assurances. This is to avoid consumers attaching specific values/disvalues associated with various agencies. Although consumer response to quality assurance issued by various organizations can be an interesting area of research, it is beyond the scope of this current study. All attributes were explained to the respondents in an information sheet (attached in appendix) before they were asked to complete the choice experiment. Readers may also refer to the informational sheet in the attached appendix for a view of the choice sets given to survey our respondents.

A full-factorial orthogonal design was used to generate the choice tasks. Full-factorial design maintains some useful statistical properties; in particular, all attribute effects of interest are designed to be independent which allows for identification of own-price, cross-price and alternative-specific effects (Louviere et al 2000). In total, 192 choice profiles including the *would-not-buy* option were produced by the experimental design. The choice sets were distributed as 14 versions of the questionnaire. To balance between respondent fatigue and degrees of freedom, each respondent was randomly assigned to one of the 14 versions each containing 10-14 choice sets.[3] Each choice set presents choices of two steaks bundled

[3] Past studies employing choice experiments assigned different numbers of choice sets to each individual. Hu et al. (2005) asked each respondent to complete eight choice set while Tonsor et al. (2009) assigned 21 choice scenarios to each respondent. Although there has been discussion in the literature on the impact

with various attributes and prices (see appendix for a sample choice set); if neither steak appeals to them, the third choice of not buying (*would-not-buy* option) could be chosen.

(Hensher et al 2005) noted omitting the *would-not-buy* alternative constrained decision makers into making a choice from the listed alternatives, which are effectively *conditional choices* and may not reflect all options available to decision makers in the real word. The inclusion of the *would-not-buy option* reflects a more realistic choice environment, where respondents were allowed to delay or decline to make a choice if the options presented are not appealing.

Estimation Method

This paper investigates consumers' preference of imported steaks with the use of Individual-Level Parameter in the context of mixed logit. Mixed logit is capable of capturing unobserved taste heterogeneity within a population, such that variation in taste of sampled individuals is mapped to a taste distribution (Hensher and Greene 2003; Train 2003). Building upon mixed logit, Revelt and Train (2000) described a method to ascertain where in the taste distribution of does a particular consumers lies. Individual-level parameters are suitable for differentiate consumers for marketing purpose (Hensher et al 2006) . Greene et al (2005) showed that willingness-to-pay values derived from Individual-Level estimation are less prone to extreme values, thus produces more behavioral and practical appealing interpretation.

Derivation of Individual-Level Parameters

The central concept of individual-level parameter lies in distinction between global distributions and conditional distributions. Revelt and Train (2000) described the method to derived conditional

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of scenario complexity on choices, this is not the focus of this research. A total of 10-14 choice sets per person are in line with the past literature.

distribution based on Bayesian theorem. The conditional distribution is tighter than unconditional population distribution. thus allowing researchers to gather more precise information regarding a person's taste (Train 2003).

Individual-level parameter can be derived from any behavioral model that specifies random coefficient (Train 2003). In this application, the parameters are derived from a mixed logit framework, which allows unobserved taste heterogeneity to be captured with distribution specification on coefficients. Mixed logit model build on Random Utility Model (McFadden, 1974), which allows the utility (U) associate with individual *i* for alternative *j* under choice situation *t* to be denoted as:

(1)

where is a Kx1 vector of explanatory variables, which describe the alternative *j* in choice set *t*, where K is the number of attributes. The error term signals the randomness of the utility. The Kx1 vector is specified as random coefficient in a mixed logit model that induces individual heterogeneity. Let denotes the parameter associate with attribute k, can be expressed as:

(2)

where **a mean coefficient associated with attribute k, and vik is** is an IID error term. The mixed logit model estimates and -- the coefficient associate with $\mathbf{v_{ik}}$ and – covariance matrix of . The mixing distribution g(.) can take on any appropriate distribution that reflect behavior of subject.

McFadden (1974) showed that if the error term, ,follows an IID maximum extreme value Type I distribution, the resulting choice probability is the conditional logit choice probability. Given the parameter , the probability is denoted as:

$$| \sum \frac{(\quad)}{} \tag{3}$$

where y_{it} represent the choice individual *i* made under choice set *t*. Let $\mathbf{y}_i$ denotes sequence of choices individual *i* made, such that . The probability of the sequence of choices is a product of logit:

$$P(\; | \qquad \prod \; | \tag{4}$$

however in mixed logit setting, since is random. The probability $\mathbf{y}_i$ is derived by integrating with respect to its mixing distribution | , specifically:

$$P(| \int | | \tag{5}$$

Train (2003) showed that using Bayes' rule, the conditional density that represents the group of individuals who made the sequence of choice under choice situation x_i is given as:

$$h(| \frac{| |}{} \; | \tag{6}$$

Individual-level parameter, which is also the mean coefficient in the subpopulation that chooses $\mathbf{y}_i$ given $\mathbf{x}_i$, can be derived using the conditional density, specifically:

$$\bar{} \quad \int \quad | \qquad \frac{\int | \; |}{\int | \; |} \tag{7}$$

The integrals in equation 7 do not have close forms. Simulation is required to solve for the individual parameter (Train (2003, chapter 11); Greene et al. (2005)).

Our specification of the mixed logit is as following:

$$\mathbf{x}_{jt} = [\text{WOULD-NOT-BUY, AUS, CAN, BSE, TRACE, BSE\_TRC, TENDER, NAT}]_{jt} \quad \textbf{(8)}$$

Two components made up the deterministic part of the utility: first, the price scalar (c_{ijt}) along with its fixed parameter α; the price coefficient is specified as a fixed coefficient to avoid an unrealistic positive coefficient associated with price (Meijer and Rouwendal 2006; Olsen 2009). Second, the 8x1 vector $\mathbf{x}_{jt}$ represents steak attributes with dummy variables, where the base cases are *USA* in origin labeling, *Approved Standards* in production practices, *None* in food safety assurance and *Not Specified* in tenderness respectively. Moreover, the random parameter **β** is specified to have normal distribution and correlated attributes, the model produced an 8x8 covariance matrix with non-zero off diagonal elements reflecting the correlation.

Of particular interest are the individual-level parameters of the country-of-origin attributes, which describe the utility/disutility an individual associated with steak from a given country of origin. The derivation of individual-level parameters requires simulation. The individual-level parameters are weighted average of draws of **β** from the population density $g(\boldsymbol{\beta}|\ \boldsymbol{\beta}_k, \Omega)$. The individual-level coefficient is calculated as follow:

$$\check{} \quad \Sigma \qquad \textbf{(9)}$$

where the weights, w_r, which also equals to the contribution of each draw towards the likelihood function (Greene et al 2005), are:

$$\Sigma \qquad \textbf{(10)}$$

The country-of-origin specific individual-level willingness to pay (WTP) is derived by taking ratio of the coefficient associate with a COOL attribute and the price coefficient, that is substituting as _____ in equation 9.

Results

The conditional logit model (Table 3) recorded a McFadden R^2 of 0.147. In comparison, the mixed logit model (Table 4) recorded a McFadden R^2 of 0.326, a significant improvement over the conditional logit model. The improvements in explanatory power of Mixed Logit model could be attributed to the inclusion of unobserved heterogeneity in the model, the standard deviation statistics of all the random coefficient are significant, which indicated significant present of taste heterogeneity for all the random parameters.

All coefficient tested were significant at 1% level except for natural beef. However, the significant standard deviation associated with natural beef suggests that half of the sample prefers natural beef. These coefficients are readily transformed into context of (population/unconditional) willingness to pay estimates, which is a measure of compensation variation for a given attributes (Sillano and Ortuzar 2005; Zhao and Kling 2004). The WTP are calculated as:

_____ **(11)**

The standard errors of the WTP estimates were produced using Krinsky and Robb (1986) simulation procedure with 2,000 replications (Hensher and Greene 2003). Table 5 presents the results. The negative WTP for imported steaks suggests that holding other factors constant, most consumers need to be compensated, either in price or in favorable attributes, for choosing Canadian or Australian strip loin steak over U.S. strip loin steak. Specifically, the estimated WTP associated with Australian and Canadian

beef in comparison to US beef were -$7.35/lb and -$5.41/lb. Sizeable premium was found on the non-COOL attributes as well. On average, the marginal WTP for BSE tested beef, traceable beef or with both attributes combined were $5.08, $5.26, and $7.51 per pound respectively; the WTP for these food-safety enhancements eclipse a large portion of the discount associated with Australian and Canadian beef. In addition, the tenderness-assured steaks garner a premium of $3.97 on average. Although *natural* steak was not found to be associated with significant WTP, overall, the food-safety and eating-quality attributes provide a viable way to differentiate imported steak from domestic products.

Individual Parameter Analysis

We derived the individual-level WTP associated with steak labeled as Australian origin (WTPaus) and Canadian origin (WTPcan). The mean values of WTPaus and WTPcan are comparable to those found in the population WTP in previous section. Train (2003, pg. 269) suggested that individual-specific parameters derived from a correctly specified model should mirror closely to the unconditional parameters.

We analyze WTPaus and WTPcan with a box plot presented as Figure 1. We observed that a small number of the sample were willing to pay more for the imported steaks than similar domestic-originated steak. Although the median value of WTPcan is higher than WTPaus, the range between 75^{th} percentile and upper adjacent value of WTPaus is wider than the similar range of WTPcan. This suggests that Australia steak has more potential as a niche product than Canadian beef, which perhaps are due to grass- fed nature of Australian beef.

Next, WTPaus and WTPcan enter as dependent variables in a seemingly unrelated model (SUR). Examples of ex-post analysis of individual-level parameters can be found in Hu et al. (2004) and Hu et al. (2006). The explanatory variables of the SUR model were *age*, *income*, *education*, *gender* and *number of children*, and Likert-scale variables regarding food safety opinion and purchase behavior. The specific

questions used in the survey and descriptions for the Likert-scale variables are presented on Table 6. The specification of the SUR model was:

(12)

$$\mathbf{d} = [\text{age, edu, inc, male, child}]$$

The SUR model estimated two sets of coefficients; each belongs to WTP equation of Australian steak and WTP of Canadian steak respectively. The results from the SUR model are presented on Table 7. The R^2 were 0.1073 and 0.066 respectively for the Australian and Canadian model. The robust standard errors were calculated using bootstrapping method with 400 repetitions to account for potential heteroskedasticity in the data. Breusch-Pagan test (Table 8) rejected null hypothesis that the two error terms were independent, thus justifying the use of SUR model.

On parameters associated with demographic variables, *age* and *edu* were significant and consistent in sign for both the Australian and Canadian model; the coefficients indicated that ceteris paribus, older consumers were, on average, willing to pay less for imported Australian and Canadian steak, and the WTP for the imported steak increase with education level.

We elicited the respondent's opinion on food safety level of beef originated from Australia (*fsaus*) and Canada (*fscan*) with a five-point Likert-scale question with options of *no opinion*; the rating of *1* corresponds to *very-low* opinion and the rating of *5* corresponds to a *very-high* rating. From Table 6, considerable large group of respondents answered no opinion on the rating for Australia (34.7%) and Canada (30.5%). We transformed the ratings into dummy variables, and used the groups who answered no opinion as base categories in the SUR model. We found that those who rated the safety of imported beef as *very low* were willing to pay less for the imported beef on average than those who rated *no*

opinion; this observation is consistent across the Australian and Canadian model. However, the WTP for the imported beef were statistically equivalent for those who rated *no opinion* and a rating of *2*, which suggest that those who rated *no opinion* holds some reservation about the safety of imported steak. The WTP were found to be higher on average for respondent who rated *3* or above on the rating. From these, we see that most U.S. consumers are unfamiliar with imported beef, possibly due the lack of clear indication of origin prior to COOL. Consumers who were unfamiliar with safety of imported beef were, on average, willing to pay less than those who have rated the safety level of imported beef as moderate of safe. In addition, we observed that those who have higher tolerance to food safety risk in beef (*accept*) were willing to pay more for the imported steak, which reinforce the link between risk perception and willingness to pay for imported beef. These findings suggest that foreign beef producers could benefit from risk communication campaign that seek to increase product familiarity.

The negative coefficient on *COOL* suggests that respondents who rated country of origin as an important consideration in beef purchase were willing to pay less for the imported steaks. In contrast, the discounts on the imported steaks were lower on those who emphasize price, as indicated by the positive coefficient on *price*. From Table 6, we observed that 44% of the sampled disagree they purchase beef based on country of origin, and more 42% indicated that price is important factor in beef-purchase decision. This suggests that considerable consumer population is willing to make the country of origin and price trade- off.

Conclusion and Implication

Despite recent interest in country of origin, little is known about the underlying factors on willingness to pay for imported food products. Using the individual-level parameters method suggested in Revelt and Train (2000), we derived individual-level WTP for imported Australian and Canadian steak. We found significant negative WTP is associated with these imported steak.

Upon further analysis, we observed significant taste heterogeneity exist on consumers' preference of the imported steaks. The taste heterogeneity underlines potential for these imported steaks to be marketed as niche products.

In addition, we observed that perception on food safety level of the exporting countries significantly affect consumers' willingness to pay. Evidence from our study suggests that a significant portion of U.S. consumers are either uncertain or hold low opinion about food safety level of imported beef. This points to a need of risk and information communication may relieve concerns about the safety of imported beef.

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Table 1. Sample Descriptive Statistics

Variable	Group	Percent	Sample Mean/Median	US Census Data
Age	15-19	0.93%	56.62	36.8[a]
	20-24	3.52%		
	25-29	2.22%		
	30-39	7.78%		
	40-49	12.70%		
	50-64	32.25%		
	65+	40.59%		
Gender	Male	47.54%		49.20%
	Female	52.46%		50.80%
Education	<High School	1.11%	14[a]	12[a]
	High School	23.08%		
	Some College	39.39%		
	4 year Degree	24.28%		
	Graduate	12.14%		
Household Income ($)	<25k	24.10%	52.37k	51.42k
	25k-40k	23.54%		
	40k-65k	23.82%		
	65k-80k	9.55%		
	80k-100k	7.32%		
	100k-120k	6.12%		
	>120k	5.56%		
No. of Children			0.3420	
Freq. shopping grocery	Never	1.85%		
	Sometimes	14.74%		
	Frequently	83.42%		

[a]Median values.

Table 2. Attributes Levels and Descriptions

Categories	Levels	Abbr.	Descriptions
Price ($/lb)			Refers to steak price in retail grocery store or butcher where the respondent typically shops.
	5.50		
	9.00		
	12.50		
	16.00		
Country of Origin			Refers to country in which the cattle were raised
	USA		
	Canada	CAN	
	Australia	AUS	
Production Practices			Refers to the method used in production.
	Approved Standards		**Approved Standards** means production involved government-approved synthetic growth hormones and antibiotics.
	Natural	NAT	**Natural** means animal was raised without the use of synthetic growth hormones or antibiotics
Food Safety Assurance			Refers to the food safety assurance offered with the steak
	None		
	BSE-Tested	BSE	**BSE-Tested** means that cattle are tested for BSE prior to slaughtering process
	Traceable	TRC	**Traceable** means the product is fully traceable back to farm of origin from the point of purchase
	BSE-Tested and Traceable	BSE_TRC	**BSE-Tested and Traceable** were offered in combination
Tenderness			Refers to the softness in the steak's eating quality
	Not Specified		**Not Specified** means there are no guarantees on tenderness level of the steak
	Assured Tender	TENDER	**Assured Tender** means the steak is guaranteed tender by testing the steak using a tenderness measuring instrument

Table 3. Conditional Logit Model Results

Variable	Coefficient Estimates		Stand Error	t-value	95% Confidence Interval	
PRICE	-0.1616	***	0.0039	-41.8	-0.1692	-0.1540
CHOOSENO	-0.8071	***	0.0575	-14.03	-0.9198	-0.6944
AUS	-1.0841	***	0.0351	-30.91	-1.1529	-1.0154
CAN	-0.8435	***	0.0335	-25.15	-0.9093	-0.7778
BSE	0.9030	***	0.0428	21.08	0.8191	0.9870
TRACE	0.9244	***	0.0429	21.57	0.8404	1.0084
TRC_BSE	1.3461	***	0.0424	31.78	1.2631	1.4291
TENDER	0.6748	***	0.0284	23.79	0.6192	0.7304
NAT	0.0242		0.0289	0.84	-0.0324	0.0807
Log likelihood Score			-13705			
McFadden R2			0.1475			

Notes: ***, **, and * indicate significant at the 1%, 5%, and 10% significance levels. Results produced with NLOGIT 4.0.

Table 4. Mixed Logit Model Results

Variable		Coefficient Estimates		Stand Error	t-value	95% Confidence Interval	
PRICE	mean	-0.2405	***	0.0058	-41.77	-0.2518	-0.2292
CHOOSENO	mean	-1.7396	***	0.1088	-15.99	-1.9527	-1.5264
	std dev	2.6436	***	0.0904	29.24	2.4664	2.8208
AUS	mean	-1.7665	***	0.0713	-24.79	-1.9061	-1.6268
	std dev	1.4594	***	0.0752	19.41	1.3120	1.6067
CAN	mean	-1.3029	***	0.0574	-22.70	-1.4154	-1.1904
	std dev	1.0363	***	0.0719	14.41	0.8954	1.1773
BSE	mean	1.2235	***	0.0597	20.51	1.1066	1.3404
	std dev	0.5943	***	0.0844	7.04	0.4288	0.7597
TRACE	mean	1.2670	***	0.0606	20.91	1.1483	1.3857
	std dev	0.6477	***	0.0859	7.54	0.4793	0.8162
TRC_BSE	mean	1.8065	***	0.0625	28.92	1.6841	1.9289
	std dev	0.7841	***	0.0749	10.47	0.6373	0.9310
TENDER	mean	0.9562	***	0.0455	21.02	0.8670	1.0453
	std dev	0.7518	***	0.0614	12.24	0.6314	0.8722
NAT	mean	0.0047		0.0440	0.11	-0.0816	0.0909
	std dev	0.6605	***	0.0629	10.49	0.5371	0.7838
Log Likelihood Score		-10902					
McFadden R2		0.326					

Notes: ***, **, and * indicate significant at the 1%, 5%, and 10% significance levels.
Results produced with NLOGIT 4.0, 250 Halton draws.

Table 5. Population Mean WTP Estimates

Variable	WTP $/lb		Standard Error	95% Confidence Interval	
CAN	-7.3476	***	0.3125	-7.9601	-6.7352
AUS	-5.4112	***	0.2517	-5.9045	-4.9179
WOULD-NOT-BUY	-7.2321	***	0.3856	-7.9878	-6.4764
BSE	5.0818	***	0.2576	4.5769	5.5867
TRACE	5.2642	***	0.2572	4.7601	5.7683
BSE_TRC	7.5096	***	0.2795	6.9618	8.0575
TENDER	3.9716	***	0.1979	3.5838	4.3595
NAT	0.0207		0.1825	-0.3369	0.3782

Notes: ***, **, and * indicate significant at the 1%, 5%, and 10% significance levels.

Table 6. Tabulation and Description of Variables Entering the SUR Model

Variable	Ratings	Percentage	Question/ Description
COOL			I purchase meat based on country of origin
	1	16.03	Strongly disagree
	2	28.08	Disagree
	3	31.97	Neither agree nor disagree
	4	19.00	Agree
	5	4.91	Strongly agree
Price			I purchase meat based on price
	1	6.49	Strongly disagree
	2	16.96	Disagree
	3	34.01	Neither agree nor disagree
	4	34.20	Agree
	5	8.34	Strongly agree
Risk			When eating beef, I am expose to …
	1	17.90	Very little risk
	2	26.44	
	3	38.22	
	4	12.99	
	5	4.45	A great deal of risk
Accept			I accept the risk of eating beef
	1	5.47	Strongly disagree
	2	8.44	Disagree
	3	29.13	Neither agree nor disagree
	4	35.16	Agree
	5	21.80	Strongly agree
			What is your perception of the level of food safety of beef by country of origin?
fsaus	1	6.21	Very low
(Australia)	2	8.06	Low
	3	23.54	Moderate
	4	18.91	High
	5	8.62	Very high
	No Opinion	34.66	
fscan	1	4.82	Very low
(Canada)	2	7.14	Low
	3	24.93	Moderate
	4	20.85	High
	5	11.77	Very high
	No Opinion	30.49	

Notes: Fsaus and Fscan are transformed into dummy variables
All variables above are based on 5-point Likert scale

Table 7. SUR Model Results

	Coefficient		Std. Err.	95% Confidence Interval	
WTPaus					
age	-0.0204	**	0.0090	-0.0380	-0.0028
inc	0.0042		0.0041	-0.0037	0.0122
edu	0.1762	***	0.0611	0.0564	0.2960
male	-0.1065		0.2580	-0.6123	0.3992
child	-0.0775		0.1549	-0.3812	0.2262
fsaus1	-1.8302	***	0.5180	-2.8454	-0.8150
fsaus2	-0.5532		0.4963	-1.5259	0.4194
fsaus3	-0.5532	**	0.3392	0.1715	1.5012
fsaus4	1.6859	***	0.3269	1.0453	2.3265
fsaus5	1.2294	***	0.5065	0.2365	2.2222
COOL	-0.4504	***	0.1192	-0.6840	-0.2169
price	0.3354	***	0.1178	0.1045	0.5662
risk	0.0106		0.1326	-0.2492	0.2704
accept	0.2798	**	0.1290	0.0269	0.5326
constant	-12.0970	***	1.2915	-14.6283	-9.5657
WTPcan					
age	-0.0198	***	0.0059	-0.0313	-0.0082
inc	-0.0005		0.0024	-0.0052	0.0042
edu	0.0695	*	0.0386	-0.0061	0.1451
male	0.0300		0.1440	-0.2523	0.3123
child	0.0220		0.0923	-0.1589	0.2030
fscan1	-0.9819	***	0.3484	-1.6646	-0.2991
fscan2	-0.0901		0.3652	-0.8060	0.6257
fscan3	0.4903		0.2211	0.0570	0.9235
fscan4	0.9822	***	0.2079	0.5747	1.3897
fscan5	1.0512	***	0.2343	0.5920	1.5104
COOL	-0.1938	***	0.0724	-0.3356	-0.0520
price	0.1404	*	0.0825	-0.0213	0.3021
risk	0.1540	*	0.0810	-0.0046	0.3127
accept	0.1174		0.0811	-0.0415	0.2764
constant	-6.4759	***	0.8553	-8.1523	-4.7995
R^2 for WTPaus	0.0695				
R^2 for WTPcan	0.1074				

Notes: ***, **, and * indicate significant at the 1%, 5%, and 10% significance levels.
Results produced with SUREG and Bootstrap procedure in STATA 10

Table 8. Bruesch- Pagan Test for SUR Model

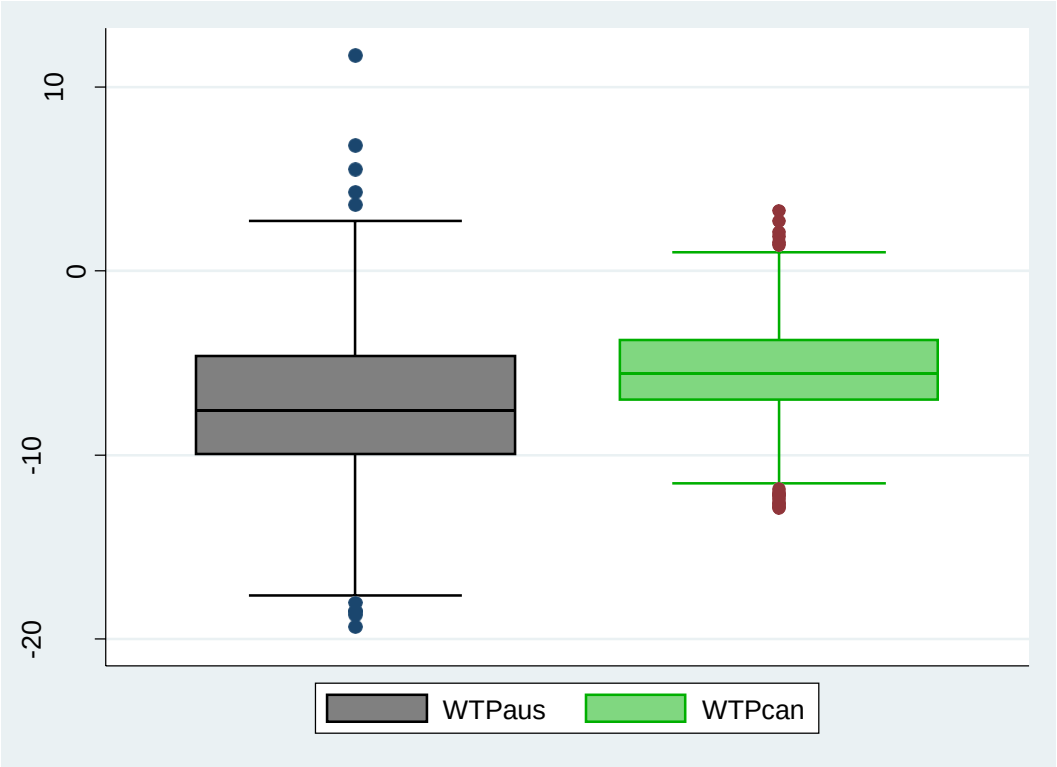
Correlation matrix of residuals:

	WTPcan	WTPaus
WTPcan	1.0000	
WTPaus	0.2366	1.0000

Breusch-Pagan test of independence:

$Chi^2(1)$ = 60.324 Pr = 0.000

Figure 1. Box Plot of Individual WTPs



	Median	75th Percentile	Upper Adjacent Value
WTPaus ($/lb)	-7.5670	-4.6040	3.3715
WTPcan ($/lb)	-5.5484	-3.7508	1.0864

CONSUMER REPORTS® NATIONAL RESEARCH CENTER
Survey Research Report

Food Labels Survey

2016 Nationally-Representative Phone Survey

April 6, 2016

Introduction

In February, 2016, the Consumer Reports® National Research Center conducted a nationally representative phone survey to assess consumer opinion regarding the labeling of food. Opinion Research Corporation (ORC) of Princeton, New Jersey administered the survey to a nationally representative sample of 1,001 adult U.S. residents (half of the respondents were women) through its CARAVAN Omnibus Survey. Respondents were selected by means of random-digit dialing and were interviewed via phone. The data were statistically weighted so that respondents in the survey are demographically and geographically representative of the U.S. population. This report summarizes the findings from this survey.

Highlights

CONSUMER FOOD SHOPPING BEHAVIORS

More Consumers Buy Natural Food than Organic Food

- A greater percentage of consumers buy natural (73%) versus organic (58%) food. When asked about the price of natural versus organic food, many (67%) consumers say organic food is more expensive than natural food. Interestingly, a quarter say there is little price difference between natural and organic food.

Most Consumers Willing to Pay More for Fruits/Vegetables Produced Under Fair Work Conditions

- Most consumers (79%) are willing to pay more per pound for fruits and vegetables produced by workers who earned a living wage and were treated fairly.

Consumers are Looking at Labels on Processed Foods to Help Inform First Time Purchase Decisions

- The clear majority of consumers look for information on the package of a processed food item to decide whether to purchase that food item for the first time; 79% look at nutrition facts, 77% read the ingredient list, and 68% look at the information on the front of the package.

LABELING AND SAFETY STANDARDS

Most Consumers Believe 'GRAS' Means FDA Deemed the Ingredient Safe

- Companies primarily bring new food ingredients to market through an FDA system called GRAS, which stands for 'generally recognized as safe.' Many consumers believe that 'GRAS' means *the FDA has evaluated the ingredient and deems it to be* safe (77%) or *the FDA keeps track of the new ingredient's safety and use* (66%), though this is not true. However, 71% think that 'GRAS' means that *the company using the ingredient deems it to be safe*, which is true.

Consumers Want Same Uniform USDA Standards Across Companies

- When consumers were told that the USDA often allows companies to set their own standards on meat, the clear majority (94%) of consumers said all companies should meet the same standards for labels on meat (rather than set their own standards).

Consumers Expect Strong Standards for Organic Food

- Many consumers think federal standards for fish labeled 'organic' should require *100% organic feed* (87%), *no antibiotics/other drugs are used* (82%), *no added colors to the feed/fish* (80%), or *no open fish net farms* (68%).
- Seven out of 10 consumers think the USDA should NOT permit the use of non-organic ingredients in organic food production if they are NOT deemed essential.

Consumers Seek Information About Food Origin

- The overwhelming majority of consumers want labels on meat/poultry/fish/produce to reflect country of origin (87%) or state of origin (74%).
- An outstanding percentage of consumers (93%) want to know if their meat is from outside the United States. Many consumers (60%) want the label to include where the animal was born/raised and where the animal was slaughtered. A sizable percentage of consumers (33%) want more stringent labeling; if the animal was born or raised in a different country, these consumers feel this food is a product of that country.
- Consumers are split on whether countries outside the U.S. should have the right to dispute the information provided on labels of food sold in the U.S.
- Nearly half (45%) of consumers disagree with the recent decision by Congress to repeal the requirement that labels on beef and pork specify the countries where the animals were born/raised/slaughtered; a quarter agree with this decision and 29% have no opinion.

Consumers Want Standards for Meat Raised with Drugs

- Many consumers reported being *extremely* or *very concerned* that routinely feeding healthy animals antibiotics and other drugs may *allow animals to be raised in crowded and unsanitary conditions* (68%), *create new bacteria that cause illnesses that antibiotics cannot cure* (65%), *lead to environmental pollution* (53%), or *artificially promote growth* (51%).
- When consumers see the 'raised without antibiotics' label on meat, half correctly think this means *no antibiotics were administered to the animal*; a quarter mistakenly think this label means *no antibiotics or ANY other drugs were administered to the animal*.
- Most (84%) consumers think the government should require that meat from healthy animals routinely fed antibiotics be labeled as 'raised with antibiotics.'
- The overwhelming majority (88%) of consumers think the government should require that meat raised with hormones/ractopamine be labeled as such.
- Most (87%) consumers think animals should not be given hormones, ractopamine or other growth promoting drugs.

Consumers Want Strong Federal Safety and Labeling Standards for Genetically Engineered Food

- An overwhelming majority of U.S. consumers think that before genetically engineered food can be sold it must be labeled as such (86%) or meet government safety standards (84%).
- Accordingly, an outstanding percentage of Americans (93%) want the government to legally require that genetically engineered salmon be labeled as such.
- Moreover, over half (53%) are less likely to buy salmon if it isn't possible to tell if the salmon is genetically engineered.

Consumers Have High Expectations for 'Grass-fed' Label on Meat

- Many believe this label should mean the *animal was exclusively fed grass for MOST of its life* (69%), *the animal's diet was 100% grass for its ENTIRE life* (66%), *the animal was allowed to graze on grass during the pasture growing season, but ate grain other times* (60%), or *the animal was not routinely given drugs such as antibiotics and hormones* (58%).
- Six out of 10 consumers think companies should be able to make a partial grass-fed claim if the animal's diet was less than 100% grass.

Many Consumers Don't Understand 'No Nitrates' Label

- Nearly two-thirds of consumers think a 'No Nitrates' label means no nitrates at all, whether from an artificial or natural source, were used; however, this is not true.
- Two thirds of consumers are aware of the recent World Health Organization conclusion that some processed meats can increase the risk of cancer; over a third were unware of this finding.

Consumers Want Fructose Origin Labeling

- Nearly 8 out of 10 consumers want the origin of fructose to be listed on labels.
- When asked about the origin of fructose, many consumers say fructose could be made from high fructose corn syrup (76%), sugar cane/beets (66%), or fruit (53%).

CLAIMS OF HUMANE TREATMENT OF WORKERS AND ANIMALS

Consumers Want More Stringent Standards for 'Fair Trade' Label on Food

- While many consumers think that the 'fair trade' label on food *currently* means that *farm workers were provided with a fair living wage* (61%), *farm workers were provided with healthy working conditions* (61%), *the food was produced by small-scale independent farmers* (50%), or *no toxic pesticides were used* (43%); an even greater percentage feel that this label *should* mean that *farm workers were provided with a fair living wage* (79%), *farm workers were provided with healthy working conditions* (80%), *the food was produced by small-scale independent farmers* (62%), or *no toxic pesticides were used* (68%).

Consumers Have High Expectations for Humanely Raised Claim on Eggs, Dairy and Meat

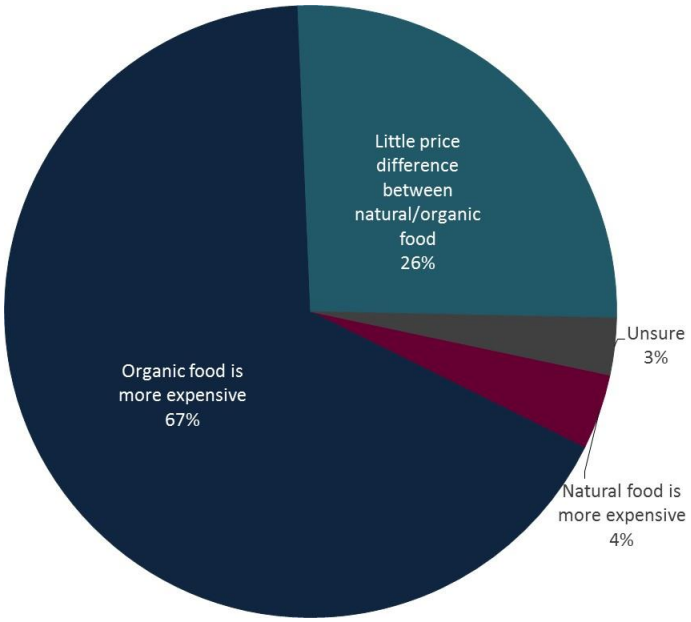
- Many consumers think a humanely raised claim on eggs, dairy and meat *currently* means *the farm was inspected to verify this claim* (82%), the *animals had adequate living space* (77%), *the animals were slaughtered humanely* (71%), the *animals went outdoors* (68%), *the animals were raised in houses with clean air (65%)*, or *the animals were raised without cages* (57%). Accordingly, a greater percentage of consumers believe this claim *should* mean that *the farm was inspected to verify this claim* (88%), *the animals had adequate living space* (86%), *the animals were slaughtered humanely* (80%), *the animals were raised in houses with clean air (78%)*, *the animals went outdoors* (78%), or *the animals were raised without* cages (66%).

CONSUMER FOOD SHOPPING BEHAVIORS

More Consumers Buy Natural Food than Organic Food

A greater percentage of consumers typically buy natural (73%) versus organic (58%) food. When asked about the price of natural versus organic food, many (67%) consumers say organic food is more expensive than natural food. Interestingly, a quarter say there is little price difference between natural and organic food.

Consumer Perception of Cost of Natural vs. Organic Food



Base: All respondents (1001)

Most Consumers Willing to Pay More for Fruits/Vegetables Produced Under Fair Work Conditions
Most consumers (79%) are willing to pay more per pound for fruits and vegetables produced by workers who earned a living wage and were treated fairly. Our 2014 Food Labels Survey[1] also found that 79% of consumers are willing to pay more; however, compared to 2014, there was a slight increase in the percentage willing to pay a dollar more (14% in 2016 versus 9% in 2014).

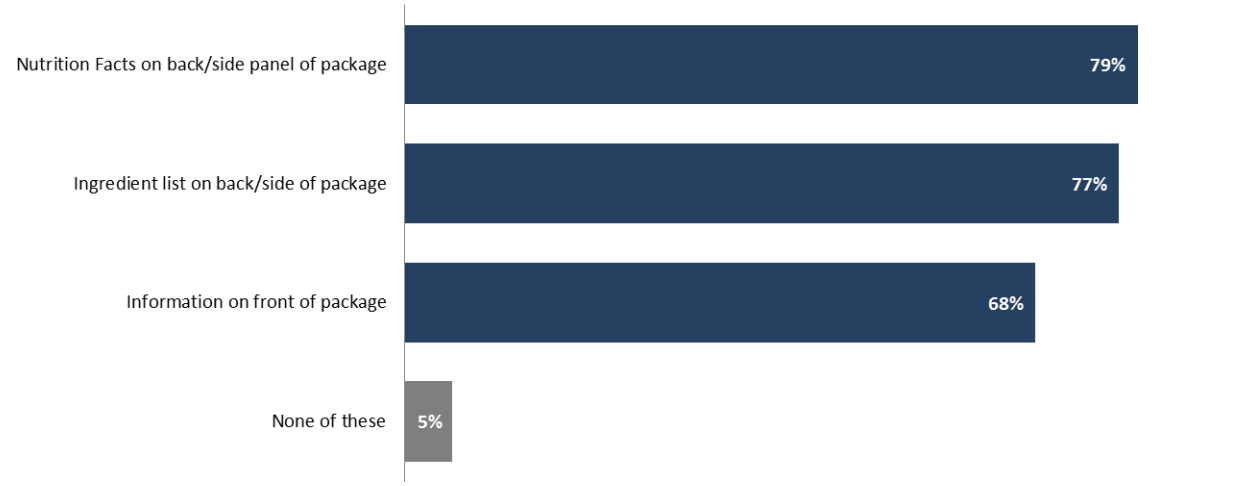
Consumer Willingness to Pay More for Fair Trade Fruits/Vegetables

	2014	2016
Would be willing to pay more (Net)	*79%*	*79%*
10 cents more per pound	22%	20%
25 cents more	22%	18%
50 cents more	20%	21%
One dollar more	9%	14%
More than one dollar more per pound	5%	6%
Would NOT be willing to pay any more	18%	18%
Total	*1004*	*1001*

Base: All respondents

Consumers are Looking at Labels on Processed Foods to Help Inform First Time Purchase Decisions
The clear majority of consumers look for information on the package of a processed food item to decide whether to purchase that food item for the first time; 79% look at nutrition facts, 77% read the ingredient list, and 68% look at the information on the front of the package.

Percentage of Consumers Using Package Information during First Time Purchase Decision



Base: All respondents (1001)

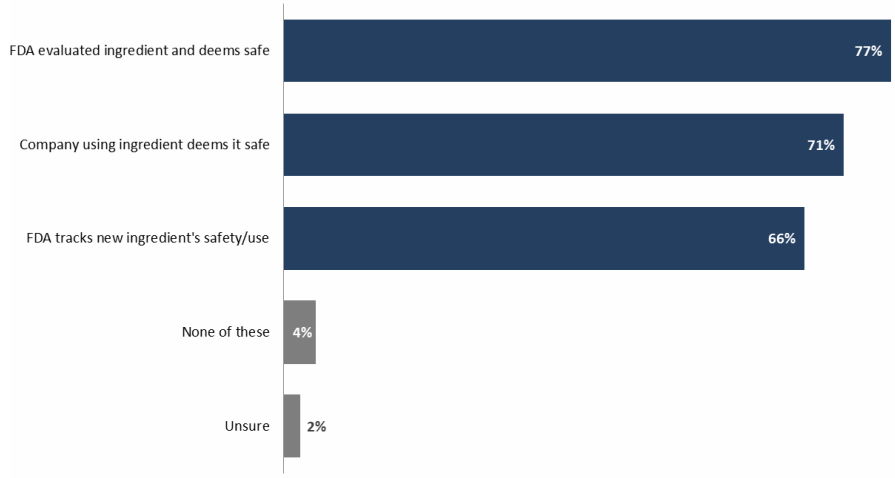
[1] 2014 nationally representative phone survey of 1004 U.S. adults, conducted with ORC from April 17-19, 2014.

LABELING AND SAFETY STANDARDS

Most Consumers Believe 'GRAS' Means FDA Deemed the Ingredient Safe

Companies primarily bring new food ingredients to market through an FDA system called GRAS, which stands for 'generally recognized as safe.' Many consumers believe that 'GRAS' means *the FDA has evaluated the ingredient and deems it to be* safe (77%) or *the FDA keeps track of the new ingredient's safety and use* (66%), though this is not true. However, 71% think that 'GRAS' means that *the company using the ingredient deems it to be safe*, which is true.

What Consumers Think 'GRAS' Means

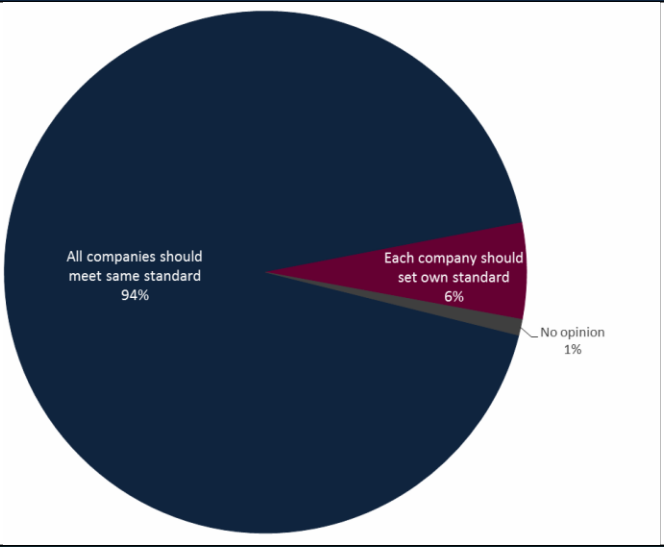


Base: All respondents (1001)

Consumers Want Same Uniform USDA Standards Across Companies

When consumers were told that the USDA often allows companies to set their own standards on meat, the clear majority (94%) said all companies should meet the same standards for labels on meat (rather than set their own standards).

Consumer Preference for Standards for Meat

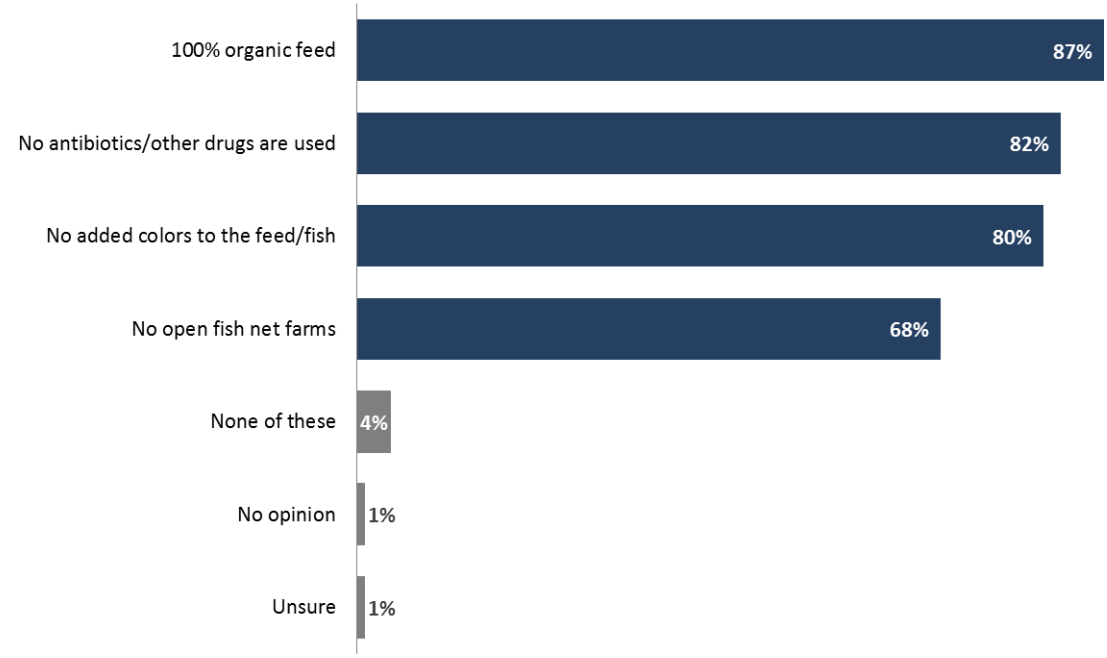


Base: All respondents (1001)

Consumers Expect Strong Standards for Organic Food

Many consumers think federal standards for fish labeled 'organic' should require *100% organic feed* (87%), *no antibiotics/other drugs are used* (82%), *no added colors to the feed/fish* (80%), or *no open fish net farms* (68%).

Consumer Opinion of Required Federal Standards for ORGANIC Fish



Base: All respondents (1001)

70%

Say no to use of non-organic ingredients in organic food production if they are NOT deemed essential

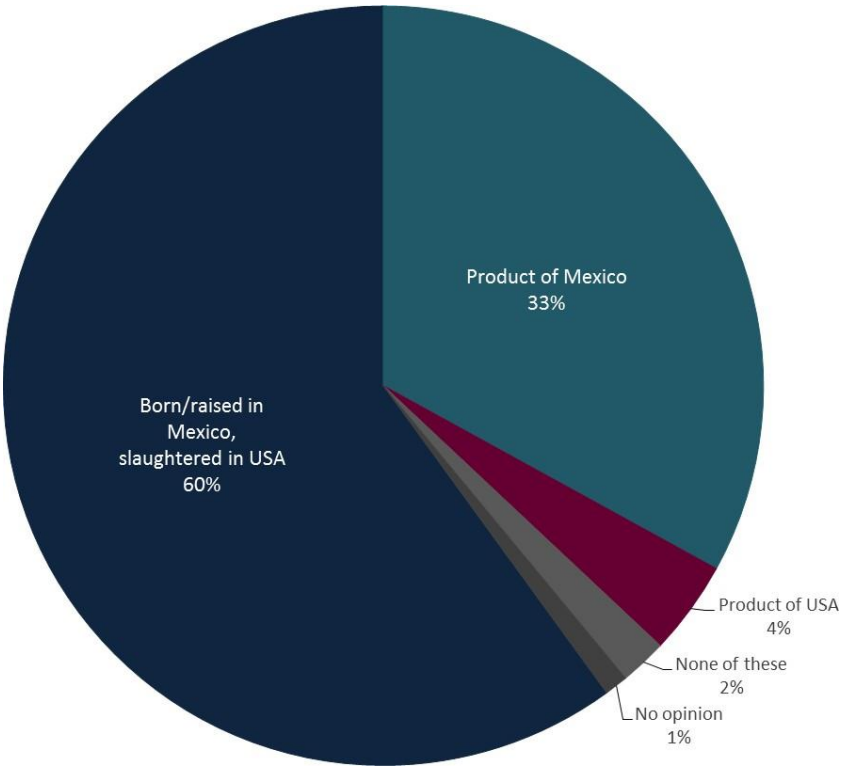
Seven out of 10 consumers think the USDA should NOT permit the use of non-organic ingredients in organic food production if they are NOT deemed essential.

Consumers Seek Information about Food Origin

The overwhelming majority of consumers want labels on meat/poultry/fish/produce to reflect country of origin (87%) or state of origin (74%).

An outstanding percentage of consumers (93%) want to know if their meat is from outside the United States. Consumers were asked about their preference for country of origin labeling on meat that came from a different country like Mexico. Many consumers (60%) want the label to include where the animal was born/raised and where the animal was slaughtered. A sizable percentage of consumers (33%) want more stringent labeling; if the animal was born or raised in a different country, these consumers feel this food is a product of that country. Few consumers (4%) adopt the more lenient view that being slaughtered in the USA is sufficient for this meat to be labeled as a USA product.

Consumer Preference for Country of Origin Labeling on Meat



Base: All respondents (1001)

50%

Think countries outside of the U.S. should NOT have the right to dispute the information on labels of food sold in U.S.

Consumers are split on whether countries outside the U.S. should have the right to dispute the information provided on labels of food sold in the U.S; 50% think countries outside the U.S. should NOT have this right, while 48% think they should.

45%

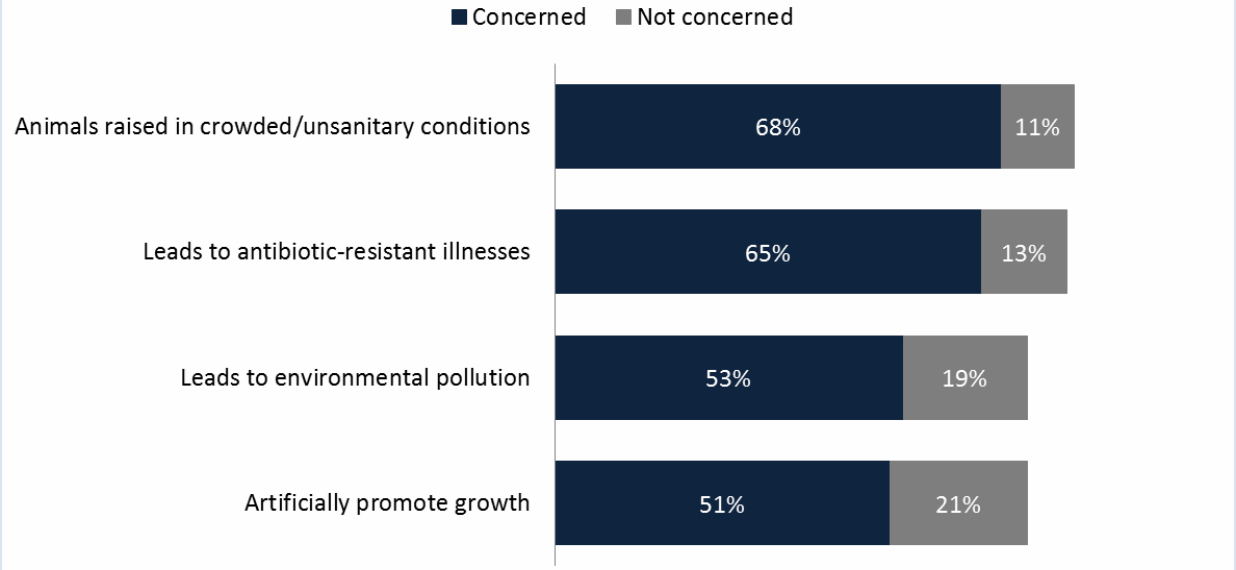
Disagree with the decision by Congress to repeal more specific country of origin labeling

Nearly half (45%) of consumers disagree with the recent decision by Congress to repeal the requirement that labels on beef and pork specify the countries where the animals were born/raised/slaughtered; a quarter agree with this decision and 29% have no opinion.

Consumers Want Standards for Meat Raised with Drugs

Many consumers reported being *extremely* or *very concerned* that routinely feeding healthy animals antibiotics and other drugs may *allow animals to be raised in crowded and unsanitary conditions* (68%), *create new bacteria that cause illnesses that antibiotics cannot cure* (65%), *lead to environmental pollution* (53%), or *artificially promote growth* (51%).

Consumer Concerns Regarding Feeding Drugs to Healthy Animals



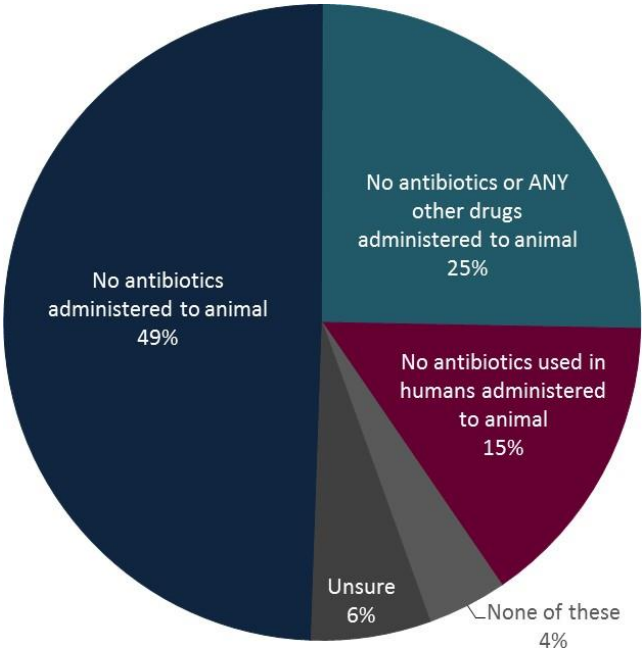
Base: All respondents (1001)
Concerned = Extremely/Very concerned
Not concerned = Not very/Not at all concerned

87%
Think animals should not be given growth promoting drugs

Most (87%) consumers think animals should not be given hormones, ractopamine or other growth promoting drugs.

When consumers see the 'raised without antibiotics' label on meat, half correctly think this means *no antibiotics were administered to the animal*. A quarter mistakenly think this label means *no antibiotics or ANY other drugs were administered to the animal*. About 1 in 7 believe this label means *no antibiotics that humans use were administered to the animal*.

Consumer Perception of RAISED WITHOUT ANTIBIOTICS Label on Meat



Base: All respondents (1001)

84%
Think government should require label for meat from animals routinely fed antibiotics

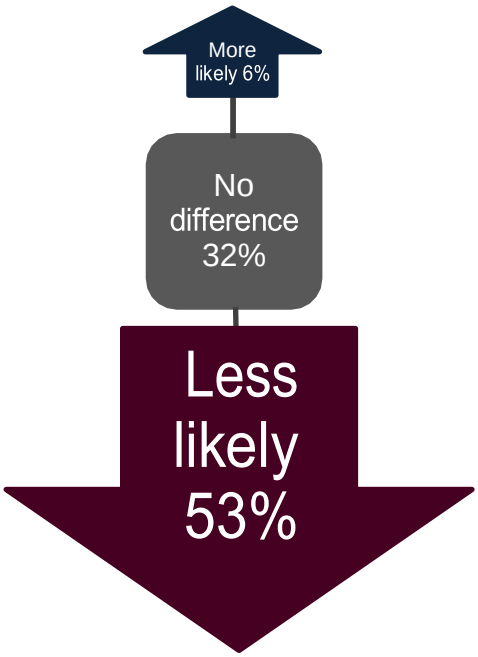
Most (84%) consumers think the government should require that meat from healthy animals routinely fed antibiotics be labeled as 'raised with antibiotics.'

88%
Think government should require label for meat raised with hormones/ractopamine

The overwhelming majority (88%) of consumers think the government should require that meat raised with hormones/ractopamine be labeled as such.

Consumers Want Strong Federal Safety and Labeling Standards for Genetically Engineered Food
An overwhelming majority of U.S. consumers think that before genetically engineered food can be sold it must be labeled as such (86%) or meet government safety standards (84%). Accordingly, an outstanding percentage of Americans (93%) want the government to legally require that genetically engineered salmon be labeled as such. Moreover, over half (53%) are less likely to buy salmon if it isn't possible to tell if the salmon is genetically engineered.

Consumer Likelihood to Buy Salmon, if Not Possible to Tell if Salmon is GMO

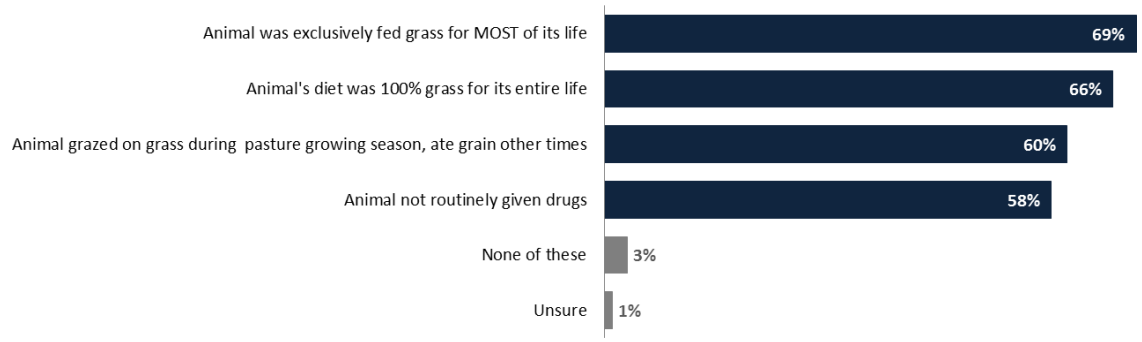


Base: All respondents (1001), Don't purchase salmon = 8%, Unsure = 1%

Consumers Have High Expectations for 'Grass-fed' Label on Meat

Consumers were asked about their perception of the 'grass-fed' label on meat. Many believe this label should mean the *animal was exclusively fed grass for MOST of its life* (69%), *the animal's diet was 100% grass for its ENTIRE life* (66%), *the animal was allowed to graze on grass during the pasture growing season, but ate grain other times* (60%), or *the animal was not routinely given drugs such as antibiotics and hormones* (58%).

Consumer Opinion of What GRASS-FED Label on Meat Should Mean



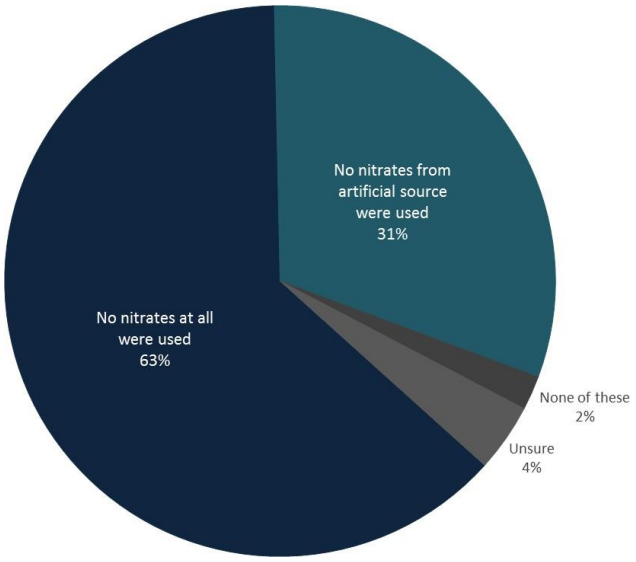
Base: All respondents (1001)

Six out of 10 consumers think companies should be able to make a partial grass-fed claim if the animal's diet was less than 100% grass.

Many Consumers Don't Understand 'No Nitrates' Label

Nearly two-thirds of consumers think a 'no nitrates' label means no nitrates at all, whether from an artificial or natural source, were used; however, this is not true.

Consumer Perception of NO NITRATES Label



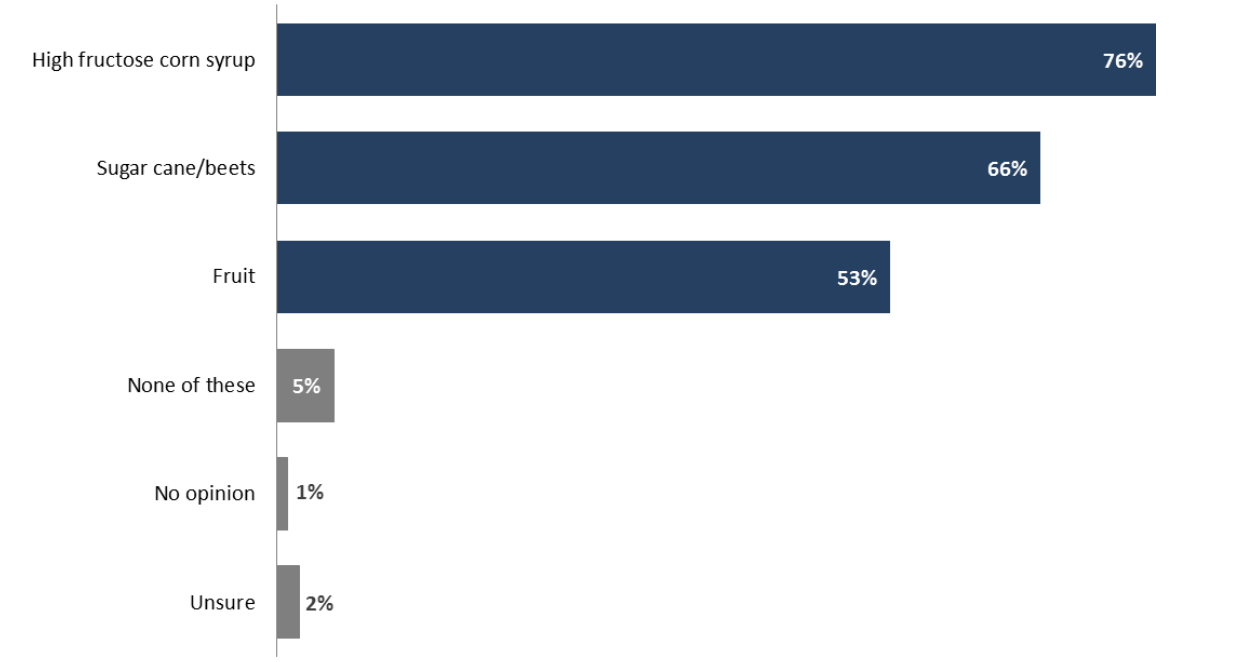
Base: All respondents (1001)

Two thirds of consumers are aware of the recent World Health Organization conclusion that some processed meats can increase the risk of cancer; over a third were unware of this finding.

Consumers Want Fructose Origin Labeling

Nearly 8 out of 10 consumers want the origin of fructose to be listed on labels. When asked about the origin of fructose, many consumers say fructose could be made from high fructose corn syrup (76%), sugar cane/beets (66%), or fruit (53%).

Consumer Perception of Origin of Fructose



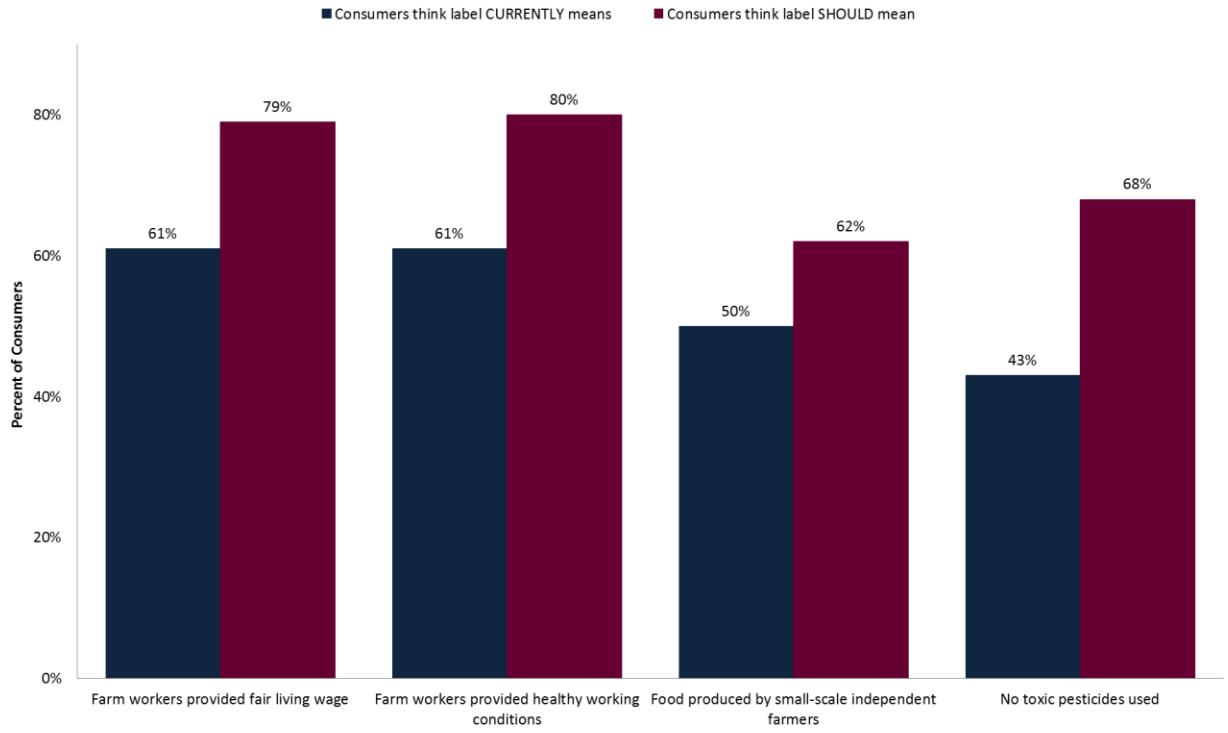
Base: All respondents (1001)

CLAIMS OF HUMANE TREATMENT OF WORKERS AND ANIMALS

Consumers Want More Stringent Standards for 'Fair Trade' Label on Food

While many consumers think that the 'fair trade' label on food *currently* means that *farm workers were provided with a fair living wage* (61%), *farm workers were provided with healthy working conditions* (61%), *the food was produced by small-scale independent farmers* (50%), or *no toxic pesticides were used* (43%); an even greater percentage feel that this label *should* mean that *farm workers were provided with a fair living wage* (79%), *farm workers were provided with healthy working conditions* (80%), *the food was produced by small-scale independent farmers* (62%), or *no toxic pesticides were used* (68%).

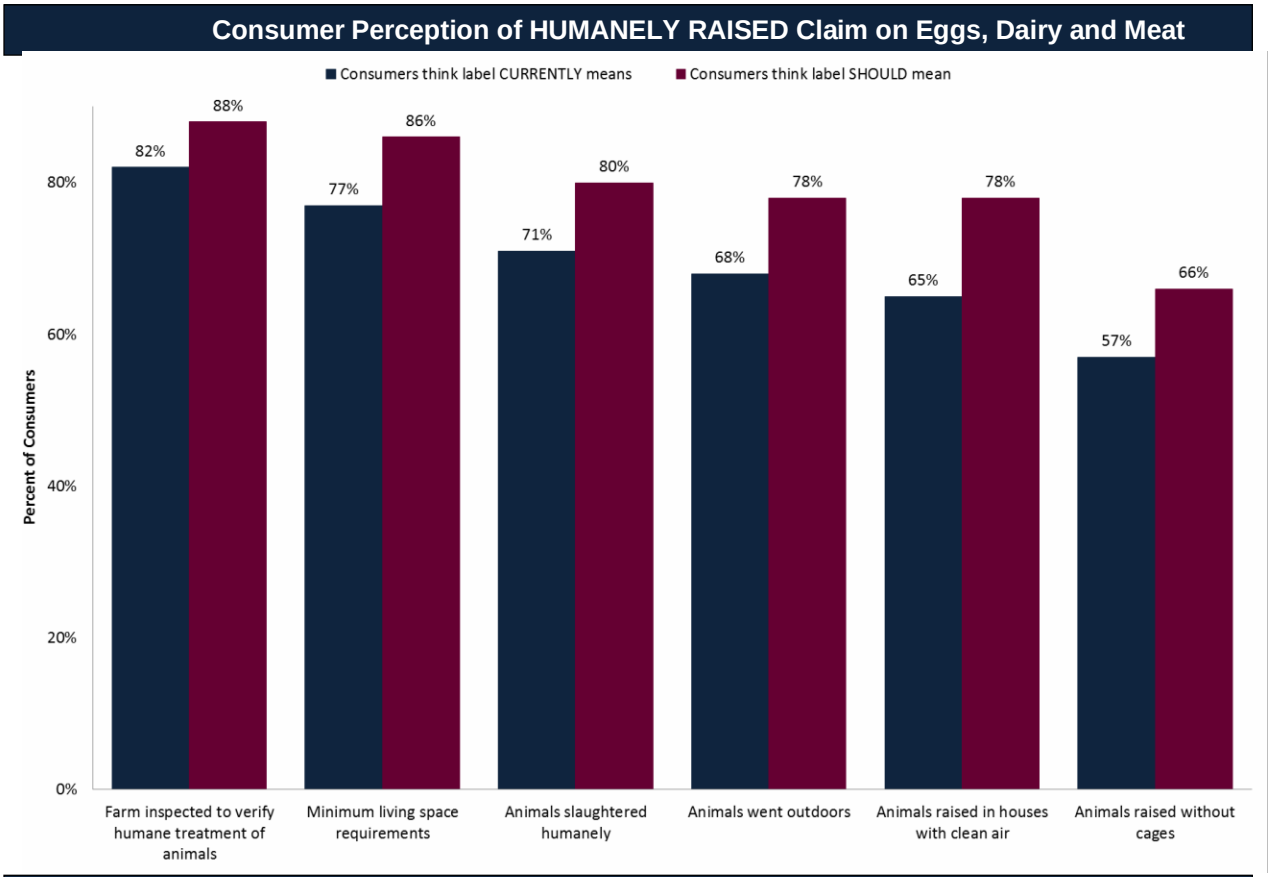
Consumer Perception of FAIR TRADE Label on Food



Base: All respondents (1001)

Consumers Have High Expectations for Humanely Raised Claim on Eggs, Dairy and Meat

Many consumers think a humanely raised claim on eggs, dairy and meat *currently* means *the farm was inspected to verify this claim* (82%), *the animals had adequate living space* (77%), *the animals were slaughtered humanely* (71%), *the animals went outdoors* (68%), *the animals were raised in houses with clean air (65%)*, or *the animals were raised without cages* (57%). Accordingly, a greater percentage of consumers believe this claim *should* mean that *the farm was inspected to verify this claim* (88%), *the animals had adequate living space* (86%), *the animals were slaughtered humanely* (80%), *the animals were raised in houses with clean air (78%)*, *the animals went outdoors* (78%), or *the animals were raised without* cages (66%).



Summary

Our findings show a clear majority of consumers look to labels when deciding whether to purchase food. Accordingly, many consumers want strong federal standards for a range of food related issues and labels, including feeding drugs to animals, food origin labeling, and genetically engineered food. Survey findings also show consumers want more from a variety of food labels and claims. Many would even pay more to purchase food produced by workers under fair working conditions. Consumers are looking to food labels for information. They have high expectations of those labels.

Methodology

This phone survey was fielded by ORC using a nationally-representative sample. The survey was conducted February 25-28, 2016. The margin of error is +/- 3.1 percentage points at a 95% confidence level. The margin of error may be higher for subgroup analysis.

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Consumer preferences for US beef products: a meta-analysis

By conducting a meta-analysis with 57 observations collected from 20 primary studies, we systematically analyze heterogeneities in consumer preferences for the Country-of-Origin-Labeling (COOL) of US beef products. We find that consumers often prefer their domestic beef products due to patriotism. Consumers in Asian (mainly Korea and Japan) and European countries (such as France, Germany and UK) are willing to pay significantly lower prices for US beef products compared to their domestic products; while the US consumers are willing to pay more for the domestic products than the imported ones.

Keywords: US beef, country of origin, willingness to pay, meta-analysis
JEL codes: Q18, Q51

1. Introduction

Food labeling is an important tool for promoting and distinguishing food quality in many countries. In order to promote the competitiveness of domestic food products and provide better information to consumers, many countries (such as the US, the members of the EU, Japan and South Korea) have introduced mandatory Country-of-Origin Labeling (COOL) for food products, and it invokes a lot of arguments either from political perspectives or from academic perspectives (Carter and Zwane, 2003, Krissoff *et al.*, 2004). The US beef industry is an important case, as the 2002 US Farm Bill, taking effect in September 2004, mandated COOL for fresh and frozen food commodities[1].

Opponents of COOL argue that it may decrease the profits of producers and retailers because of the high costs of labeling, record-keeping, and operating procedures, necessary to ensure compliance with these regulations, and it could also create 'deadweight' loss because of the distorted producer and consumer prices. Furthermore, international trade conflicts could be raised because COOL

[1] COOL was mandatory for fish and shellfish in 2004 and is required for beef, lamb, chicken and other covered commodities by September 30, 2008.

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is considered as a non-tariff barrier to trade (Carter and Zwane, 2003; Brester *et al.*, 2004a and 2004b). On the other hand, proponents of COOL insist that consumers have a 'right to know' the country of origin (COO) of products and that COOL is a valuable marketing tool (Lusk *et al.*, 2006). Product information is often asymmetric in markets and COOL can help consumers, at least par- tially, to solve the problem of imperfect information because the country of ori- gin can serve as a proxy for product quality. Growers and ranchers have largely supported COOL because they regard it as a non-tariff barrier to trade that can potentially provide producers with a competitive advantage in domestic markets (Carter and Zwane, 2003; Umberger, 2004). Klain *et al.* (2014) find that the value of information conveyed in a label is positive for beef products in the US.

A meta-analysis of consumer preferences regarding the country of origin of food products by Ehmke (2006) indicates that consumers are willing to pay a premium for domestic food products, which can be explained by consumer ethnocentrism and patriotism (Lusk *et al.*, 2006). The US is the largest pro- ducer and consumer, and the fourth largest exporter for beef products in the world. In 2013, US produced 11.76 million metric tons of beef products, and about 10% is exported (USDA, 2014). Hence, it has attracted quite a number of studies on consumer preferences for US beef, which generally find that US consumers are willing to pay a premium for 'Certified U.S.' beef products, indicating that they believe that the domestic beef might be safer, of higher quality and fresher. However, the variations of premiums are quite large across different studies and different regions (Umberger, 2004; Gao *et al.*, 2010b). Most studies on consumer willingness-to-pay (WTP) for US food products support the policy of mandatory COOL in the US.

The attitudes of non-US consumers towards US beef products are quite dispersed across different regions. Studies in Japan (Aizaki *et al.*, 2006; Peter- son and Burbidge, 2012), Korea (Chung *et al.*, 2009; Unterschultz *et al.*, 1998; Lee *et al.*, 2013), Norway (Alfnes *et al.*, 2003; Alfnes, 2004), Germany (Tonsor *et al.*, 2005), and UK (Meas *et al.*, 2014) find that the WTP for US beef prod- ucts is negative in these countries compared with local beef, which implies that these consumers favor domestic beef products. However, studies in Spain (Beriain *et al.*, 2009), France and the UK (Tonsor et *al.*, 2005) show positive WTP for US beef products, which indicates that consumers in these countries prefer US beef to local counterparts.

It would be very important to scrutinize the variations of consumer pref- erences for the COOL with respect to US beef products in the current litera- ture, given the fact that US is the largest producer in the world. Table 2 shows the main exported markets of US beef products. In 2013, the exported value amounted to $ 5.71 billion, about the 10% of the production, of which 66% is exported to Canada, Mexico, Korea and Japan.

Tab. 1. World major producers, consumers, importers and exporters for beef and veal (1,000 metric tons)

	2010	2011	2012	2013
Production				
US	12,046	11,983	11,849	11,757
Brazil	9,115	9,030	9,307	9,675
EU	8,101	8,114	7,708	7,470
China	5,600	5,550	5,540	5,637
India	2,842	3,244	3,450	3,850
World Total	57,576	57,422	57,623	58,620
Consumption				
US	12,038	11,646	11,739	11,617
Brazil	7,592	7,730	7,845	7,885
EU	8,202	8,034	7,760	7,602
China	5,589	5,524	5,597	5,959
Argentina	2,346	2,320	2,458	2,664
World Total	56,427	55,718	56,090	56,825
Import				
US	1,042	933	1,007	1,021
Russia	1,058	994	1,032	1,031
Japan	721	745	737	760
HK	154	152	241	473
China	40	29	99	412
World Total	6,622	6,413	6,652	7,423
Export				
Brazil	1,558	1,340	1,524	1,849
India	917	1,268	1,411	1,765
Australia	1,368	1,410	1,407	1,593
US	1,043	1,263	1,113	1,172
New Zealand	530	503	517	529
World Total	7,822	8,095	8,164	9,165

Source: USDA (2014)

Tab. 2. Top markets for US beef

Year	Japan		Mexico		South Korea		South Korea		Total Export		
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	% of Production
	Million lbs	$Million	Million lbs	$Million	Million lbs	$Million	Million lbs	$Million	Billion lbs	$Billion	%
2002	771	854	629	615	597	619	241	286	2.447	2.629	*9.0*
2003	918	1,182	586	623	587	754	227	309	2.518	3.186	*9.6*
2004	12	31	333	393	1	2	56	105	0.46	0.631	*1.9*
2005	17	50	464	584	1	3	106	194	0.697	1.031	*2.8*
2006	52	105	660	786	1	4	239	415	1.145	1.617	*4.4*
2007	159	294	586	732	78	124	339	575	1.434	2.187	*5.4*
2008	231	439	759	895	152	291	389	683	1.996	3.014	*7.5*
2009	274	495	628	770	141	215	363	622	1.935	2.909	*7.4*
2010	351	662	500	669	277	504	391	731	2.3	3.839	*8.7*
2011	456	873	488	791	380	661	500	1,039	2.785	5.041	*10.6*
2012	449	1,000	352	647	305	548	467	1,189	2.453	5.114	*9.4*
2013	671	1,283	403	738	253	567	463	1,190	2.584	5.711	*10.0*

Source: ERS, USDA

Many factors can influence the estimates of consumer preferences for the COOL of US beef, including methodologies, samples, as well as study place and time (Umberger, 2004; Ehmke, 2006). The meta-analysis is widely used for synthesizing the empirical studies in economic analysis (Nelson and Ken- nedy, 2009; Tian and Yu, 2012; Santeramo and Shabnam, 2015; Chen *et al.*, 2016; Zhou and Yu, 2015). In order to find out the systematic differences in consumer preferences for US beef products across countries and to shed some light on current mandatory COOL compliance as well, this paper conducts a meta-analysis to study consumer WTP for US beef products from 20 primary studies, which employed different methods and provided a total of 57 obser- vations of the WTP for US beef products in different countries. Furthermore, this paper could also give some implications of the methodological issues in the current literature.

2. Method

A few meta-analyses have studied consumer preferences for COO across different food products. For instance, Ehmke (2006) collected 13 studies with 27 observations of WTP for COO and finds that consumer WTP for COO de- pends on the number of other credence attributes included in product descrip- tions and the location of the consumers. Such a meta-analysis ignored the het- erogeneities of food products. Clearly the effect of COO on vegetables would be different from that on meat. Additionally, to the best of our knowledge, no meta-analyses have specifically focused on COO of US beef products, even though the beef industry is a very important part of US agriculture and many studies have been done regarding consumer preferences for US beef products.

In an assessment of 130 meta-analyses in the field of environmental and resource economics, Nelson and Kennedy (2009) separate the estimation het- erogeneity into factual and methodological heterogeneities. The methodologi- cal heterogeneity refers to the heterogeneities in the current literature that are caused by methodological reasons, such as sampling methods, econometric models, or estimation approaches; while the factual heterogeneity means that the heterogeneities are caused by factual reasons, such as the differences in time, regions, cohorts or products.

Following Nelson and Kennedy (2009), and Zhou and Yu (2015), first, we will separate the variation of consumer WTP for the COO of US beef products into factual and methodological heterogeneity. Factual heterogeneity mainly refers to study location. The current literature has pointed out that consumers usually prefer domestic to imported food products, as COO is linked to patriot- ism (Meas *et al.*, 2014). It is reasonable that US consumers are willing to pay a

higher price for US beef products, while consumers in other countries on the contrary are willing to pay a lower price for it. We categorize the study locations into the US, Asia, and European countries, and the remaining countries (Canada and Mexico) and use dummy variables to control for this heterogeneity.

Lusk and Schroeder (2004) also point out that methodological differences can impact the studies of WTP and that choice experiments usually lead to a higher probability of payments. In the current literature, contingent valuation methods (CVM), experimental auction, and choice experiment (CE) are three main methods used to estimate consumer WTP. In order to capture the methodological heterogeneities, we comprise methodological dummy variables (CE and auction, as compared to CVM) in the regression.

Nelson and Kennedy (2009) point out that the effect-size of samples in different primary studies can generate non-homogeneous variances and smaller variances are more reliable. In order to control the heterogeneities caused by sample size, we include the sample sizes as an independent variable. Considering that the 57 observations derive from 20 papers, it can be argued that some papers may produce multiple observations. This could lead to the issue of in- trapaper correlation, which biases the standard errors. We use the clustered sandwich estimator to correct the standard errors.

Furthermore, the methods of choice experiments (CE) are increasing- ly used in this field. For instance, 37 out of the 57 observations used in this study are obtained from CE methods. In order to study the heterogeneities in CE methods, we also perform a separate regression by using only the 37 CE observations. It is well known that experiment designs (number of attributes), survey approaches (online survey or in-person), survey time, and estimation strategies (multinomial Logit or mixed multinomial Logit) play significant roles in the choice experiment (Gao *et al.*, 2010a; Gao *et al.*, 2010b; Hensher, 2006; Islam *et al.*, 2007; Yu *et al.*, 2014a). These methodological heterogenei- ties in choice experiments can also be scrutinized in this step, so that it might also be possible to derive important methodological implications for the use of choice experiments in the future.

3. Data

Using the two academic search engines: Google Scholar and AgEcon Search, we collected 20 primary studies , which yield 57 observations of the WTP values for the COO of US beef products, out of which 27 observations relate to US consumers, 15 to European consumers, 13 to Asian consumers and the remaining 2 relate to Mexico and Canada. In the Appendix, we have listed all these primary studies and provided a brief introduction, including

survey country, survey year, sample size, eliciting methods, estimation methods, type of the beef products, and WTP values.

The mean WTP of all observations is -2.20$/lb, less than zero, though it is not much meaningful. When separating the samples, we found that all 29 US observations are positive and their mean value is 3.57$/lb. This implies that US consumers are willing to pay 3.57$/lb more for domestic compared with non-US beef products without controlling for other variables, thus showing that the current literature is quite consistent and indicates that COO does increase consumer welfare for beef products in the US.

On the other hand, the mean of the 28 non-US observations is -8.17$/lb and less than zero. It implies that non-US consumers are willing to pay 8.17$/ lb less for US beef products than for domestic products. These statistics also show that the perceptions of US and non-US consumers regarding US beef products are quite different. Within the non-US observations, the mean WTP value for 13 Asian samples is -15.90$/lb, while the mean for 13 European countries is -2.86$/lb. Table 3 reports the t-tests for the difference between US, Asian and European consumers. It indicates that US consumers are willing to pay significant higher values for US beef than European consumers; whilst the WTP values for Asian consumers are significantly lower than those for European consumers.

Table 4 in turn presents definitions and descriptive statistics with respect to all variables included in the meta-analysis.

In the current literature, WTP for the COO of US beef products can be elicited by three different approaches: the contingent valuation method (CVM), the choice experiment (CE) and the experimental auctions. Out of the 57 observations, 37 are from choice experiments, 9 were derived using the CVM, and the remaining 11 are based on experimental auctions. The mean WTP values are -3.53$/lb, 0.64$/lb, and -0.01$/lb for CE, CVM and auctions respectively. These figures indicate that the differences with respect to methods are significant, also consistent with the literature.

Tab. 3. Comparison of WTP values between different regions

Countries	Sample size	mean WTP	US	Asian	European
US	29	3.57 [0.73]		t=7.04	t=4.42
Asian	13	-15.90 [3.85]			t=3.16
European	13	-2.86 [1.46]			

Note: Standard Errors are reported in [ ]
t-ratios are reported for each pair

Tab. 4. Description of the variables

Variables			Full Sample			US Studies			Non-US Studies			Choice Experiment		
			Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Dependent Variable	WTP	WTP for US beef ($/lb)	-2.20	-49.00	12.19	3.57	0.20	12.19	-8.17	-49.00	9.89	-3.53	-49.00	12.19
Methodological Heterogeneities	Auction	Obs from Auctions=1, otherwise=0	0.19	0	1	0.24	0	1	0.14	0	1	0.00	0	0
	CE	Obs from Choice Experiments=1, otherwise=0	0.65	0	1	0.45	0	1	0.86	0	1	1.00	1	1
	CVMt	Obs from CVM=1, otherwise=0	0.16	0	1	0.31	0	1	0.00	0	0	0.00	0	0
	Sample Size	Sample Size in the study	388.33	10	1171	326.07	74	1171	452.82	10	1066	490.89	10	1171
Factual Heterogeneities	EU	Study in Europe=1, otherwise=0	0.22	0	1				0.46	0	1	0.24	0	1
	US	Study in US=1, otherwise=0	0.51	0	1							0.35	0	1
	Asia	Study in Asia=1, otherwise=0	0.23	0	1				0.46	0	1	0.35	0	1
	Other Countries	Study in Other countries=1, (Canada and Mexico); otherwise=0	0.02	0	1				0.04	0	1	0.03	0	1
Methodological Heterogeneities in CE	MMNL	Estimated by Mixed Multinomial Logit Model (MMNL, or Random Parameter Logit)=1; and by Multinomial Logit Model (MNL)=0										0.76	0	1
	Attributes	# of Attributes in Choice Experiment										4.51	2	9
	Online	Surveyed by Internet=1, otherwise=0										0.49	0	1
# of WTP Obs.			57			29			28			37		

In the next part, we will statistically analyze the dispersion in consumer preferences for the COO of US beef products by conducting a meta-analysis.

4. Results and Discussions

We estimate three meta-analysis models from two different categories: Model (1) and (2) using the full observations, and Model (3) only considering the CE observations. The results are reported in Table 5. We find that the re- sults are quite consistent.

4.1 Full-Observation Models

The first two columns in Table 5 report the estimation results for full samples. Model (1) in the first column includes all possible variables (full model), while Model (2) in the second column only includes the dummy variables for country (region) difference (restricted model) for the purpose of comparison.

In general, we look at the factual heterogeneities, and we detect significant regional differences in WTP values for US beef products. In the full model, consumers' WTP values in Asian countries (mainly Japan and South Korea) and European countries are on average 23.01$/lb and 7.84$/lb respectively lower than those in US. The results are statistically significant at the levels of 1% and 5% respectively. Even though consumers in Canada and Mexico (other countries) have a higher WTP, it is not statistically significant. Similar results are found in the restricted model, and it shows robustness of the results. The results are consistent with the current literature in which consumers are usu- ally willing to pay higher price for domestic products due to patriotism. Such a result mirrors a strong local preference for beef in most countries. The US beef is heavily discriminated in Japan, Korea and European countries, where the US and the local beef products are segregated by country-of-origin into two different markets, which cannot compete with each other.

Regarding the methodological heterogeneities, even though we find that coefficients for CE and Auction are respectively 7.48 and 1.59, unfortunately they are not statistically significant. It implies that the research approaches do not play significant roles for studying the WTP for COO of US beef products.

The coefficient for sample size is -0.007 and statistically significant at the level of 10%. It implies that estimated WTP for COO of US beef products would decrease when sample size increases. It is plausible that the distribution of the sample is not a symmetric normal distribution, and that it is slightly skewed toward to the left.

Tab. 5. WTP for US beef for the Choice-Experiment methods

Variables	All Sample		CE Sample
	(1)	(2)	(3)
Asia	-23.01***	-19.68***	-24.43***
	(4.534)	(6.573)	(4.254)
EU	-7.844**	-6.643**	-8.664
	(3.343)	(2.528)	(5.056)
Other Countries	2.386	1.430	6.739
	(3.860)	(1.567)	(6.830)
Auction	1.594		
	(1.414)		
CE	7.479		
	(4.752)		
Sample Size	-0.00708*		-0.0102***
	(0.00349)		(0.00308)
Online	0.0226		3.961
	(4.585)		(5.801)
MMNL			-10.92*
			(6.069)
Attributes			2.433
			(1.606)
Intercept	2.380**	3.783**	7.316
	(1.062)	(1.567)	(7.825)
Observations	57	57	37
R-squared	0.614	0.534	0.741

Note: ***, ** and * denotes the significant level of 1%, 5% and 10%, respectively
Cluster effect standard errors for papers in parentheses

Recently, online surveys have become more popular than the other survey methods, such as personal surveys and mail surveys. However, it is argued that online surveys may incur significant bias, because some consumers who do not use Internet are neglected. We hence include a dummy variable of on- line survey to control for the difference in survey methods. The estimated co- efficient is 0.023, but not statistically significant. It implies that survey meth- ods are not important for WTP results.

4.2 Choice-Experiment Observations

As CE approaches are increasingly used in the current literature, there are many arguments regarding the methodological issues, such as experiment de- sign and estimation methods (Boxall *et al.*, 2009; Gao *et al.*, 2010a). Out of the 57 observations in this study, 37 are obtained from choice experiments. We can also use only this subset of observations to examine the heterogeneities among them. Similarly, we divide the heterogeneity into factual and methodo- logical heterogeneity.

Similar to the aforementioned analyses, the factors considered with respect to factual heterogeneity include study locations (the US, Asia, Europe and other countries). Methodological heterogeneities in choice experiments are mainly caused by their design, such as in terms of the choices of attributes, sample size, survey methods and econometric methods. For instance, Hensher (2006) and Gao *et al*. (2010a) point out that the design of choice experiments can af- fect the results significantly. In particular, both the interaction between attrib- utes and an increase in the number of attributes can increase the information load and cause confusions in answers of respondents. Therefore, the number of attributes and the effective sample size should be included in the meta-analysis. Similar to the above full sample regression, we also include a dummy vari- able (online survey vs. other methods) in the regression in order to capture the heterogeneity.

In addition, there are two major econometric methods for estimating choice experiments: the multinomial Logit model (MNL) and the mixed multinomial Logit model (MMNL), which may also cause some meth- odological heterogeneity in WTP. Consequently, a dummy variable capturing the choice of econometric methods is also included in the regression.

The estimation results are reported in the third column in Table 5. We find that only the coefficients for Asia, Sample Size, and MMNL (mixed mul- tinomial logit) are statistically significant, and other variables are not so im- portant for explaining the heterogeneity in the WTP. Basically, the results are consistent with the Full Sample model (Model (1) and (2)).

First, similar to the results in Model (1) and (2), consumers of the Asian countries have a significantly lower WTP value for US beef products, com- pared with US consumers. The coefficient is -24.43. Then the coefficient for EU is -8.66, but not statistically significant any more here.

Second, sample size and MMNL belong to the factors of methodologi- cal heterogeneities. In particular, the coefficient of the sample size variable is -0.010 and is statistically significant at the 1% level, which implies that the WTP for US beef will decrease as the sample size increases, similar with the results in the full-observation model and consistent with the current literature (Boxall *et al.*, 2009; Lusk and Anderson, 2004). In addition to the skewed dis-

tribution, it is also possible that choice experiments often yield some high outliers of WTP values, and an increase in sample size can reduce some bias.

The coefficient for MMNL is -10.92 and statistically significant at 10%. It implies that MMNL could yield significantly lower WTP values. It is well-known that MMNL could capture some heterogeneity in consumer prefer- ences. Therefore, it could reduce the outliers in estimation process, and could make the WTP values more robust.

The results also indicate that other methodological-heterogeneity variables, such as survey methods (online vs. other survey methods), and the number of attributes, are not statistically significant.

5. Conclusion

In order to protect their domestic agriculture, many developed countries have introduced mandatory compliance of Country-of-Origin Labeling. This caused a lot of arguments both domestically and internationally. As an impor- tant agricultural product in the US, many studies on the consumer preferences for the country-of-origin of US beef products have been conducted using dif- ferent methods in different countries, and the results are quite disperse.

This paper collected 57 observations of consumer WTP for the COO of US beef products in different countries from 20 primary studies and uses a meta-analysis to systematically analyze the heterogeneities within the observations.

We divide the heterogeneities of WTP into factual and methodological heterogeneities, and find that consumers' WTP values for US beef products in Asian countries (mainly Japan and South Korea) and European countries on average are 23.01$/lb and 7.84$/lb respectively, lower than those in US. The US beef is heavily discriminated in Japan, Korea and European countries, where the US and the local beef products are segregated by country-of-origin into two different markets, which cannot compete with each other.

In addition to a possible increase in consumer welfare by conveying more production information, COOL is also an effective instrument to promote the competitiveness of domestic beef products when producers face a sharp competition of imported products in the case of US beef products.

It is sure that COOL could increase consumer welfare due to better information provision. However, it may not promote the market competiveness of domestic products in some countries under a complicated situation of domes- tic food safety, in particular where consumers generally lack trust on the labe- ling (Yu *et al*., 2014a; Yu *et al*., 2014b). The policy makers should be cautious before introducing mandatory COOL, and more research hence is needed.

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Appendix: Summary of the Primary Studies

#	Study	Country	Survey Year	Sample size	Format	Method	Attributes#	Estimation	Products	WTP	Units
1	Aizaki *et al.* (2006)	Japan	2005	351	Mail	CE	2	MMNL	US Beef	-1126 JPY/100g	
	Aizaki *et al.* (2006)	Japan	2005	351	Mail	CE	4	MMNL	US Beef	-642 JPY/100g	
	Aizaki *et al.* (2006)	Japan	2005	351	Mail	CE	3	MMNL	US Beef	-505 JPY/100g	
2[a)]	Alfnes (2004)	Norway	2000	1066	In-person	CE	4	MMNL	US Hormone-Free Beef	-47.8 NOK/kg	
	Alfnes (2004)	Norway	2000	1066	In-person	CE	4	MNL	US Hormone-Free Beef	-52.89 NOK/kg	
	Alfnes (2004)	Norway	2000	1066	In-person	CE	4	MMNL	US Hormone-Treated Beef	-226.75 NOK/kg	
	Alfnes (2004)	Norway	2000	1066	In-person	CE	4	MNL	US Hormone-Treated Beef	-264.52 NOK/kg	
3	Alfnes *et al.* (2003)	Norway	2000	106	In-person	Auction			US Hormone-Free	-5.78 NOK/0.5 kg	
	Alfnes *et al.* (2003)	Norway	2000	106	In-person	Auction			US Hormone-Treated	-14.94 NOK/0.5 kg	
	Alfnes *et al.* (2003)	Norway	2000	106	In-person	Auction			US Hormone-Free	-10.61 NOK/0.5 kg	
	Alfnes *et al.* (2003)	Norway	2000	106	In-person	Auction			US Hormone-Treated	-21.38 NOK/0.5 kg	
4 [b)]	Beriain *et al.* (2009)	Spain	2008	290	In-person	CE	3	MNL	US Beef	11.73 % of price	
5	Chung *et al.* (2009)	Korea	2007	1000	In-person	CE	7	MNL	US Beef	-13.35 $/lb	
	Chung *et al.* (2009)	Korea	2007	1000	In-person	CE	8	MMNL	US Beef	-14.63 $/lb	
6	Gao and Schroeder (2009)	US	2006	74	Online	CE	3	MMNL	US Beef Steak	9.09 $/12 oz	
	Gao and Schroeder (2009)	US	2006	74	On-line	CE	4	MMNL	US Beef Steak	6.31 $/12 oz	
	Gao and Schroeder (2009)	US	2006	76	Online	CE	4	MMNL	US Beef Steak	5.26 $/12 oz	
	Gao and Schroeder (2009)	US	2006	76	Online	CE	5	MMNL	US Beef Steak	9.14 $/12 oz	
	Gao and Schroeder (2009)	US	2006	211	Online	CE	3	MMNL	US Beef Steak	4.61 $/12 oz	
	Gao and Schroeder (2009)	US	2006	211	Online	CE	4	MMNL	US Beef Steak	3.03 $/12 oz	
	Gao and Schroeder (2009)	US	2006	187	Online	CE	4	MMNL	US Beef Steak	2.33 $/12 oz	

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#	Study	Country	Survey Year	Sample size	Format	Method	Attrib-utes#	Estimation	Products	WTP	Units
	Gao and Schroeder (2009)	US	2006	187	Online	CE	5	MMNL	US Beef Steak	3.89	$/12 oz
7	Killinger *et al.* (2004)	US	2002	124	In-person	Auction			US Beef Steak	0.86	$/lb
	Killinger *et al.* (2004)	US	2002	124	In-person	Auction			US Beef Steak	0.52	$/lb
8	Loureiro and Umberger (2002)	US	2002	243	In-person	Contingent		Single-Bounded	US Beef	1.9	$/lb
	Loureiro and Umberger (2002)	US	2002	243	In-person	Contingent		Single-Bounded	US Beef Hamburger	1.33	$/lb
9	Loureiro and Umberger (2005)	US	2003	632	Mail	Contingent		Single-Bounded	US Beef Steak	0.198	$/lb
10	Loureiro and Umberger (2005)	US	2003	632	Mail	CE	5	MNL	US Beef Steak	7.568	$/lb
11	Sitz *et al.* (2005)	US	2002	273	In-person	Auction			US Beef Steak	1.2	$/lb
	Sitz *et al.* (2005)	US	2002	273	In-person	Auction			US Beef Steak	0.38	$/lb
12	Tonsor *et al.* (2005)	UK	2002	121	In-person	CE	5	MMNL	US Hormone-free Beef	2.07	$/lb
	Tonsor *et al.* (2005)	Germany	2002	65	In-person	CE	5	MMNL	US Hormone-free Beef	-3.74	$/lb
	Tonsor *et al.* (2005)	France	2002	62	In-person	CE	5	MMNL	US Hormone-free Beef	5.96	$/lb
13 [a)]	Tonsor *et al.* (2007)	US	2006	1009	Online	CE	6	MMNL	US Beef Steak	11.59	$/lb
	Tonsor *et al.* (2007)	Canada	2006	1002	Online	CE	7	MMNL	US Beef Steak	9.89	$/lb
	Tonsor *et al.* (2007)	Japan	2006	1001	Online	CE	8	MMNL	US Beef Steak	-29.62	$/lb
	Tonsor *et al.* (2007)	Mexico	2006	993	In-person	CE	9	MMNL	US Beef Steak	5.21	$/lb
14	Umberger *et al.* (2003)	US	2002	141	In-person	Contingent		Single-Bounded	US Beef Steak	0.36	$/lb
	Umberger *et al.* (2003)	US	2002	132	In-person	Contingent		Single-Bounded	US Beef Steak	0.48	$/lb
	Umberger *et al.* (2003)	US	2002	273	In-person	Contingent		Single-Bounded	US Beef Steak	0.42	$/lb
	Umberger *et al.* (2003)	US	2002	141	In-person	Contingent		Single-Bounded	US Beef Hamburger	0.36	$/lb
	Umberger *et al.* (2003)	US	2002	132	In-person	Contingent		Single-Bounded	US Beef Hamburger	0.36	$/lb

(Continued on page 195)

(Continued from page 194)

#	Study	Country	Survey Year	Sample size	Format	Method	Attrib-utes#	Estimation	Products	WTP	Units
	Umberger *et al.* (2003)	US	2002	273	In-person	Contingent		Single-Bounded	US Beef Hamburger	0.36	$/lb
	Umberger *et al.* (2003)	US	2002	141	In-person	Auction			US Beef Steak	1.03	$/lb
	Umberger *et al.* (2003)	US	2002	132	In-person	Auction			US Beef Steak	0.57	$/lb
	Umberger *et al.* (2003)	US	2002	273	In-person	Auction			US Beef Steak	0.81	$/lb
15 [a) b)]	Unterschultz *et al.* (1998)	Korea	1995	43	In-person	CE	4	MNL	US Beef	-10.85	% of price
	Unterschultz *et al.* (1998)	Korea	1995	10	In-person	CE	4	MNL	US Beef	-19.51	% of price
	Unterschultz *et al.*(1998)	Korea	1995	11	In-person	CE	4	MNL	US Beef	-8.23	% of price
	Unterschultz *et al.* (1998)	Korea	1995	22	In-person	CE	4	MNL	US Beef	-10.96	% of price
16	Abidoye *et al.* (2011)	US	2005-2006	1171	Online	CE	9	MNL	US beef	2.01	$/lb
17	Lee *et al.* (2013)	Korea	2012	500	Online	CE	3	MNL	US beef	-21.09	$/kg
18	Lim *et al.* (2014)	US	2010	1000	Online	CE	5	MNL	US beef	7.33	$/lb
	Lim *et al.* (2014)	US	2010	1000	Online	CE	5	MNL	US beef	5.75	$/lb
19	Meas *et al.* (2014)	UK	2013	402	Online	CE	5	MNL	US beef	-4.34	Pound/pack (.375 kg)
20	Peterson and Burbidge (2012)	Japan	2006	313	Online	CE	5	MNL	US beef	-501	yen/100 g
	Peterson and Burbidge (2012)	Japan	2009	103	Online	CE	5	MNL	US beef	-276	yen/100 g

Note: a) Alfnes (2004), Tonsor *et al.* (2007) and Unterschultz *et al.* (1998) did not calculate the WTP for the attributes of US beef products. We use the equation (5) in Nahuelhual *et al.* (2004) to compute the WTP values in stead.

b) Beriain *et al.* (2009) and Unterschultz *et al.* (1998) only give the WTP as percentage of prices, and we can get the WTP in cash by timing it with prices. Bardají I. *et al.* (2009) give the mean price of certified PGI beef is €3.37/kg in Navarra region of Spain, the same region with the experiment field of Beriain *et al.* (2009), and it is used for calculating the WTP in cash in Unterschultz *et al.* (1998). And Chung *et al.* (2009) give that mean price of beef in Korea in 2007 is $ 30/kg which is used in calculating the WTP in cash for Unterschultz *et al.* (1998).

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Assessing Consumer Preferences for Country-of-Origin Labeling

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In this paper, we assess consumer willingness to pay for a mandatory country-of-origin labeling (COOL) program applied to beef ribeye steaks, chicken breasts, and pork chops, all labeled as "Certified U.S." products. A consumer survey was mailed in spring and early summer 2003 to households in the continental United States. Results indicate that consumers are in general very concerned about food safety issues, viewing U.S. meat as the safest among the selection of countries considered. Nevertheless, consumer willingness to pay for Certified U.S. products is relatively small, although above the expected implementation costs associated with a mandatory labeling program. This finding coincides with the fact that only 36% of the sample favored consumers paying directly for the costs related to a mandatory COOL program.

Key Words: beef, consumer preferences, country-of-origin labeling, dichotomous choice, willingness to pay

JEL Classifications: D12, Q13

The 2002 Farm Security and Rural Investment Act (2002 Farm Bill) contains a provision mandating retailers to provide consumers with country-of-origin labeling (COOL) information at the point of purchase for ground and whole-muscle cuts of beef, pork, and lamb. Seafood, peanuts, and fruits and vegetables are also included in the mandatory COOL law. The COOL program guidelines created by the USDA Agricultural Marketing Service (AMS), the government agency responsible for implementing COOL, state that only meat products from animals born, raised, and processed in the United States can be labeled as a "Product of the U.S.A." Imported products produced entirely in any country other than the United States would be labeled as a "Product of Country X" (USDA/AMS 2003).

The 2002 COOL provision has become one of the most polemic labeling programs. The 2002 Farm Bill's country-of-origin provision states that mandatory COOL at the retail level shall begin by September 30, 2004. However, because of industry concerns, in January 2004, legislation was signed into law postponing implementation of mandatory COOL for all commodities except wild and farm-raised fish and shellfish until September 30, 2006 (USDA/AMS 2004). Thus, the COOL program is currently voluntary, but proponents of COOL are continually lobbying for reinstatement of mandatory COOL.

Initially, the COOL law was proposed on the premise that consumers have a right to know where their food comes from and that COOL would increase demand for U.S. meat products (Becker). Thus, proponents believed

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COOL would not only enhance the welfare of consumers, but also producers' welfare. For producers to benefit from an increase in demand, the same quantity of U.S. meat products would have to sell at a higher price in the market, a larger quantity of U.S. meat would have to sell at the same price, or a combination of both increased market price and increased quantity would have to occur.

Much of the current debate originates from interested parties' concerns over meat products excluded from the provision, as well as the extent of the costs associated with labeling requirements and origin verification methods. Under the current COOL law, poultry products, dairy products, meat sold through the restaurant and food service sector, and small retailers with less than $230,000 of annual sales are all exempt from mandatory COOL. Producers and consumer advocate groups have proposed that if consumers have the right to know of the origination of their food, then all meat products (including poultry) should be required to carry labels denoting country of origin.

Additionally, there is concern that the costs of complying with COOL would ultimately be passed on to the consumer and could potentially have a negative effect on producers of covered meat products. This might occur if consumers shift their consumption away from a covered meat product such as beef or pork and to a competing meat product such as poultry. For example, a comprehensive cost study by Andersen and Kay found mandatory COOL would cost the beef industry an additional $0.10/pound and the pork and seafood industries an additional $0.075/pound. Two separate studies by Lusk and Anderson and Brester and Marsh found asymmetric welfare effects at different levels of the food chain from COOL and suggested that increases in consumer demand would be necessary for COOL to be beneficial to producers. Several other studies have attempted to estimate the costs of COOL to the livestock industry (Davis; Hayes and Meyer; Krissoff et al.; USDA/AMS 2002, 2003; VanSickle et al.). These cost estimates vary extensively, ranging from millions to billions of dollars annually for the meat industry.

In spite of the continuing COOL debate and the fact that the 2002 Farm Bill mandates COOL of most perishable agricultural products, little research has been conducted to assess the effect of COOL on demand for products from the affected sectors of the livestock industry. It is not apparent whether U.S. consumers would prefer to have their meat labeled with the country of origin and whether they value labeling of all meat or just specific meat products. Given the currently unanswered questions surrounding COOL for meat products, the objectives of this paper are twofold: (1) to estimate consumers' willingness to pay (WTP) for three types of meat products (beef, chicken, and pork) and (2) to examine the role played by sociodemographic characteristics in determining willingness to pay for the different meat products. Additional quantitative information is presented regarding the payment method respondents believe to be fairest for covering costs associated with a mandatory COOL program, respondent food safety perceptions surrounding domestic and imported meat products, and trust levels in surveillance authorities.

Although poultry products are not included in the current COOL provision, it is interesting to examine the relative value of labeling poultry products versus other meat products that are included in the law, such as beef and pork, to provide information relevant to the debate over amending the law to include poultry products. The WTP values assessed for individual meat products will allow us to compare the relative WTP values for each meat product to the associated relative costs of COOL of meat products. These relative WTP estimates are not currently available, yet they are important for comparing alternative COOL policies.

Literature Review

In many countries, local products carry a certain reputation for quality. Quagrainie, Unterschultz, and Veeman compared a popular beef product from Alberta with a similar product

produced elsewhere in Canada. They found the price of the non-Alberta meat product had to be reduced by 15% so that consumers would be indifferent between the two sources. Loureiro and McCluskey found that Spanish consumers were willing to pay a premium for fresh meat products labeled with a Protected Geographical Identification (PGI) label, "Galician Veal," which is regulated by the European Union. Although consumers were willing to pay a premium for the beef with a Galician Veal label, the premium varied depending on the cut and quality of beef.

Consumers in France, Germany, and the United Kingdom were surveyed to determine European consumers' preferences for beef labeling strategies associated with origin labeling, private brands, and mandatory labeling of beef from cattle fed genetically modified corn (Roosen, Lusk, and Fox). Consumers in France and Germany indicated that the origin of their beef was more important than any other product attributes such as brand, price, marbling, or fat content. In the United Kingdom, however, consumers ranked origin labeling as more important than brand labeling, but steak color, price, and fat content were most important (Roosen, Lusk, and Fox). Although these studies indicate consumers are willing to pay a premium for geographically labeled products, they are likely not representative of U.S. consumers' preferences.

In a study of U.S. consumers, Umberger et al. (2002) found in blind taste tests that consumers could taste and were willing to pay a significant premium of $0.70 per pound (on average) for corn-fed beef raised in the United States versus grass-fed beef raised in and imported from Argentina. The segment of consumers who preferred the U.S. corn-fed beef (62%) were willing to pay an average premium of $1.61 per pound. However, a portion (23%) of the consumers preferred and were willing to pay a $1.36 per pound premium for the Argentine, grass-fed beef.

Few studies have examined consumers' perceptions associated with country-of-origin labels on beef products in the United States. Schupp and Gillespie (2001a) sampled beef processors, retailers, and restaurants in Louisiana to identify why beef-handling firms would either support or reject a mandatory COOL policy. They found supporters of the law believed their consumers would find the label valuable, whereas opponents of the law thought that mandatory labeling simply meant more government intervention. In another study, Schupp and Gillespie (2001b) surveyed Louisiana households to analyze consumers' degree of support for mandatory COOL of beef in grocery stores and restaurants. Over 80% of their respondents supported a compulsory labeling program. Although these studies show beef handlers' and consumers' support of mandatory labeling, they do not shed light on whether or not consumers would be willing to pay the additional costs associated with the mandatory labeling policy.

In a sample of Colorado consumers, Loureiro and Umberger estimated the mean willingness to pay for a U.S. mandatory labeling program, as well as for "Certified U.S." steak and hamburger, concluding consumers are willing to pay premiums ranging from 38% to 58% to obtain Certified U.S. beef. In another study, experimental methods were used to determine Chicago and Denver consumers' preferences for steak after visually evaluating and bidding on two steaks, which differed only in package labels. One steak was labeled "Guaranteed U.S.A.: Born and Raised in the U.S.," and the other steak was unlabeled. Seventy-five percent of the 273 consumers indicated they would prefer to have their meat labeled with the country of origin, however only 69% of the consumers were willing to pay an average premium of 19% for the U.S.-labeled steak (Umberger et al. 2003).

The current research will resolve pending questions regarding U.S. consumers' preferences and willingness to pay for COOL of meat products, extending both the context and geographical dimensions of previous studies.

Methods

To elicit consumers' willingness to pay for the three labeled meat products, Certified U.S. ribeye steaks, chicken breasts, and pork chops, we implemented a set of dichotomous choice

questions. Specifically, each consumer was asked three valuation questions of the following form.

> Assume that the cost of traceability required to label a ribeye beef steak as "Certified U.S. Beef" is $[price]/pound in addition to the traditional $6.75/pound price; would you be willing to pay this premium in order to guarantee that your beef is "Certified U.S. Beef"?
>
> a. Yes
>
> b. No

Other consecutive and similar questions were asked for the valuation of chicken breasts and pork chops. In the questionnaire design, the national average prices published by the USDA (USDA/ERS) were used as reference or baseline prices. The baseline prices for chicken breasts and pork chops were $2.07/pound and $3.46/pound, respectively. These initial prices corresponded to the average prices for the nonlabeled meat products at the time the survey was conducted. In all three cases, the bid amounts were percentage values in increments of 5% over the initial value of the product, adding up to a maximum premium of 75%. This bid design was pretested with open-ended WTP questions.

The individual responses to dichotomous choice WTP questions for these three country-of-origin–labeled products might not be independent; therefore, we modeled the three responses in a panel format with a binary logit model, such that

$$(1) \qquad \mathrm{WTP}_{ij} = \alpha + \beta_j \mathrm{Bid}_{ij} + \gamma \mathbf{Z}_i + \varepsilon_{ij},$$

where WTP_{ij} indicates the dichotomous response (No = 0, Yes = 1) to the WTP question (which is a proxy for the latent WTP*) of participant i for product j, and α, β, and γ are the coefficients to be estimated. The Bid_{ij} variable represents the premium for each of the j products that consumer i faced. In this way, we can compare the WTP values elicited for the three different products. The vector $\mathbf{Z}$ includes the sociodemographic characteristics and consumer food safety perceptions of each individual respondent. The error term $\varepsilon_{ij} \sim G(0, \sigma^2)$ follows a standard logistic distribution denoted by $G(\cdot)$, having mean zero and standard deviation $\sigma = \pi/\sqrt{3}$.

Equation (1) was estimated via maximum likelihood. The respective WTP estimates were calculated as Hanemann proposed, such that

$$(2) \qquad E(\mathrm{WTP}_j) = -\frac{1}{\hat{\beta}_j} \ln(1 + \exp^{\hat{\alpha}}).$$

Notice that this formula employs the $\hat{\beta}_j$ coefficient associated with each of the respective bid amounts, and the $\hat{\alpha}$ coefficient represents the so-called grand constant. The grand constant is the sum of the products of the estimated coefficients times their respective explanatory variables (excluding the Bid coefficients). This formula restricts the WTP to positive values, which is a reasonable assumption for a private good.[1]

Data

During Spring 2003, data were gathered by a mail survey sent to households in the continental United States. A representative sample of 5,000 participant households was drawn from a mail listing purchased from Survey Sampling Inc., a leader in the science of sampling methodology and research quality. This listing is compiled from white pages directories and supplemented with a variety of other sources such as Department of Motor Vehicles information, voter information, and census data. Thus, the listing is expected to be representative of the current U.S. Census. Survey design and data collection procedures followed the survey design methods proposed by Dillman.[2] Before the survey was mailed, a

[1] Note that the formula $E(\mathrm{WTP}) = -(\hat{\alpha}/\hat{\beta})$ potentially could be applied, and it provides lower point estimates. This is because it does not restrict the mean WTP estimates to the positive range. In our case, this is not a very realistic assumption because it is most likely that consumers have a positive or zero willingness to pay for products labeled with country of origin.

[2] Because of budgetary constraints, no economic compensation was used to increase the participation rate by inducing response.

pretest was conducted with consumers in two U.S. cities. With the use of the information gathered in the pretest to make slight modifications, the final survey was sent out in a seven-page booklet format, with a hand-signed cover letter explaining the project and a postage-paid return envelope. A second survey and postage-paid return envelope were mailed out during the early summer months to the households who did not respond in the first attempt.

The survey solicited information regarding respondents' purchasing behavior and attitudes about beef products; beef qualities that consumers find most desirable; food safety attitudes; and willingness to pay a given premium for beef steak, chicken breast, and pork chops labeled Certified U.S. Additionally, consumers were asked to indicate the agency they believed would be most suitable for certifying the origin of meat products and the fairest mechanism to pay for costs that might arise from a mandatory COOL program. Finally, sociodemographic characteristics were elicited in the last section of the survey.

Empirical Specification

To test the role of the different sociodemographic characteristics on consumer response for the three labeled products, the logit model in Equation (3) was estimated. This model includes the cross products of the sociodemographic characteristics with the indicator variables that denote each of the three meat types (chicken, pork, and beef, respectively). The estimated model has the following functional representation.

$$
\begin{aligned}
(3)\quad WTP_{ij}^{*} &= \alpha_0 + \beta_1 BidChicken_i + \beta_2 BidPork_i \\
&\quad + \beta_3 BidBeef_i + \beta_4 Age_i * Chicken \\
&\quad + \beta_5 Age_i * Pork + \beta_6 Age_i * Beef \\
&\quad + \beta_7 LowEdu_i * Chicken \\
&\quad + \beta_8 LowEdu_i * Pork + \beta_9 LowEdu_i * Beef \\
&\quad + \beta_{10} HighEdu_i * Chicken \\
&\quad + \beta_{11} HighEdu_i * Pork + \beta_{12} HighEdu_i * Beef \\
&\quad + \beta_{13} Children_i * Chicken \\
&\quad + \beta_{14} Children_i * Pork + \beta_{15} Children_i * Beef \\
&\quad + \beta_{16} LowInc_i * Chicken \\
&\quad + \beta_{17} LowInc_i * Pork + \beta_{18} LowInc_i * Beef \\
&\quad + \beta_{19} HighInc_i * Chicken \\
&\quad + \beta_{20} HighInc_i * Pork + \beta_{21} HighInc_i * Beef \\
&\quad + \beta_{22} Gender_i * Chicken \\
&\quad + \beta_{23} Gender_i * Pork + \beta_{24} Gender_i * Beef \\
&\quad + \beta_{25} FoodSafety_i * Chicken \\
&\quad + \beta_{26} FoodSafety_i * Pork \\
&\quad + \beta_{27} FoodSafety_i * Beef + \varepsilon_{ij}.
\end{aligned}
$$

The indicator variables *Chicken, Pork,* and *Beef* represent each of the meat types. $BidChicken_i$, $BidPork_i$, and $BidBeef_i$ represent the cross products of the indicator variable that signals each of the corresponding meat types times the random amount each respondent i was asked to pay for a pound of chicken breast, pork chops, and beefsteak labeled with the country of origin. The variables Age_i, $Gender_i$, and $Children_i$ represent the age of the respondent measured in years; the gender represented by an indicator variable that takes the value of 1 if the respondent is a female and 0 otherwise; and an indicator variable that takes the value of 1 if children younger than 18 years of age are living in the household and 0 otherwise, respectively (Table 1).

To allow for nonlinear relationships between the dependent and independent variables, *Education* and *Income* are introduced as a series of indicator variables that represent the lowest and highest values of the categorical variables. In particular, the variable $LowEdu_i$ represents respondents whose education level is less than or equal to high school, whereas $HighEdu_i$ represents respondents whose education level is equal to or more than a 4-year university degree. Additionally, $LowInc_i$ represents individuals with an annual household income after taxes in 2002 of less than $30,000, whereas $HighInc_i$ indicates individuals with an annual household income equal to or more than $50,000 for the same period (Table 1). Finally, $FoodSafety_i$ measures participants' stated importance rated

Table 1. Summary Statistics for the Demographic Variables

Variable Name	Description (Coding)	Mean	SD
Age	Years	55.118	21.182
Gender	1 if female 0 if male	0.532	0.511
Shopper	1 if primary household shopper 0 if otherwise	0.857	0.349
Education	1 = Elementary 2 = Some high school (HS) 3 = HS diploma 4 = Some college 5 = Junior college 6 = B.A. or B.S. 7 = Graduate school	5.107	1.674
Children	1 if children <18 living in the household 0 if otherwise	0.346	0.501
Family Size	Number of family members living in the household	1.904	0.745
Income	2001 annual household income: 1 = <$20,000 2 = $20,000–$29,999 4 = $30,000–$39,999 5 = $40,000–$49,999 6 = $50,000–$59,999 7 = $60,000–$69,999 8 = ≥$70,000	6.134	2.789
Race	1 if White 0 if otherwise	0.912	0.283

on a five-point Likert scale (see Table 2) of food safety inspection when shopping for meat. All of these sociodemographic characteristics were interacted with the three indicator variables: *Chicken, Pork,* and *Beef.* Thus, the cross-product variables represent the product of the included sociodemographic and food safety variables with the corresponding indicator variables of the respective meat types. ε_{ij} is the error term that follows a logistic distribution.

Additionally, and to explore the presence of nonobserved heterogeneity, a random effects logit model was estimated. In this model, the error term ε_{ij} represents a combination of two processes, such that $\varepsilon_{ij} = v_i + u_{ij}$, where v_i represents an individual nonobserved heterogeneity component uncorrelated with the explanatory variables and u_{ij} a stochastic error term. The v_i in this particular application is assumed to follow a Gaussian distribution with mean 0 and variance s_v^2, whereas u_{ij} is assumed to follow a logistic distribution with mean 0 and s_u^2, respectively. We can account for the correlation in the responses of the WTP questions coming from the same individual i at different time periods (or responses, r) t and s, such that $r(\text{WTP}_{it}, \text{WTP}_{is}) = s_v^2/(s_v^2 + s_u^2)$, for which this correlation can be substantial.

Results

From the 5,000 surveys mailed, 216 were returned because of insufficient information in the address, and 632 were returned completed, which contributes to a response rate of about 13%.[3] The majority of respondents were the

[3] This response rate is similar to rates obtained in other published, contingent valuation, unsolicited, bulk

Table 2. Mean Ratings of Desirable Meat Attributes (1 = Not at All Desirable; 5 = Extremely Desirable)

Attribute	Mean	SD
Food Safety Inspected (*Escherichia coli* and *Salmonella* free)	4.802 A	0.503
Freshness	4.771 A	0.472
High-Quality Grade	4.406	0.674
Reasonably Priced	4.357 B	0.769
Meat Produced in the United States	4.306 B	0.878
Good Visual Presentation	4.236	0.815
Lean	4.165 C	0.803
Tenderness Assurance	4.164 C	0.816
Nutritional Value	4.117 C	0.863
No Added Growth Hormones or Antibiotics	4.022	1.140
Source Assurance (Knowing Who Produced Your Meat)	3.857	1.100
Humane Production Methods	3.750 D	1.192
Premium Brand	3.714 D	0.987
Meat Produced or Raised Locally	3.451	1.135
Organic Production Methods	2.969	1.174

Note: Mean ratings of meat attributes with the same letters are not statistically different from one another at the α = .05 level of significance. For example, the mean ranking of the attribute Food Safety Inspected is not statistically different from the mean rating of Freshness.

primary food shoppers of the household (85%), White (91%), and female (53%). The respondents' average age was about 55 years, and 35% of all respondents had children under the age of 18 years old living in their household. The mean household income of the sample was calculated to be about $50,000 after taxes for the 2002 calendar year, and their average education was a junior college degree. Demographic summary statistics are presented in Table 1. The sample is comparable to the U.S. Census (U.S. Census Bureau) in terms of gender, education, income, number of children per household, and household size. However, this sample includes fewer minorities, and participants are slightly older than the mean age reported by the U.S. Census. As with all surveys, there could be some degree of sample selection bias in which the respondents who were more interested in the COOL program elected to participate in the survey. The effect of sample selection on our results concerning country-of-origin labels is impossible to determine.[4]

Respondents were asked to indicate the importance of 15 attributes that consumers might look for when purchasing meat. Pairwise *t*-tests were used to statistically compare differences in mean ratings between attributes. Table 2 shows that the attributes Food Safety Inspection and Freshness were rated statistically higher on a five-point Likert scale than any other meat attributes. High-Quality Grade and Reasonably Priced were also rated as extremely desirable to very desirable. Other attributes, such as U.S. origin, Good Visual Presentation, Leanness, Tenderness Assurance, and Nutritional Value were also ranked as very desirable on average. These relative ratings are similar to other studies conducted with smaller samples (see Loureiro and Um-

mailing studies in which no economic compensation was used (e.g., Lusk; Roosen, Lusk, and Fox; Sherrick et al.). It is possible that a monetary incentive would have increased our response rate. However, the length and complexity of the survey might also have affected the response rate.

[4] Weighting of observations might be a solution to overcome the problems posed by a sample that is not entirely representative of the U.S. population. However, the practice of weighting estimates is not exempt from criticism. A large amount of auxiliary information has to be available to the researchers, from both respondents and nonrespondents. Unfortunately, as in most surveys, we do not have any information regarding the nonresponses for some of the explanatory variables, such as the importance of food safety.

Table 3. Perceived Safety of Meat Products from Various Countries of Origin (1 = Not at All Safe; 5 = Extremely Safe)

Country	Mean	SD
United States	4.216	0.678
Canada	3.657	0.842
México	2.135	0.836
Australia	3.130	0.921
New Zealand	3.082	0.951
Denmark	2.989	0.929
Argentina	2.623	0.901
Hypothesis Test[a]	***t*-test value**	***p* value**
H_0: $\mu_{U.S.} - \mu_{Canada} = 0$	34.718	.000
H_0: $\mu_{U.S.} - \mu_{México} = 0$	49.570	.000
H_0: $\mu_{U.S.} - \mu_{Australia} = 0$	49.570	.000
H_0: $\mu_{U.S.} - \mu_{New\ Zealand} = 0$	26.595	.000
H_0: $\mu_{U.S.} - \mu_{Denmark} = 0$	46.930	.000
H_0: $\mu_{U.S.} - \mu_{Argentina} = 0$	50.083	.000

[a] Tests of differences in mean ratings of perceived safety of meat originating from the United States versus mean of six other countries (H_0: $m_{U.S.} - m_{country\ j} = 0$ versus H_a: $\mu_{U.S.} - \mu_{country\ j} \neq 0$).

berger; Umberger et al. 2003). It is interesting to note that brands, Meat Produced or Raised Locally, and Organic Production Methods were the attributes with the three lowest rankings.

Proponents of mandatory COOL have argued that domestic meat is perceived by U.S. consumers to be safer than imported meat. To examine U.S. consumers' safety perceptions of domestic versus imported meat products, respondents used a scale from 1 (not at all safe) to 5 (extremely safe) to rate the safety of meat originating from the United States and six major meat or livestock importers: Argentina, Australia, Canada, Denmark, Mexico, and New Zealand. In terms of food safety perceptions associated with the country of origin of meat products, respondents indicated (as shown in Table 3) that meat produced domestically is perceived to be the safest, followed by meat produced in Canada. However, consumers rated meat from Mexico and Argentina as the least safe meats, below meat from Australia, New Zealand, and Denmark, a country that has suffered outbreaks of bovine spongiform encephalopathy (BSE or mad cow disease). Pairwise *t*-tests indicate the statistical difference between respondents' perceptions of the safety of U.S. meat versus their safety perceptions of all other origins of meat included in the survey (see Table 3). Thus, U.S. meat is perceived to be safer than meat originating from any of the six other nations.[5] It is important to note that, although U.S. meat is perceived to be of better quality than major importers' meat from a food safety standpoint, domestic meat might be deemed lower quality on other attributes. For example, grass-fed beef from Argentina and Australia is perceived by some U.S. consumers to have a better flavor than U.S. beef (Sitz et al.; Umberger et al. 2002), and some U.S. consumers prefer the quality of New Zealand and Australian lamb to domestic (Krissoff et al.).

Respondents were also asked to indicate the agency they believed would be most suitable to certify the origin of meat, as well as the fairest way to pay for the costs incurred from a mandatory COOL program. Approximately 60% of the consumers indicated that they prefer the government (USDA/AMS inspection services) to certify the origin of their meat products. This high percentage reflects strong confidence of U.S. consumers in the inspection services of the U.S. government. Other entities preferred as the best certification agencies third-party independent certifiers, with 20.8% of the support, and local producers, with 12.7% of support. Only 7.9% of the participants indicated other agencies would provide the most desirable way of certification. These results would tend to support the current USDA/AMS COOL guidelines, which state that self-certification (by suppliers) of country-of-origin is not sufficient.

[5] This research was conducted before the December 23, 2003, case of BSE (mad cow disease) in Washington State. A survey conducted in January 2004 found that 85% of the 1,001 continental U.S. consumers surveyed were knowledgeable about the December U.S. BSE case. However, of the knowledgeable consumers, the majority indicated their confidence in the U.S. beef supply remained unchanged, and 8% indicated their confidence had increased (Hallman, Schilling, and Turvey).

With respect to the fairest mechanism for paying for the COOL-related certification costs, respondents showed a clear division of opinions. Nearly 39% suggested the associated costs should be paid with the use of the existing government budget through reducing expenditures on other programs or infrastructures. However, 36.2% believed that the costs should be paid via higher meat prices that could compensate industry expenditures. The other 10.9% of respondents believed the associated costs should be paid for by fees applied to producers, and 2% preferred a higher income tax. The rest of the sample (about 12%) preferred to use another payment mechanism; with most of them indicating that import levies and tariffs on imports would be the fairest mechanisms. Consequently, only about a third of the sample favored consumers paying directly for the mandatory COOL program.

Econometric Results

To analyze the different roles played by sociodemographic characteristics and food safety perceptions on the WTP decisions of respondents for each of the three meat products, Equation (3) was estimated. The specification in Equation (3) is rather useful to determine whether the WTP decisions for the three types of meat products are equally affected by consumer characteristics and food safety perceptions. In addition to using a binary logit model specification, Equation (3) was also estimated with a random effects logit model to account for the nonobserved heterogeneity (preference differences that are not related to sociodemographic variables).

The coefficients from both estimations are presented in Table 4. In terms of general fit of the model and statistical significance, the results were improved when estimating a logit model with random effects. Likelihood ratio tests, as well as a higher number of statistically significant variables, indicate the superiority of the random effects model relative to the binary logit model. Furthermore, the magnitude of the estimated correlation coefficient r is also very close to 1 and is statistically significant. Thus, indicating that the proportion of the variance from random effects is important and statistically significant reassures that the random effects model is more appropriate. Therefore, although both sets of results are included (with the first set used as a baseline type of scenario), we focus our discussion of results on the estimated coefficients of the random effects logit model (last three columns of Table 4).

As expected, the coefficients associated with the three assigned bids are all negative and statistically significant. As demand theory predicts, the higher the premium or amount a consumer is requested to pay, the less likely a consumer will be willing to pay the premium. Of the three bid coefficients, the magnitude of the *BidChicken* coefficient is the largest, indicating that the effect of increasing the premium for Certified U.S. labeling on a participant's probability of being willing to pay for COOL is largest for *Chicken* and smallest for *Beef*.

Several sociodemographic variables are also significant in explaining the likelihood of a consumer being willing to pay a premium for Certified U.S. meat products. The sign and significance of the *Age*Beef* coefficient indicates that older individuals are less likely to be willing to pay a premium for the Certified U.S. label. Although the *Age*Chicken* and *Age*Pork* coefficients are also negative, they are not statistically significant. Higher educated consumers are also less likely to be willing to pay premium for U.S.-labeled meat products; however, only the coefficients on *HighEdu*Pork* and *HighEdu*Beef* are significant. On the basis of the sign and significance of all coefficients related to gender (*Gender*Chicken, Gender*Pork, Gender*Beef*), females are more likely to be willing to pay a premium for all meat products labeled Certified U.S. Loureiro and Umberger found a similar significant relationship between gender and willingness to pay for COOL of steaks in their regional study of Colorado consumers. Income also appears to have a significant effect on willingness to pay for Certified U.S. beef and pork products. Low-income consumers are less likely to be willing to pay for Cer-

Table 4. Estimates from a Binary Logit and a Logit Model with Random Effects (N = 1,833)

	Logit Model				Logit Model with Random Effects		
Variable	Coefficient	SE	Marginal Effects	SE	Coefficient	SE	p value
Constant	−0.382	0.511			−4.147	2.724	0.128
BidChicken	−1.225	0.188***	−0.2481	0.0383	−5.364	0.771	0.000
BidPork	−0.590	0.116***	−0.1196	0.0233	−2.385	0.423	0.000
BidBeef	−0.256	0.061***	−0.0519	0.0380	−1.065	0.224	0.000
Age*Chicken	−0.001	0.005	−0.0003	0.0525	−0.012	0.019	0.507
Age*Pork	0.001	0.005	0.0002	0.0009	−0.009	0.018	0.610
Age*Beef	−0.002	0.005	−0.0003	0.0010	−0.043	0.022	0.047
LowEdu*Chicken	−0.029	0.262	−0.0059	0.0525	−0.250	0.977	0.798
LowEdu*Pork	0.169	0.267	−0.0353	0.0575	0.390	0.874	0.656
LowEdu*Beef	−0.121	0.278	−0.0239	0.0535	−1.018	0.963	0.290
HighEdu*Chicken	−0.492	0.215**	−0.0059	0.0373	−0.737	0.687	0.283
HighEdu*Pork	−0.520	0.228**	−0.0968	0.0385	−1.101	0.657	0.094
HighEdu*Beef	−0.577	0.235**	−0.1063	0.0389	−1.527	0.734	0.038
Gender*Chicken	0.473	0.187**	0.1016	0.0423	1.673	0.702	0.017
Gender*Pork	0.493	0.199**	0.1063	0.0451	1.494	0.640	0.019
Gender*Beef	0.471	0.207*	0.1012	0.0466	1.544	0.724	0.033
LowInc*Chicken	−0.312	0.283	−0.0593	0.0502	−1.759	1.088	0.110
LowInc*Pork	−0.177	0.294	−0.0346	0.0554	−2.285	1.073	0.033
LowInc*Beef	−0.043	0.303	0.0086	0.0623	−3.820	1.123	0.001
HighInc*Chicken	0.071	0.228	0.0146	0.0469	1.292	0.918	0.159
HighInc*Pork	0.128	0.242	0.0264	0.0507	1.218	0.726	0.094
HighInc*Beef	0.249	0.253	0.0520	0.0543	1.915	0.849	0.024
Children*Chicken	−0.157	0.204	−0.0309	0.0391	−1.522	1.046	0.146
Children*Pork	−0.326	0.218	−0.0623	0.0392	−0.702	1.048	0.503
Children*Beef	−0.736	0.238**	−0.1296	0.0353	−2.002	1.325	0.031
FoodSafety*Chicken	0.262	0.145*	0.0530	0.0294	1.036	0.566	0.067
FoodSafety*Pork	0.066	0.146	0.0134	0.0295	0.237	0.583	0.684
FoodSafety*Beef	0.047	0.150	0.0095	0.0303	0.470	0.612	0.443
$\ln(\sigma^2)v$					4.193	0.192	
$\sigma\ v$					8.136	0.780	
r					0.953	0.009	
Likelihood ratio test of $r = 0$					755.65		0.000
Likelihood value	−966.726				−588.899		

Note: A coefficient is statistically significant at *** α = .000, ** α = .01, and * α = .1. Although 632 surveys were returned, 21 surveys contained missing observations; therefore, 611 respondents were used in this econometric analysis (N = 661 × 3 = 1,833).

tified U.S. pork chops and beef steaks, and high-income consumers are more likely to be willing to pay for U.S.-labeled pork and beef.

The interaction terms between the indicator denoting that children under 18 are living in the household and the indicator variables that represent chicken breasts (*Children*Chicken*) and pork chops (*Children*Pork*) are both negative, although not statistically significant, whereas the cross product of beef and children (*Children*Beef*) is also negative, but it is statistically significant. The coefficients on the variables representing the cross products of food safety attitudes and meat types (*FoodSafety*Chicken*), (*FoodSafety*Pork*), (*FoodSafety* Beef*) are all positive; however, only the coefficient on the variable *FoodSafety*Chicken* is statistically significant. This indicates that consumers who ranked food safety inspection as very desirable were more likely to be willing to pay a premium

Table 5. Willingness-to-Pay Estimates and Standard Errors for Certified U.S. Meat

Meat Product	Mean WTP Estimate	90% Confidence Limits
Certified U.S. Chicken Breasts	$0.051/pound	(0, 0.175)
Certified U.S. Pork Chops	$0.088/pound	(0, 0.304)
Certified U.S. Beef Steaks	$0.198/pound	(0, 0.682)

[a] $CL_j = -1/\hat{\beta} \ln(1 + \exp^{\hat{\alpha}}) \pm T_{critical} SE_{bootstrap}$; $T_{critical} = 1.65$ for 90% confidence limits.

for Certified U.S. meat. Consequently, it is quite plausible that consumers are willing to pay for COOL of chicken breasts not only because its baseline price is cheaper but also because consumers might perceive Certified U.S. chicken as a product assuring high quality standards.

In general, on the basis of the signs of the coefficients, demographics have similar directional effect on willingness to pay for COOL across meat products. However, of the significant coefficients, not all are significant for all three meat products. Consequently, we conclude that the relative importance of demographic variables differs among meat products. For example, only two of the demographic interaction terms with the chicken breast indicator variable are statistically significant (*Gender*Chicken* and *Food-Safety*Chicken*), whereas nearly all of the demographic interaction terms with the beef steak indicator variable are significant. Additionally, of the significant demographic variables, the magnitudes of the coefficients interacting with the indicator variable *Beef* (relative to the indicator variables *Chicken* or *Pork*) are the largest. The use of demographic variables to target market consumers who potentially would be willing to pay a premium to obtain Certified U.S. meat products appears to be relatively easier for beef steaks than for chicken breasts or pork chops.

Willingness-to-Pay Estimates

By employing the estimated coefficients from the random effects logit model [Equation (3)] and first calculating the grand constant for each individual observation, which will replace $\hat{\alpha}$ in Equation (2), we are able to obtain mean WTP point estimates for the COOL of each of the individually labeled meat products. These mean WTP estimates are calculated by summing up each of the individual WTP estimates for each specific meat cut and then dividing by the total sample size. The mean WTP estimates and their respective confidence intervals are presented in Table 5. The premium for Certified U.S.–labeled chicken breasts was calculated as $0.05/pound over the base price, or 2.5% more than the initial price. The WTP estimates for Certified U.S. pork and beef are slightly higher than for chicken breasts. Mean WTP values for COOL of pork and beef were calculated to be about $0.09/pound and $0.20/pound, respectively. These are premiums of 2.5% for pork and about 2.9% for beef. Therefore, the WTP values for U.S.-labeled poultry, pork, and beef products are the same in relative terms (percentages).[6]

Even though the estimated premiums for beef and pork are slightly higher than Andersen and Kay's cost estimates of $0.10/pound of beef and approximately $0.08/pound of pork, they do not indicate that benefits will exist at the producer level. These estimated premiums are average values for the entire sample. Although respondents might have an interest in a COOL program, only about 30% of the respondents indicated they would be willing to pay (by answering Yes to the dichotomous choice question) a premium greater than 5% for Certified U.S. meat products.[7]

[6] If we work under the assumption that average consumers might dislike U.S. beef so much that they might buy it only if offered at a discounted price and apply the formula $E(\text{WTP}) = -(\hat{\alpha}/\hat{\beta})$ to estimate willingness to pay, then the mean WTP estimates (or in this case, discounts) for Certified U.S. chicken breasts, beef steaks, and pork would be −$0.28/pound, −$1.41/pound, and −$0.63/pound, respectively. However, for private goods, it is not very common to expect a negative WTP estimate. Please see Haab and McConnell for a critique of unbounded WTP values.

[7] This result coincides with the finding that only 36.2% of these respondents favored consumers paying

Considering typical U.S. meat supplies and production capacity, nearly all poultry products and approximately 90% and 95% of the beef and pork products sold in the United States could be labeled as Certified U.S. (Brester and Marsh; Plain and Grimes). Thus, under a mandatory COOL program, it is unlikely that consumers would actually have to pay premiums for Certified U.S. meat products unless the costs of COOL were passed on directly to the consumer.[8]

Moreover, Lusk and Anderson estimate that, at a minimum, a 2% increase in aggregate consumer demand for pork and beef would be needed to offset the reduction in producer surplus caused by COOL. As a result, even if the estimated premiums of 2.5% and 2.9% for pork and beef, respectively, labeled with the country of origin did exist, according to Lusk and Anderson's estimates, the premiums would only be enough to offset the negative effect related to COOL. These values also depend on the ability of U.S. producers to maintain a domestic reputation of U.S. meat as being of higher quality relative to major importers.

Furthermore, we caution that, as in any contingent valuation study (CV), our WTP estimates could suffer from hypothetical bias common to these type of studies. Several studies address the point of hypothetical bias of CV results when compared with actual purchasing behavior (see, e.g., Cummings, Harrison, and Rutström; Cummings et al.; List and Gallet). Most of these studies conclude that there is a slight upward bias when dealing with private goods, although the bias is generally smaller than the calibration factor suggested by the National Oceanic and Atmospheric Administration's panel (Arrow et al.). Nevertheless, the application of CV methods is supported by many other studies showing the correspondence between stated preferences and actual market behavior (see, e.g., Haab, Huang, and Whitehead; Loomis).

Accordingly, these WTP estimates provide insight on the relative value consumers place on COOL for beef, pork, and poultry, and they are useful in terms of providing estimates for more in-depth cost–benefit analyses. However, multiple questions arise when conducting a cost–benefit analysis: the selection of the applied rate of discount, the time path of benefits, and the presence of risk and uncertainty associated with each of the estimated benefits and costs. In this paper, our goal is not to estimate a cost–benefit analysis, but rather to provide estimates of potential relative premiums (or estimates of consumer surplus) for meat products that could serve as inputs in future economic analyses.

Robustness Checks

Robustness checks performed in the analysis included a test regarding whether the ordering of the questions affected WTP responses for the meat products. If an ordering effect is present, then the WTP estimates could be biased. Such ordering effects can emerge because of budget restrictions that become more severe as additional WTP questions are presented to the respondents. To test whether an ordering effect exists, two versions of the survey (A and B) were used, altering the order of the questions related to the willingness to pay for U.S. certification of chicken breasts and pork chops. When estimating the WTP equations for chicken breasts and pork chops, an indicator variable was included to reflect the order in which the question was posed to the respondent. This indicator variable was not statistically significant, implying that the WTP estimates were not affected by the order in which the questions were presented to the respondents.

Conclusions and Implications

The COOL provision has become one of the most controversial and widely debated food labeling programs. Previous WTP studies for

directly for the costs related to a mandatory COOL program.

[8] Non-U.S. product would likely be sold in sectors of the industry in which COOL is not required, such as the food service sector. Several studies discuss the expected distribution of COOL-related costs throughout the food chain (see, e.g., Brester and Marsh; Hayes and Meyer; Lusk and Anderson; VanSickle et al.)

COOL have been regional in scope and have focused primarily on beef. This study presents results from a U.S. survey and compares consumer response toward a proposed COOL program applied to beef ribeye steaks, chicken breasts, and pork chops. Results indicate that participants are only willing to pay premiums ranging from 2.5% to 2.9% over the original market price to obtain Certified U.S. chicken breasts, pork chops, and ribeye beef steaks. These premiums are relatively small when compared with the values obtained from more regional WTP studies. Additionally, the estimated premiums for COOL of pork and beef are only large enough to offset previous studies' estimated costs from mandatory COOL. There has been considerable debate over whether or not poultry products should be added to the mandatory COOL provision. The poultry industry would likely benefit the most from the labeling requirements of the 2002 mandatory COOL provision when considering the relative premiums estimated in this study and comparing them with previous cost estimates for COOL of beef, pork, and poultry.

The results of the demographic analysis indicate that the segment of individuals willing to pay for Certified U.S. chicken could be different from the market for beef and pork, particularly in terms of food safety preferences. Consumers who rated food safety inspection as more desirable were more likely to be willing to pay a premium for Certified U.S. chicken. Additionally, the target market of consumers who would be willing to pay a premium for Certified U.S. beef and pork appears to be more distinguishable than the market for chicken labeled with country of origin. In particular, higher educated consumers are less likely to be willing to pay for Certified U.S. pork and beef, and consumers with children in the household are less likely to be willing to pay a premium for COOL of beef. Higher income groups are more likely to be willing to pay a premium for beef and pork labeled with country of origin. Female consumers are more likely to pay for Certified U.S. meat, regardless of the meat type.

Under a mandatory COOL program, it is likely that because of production capabilities of U.S. producers, the supply of Certified U.S. meat would be greater than the demand. As a result, there would be no premiums in the marketplace. However, with a voluntary program, the entire meat case would not necessarily be labeled as a "Product of the U.S.A.," and companies could target market demographic groups of consumers, such as higher income consumers, who might be willing to pay a premium for Certified U.S. beef. Consequently, under a voluntary COOL program, marketers of beef and pork products would be more likely to benefit than under a mandatory program.

Other conclusions drawn from this study indicate that food safety inspection and freshness are the two most important attributes to consumers when purchasing meat. Overall, consumers have a strong confidence in U.S. government agencies as potential certifiers and rate meat produced domestically as safer than meat from major importing countries. Additional research is necessary to further explore how consumers' perceptions of Certified U.S. meat products compare with meat from other countries, such as Australia or New Zealand, in terms of other quality variables such as flavor and nutritional characteristics, as well as price. Future research might also examine how consumers' perceptions toward COOL of vegetables and fruits compare with COOL of meat products.

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Country-of-Origin Labeling of Beef Products: U.S. Consumers' Perceptions

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In 2002, Chicago and Denver consumers were surveyed and participated in an experimental auction to elicit willingness to pay for country-of-origin labeling (COOL) of beef. Survey results indicate the majority of consumers (73%) were willing to pay an 11% and 24% premium for COOL of steak and hamburger, respectively. In the auction, consumers were willing to pay a 19% premium for steak labeled "U.S.A. Guaranteed: Born and Raised in the U.S." Food-safety concerns, preferences for labeling source and origin information, a strong desire to support U.S. producers, and beliefs that U.S. beef was of higher quality were reasons consumers preferred COOL.

Consumers are becoming increasingly concerned with the quality, safety and production attributes of their food (Caswell 1998). Consumers' concerns with the safety and origin of beef are especially true in light of recent European and Japanese BSE outbreaks and occurrences of *E-coli 0157:H7* in U.S. beef (Shiptsova, Thomsen, and Goodwin 2002). The origin and processes used to produce beef products are not apparent to the consumer through experience, consumption, or visual inspection of products. Therefore, without additional information consumers cannot differentiate the origin of or processes used to produce beef products. Production attributes that may be valued by consumers, such as country of origin, are considered *credence characteristics* (Darby and Karni 1973; Caswell and Mojduszka 1996). Truthful labeling of credence characteristics allows consumers to judge products before purchasing (Caswell 1998).

Given that country of origin of beef is a credence attribute, consumer-advocacy groups and some agricultural-producer groups have petitioned for a mandatory country-of-origin labeling (COOL) law in the United States. After many years of debate a mandatory COOL program was passed as Title X, Section 10816 of the Farm Security and Rural Investment Act of 2002 (the 2002 Farm Bill). The 2002 program amends the Agricultural Marketing Act of 1946 and requires retailers to inform consumers of the country of origin of agricultural commodities such as ground meat and muscle cuts from beef, lamb, and pork.[1] For a beef product to be labeled as a "Product of U.S.A." the beef animal must be born, raised, and processed in the United States. Initially, COOL is a voluntary program; it does not become mandatory until 2004. (U.S. Senate Farm Bill Conference Framework 2002).

Proponents of mandatory COOL have expressed concerns about the safety of imported food and have argued that "consumers have a right to know" where their food is coming from (Food Marketing Institute 2002). Additionally, supporters of mandatory labeling believe COOL would provide U.S. producers with a competitive advantage in the supermarket (Schupp and Gillespie 2001b). Opponents of the law have argued that the costs incurred by producers, importers, packers, wholesalers, and retailers to segregate and preserve the identity of meat products, as well as the government expenditures that would be necessary to ensure compliance would outweigh the benefits of labeling (USDA/FSIS 2000). Other critics have argued that mandatory COOL would impose a trade barrier and instigate trade wars (see Schupp and Gillespie 2001a and Food Marketing Institute 2002).

Aside from the COOL debate, Caswell and Padberg (1992) contend in their analysis of the role of labeling information in consumer-good markets that food labels provide more than just "point-of-purchase" information. In today's food markets, information provided through required labeling disclosures "may change the attitude of the consumers or consumers advocate (even if the

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[1] Other commodities included in the mandatory COOL provision were farm-raised fish and shellfish, wild fish and shellfish, peanuts, and fresh fruits and vegetables (U.S. Senate Farm Bill Conference Framework 2002).

consumers do not read or understand it) and may change the sellers' strategy (Caswell and Padberg 1992, 466)." Furthermore, because of the potentially broad impact that food labels can have on consumers' confidence in food quality, on their education about diet and health, and on their overall behavior, policy-makers must take into account the benefits and costs of labeling policies and should evaluate how alternative methods impact consumers' behavior and sellers' strategies (Caswell and Padberg 1992).

Caswell (1998) discusses the regulatory choices available for food labeling. Firms will voluntarily label a food-product attribute if the private benefits from doing so exceed the costs (Caswell and Mojduszka 1996).[2] Thus labeling policies should enhance the information available to consumers, improving the efficiency of the market (Caswell 1998). A mandatory country-of-origin labeling program would be an appropriate policy tool if asymmetric information exists, country of origin increases demand for the product, and the disclosure of possible negative quality attributes does not exceed the benefits (Golan et al. 2000).

Labeling of COOL may be beneficial since it would transform country-of-origin attributes into search characteristics. However, the impact that COOL will have on beef demand is unknown. The objective of this research is to quantitatively and qualitatively evaluate U.S. consumers' preferences and willingness to pay for country-of-origin labeling of beef products and steaks with a "U.S.A. Guaranteed: Born and Raised in the U.S." label. Surveys and experimental auctions are used to elicit consumers' preferences and willingness to pay (WTP) for COOL. Prior to discussing the results of this particular research, previous research examining similar labeling issues will be discussed.

Labeling of Credence Attributes in Food

Numerous studies have examined consumers' preferences and WTP for various credence attributes associated with the processes used to produce foods, such as organic, eco-friendly, no use of growth hormones, non-genetically-modified, and shade-grown. The results of these studies have varied, but the general consensus has been that certain segments of the population are willing to pay more for the food products carrying a label identifying specific credence attributes (Loureiro, McCluskey, and Mittelhammer 2001; Lusk and Fox 2002; Baker and Burnham 2001). Most of the previous work on the labeling of credence attributes in food has focused on production processes or food-safety attributes that consumers may be concerned about. However, as mentioned earlier, consumers are becoming increasingly concerned about the origin of their food. The remainder of this section focuses on studies that have examined consumers' perceptions and preferences for geographical labeling of food products.

In 1999, Louisiana consumers, meat processors, wholesalers, retailers, and restaurants were surveyed to determine their attitudes toward mandatory labeling of country of origin of beef (Schupp and Gillespie 2001a and 2001b). The majority of the Louisiana consumers surveyed (93%) supported mandatory labeling of fresh and frozen beef in retail stores. Most of the consumers (86%) also rated U.S beef superior to imported beef based on their expectations of higher quality and concerns with the safety of imported beef (Schupp and Gillespie 2001a). The majority of the meat handlers (82%) surveyed by Schupp and Gillespie (2001b) supported mandatory COOL of beef as well. Beef handlers were more likely to favor the labeling requirement if they believed their customers would benefit from the increased information provided by COOL. However, restaurants and firms already using imported beef were less likely to support mandatory COOL. Schupp and Gillespie's (2001a) research indicates consumers would be supportive of mandatory COOL of beef; however, they did not determine if consumers would be willing to pay a premium to offset the potential costs of mandatory COOL.

Several recent studies have examined international consumers' WTP for labels verifying the source of origin. Quagrainie, Untershchultz, and Veeman (1998) surveyed consumers in western Canada and found that fresh beef products originating from Alberta were preferred to products originating from other locations in Canada or the United States. Consumers in France, Germany, and the United Kingdom were surveyed in 2000 by Roosen, Lusk, and Fox (2003) to determine European consumers' preferences for beef-labeling

[2] The uncertainty over who will bear the burden of the costs versus potential benefits is likely one reason COOL has not been voluntarily implemented. AGAO (2000) study concluded that the distribution of mandatory COOL compliance costs among producers, packers, processors, distributors, retailers, and consumers was unclear.

strategies associated with origin-labeling, private brands, and mandatory labeling of beef from cattle fed genetically modified corn. Consumers in France and Germany indicated the origin of beef was more important than any other product attribute, such as brand, price, marbling, or fat content. In the UK, however, consumers ranked origin labeling as more important than brand labeling, but steak color, price and fat content were most important (Roosen, Lusk, and Fox 2003).

Another European consumer study examined Spanish consumers' preferences and WTP for beef labeled from a specific geographical location (Loureiro and McCluskey 2000). On average, consumers were willing to pay a premium for veal products with a specific Protected Geographical Identification (PGI) label called "Galician Veal." Loureiro and McCluskey (2000) observed that the PGI label played a larger role in determining the prices of higher-quality and higher-priced beef cuts, such as steaks, which are already perceived to have high intrinsic value.

To assess if consumers were willing to pay for a mandatory COOL program, Loureiro and Umberger (2003) surveyed 243 Colorado consumers during Spring 2002. They found Colorado consumers were willing to pay approximately $184 per year for a mandatory COOL program. The same consumers indicated they would be willing to pay an average of 38% and 58% more for "U.S. Certified Steak" and "U.S. Certified Hamburger," respectively.

One aspect related to COOL is traceabilty. Golan, Krissoff, and Kuchler (2002) discuss the different goals of food-system traceability for the public and private sectors. The public sector's objectives are to provide consumers with information in the case of a market failure, to prevent fraudulent labeling claims, and to ensure sufficient records for traceback in the case of a food-borne illness. However, the private sector's primary objectives from food traceability are to provide consumers with quality assurance and to increase supply-chain management (Golan, Krissoff, and Kuchler 2002).

Some agricultural producer groups believe a traceability system is needed in the United States to increase food safety, and they argue COOL will be meaningless to consumers unless meat can be traced back to the farm or animal of origin. Other producers adamantly oppose any form of mandatory traceback, fearing the additional costs and potential liabilities associated with such a system (Smith 2003). The COOL law prohibits the U.S. Secretary of Agriculture from establishing a mandatory animal-identification program for COOL but requires a verifiable and auditable recordkeeping trail to validate compliance.

Some producers groups believe they should be allowed to self-certify the country of origin of their animals. The USDA Agricultural Marketing Service (USDA/AMS 2002), the agency responsible for writing the final mandatory COOL rules, has stated self-certification is not sufficient, and a credible COOL program will require verifiable records and a system allowing products to be traced back to the animal of origin (Smith 2003). Others have argued that a domestic traceback system is not required to implement COOL, and that the least costly method for regulating COOL is presumption of U.S. origin unless the food product carries a label indicating it is a product of another country (Smith 2003; VanSickle et al. 2003).

The necessary documentation and verification for mandatory COOL is a complex issue. Regardless of the discussion, Dickinson and Bailey (2002) recently conducted research evaluating consumers' preferences for beef and pork products guaranteed to be traceable to the animal of origin, as well as for other credence attributes: humane animal treatment, no added growth hormones, and food-safety assurance. Although consumers in the that study valued and were willing to pay for traceability, they placed a higher value on food-safety assurance and the other credence attributes which are only verifiable through a traceback system.

The recently passed mandatory COOL law has increased the demand for information regarding U.S. consumers' perceptions of and willingness to pay for COOL, specifically for products with a U.S. label. The present research expands on previous studies by examining consumers in two regions of the United States and assessing consumers' perceptions and WTP for COOL after visually examining an actual steak product with a "U.S.A. Guaranteed: Born and Raised in the U.S." label.

Procedures, Data, and Methods

In June and July of 2002, consumers from Denver and Chicago were randomly recruited to participate in a study on beef quality where they would be paid $50 for two hours of their time. Qualifying individuals who agreed to participate were scheduled for one

of 12 panels in each city. Consumers were paid the $50 upon their arrival at the designated research facility; they then completed surveys describing their meat-purchasing behavior, knowledge of beef and socio-demographic characteristics. They also were asked to indicate their preference and willingness to pay for different beef products with labels identifying the country of origin where the beef was produced.

After completing the survey questions, a random *n*th-price auction (Shogren et al. 1994) was explained to participants. The research monitor explained to participants that they would have the opportunity to bid on steaks in several auctions and that their bids would determine the prices paid for the steaks in the auctions. Panelists were told that the market price would be the second-, third-, or fourth-highest price, and they would have won the auction if their bid exceeded the market price. Participants were encouraged to bid exactly what they believed the product was worth to them.

Following the auction explanation, consumers were asked to visually evaluate two New York Strip steaks in overwrapped Styrofoam packages. The steaks were cut from the same strip loin so as to be nearly identical in size, color, marbling, and external fat. Consumers were told the USDA had inspected both steaks. The main difference between the two steaks was that one package had a label stating "U.S.A. Guaranteed: Born and Raised in the U.S." and the other package had no label. Consumers were then given the opportunity to submit a sealed bid in dollars-per-pound for each steak package. After all of the bids were collected, the moderators ranked the bids and determined the market price for each auction and the binding auction (either the labeled or unlabeled steak auction). Consumers then moved into taste-panel booths to complete the taste-preference portion of the study.[3]

Modeling Consumers Preferences

A binomial logit model was used to specify the relationship between demographic variables, product characteristics, and a consumer's likelihood of preferring and being willing to pay a substantial premium for a "U.S.A. Guaranteed" steak. Let consumer *i*'s WTP for the "U.S.A. Guaranteed" steak, measured through their auction bid, be equal to WTP_{ij} and their WTP for the unlabeled steak be equal to WTP_{ik}. To assess consumer *i*'s premium for the U.S.-labeled steak, the difference between WTP_{ij} and WTP_{ik} was calculated and divided by the bid for the unlabeled steak, WTP_{ik}. If a consumer's premium was larger than 10%, the consumer was considered to have a strong preference for a steak labeled "U.S.A. Guaranteed" and $USAPREF_i$ is equal to 1. $USAPREF_i$ is equal to 0 if a consumer's premium was less than 10% or was negative, indicating he or she did not have a strong preference for the labeled steak. Given that $USAPREF_i$ can equal either 0 or 1, the logistic probability distribution is assumed, and defined as:

$$(1)\quad \text{Prob}(USAPREF = 1) = \frac{e^{(X_i'ß)}}{1 + e^{(X_i'ß)}}$$

where $USAPREF_i$ is as defined earlier, X_i' is a vector of explanatory variables that may influence a consumer's WTP for the "U.S.A. Guaranteed" steak, $ß$ is the vector of coefficients, and ε_i is an error term (Greene 1998).

The following equation was used to empirically model the probability that a consumer would prefer and would be willing to pay a premium for a U.S.-labeled steak:

$$(2)\quad USAPREF_i = ß_0 + ß_1 Location_i + ß_2 Age_i + ß_3 Gender_i + ß_4 Ethnic + ß_5 Kids_i + ß_6 Income_i + ß_7 Educate_i + ß_8 Safety_i + ß_9 Source_i + ß_{10} COOL_i + ß_{11} Local_i + ß_{12} Fresh_i + ß_{13} Organic_i + ß_{14} BeefEat_i + ß_{15} NonGrocery_i + ß_{16} USDAGRADE_i + \varepsilon_i$$

where $USAPREF_i$ is the binary variable (explained previously) indicating the consumer's preference for the U.S.-labeled steak versus the unlabeled steak, *Location* is a dummy variable equal to 0 if the location was Denver and equal to 1 if the location was Chicago, *Age* is the age level of the respondent, *Gender* is a dummy variable indicating the respondent was a male, *Ethnic* is a dummy variable equal to 0 if the respondent was Caucasian and 1 otherwise, *Kids* is a dummy variable indicating presence of children in the household, *Income* is the participant's household-income level, and *Educate* is the level of education the respondent completed. *Safety*, *Source*, *COOL*, *Local*, *Fresh*, and *Organic* are dummy variables indicating that food

[3] This research was part of a larger study on consumers' taste preferences for beef quality attributes. The experimental methods and results of the taste panels can be found in Sitz (2003).

safety, source assurance, country of origin, locally produced, fresh, and organic are extremely desirable attributes in a consumer's shopping decision, respectively. *Beefeat* is a dummy variable equal to 1 if beef is the meat product most commonly consumed in the household. *NonGrocery* is a dummy variable indicating that the consumer typically purchases meat somewhere other than a retail store or warehouse outlet. *USDAGrade* is equal to 1 if the consumer typically purchases USDA Choice or Select beef and 0 otherwise, and ε_i is the random error term. The variables are further explained in Table 1 and Table 2.

Results

A total of 273 consumers participated in the study. Slightly more consumers participated in Chicago (141 consumers) than in Denver (132 consumers). The majority of the participants were female (73%) and Caucasian (87%). On average, participants were about 40 years of age, married, had two children under the age of 18 living in their household, and had some college education. The mean household-income level of the sample was \$50,000–\$60,000,[4] and most participants (74%) were employed either full- or part-time. Beef and chicken were the primary meat products consumed, with the majority of the consumers (70%) indicating they preferred to consume beef. On average, quality (50%) was the primary factor determining consumers' meat-purchasing decisions. Hamburger and steak were the beef products consumers most preferred to have labeled with country of origin.

Consumers were asked to rank the importance of a series of food characteristics when purchasing beef. Summary statistics for beef attributes important to consumers are reported in Table 2. Freshness, food safety inspection, color, price, and leanness were the five attributes ranked highest by consumers on a Likert scale. The attributes indicating production location or source of origin—such as country of origin, beef raised locally, and source assurance—were less important to consumers; however, they were still ranked as "very" to "somewhat" desirable. The relatively high ratings for freshness and food-safety inspection are similar to those found by Loureiro and Umberger (2003) in their study of Colorado consumers.

Consumers' Preferences and Willingness to Pay for COOL

Consumers' preferences and WTP for COOL were elicited through both a survey and an auction. In the survey, the majority of participants (75%) indicated they preferred to purchase the country-of-origin labeled product, 22% were indifferent, and 3% preferred to purchase the unlabeled product. Participants who preferred to purchase country-of-origin labeled products were asked to explain why they preferred COOL. Their reasons for choosing the labeled product were grouped into six categories: safety and health of meat, freshness of meat, quality of meat, support of producers, location, and general information. Selected comments from participants, and the percentage of participants identifying each characteristic as the basis for their preference for COOL are shown in Table 3. Food-safety concerns regarding imported beef, a preference for labels and more information about the source and origin of products, a strong desire to support U.S. producers, and beliefs that U.S. beef was of higher quality were the most commonly cited rationale for preferring a label identifying the country of origin of beef products (Table 3). Consumers' motivations for preferring COOL are similar to those specified by Schupp and Gillespie (2001a) and the USDA/FSIS (2000).

After specifying their preferences for COOL, consumers were asked to indicate the most they would be willing to pay per pound to have their beef steaks labeled with country of origin. Participants were told the price of the unlabeled steak was \$4.00/pound. They also were asked to complete the same WTP question for hamburger priced initially at \$1.50/pound. Based on the survey results, the majority (73%) of the consumers were willing to pay a premium for COOL (Table 4). However, 26% were not willing to pay a premium, regardless of whether or not they indicated a preference for COOL. Consumers were willing to pay an average of \$0.42/pound more for COOL of steak, an 11% premium. Consumers were willing to pay more for labeling of hamburger than for labeling of steak; the average premium for country-of-origin labeled hamburger was \$0.36/pound, a 24% premium.

[4] The mean U.S. household income was \$56,644 in 1999. The mean household income in 1999 for Chicago and Denver was \$67,321 and \$66,209, respectively (U.S. Census Bureau 2000).

Table 1. Definitions of Demographic Variables and Summary Statistics.

Variable	Description	Mean	Std. deviation
Gender	0 = Female; 1 = Male	0.27	0.45
Location	0 = Denver; 1 = Chicago	0.52	0.50
Age	1 = 18 to 21 years; 2 = 22 to 24 years …9 = 55 to 59 years; 10 = Over 60 years	6.07	1.93
Ethnic background	0 = Caucasian; 1 = Other	0.25	0.81
Education level	1 = Elementary school; 2 = Some high school; 3 = Completed high school; 4 = Some college; 5 = Completed junior college; 6 = Completed a 4-year university; 7 = Graduate school	4.85	1.36
Employment status	1 = Student; 2 = Part-time; 3 = Full-time; 4 = Not employed	2.91	0.77
Income	1 = Less than $20,000; 2 = $20,000 to $24,999 … 8 = $60,000 to $69,999; 9 = $70,000 or more	7.09	2.28
Martial status	1 = Single; 2 = Divorced; 3 = Separated; 4 = Married; 5 = Widowed; 6 = Domestic Partnership	3.43	1.20
Children in household	1 = Yes; 0 = No	1.37	0.48
No. of children	1 = 1; 2 = 2 … 6 = more than 5	2.12	1.00
Preferred beef product to consume	1 = Beef	1.65	1.10
Meat product most consumed at home	1 = Beef; 0 = Pork, Chicken, Lamb, Fish, Elk, Shrimp, Turkey	0.69	0.46
Beef product most often purchased for consumption at home	1 = Steaks; 2 = Ground beef or hamburger 3 = Roasts 4 = Other	1.75	0.83
Grade of steaks purchased for household consumption	1 = USDA Choice or Select; 0 = other	0.59	0.49
Primary factor in meat purchasing decisions	1 = Quality; 0 = Price, Health, or other	0.50	0.50
Place where typically purchase beef products	0 = Retail or warehouse store; 1 = Butcher shop, specialty health store, or private farmer or rancher	0.12	0.33

Table 2. Mean Rank of the Importance of Beef Attributes to Consumers (Variables Measured on a Likert Scale where 1 = Extremely Desirable and 5 = Not Desirable at All).

Attribute	Mean	Standard deviation
Freshness	1.23	0.52
Inspected for food safety	1.45	0.77
Color	1.60	0.72
Price	1.72	0.76
Leanness	1.76	0.78
High quality grade	1.79	0.77
Tender	1.86	0.85
Nutritional value	2.20	0.92
Country-of-origin label	2.41	1.17
Marbling	2.43	1.04
Brand	2.53	0.98
Source assurance	2.56	1.08
Environmentally friendly production methods	2.61	1.05
Beef raised in your region of the country	2.64	1.09
Convenience	2.66	1.01
Fat content	2.75	1.26
Organic/natural	3.01	1.15

Loureiro and Umberger (2003) also found WTP for COOL of hamburger to be significantly higher than for COOL of steak.

Experimental Results

After visually evaluating the "U.S.A. Guaranteed" labeled and unlabeled steaks, consumers submitted bids in $/pound for each of the steaks. The average auction prices consumers bid for each steak are presented in Table 5. Sixty-nine percent of the participants bid more for, and were willing to pay a premium for the steak labeled as "U.S.A. Guaranteed." However, 7% of the consumers preferred and bid more for the nonlabeled steak, and 24% of the consumers showed no preference between the two steaks.

Consumers were willing to pay an average premium of 19%, or $0.81/pound more, for the "U.S.A. Guaranteed"-labeled steak than for the nonlabeled steak. Consumers in Chicago were willing to pay a significantly higher premium of 23% for the labeled steak than were the Denver participants, who were willing to pay only a 14% premium for the U.S.-labeled steak. The steak premiums for COOL from the auction are larger than those elicited through the survey method. This may be because consumers were able to see the product they were bidding on and because the country of origin was specified.

The distribution of premiums consumers were

Table 3. Participants' Rationale for Preferring Country-of-Origin Labeling (Selected Comments from Survey Responses).

Category	Selected comments	Percent[a]
Safety and health of meat	• Food safety inspections, regulations, and health standards are not as stringent outside of U.S. • Trust U.S. health standards. • Mad cow disease in some countries. • To know what I'm eating was produced somewhere clean and safe. • Do not trust beef from outside of the United States. • Safety—if I knew the meat came from reputable sources, I would worry less about getting bad meat. • For future information in case there was a health or safety problem involving the meat consumed. • With the food safety controversy, I am more cautious than before label helps.	45.0%
Freshness of meat	• U.S.A. meat is fresher. • Believe label indicating a closer geographical region would be fresher meat.	4.5%
Quality of meat	• U.S. beef is higher quality. • Label provides me with a better feeling of health and quality. • U.S. has more quality control, stricter animal feed regulations, and less chemicals are used in processing.	11.0%
Support producers	• Want to support U.S. farmers and ranchers; also don't want to buy beef raised in areas where rainforests are burned down. • I want to support U.S. farmers. • I'd prefer to buy American (like my car) and support U.S. producers, I'd buy it over an unlabeled or other-country item. • I buy mostly organic meat, want to support a reputable organic farm.	21.0%
Location	• I would prefer beef from the United States, Australia, or Argentina. • Prefer meat from Colorado because familiar with quality. • I would like to know if I'm eating a steak from a Third World country—I don't think it would be quite as healthy. • If not produced in U.S.A. or Canada, I would have concerns about the safety. • I would be concerned if it was from England. • Some countries have better reputation in beef industry (i.e. New Zealand Lamb). • Would like to learn about the company and country producing beef—where animals come from, their feeding and handling processes.	12.5%
General information	• More information is always desirable; it gives me confidence in the product. • Label tells me about the way cattle were fed and raised. • I prefer anything labeled vs. unlabeled—(label) makes me feel like I had some decision in purchase selection. • If there's a recall it would be easier to identify where meat comes from. • I like labels when I go to a big grocery store, but when I go to a little store where there is a meat market, I don't care about labels because I know their meats are good. • Aware of the inspection and/or conditions in which the meat was processed. • Label allows me to feel more comfortable with the product.	31.8%

[a] The percentages do not add up to 100% because some comments fit multiple categories.

Table 4. Average Survey Premiums and Percentage of Population Willing to Pay for Country-of-Origin Labeling of Steak and Hamburger.

	Steak			Hamburger		
	Premium[a] $/pound	% Premium	% Population[b]	Premium[c] $/pound	% Premium	% Population[b]
Denver	$0.36[d]	9.1%	83.0%	$0.36[d]	24.3%	81.1%
(Std deviation)	(0.54)			(0.43)		
Chicago	$0.48[d]	12.0%	67.4%	$0.36[d]	24.3%	67.4%
(Std deviation)	(0.63)			(0.39)		
Overall	$0.42[d]	10.5%	72.9%	$0.36[d]	24.3%	71.8%
(Std deviation)	(0.59)			(0.41)		

[a] Premium is the most that a participant would be willing to pay per-pound in addition to a $4.00/pound steak price.
[b] Percent of the population that indicated they would be willing to pay a premium for country-of-origin labeling of steak or hamburger
[c] Premium is the most that a participant would be willing to pay per-pound in addition to a $1.50/pound hamburger price.
[d] Premium is statistically different from zero ($\alpha = 0.05$).

willing to pay for the U.S.-labeled steak is shown in Figure 1. The percent premium category labeled as "0% premium" includes both consumers who had no preference between the labeled and nonlabeled product and those consumers who preferred the nonlabeled steak; thus this category accounts for 31% of the consumers. Over one-half (56%) of participants were willing to pay a premium greater than 10%—about one-third (30%) of participants were willing to pay a premium ranging between 10% to 25%, and a small number of participants (10%) were willing to pay a premium of more than 50%.

The results of the estimated binomial logit model (equation 2) are presented in Table 6. The marginal effects represent the change in the probability that a consumer is willing to pay more than 10% extra for the steak labeled as "U.S.A. Guaranteed" when the independent variable changes by one unit. The logit model estimated 68% of the individual choices correctly and is significant at $\alpha = 0.01$. All of the variables for which coefficient estimates are significant have the expected signs except *Income*. An initial hypothesis was that higher income levels would increase the participant's probability of paying a premium for a U.S.-labeled product. The negative sign on the coefficient and marginal effect of *Income* is similar to that found by Loureiro and Umberger (2003). Aplausible reason for the negative marginal income effect may be that wealthier consumers already believe that their meat supply is safe and are less concerned about the country of origin of their beef products (Loureiro and Umberger 2003).

The variables *COOL*, *Local*, and *NonGrocery* were all significant at the $\alpha = 0.05$ level and carry the expected sign. The significance of the *COOL* and *Local* variables indicate consumers who find a label guaranteeing the country of origin of their beef products or certifying the beef product was raised in their region of the country are respectively 19% and 15% more likely to pay a premium for the U.S.-labeled product. Additionally, consumers who tend to purchase their meat from a butcher shop, private meat market, or directly from the producer rather than at the supermarket are 27% more likely to be willing to pay a premium for the U.S.-labeled steak. The *Source* and *Fresh* variables were significant at the $\alpha = 0.10$ level. Consumers who indicated that source assurance (knowing who produced the beef) and freshness were extremely desirable were respectively 15% and 31% more likely to pay a premium for the U.S.-labeled product.

Table 5. Average Auction Bids ($/pound) and Bid Difference for "U.S. Guaranteed" and Non-labeled Steaks (Standard Deviations in Parentheses).

Treatment	Chicago mean (Standard deviation)	Denver mean (Standard deviation)	Overall mean (Standard deviation)
"U.S. Guaranteed" steak	$5.56	$4.69 [a]	$5.14
	(1.69)	(1.61)	(1.71)
Non-labeled steak	$4.53	$4.12 [a]	$4.33
	(2.15)	(1.69)	(1.95)
Difference (U.S.-labeled vs. non-labeled)	$1.03 (1.67)[b]	$0.57 (1.22) [b]	$0.81 (1.49) [b]
	n = 141	n = 132	n = 273

[a] Mean bids are significantly different between locations (α = 0.05).
[b] Mean bids are significantly different between treatments (α = 0.05).

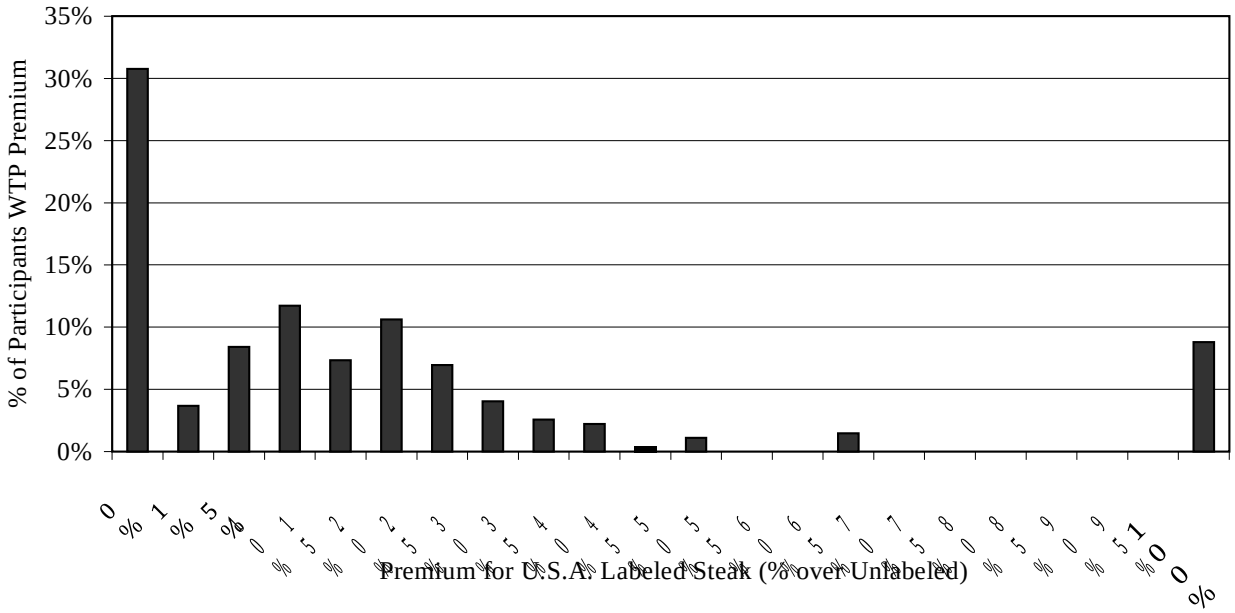

Figure 1. Distribution of Participants' Premiums for the "U.S. Guaranteed" Steak over the Non-Labeled Steak.

Table 6. Logit Estimates and Marginal Effects for the Willingness to Pay for Steak Labeled "U.S. Guaranteed."

Variable	Logit estimate		Marginal probability	
	Coefficient	t-ratio	Coefficient	t-ratio
Constant	-0.20	-0.16	-0.05	-0.16
Location	-0.05	-0.16	-0.01	-0.16
Age	0.04	0.48	0.01	0.48
Gender	-0.14	-0.42	-0.03	-0.42
Ethnic	-0.34	-0.85	-0.08	-0.85
Kids	0.26	0.83	0.06	0.83
Income	-0.13*	-1.89	-0.03*	-1.89
Educate	-0.12	-1.10	-0.03	-1.10
Safety	0.33	0.70	0.08	0.70
Source	0.59*	1.89	0.15*	1.90
COOL	0.76**	2.25	0.19**	2.25
Local	0.59**	1.94	0.15**	1.94
Fresh	1.24*	1.76	0.31*	1.76
Organic	-0.48	-1.45	-0.12	-1.45
BeefEat	0.16	0.53	0.04	0.53
NonGrocery	1.11**	2.26	0.27**	2.27
USDAGrade	-0.02	-0.18	-0.01	-0.19

* Denotes statistical significance at $\alpha = 0.10$ level.
** Denotes statistical significance at $\alpha = 0.05$ level.
n = 255 (273 consumers actually participated in the study; however, the number of usable observations is reduced due to missing data).
Number of correct predictions = 67.5%
Model chi-squared value = 34.16 and is significant at the $\alpha = 0.01$ level.

Summary and Conclusions

In 2002, 273 consumers in Chicago and Denver and participated in a survey and an experimental auction to elicit their willingness to pay for country-of-origin labeling of beef. The survey results indicate the majority of consumers (73%) were willing to pay an 11% and 24% premium for COOL of steak and hamburger, respectively. Consumers' most-commonly cited reasons for preferring COOL were food-safety concerns about imported beef, a preference for labeling source and origin information, a strong desire to support U.S. producers, and beliefs that U.S. beef was of higher quality.

In addition to the survey, consumers participated in an auction where they bid on two steaks, one labeled "U.S.A. Guaranteed: Born and Raised in the United States" and the other unlabeled. On average,

consumers were willing to pay a 19% premium for the "U.S.A. Guaranteed" steak. The results of the logit analysis imply that consumers who find beef attributes such as freshness, source assurance, locally-raised, and country-of-origin labeled to be "extremely desirable" are more likely to be willing to pay for a steak labeled "U.S.A. Guaranteed." Moreover, wealthier consumers were less likely to prefer the labeled product, and consumers who typically purchased their beef directly from the producer or at a specialty meat market were more likely to prefer the "U.S.A. Guaranteed" steak.

A large percentage of consumers appear to be willing to pay a premium for COOL. However, it is important to point out that a number of factors related to experimental design could impact the size of premiums.[5] For example, the results would likely have been different if consumers had been asked to express their willingness to pay for a broader set of products, such as an unbranded, traditionally labeled beef product; a "Product of the U.S.;" and a "Product of Canada;" or other substitute meat products such as different cuts of beef, pork, and poultry. Potential consumer reactions to labels based on the USDA/AMS-proposed regulations covering mixed-species products (e.g., an ingredient statement might read "Product of Canada, Raised and Processed in the United States") are unexplored but would be expected to be quite different from the results based on the labels used in our study.[6] Furthermore, because no other labels—such as price, safe handling instructions, USDA grade, or brand--were on the package, it is likely that the willingness-to-pay values observed in this study are higher than would actually exist in the market, because consumers were specifically asked to focus on the country-of-origin label. Additionally, the results are based on a small sample of consumers from Denver and Chicago. The premiums may differ if a larger sample of consumers (more representative of the U.S. population) were surveyed.

Consumers who were willing to pay the most for the label believed the label signified increased food safety and quality. Therefore, retailers and processors labeling products with a country-of-origin label may also want to consider labeling food-safety and quality attributes. Additional research is necessary to determine if the premiums are substantial enough to cover the additional costs associated with the certification and traceability programs necessary to validate the label.

[5] WTP estimates elicited from hypothetical survey methods tend to overestimate the amount consumers will actually pay in the market (Loomis and Walsh 1997; Lusk et al. 2001) . Experimental design may also impact and bias WTP values (Lusk et al. 2001; Loureiro, Umberger, and Hine 2003; Umberger and Feuz 2004).

[6] Plain and Grimes (2003) discuss this issue and report that in 2002 approximately 89% of steaks and roasts sold in the U.S. were of U.S. origin. Therefore, if 69% of consumers were truly willing to pay a premium for beef from the United States, premiums for U.S. beef would not exist because quantity supplied would exceed quantity demanded (Plain and Grimes 2003).

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Consumer Perceptions of Date Labels: National Survey

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Harvard Food Law and Policy Clinic
A Division of the Center for Health Law and Policy Innovation

NCL National Consumers League

Johns Hopkins Center for a Livable Future

Background & Methods

Each year, 40% of the United States food supply goes to waste.[1] The growing, transporting, processing, and disposing of this uneaten food costs us $218 billion each year, and two thirds of this lost economic value is due to household food waste.[2] An important driver of household food waste is consumer confusion over date labels.[3] Date labels are those dates that are applied to foods and accompanied by prefixes such as "sell by," "best before," and "use by," among others. A U.K. study found that 20% of consumer waste occurs because of date label confusion.[4]

Because date labels are not federally regulated and state-level regulations, where they exist, are inconsistent, consumers face a dizzying array of unstandardized labels on their food products. Many people throw away food once the date passes because they mistakenly think the date is an indicator of safety, but in fact for most foods the date is a manufacturer's best guess as to how long the product will be at its peak quality. With only a few exceptions, the majority of food products remain wholesome and safe to eat long past their expiration dates. When consumers misinterpret indicators of quality and freshness for indicators of a food's safety, this increases the amount of food that is unnecessarily discarded. A recent report found that standardizing date labeling is the most cost-effective solution for reducing food waste, and could help to divert 398,000 tons of the food that is wasted each year.[2]

We conducted a survey to gain further insights into consumer perceptions of date labels. This survey was fielded online to a demographically representative sample of 1,029 adults from April 7-10, 2016. These questions were part of a CARAVAN® omnibus survey that is conducted twice a week by ORC International. The findings presented here are one piece of a larger analysis of consumer perceptions of date labels.

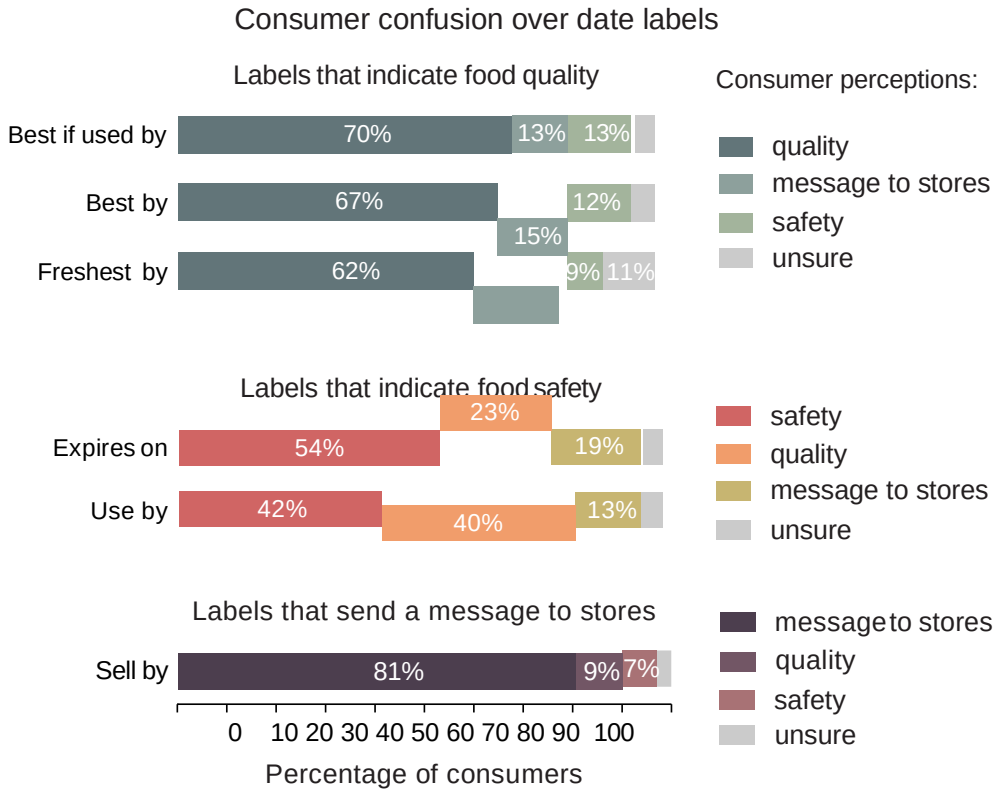
Take Home Messages

Our findings confirm that consumers use date labels to make decisions about discarding food: over one third always discard food close to or past the date on the label, and 84% do so at least occasionally. One-third of consumers wrongly think that date labels are federally regulated, and another 26% are unsure. The survey found that for future data label standardization, some labels would be particularly effective in communicating with consumers. "Best if used by" was most commonly seen as an indicator of food quality (70%) and only 12% viewed it as a food safety label. "Expires on" was most commonly seen as an indicator of food safety (54%), and relatively few respondents (23%) saw it as referring to quality. Because all six of the labels we tested are currently used as quality indicators, many foods with the "expires on" label are unnecessarily wasted. We can build on consumer perceptions of the meanings of different labels to help consumers better identify date labels that indicate safety, versus those that are only intending to communicate peak quality.

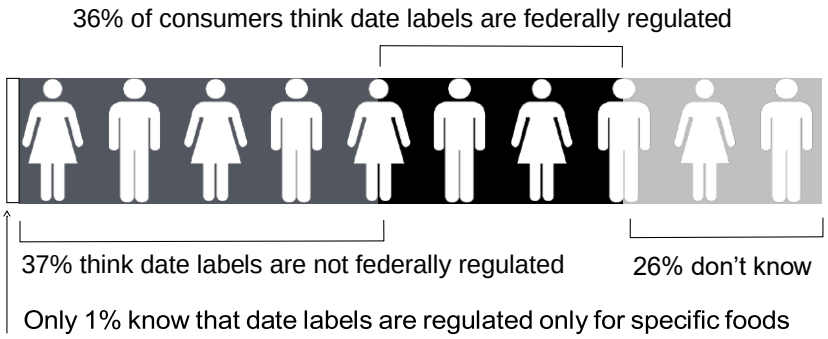
Millenials were more likely to view date labels as indicators of food safety, more likely to think date labels are federally regulated, and more likely to discard food past the date on the label.

Consumers use date labels to make decisions about discarding food.
Over one third of the population (37%) says they always or usually throw away food because it is close to or past the date that appears on the package. 84% of consumers throw out food based on date labels at least occasionally. Notably, younger consumers (age 18-34) were most likely to discard food based on the date label, while older consumers (65+) were the least likely to do so.

Consumers have misperceptions and uncertainty about what date labels actually mean.
We examined perceptions of six date labels: "best by," "best if used by," "expires on," "freshest by," "sell by," and "use by." The survey found a striking amount of diversity in interpretation of the meaning of these labels, suggesting a need to standardize labeling and better educate consumers. The labels most commonly perceived as indicators of **food quality** were "best if used by," "best by," and "freshest by," which were perceived as indicators of quality by 70%, 67%, and 62% of consumers, respectively. Both "best if used by" and "best by" were also relatively unlikely to be misperceived as food safety labels. However, "freshest by" was more confusing to consumers, with 9% seeing it as a food safety label and 11% unsure of the meaning. About half the respondents saw "expires on" (54%) as an indicator of **food safety**. Many respondents also saw "use by" (42%) as an indicator of food safety; however, 40% of respondents perceived "use by" as a quality label. The majority of consumers correctly interpreted the "sell by" label as an **indicator to stores** about when to stop selling food (81%). Nonetheless, still 7% saw it as a safety label and 9% as a quality label. Younger consumers (age 18-34) were most likely to view all of these labels as food safety labels, while those aged 65+ were least likely to do so.

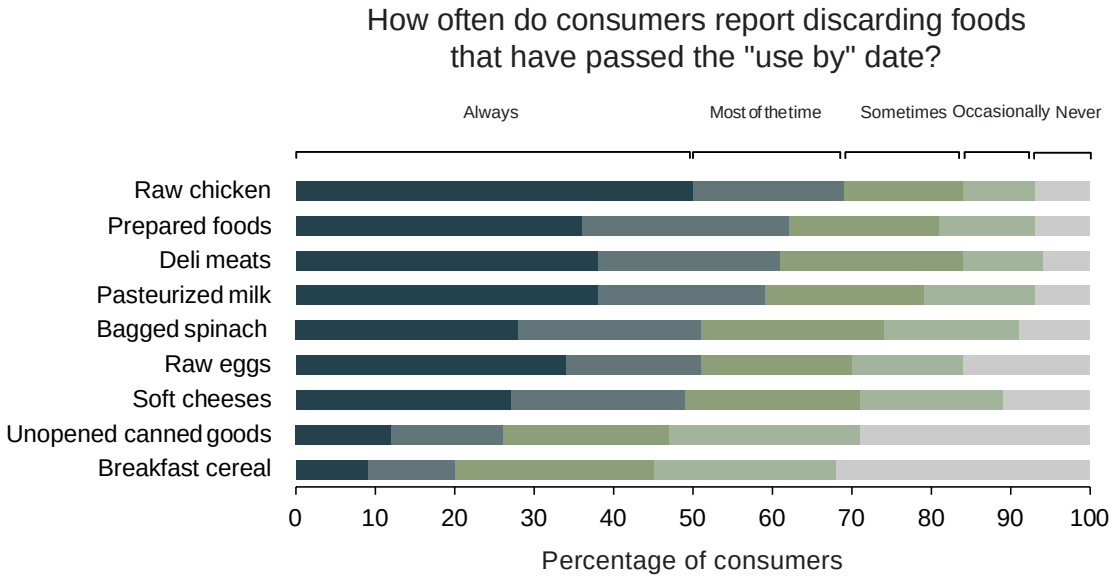


One-third of consumers wrongly think that date labels are federally regulated.
There was considerable uncertainty and misinformation about whether the federal government regulates date labels. 36% of the population wrongly answered that date labels are federally regulated, and 26% were unsure. Only 1% said they are federally regulated only for specific foods, which is technically the correct answer: the only food for which date labels are regulated federally is infant formula; all other foods are regulated at the state level or not at all, depending on the state. Those who were more likely to think that labels are federally regulated included younger consumers (18-34), African Americans, Hispanics, households of three or more, and households with children.



Consumers' willingness to throw away foods past the "use by" date depends on the food.
Consumers were also asked about their frequency of discarding food based on the "use by" label. We found that they were most cautious about raw chicken, with 50% of all respondents "always" throwing away raw chicken past the "use by" date. Consumers were least cautious about unopened canned goods and breakfast cereal. But even for these less perishable foods, 12% and 9% of consumers still reported that they "always" throw away canned goods and breakfast cereal, respectively, past the "use by" date. For those foods most likely to cause concern, consumer perceptions of the "use by" label may translate into large amounts of food wasted: raw chicken, pasteurized milk, and deli meats were thrown away "always" or "most of the time" by 69%, 59%, and 61% of consumers, respectively. Of those products, only deli meat has been shown to increase in risk after the date.[5]

Younger consumers (18-34) were more likely to "always" discard foods past the "use by" date. This was true for all foods except raw chicken and prepared foods, for which rates of discarding past the date were uniformly high across age groups. Households with children were more likely than households with no children to discard multiple foods. Household income did not affect willingness to throw away food past the date, by and large, but the lowest income category (less than $35k/year) was more likely to "never" discard raw chicken and deli meats – more expensive items – past the "use by" date.



Conclusion

This survey aimed to understand the extent to which consumers are confused about date labels, learn about their perceptions regarding whether labels are federally regulated, and identify which labels most clearly communicate quality versus safety. This report confirms previous findings that consumers are confused by date labels. As a result, they unnecessarily discard food with a high frequency, which can be a significant contributor to the wasted food problem in the United States. In addition, as millenials were more likely to view date labels as indicators of food safety, more likely to think date labels are federally regulated, and more likely to discard food past the date on the label, survey findings show that work is needed to ensure that food waste does not continue to increase with future generations of consumers. Survey results also identified those date labels that most clearly communicate safety versus quality, which can be helpful as industry, nonprofit organizations, and policymakers examine options to improve consumer awareness by standardizing date labels across the food supply.

Survey results indicate that standardizing date labels and increasing consumer education on the meaning of date labels can help to reduce the significant amount of food that consumers unnecessarily discard. Consumers discarding less food can help meet the U.S.'s national food waste reduction goal to halve the country's level of food waste by 2030, and it can decrease the amount of precious resources that are wasted producing food that unnecessarily ends up in the landfill instead of on consumer's plates.

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Exhibit 3

Nutrition Facts

Serving Size 4oz. (112g)
Servings Per Container Varied

Amount Per Serving	
Calories 260	Calories from fat 170
	% Daily Value*
Total Fat 19g	30%
Saturated Fat 8g	39%
Cholesterol 80mg	27%
Sodium 75mg	3%
Total Carbohydrate 0g	0%
Protein 19g	
Iron 15%	

* Percent Daily Values are based on a 2,000 calorie diet.

INGREDIENTS: BEEF
1 CUP AND NATURAL FLAVORINGS

DISTRIBUTED BY: TYSON FRESH MEATS, INC. DAKOTA DUNES, SD 57049

1013-A3P-1-G1

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1 - PRODUCT OF USA

Questions and Comments

If you have questions or comments, Please call our Consumer Relations department toll free at 877-994-9960.

SAFE HANDLING INSTRUCTIONS

THIS PRODUCT WAS PREPARED FROM INSPECTED AND PASSED MEAT AND/OR POULTRY. SOME FOOD PRODUCTS MAY CONTAIN BACTERIA THAT COULD CAUSE ILLNESS IF THE PRODUCT IS MISHANDLED OR COOKED IMPROPERLY. FOR YOUR PROTECTION, FOLLOW THESE SAFE HANDLING INSTRUCTIONS.

KEEP REFRIGERATED OR FROZEN.
THAW IN REFRIGERATOR OR MICROWAVE.
KEEP RAW MEAT AND POULTRY SEPARATE FROM OTHER FOODS. WASH WORKING SURFACES (INCLUDING CUTTING BOARDS), UTENSILS AND HANDS AFTER TOUCHING RAW MEAT OR POULTRY.
COOK THOROUGHLY.
KEEP HOT FOODS HOT. REFRIGERATE LEFTOVERS IMMEDIATELY OR DISCARD.

TO FREEZE: For best results, remove from original package and rewrap in freezer wrap or heavy foil.

11577 6.38

Est 244c[6]


REESE & RAYS
IGA
Hometown Proud
Hometown Fresh
EXTRA LEAN 3LB
85%LEAN-15%FAT
Product Of United States
SAFE HANDLING INSTRUCTIONS
THIS PRODUCT WAS PREPARED FROM INSPECTED AND PASSED MEAT AND/OR POULTRY. SOME FOOD PRODUCTS MAY CONTAIN BACTERIA THAT COULD CAUSE ILLNESS IF THE PRODUCT IS MISHANDLED OR COOKED IMPROPERLY. FOR YOUR PROTECTION, FOLLOW THESE SAFE HANDLING INSTRUCTIONS.
KEEP REFRIGERATED OR FROZEN. THAW IN REFRIGERATOR OR MICROWAVE.
KEEP RAW MEAT AND POULTRY SEPARATE FROM OTHER FOODS. WASH WORK (INCLUDING CUTTING BOARDS), UTENSILS, AND HANDS AFTER TOUCHING RAW MEAT OR POULTRY.
COOK THOROUGHLY.
KEEP HOT FOODS HOT. REFRIGERATE LEFTOVERS IMMEDIATELY OR DISCARD.
Net Wt/Ct
3.16 lb
Unit Price
$4.59/lb
Sell By
Dec 25, 17
Total Price
$14.50
REESE & RAYS


20165 10532
REESE & RAY'S
IGA
Hometown Proud
Hometown Fresh
BEEF FOR STEW
roduct Of United States
SAFE HANDLING INSTRUCTIONS
THIS PRODUCT WAS PREPARED FROM INSPECTED AND PASSED MEAT AND/OR POULTRY. SOME FOOD PRODUCTS MAY CONTAIN BACTERIA THAT COULD CAUSE ILLNESS IF THE PRODUCT IS MISHANDLED OR COOKED IMPROPERLY. FOR YOUR PROTECTION, FOLLOW THESE SAFE HANDLING INSTRUCTIONS.
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COOK THOROUGHLY
KEEP RAW MEAT AND POULTRY SEPARATE FROM OTHER FOODS. WASH WORKING SURFACES (INCLUDING CUTTING BOARDS), UTENSILS, AND HANDS AFTER TOUCHING RAW MEAT OR POULTRY
KEEP HOT FOODS HOT. REFRIGERATE LEFTOVERS IMMEDIATELY OR DISCARD
Sell By
Dec 27, 17
Net Wt/Ct
1.16 lb
Unit Price
$4.59/lb
Total Price
$5.32
REESE & RAYS

BRAND

RAY'S®

CES

RBECUE

ERKY

TRANS FAT PER SERVING

MADE WITH ★★★ 100% AMERICAN BEEF

DEPARTMENT OF AGRICULTURE

.25 OZ. (32g)

Our Meat Selections are Products of:

- **Beef Products of USA.** These products were born, raised and harvested in the USA.
- **Chicken Products of USA.** These products were hatched, raised and harvested in the USA.
- **Lamb/Veal Products of USA.** These products were born, raised and harvested in the USA.
- **Ground Beef Products of USA, Canada.** These products were born, raised and harvested in the USA & Canada.
- **Pork Products of USA.** These products were born, raised and harvested in the USA.

48 OZ (3 LBS) 1.36 kg

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Product of USA


NO ADDITIVES
85%
MADE IN USA
KEEP REFRIGERATED OR FROZEN

7-0053-DYP-1-01

COLOR IS NOT AN ACCURATE INDICATOR OF FINAL COOKED TEMPERATURE. ENSURE INTERNAL TEMPERATURE REACHES 145 F FOR 3 MINUTES.

Nutrition Facts

Serving Size 4oz. (112g)
Servings Per Container varied

Amount Per Serving	
Calories 140	Calories from fat 40
	% Daily Value *
Total Fat 4.5g	7%
Saturated Fat 1.5g	8%
Cholesterol 70mg	23%
Sodium 70mg	3%
Total Carbohydrate 0g	0%
Protein 25g	
Iron 20%	

Not a significant source of dietary fiber, sugars, vitamin A, vitamin C and calcium.

* Percent Daily Values are based on a 2,000 calorie diet

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INGREDIENTS: BEEF AND NATURAL FLAVORINGS

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Questions and Comments

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COOK THOROUGHLY.

KEEP HOT FOODS HOT. REFRIGERATE LEFTOVERS IMMEDIATELY OR DISCARD.

TO FREEZE: For best results, remove from original package and rewrap in freezer wrap or heavy duty [illegible]

Est 244C


Wegmans
Food You Feel Good About
No Artificial
Colors or Flavors. No Preservatives.
FRESH
Beef
USE OR FREEZE BY: JAN 21 2018
362 08:10 0160
Product of USA
Chosen With Care
Our Food You Feel Good About yellow banner means this product has no artificial colors or flavors, and no preservatives. Air Tight Keeps Fresh packaging enables this meat to stay fresh longer, right in the fridge. We guarantee it!
The Wegmans Family
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DO NOT MICROWAVE IN PACKAGE
GLUTEN FREE
LACTOSE FREE
KEEP REFRIGERATED
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Wegmans Meat—Country of Origin

ountry of Origin for meat products indicates where the animal was born, hatched, raised, a
We're proud of our long-standing relationships with suppliers that provide high quality
These are the same meats you have always enjoyed; there have been no change

eef	
Wegmans Beef	Product of USA
Wegmans *Food You Feel Good About* Beef (Choice and Prime)	Product of USA
Wagyu Beef	Product of Australia
Organic Beef	Product of Uruguay
ound Beef	
Wegmans Ground Beef	Product of USA
Wegmans *Food You Feel Good About* Ground Beef	Product of USA
Wegmans Organic Ground Beef	Product of Uruguay
k	
Wegmans Pork and Ground Pork	Product of USA
Wegmans Organic Pork and Ground Pork	Product of Canada
Berkshire (Kurobuta) Pork	Product of USA
Wegmans *Food You Feel Good About* Pork	Product of USA
en	
Wegmans Chicken	Hatched, raised, & harv
Wegmans Organic Chicken and Ground Chicken	Hatched, raised & harv
oulet Rouge Chicken	Hatched, raised & harv
egmans *Food You Feel Good About* Chicken	Hatched, raised & harv
gmans Organic Lamb	Product of Australia
gmans *Food You Feel Good About* USA Lamb	Product of USA

Exhibit 4

Food Safety
And Inspection
Service

Office of Policy, Program and
Employee Development

August 2005

Food Standards and Labeling Policy Book

Revised for Web Publication August 2005
Replaces Publication Dated May 2003 and Removal of Publication Dated 1996

PREFACE

The Policy Book is intended to be guidance to help manufacturers and prepare product labels that are truthful and not misleading. Compliance with the requirements set forth in this publication does not, in itself, guarantee an authorization. On receipt of the label application, consideration will be given to suitability of ingredients statements, preparation, and packaging so as not to mislead the consumer. Adherence to the product and label requirements in this Policy Book does not necessarily guarantee against possible infringement of all related patents, trademarks or copyrights.

Changes in this publication are to add new entries, correct errors, condense material, and reformat the entries for ease in reading and use. There will be updates of the publication to conform to changes in meat and poultry inspection standards and to reflect any current policy developments.

Errors found in this issue should be reported through channels to your district office.