How Do Different Countries Use Labeling Standards: A Case Study Comparing Wisconsin Real Cheese to Parmigiano-Reggiano

Payal Patel, Lisa House, and Thomas H. Spreen
Department of Food and Resource Economics, University of Florida, USA
payal.patel85@gmail.com; lahouse@ufl.edu; tspreen@ufl.edu

Abstract
Product labeling is an important dimension in food retailing. The evolution of Protected Geographic Indicators (PGI) and Protected Designation of Origin (PDO) in the European Union are used to identify products grown in a specific region or food products produced using a specific technology. The United States has followed a different path with the use of certification/trademarks to identify either product origin or other differentiable characteristics. The divergence of the two approaches has led to trade disputes and WTO lawsuits. In this paper, the main attributes of the two approaches are identified and highlighted with a brief case study comparing Wisconsin Real Cheese and Parmigiano-Reggiano from Italy.

1 Introduction
Product labeling has been used in a wide variety of contexts to achieve a number of goals including identification of product origin, identification of production practices (e.g. organic), and traceability concerns. In the European Union (EU), Protected Geographic Indicators (PGI) and Protected Designation of Origin (PDO) are used to identify products grown in a particular region or food products produced using a particular technology. The notion behind PGI/PDO labeling is that the consumer is readily informed regarding product origin, there may be a price premium associated with the use of a label, and thereby enhance rural income. In the United States, certification mark and trademark is used on a number of food products. The rules regarding certification/trademark, however, are generally quite different compared to PGI/PDO. This difference of implementation has led to trade disputes involving the United States and the EU. The purpose of this paper is to describe the differences between the implementation of food labeling in the United States and EU, and to highlight those differences with a case study of Wisconsin Real Cheese and Parmigiano-Reggiano from northern Italy.

2 Trade-Related Intellectual Property Rights (TRIPs)
Trade-related intellectual property rights is the driving factor determining trade regulations regarding labeling. TRIPs negotiation began in the 1986-94 Uruguay Round of the General Agreement on Trade and Tariffs (GATT) which later evolved into the World Trade Organization (WTO). The goal of TRIPs regulation is “avoid misleading the public and [to] prevent unfair competition” by maintaining a “standard level of protection” that covers all traded products
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(TRIPS, 2008). The three main components of the Agreement are to create minimum standards of protection, enforce intellectual property rights, and settle disputes regarding trade and property rights among WTO members.

Three articles in the TRIPS Agreement pertain to geographic indications and its protection of which Article 22 defines Geographical Indications (GI):

Geographical indications are, for the purposes of the Agreement, indications which identify a good as originating in the territory or a Member, or a region or locality in that territory, where a given quality, reputation, or other characteristic of the good is essentially attributable to its geographical origin. (TRIPS, 2008)

Article 23 includes a discussion that relates to the labeling and trade of wine and spirits among countries which is not the immediate interest of this paper. Article 24 includes exceptions to Article 22 and states that “a Member shall not diminish the protection of geographical indications that existed in that Member immediately prior to the date of entry into the force of the WTO Agreement” (TRIPS, 2008). The goals of these articles are to prevent misleading use of labeling that might prevent a consumer from determining product origin as well as eliminating adverse effects on competition resulting from consumer misinterpretation. TRIPS has undergone several revisions since the Uruguay Round and is a topic of discussion in the ongoing Doha Round including a higher level of geographic indication and protection.

3 TRIPS in Use

To create labels under TRIPS, countries are required to have domestic laws and a method of enforcing those laws. TRIPS does not provide specific guidelines for individual countries, instead, each nation can create their own process to allow labels as long as the regulations promulgated by TRIPS are followed. As a result, there is considerable variation across countries regarding the implementation of labeling procedures. In the United States, certification marks and trademarks are used as labels; this approach satisfies the TRIPS restrictions. Certification marks and trademarks provide a legal means of protecting the name of a product, such as 100% Pure Kona Coffee from Hawaii or Vidalia Onions from Georgia (Babcock and Clemens, 2004). The EU, however, uses PGI/PDO as a labeling device to give identity to food products produced in a particular region (e.g. apples from Bolzano) or foods produced in a particular region using a standard process (e.g. Prosciutto di Parma).

As a result of having two different approaches being used by two of the world’s major economies, a trade dispute has been created regarding labeling of food products. In this dispute, the United States holds the position that their existing system of certification mark/trademark protects these products. In the EU, regulations are generally stricter as they into account quality and safety controls, and feels that certification mark/trademark is not adequate (Marette, Clemens, and Babcock, 2007). As a result of the current dispute, the EU has requested TRIPS protection for 41 products with product names associated with a generic name in the United States (Table 1).
4 Certification Marks and Trademarks in the United States

The United States holds the position that its certification mark and trademark laws are sufficient to allow trade that include PGI/PDO labeled products from the EU. A certification mark is defined as

Any word, name, symbol, device, or any combination, used or intended for use in commerce with the owner’s permission by someone other than its owner, to certify regional or other geographical origin, material, mode of manufacture, quality, accuracy, or other characteristics of someone’s good or services, or that the work or labor on the goods or services was performed by members of a union or other organization. (USPTO, 2003)

Therefore, certification mark laws in the United States protect individual products based upon their origin or region of production. There are examples in which a single certification mark encompasses various agricultural products that are promoted by a state department of agriculture within the United States (Babcock and Clemens, 2004). An example is Go Texan, a certification mark owned by the Texas Department of Agriculture, encompassing products that produced with plants and/or animals from the state of Texas or products that are processed within the state.

In addition to certification marks are trademarks. The difference between the two is a fine line. A trademark is characterized as

Any word, name, symbol, device, or any combination, used or intended for use in commerce to identify and distinguish the goods of one manufacturer or seller from goods manufactured and sold by others, and to indicate the source of goods. In short, a trademark is a brand name. (USPTO, 2003)

Trademarks are less common in the agricultural and food sector compared to certification marks, but there are cases of food products label as a trademark. A relatively new product in the United States is the Cuties California Clementine, or California Cuties, for short. This is a brand name for Clementine citrus fruit from farms in California owned by Sun Pacific producers. There is no exceptional value claimed by these citrus fruits other than the marketing of a catchy name that can draw consumers to their product (Sun Pacific, 2006).

Certification marks and trademarks can be owned by a variety of entities including individuals, companies, trade organizations, or government. The Wisconsin Milk Marketing Board owns the certification marks for Wisconsin Real Cheese; the Indian River Citrus League, a grower association located along the east coast of Florida owns Indian River Citrus. The owner of the mark can restrict which producers can access the mark based on certain criteria. Producers must receive approval from the mark owners before using designated label on their product (Babcock and Clemens, 2004). In the case of Wisconsin Real Cheese, the Wisconsin Milk Marketing Board is certification mark owner, and will only allow the mark to be used on cheese produced in the state of Wisconsin.

The process of obtaining a trademark/certification mark involves applying for a label from the United States Patent and Trademark Office. When the label is approved, only product obtained from a specific region can use that label. As noted elsewhere, producers not in compliance with the rules and regulation of the mark owner, may be denied the right to use the mark.
5 European Union PDO/PGI Labeling System

In 1992, the EU formalized a PDO/PGI labeling program with the goal of agricultural products from being imitated under Regulation No. 2081/92 of the Council of the European Commission (EC, 2009). This regulation created two types of geographical indications: Protected Designation of Origin (PDO) and Protection of Geographical Indication (PGI). If certain production practices are taken into account and if the product is at least produced, processed, and/or prepared in that region, it is known as PDO. The product never leaves the area for any aspect of production or processing. PGI is similar to PDO but the requirement is that the product must be at least partially produced or processed in a particular region. Characteristics or reputation that is derived from that particular region can include factors such as climate, land, air, raw materials, etc. (Sanchez, 2008).

The PDO/PGI label indicates the reputation of a product which in turn determines the quality of a product (Loureiro and McClusky, 2000). For instance, a traceable name determines that a product is high quality because high standards were used to create the product. If reputation is bad, then the product will suffer in the market. Therefore, those producers with good reputation might find it beneficial to create a PDO/PGI label to identify the quality of their product and attempt to command a price premium. Certification and trademarks come at this idea from a slightly different tact, but still are trying to convey some quality (or qualities) associated with a particular region of production than enhances product desirability.

PDO/PGIs are owned regionally, by a group of producers that together make decisions regarding their products including basic regulations from the European Commission. As a result, Babcock and Clemens (2004) believe that this ensures the “economic benefits of GI protection are spread along the supply chain, including to the producers who supply the raw materials”. A consortium is often created to enforce the standards imposed by the PDO/PGI. Parmigiano-Reggiano cheese has the Consorzio del Formaggio Parmigiano-Reggiano that ensures its quality and safety control (Consorzio del Formaggio Parmigiano-Reggiano, 2008). These consortiums act as third party inspectors of the products as per Regulation 2081/92. The inspection includes a verification of origin, quality, hygiene, and may include taste checks (Babcock and Clemens 2004). The consortium may also handle marketing functions.

6 Society and the Two Labeling Systems

Certification and trademarks are used as a means to protect property rights in the United States, while the EU uses PDO/PGI to achieve the same end. In general, the PDO/PGI approach is more restrictive as a greater proportion of decision making is accomplished at the group level, as opposed to a more individualistic approach taken in the United States with certification and trade marks. The difference between the implementation of labeling of food products in the EU and the United States may be a result of society and culture. According to Hofstede (1980, 1983) the United States is an individualistic country while the countries of southern Europe (Italy, Spain, and Portugal) and France are more collectivist than the United States. People who live in an individualist country are concerned with their self-interest, which may include their immediate family. This is a loosely integrated culture that follows Adam Smith’s economic theory of “everybody for himself” and this will enable the group to reach the highest common good (Hofstede, 1983). This theory has been imbedded in American culture since its
founding in the 18th century. As a result, the use of a certification mark/trademark can view as the least intrusive approach to accomplish a group action but imposes little restrictions on the individual. Given that use of the certification mark/trademark is generally voluntary, individual producers can chose if they want to participate.

In contrast, southern European countries are largely societies with a more collectivist perspective. A collectivist society is one that is fully integrated with individuals being tied together through a group which might be extended family or community. An individual seeks to benefit the group as the group’s best interest is the best interest for the individual. Hofstede argues that Italy, France, Spain, and Portugal are in the middle of the scale between individualist and collectivist cultures with Spain and Portugal being more collectivist due to the Islamic influences introduced by the Moors in the 8th century. The higher degree of collectivism in these countries provides a possible explanation of the presence of more PDO/PGI products in these countries compared to the rest of Europe and the success of PDO/PGI labeling system. In these countries, working together is seen to benefit the group. Once the group benefits, loyalty becomes ingrained and the consortium that oversees the PDO/PGI is able to maintain membership. Loyalty is a major characteristic that is required to maintain profitability. For example, in the case of Parmigiano-Reggiano cheese, individual dairies have worked over generations with a particular cheese factory. In addition, the group has allowed the Consortium to make decisions regarding marketing of the final product. The supply chain, in theory, allows for an income guarantee for participants along the supply chain, thus ensuring profitability and continued existence.

In addition to the concepts of an individualistic versus collectivist society, Hofstede also discusses uncertainty avoidance as a cultural dimension. The uncertainty avoidance index in Hofstede’s research deals with tolerance for uncertainty and ambiguity and related to how comfortable (or uncomfortable) members of a culture are with unstructured situations. Cultures with high uncertainty avoidance would try to minimize risk with stricter laws and rules. Most southern European countries fall into a category of high uncertainty avoidance, while the United States has low uncertainty avoidance. As PDO/PGI labels carry more detailed information, this may be in response to a culture that desires less uncertainty. The more information contained in the label, the lower the uncertainty about the product being purchased.

The thesis of this paper is that ideas offered by Hofstede (1980, 1983) provide an explanation of why protection of property rights in food products in the United States and the EU have evolved along different lines and have been unable to reach agreement on a single system of labeling. In some cases, when an entity based in the EU exports to the United States, they create a trademark due to the fact that a certification mark (marks depicting the place of origin for the product) has been used. In this case the trademark is only a symbol, an icon, or a brand. The product from the EU then becomes “generic” losing its PDO/PGI status (O’Connor and Company, 2007).

It is apparent that consumers within the EU seek more information regarding product origin. Thus, the system of PDO/PGI labeling works in the EU whereas product origin is generally less important to consumers in the United States (Marette, Clemens, and Babcock, 2007). A recent

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1 Cuba and North Korea represent highly collectivist cultures with state control of nearly the entire economy.
study suggested the European consumers tend to prefer products that are from a recognizable region (Scarpa, Philippidis, and Spalatro, 2005).

In 1999, the United States filed a complaint in the WTO against EU regulations regarding the conflict between trademarks and PDO/PGI (Marette, Clemens, and Babcock, 2007). PDO/PGI labeling in the EU informs consumers on product origin, which in turn describes their quality and production features. Certification marks/trademarks used in the United States generally lack the same conveyance of information in terms of production, processing, and preparation of a product specific to a geographic area. If the EU is able to accomplish its apparent goal to maintain the PDO/PGI system, many existing product names that were protected by the certification mark/trademark system could lose rights to names already used. This observation is particularly true among both cheese and wine (Marette, Clemens, and Babcock, 2007).

Negotiations on the subject of PDO/PGI are ongoing. The EU has presented three proposals within the Doha round. The three proposals are to “establish a register of GIs protected across international boundaries”, “extend the higher level of protection already provided for wines and spirits to include other products”, and “to allow WTO member countries to retrieve or ‘claw back’ GIs currently being produced as unprotected products in other countries” (Babcock and Clemens, 2004). A single U.S. certification mark or trademark can encompass multiple products; therefore, if the United States were to switch to a GI system more in line with PDO/PGI, then U.S. food producers would need to adapt to a new marketing chain that allows more differentiation among products. It is reasonable to assume the cost of switching to this new marketing system would be high (re-branding products, legal issues, etc), therefore the United States has reasons beyond culture to maintain the current system.

7 Overview of Cheese Production

The production of cheese dates back more than 4,000 years, however, the exact time that cheese production began and original methods of production are not known. There are several legends regarding the origin of cheese, but the consensus is the cheese-making was brought to Europe by Asian travelers; cheese was recorded to have been made during the Roman empire. The importance of cheese was relatively small; it instead became an art created by monks in monasteries across Europe. In was not until 800 AD that cheese was re-introduced to history with Gorgonzola from the Po plain in Italy, and Roquefort from the Conques monastery in France. During the 17th century, European immigrants brought cheese to the New World, although the first commercial production plant was not established until 1851. Today, “cheese is one of the most widely consumed foods and a large category of products in the PDO/PGI database” (Sanchez, 2008).

The United States is the world’s largest supplier of cheese, accounting for 30% of world production, and with over 600 varieties of cheese (USDEC 2008). Per capita consumption of cheese in the United States was 31.5 pounds (14.3 kg) of which 13 pounds are American cheese (Cheddar, Colby, Monterrey Jack, and stirred curd) and 13.7 are Italian cheese (Mozzarella, Parmesan, Provolone, Ricotta, Romano, and others) (USDA-ERS, 2008). Wisconsin Real cheese includes more than 600 types and varieties of cheese and is one of the largest cheese producing entities in the United States accounting for 25% of the U.S. market in 2007 (Wisconsin Milk Marketing Board, 2009). Mozzarella is the largest cheese produced, followed by Cheddar.
Parmesan is grouped into the Other Italian group in the breakout of Wisconsin Real Cheese production shown in Figure 1.

**Figure 1.** Wisconsin cheese production by variety (2009 preliminary estimates, excluding cottage cheese). Source: USDA (2010).

Parmigiano-Reggiano is produced in north-central Italy, specifically in the provinces of Parma, Reggio Emilia, Modena, as well as parts of Mantua and Bologna. It is one of the highest valued PDO/PGI products in the EU with annual sales of approximately EU$ 1.4 billion in 2002 (Folkeson, 2005). Parmigiano-Reggiano is classified as a PDO due to the “soil characteristics of the area..., and the climate conditions that affect the natural flora, and the particular fermentation characteristics of the product” (Babcock and Clemens, 2004).

### 7.1 Wisconsin Real Cheese

Cheese producers in the state of Wisconsin, through its milk marketing board, have banded together and established the Wisconsin Real Cheese certification mark (Figure 2). The Wisconsin Milk Marketing Board owns the certification mark and it can only be applied to cheese produced, prepared, and packaged with the state of Wisconsin. Wisconsin has long been a leading dairy state in the United States and only recently was supplanted by California as the largest milk producing state. In 1872, to prevent deterioration of the quality of cheese, the Wisconsin Dairymen’s Association created a market for “Wisconsin Cheese”. In 1921, Wisconsin became the first state in the United States to grade its cheese for quality (Wisconsin
Today there are approximately 15,000 dairy farms in Wisconsin; 90% of milk output is used for cheese manufacture in 115 cheese plants.

**Figure 2. Wisconsin Real Cheese certification mark**

As Wisconsin Real Cheese is a certification mark (Figure 2), any cheese that is produced, prepared, and packaged in the state of Wisconsin can use the mark. The certification mark is used on more than 50 different types of cheese. Wisconsin Cheddar has the distinction of being the first graded cheese in the United States and now has a grade of USDA Grade AA. Grade AA is the highest graded used in the United States, and denotes uniformity of flavor, texture, and color across packages. Grade A has slight variation of flavor and color across packages (USDA-AMS, 1971).

To produce Wisconsin Real Cheese, there are no regulations related to the feed fed to dairy cattle. There are regulations imposed by the state for healthy and adulteration-free milk as well as USDA regulations related to the sanitary conditions of the processing facility. Producers of Wisconsin Real Cheese are required to purchase a license that enables them to use the certification mark. A master cheese maker, who generally specializes in one type of cheese, oversees the cheese-making process. These individuals are a Wisconsin licensed cheese maker with at least ten years of prior experience as well as five years in a specialized type of cheese. They also must complete a three-year training program.

### 7.2 Parmigiano-Reggiano

The production of Parmigiano-Reggiano can be traced back 900 years when monks located near the Po River used cow’s milk to produce cheese with a long maturation (Consorzio del Formaggio Parmigiano-Reggiano, 2008). Today there are approximately 450 small cheese factories and 9000 milk producers that follow standards established over several centuries. Parmigiano-Reggiano producers believe that the cheese derives it distinct flavor from the soil of the Po plain.

The Consorzio del Formaggio Parmigiano-Reggiano is the organization that oversees and enforces the standards for Parmigiano-Reggiano. Created in 1901, the consortium works to ensure the quality of mild and cheese. The stated responsibilities of the consortium are “the defense and protection of the Designation of Origin, the facilitation of trade and consumption by promoting every initiative aimed at safeguarding the typicality and unique features of the product” (Consorzio del Formaggio Parmigiano-Reggiano, 2008). Pin dot writing was introduced in 1964 to make the mark that identifies a cheese wheel as Parmigiano-Reggiano PDO.
Strict standards are maintained for the production of Parmigiano-Reggiano including restrictions on cattle diets, storage and transportation of milk, and rules on the cheese-making and maturation process. There are regulations that restrict the forage-concentrate ratio, types of forage crops permitted, a strict prohibition on feeding silage to mature cows, prohibition of the use of by-products including sugar beets and animal offal, concentrate feeds, and restrictions on other ingredients that can used in the ration. For the production of cheese, there are production standards, marketing standards, and standards for grated cheese.

In terms of milk handling, milk must be delivered to the cheese factory within two hours of milking. Milk from the evening delivery is left to settle overnight, resulting in the separation of fat. Cheese-making occurs the next morning and the newly-produced cheese is pressed into wheel shaped forms. After a few days, the wheels are immersed in a salt solution and the maturation process is initiated.

Humidity and temperature controlled rooms are used during the maturation process. The temperature in these rooms is maintained above 16°C. The wheels are placed on wood racks. After a minimum of 12 months of maturation, a quality check is performed on every wheel. Once a wheel is approved to meet PDO requirements, the pin-dot seal is inscribed which identifies date and site of production.

In addition, there are 16 regulations regarding the use of the Parmigiano-Reggiano mark on the cheese. Wheels that do not meet minimum standards have diagonal lines placed on their mark to indicate that this is not first quality cheese (Figure 3). If additional storage to 18 months is performed, a label with “Extra” or “Export” is added along with a seal that shows the longer maturity (Figure 3).

![Figure 3. Parmigiano-Reggiano Marks](image)

Since the production of Parmigiano-Reggiano is highly labor intensive, there are high levels of employment associated with cheese-making. This fact suggests that the PDO has accomplished one of its goals of supporting rural development.

8 Concluding Remarks

The protection of property rights is an important dimension in international trade. In the food sector, labels are used to identify product characteristics such as geographic indicators. The United States and the EU use differing approaches with respect to product labels and protection of property rights. The United States allows the use of certification
marks/trademarks. These marks are used to either denote region of product origin or brand names. In the EU, Protected Geographic Indicators (PGI) and Protected Designation of Origin (PDO) are used to identify products grown in a particular region or food products produced using a particular technology. There is a dispute between the two regions on how food labeling should be accomplished.

The main thesis of this paper is that it is differences in how societies are organized that explains the differences in the evolution of food labels. The United States is an individualistic society, so its use of geographic indicators involves little intrusion into individual rights; the societies of southern Europe and France are more collective with higher levels of uncertainty avoidance. Those countries have developed institutions that emphasize the group over the individual. PDO/PGI imposes more restrictions on individual behavior.

A brief case study of Wisconsin Real Cheese and Parmigiano-Reggiano from Italy was presented. The differences between the two highlight the greater willingness in the EU to impose a large number of regulations in order to produce what they perceive as a high quality product.
Table 1. The 41 EU products and origins proposed as Geographical Indications to be protected under the TRIPs Agreement of the World Trade Organization.

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<thead>
<tr>
<th>WINES AND SPIRITS</th>
<th>OTHER PRODUCTS</th>
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<tr>
<td>Beaujolais Wine, France</td>
<td>Asiago Cheese, Italy</td>
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<tr>
<td>Bordeaux Wine, France</td>
<td>Azafrán de la Mancha Saffron, Spain</td>
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<td>Bourgogne Wine, France</td>
<td>Comté Cheese, France</td>
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<td>Chablis Wine, France</td>
<td>Feta Cheese, Greece</td>
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<td>Champagne Wine, France</td>
<td>Fontina Cheese, Italy</td>
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<td>Chianti Wine, Italy</td>
<td>Gorgonzola Cheese, Italy</td>
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<tr>
<td>Cognac Wine, France</td>
<td>Grana Padano Cheese, Italy</td>
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<tr>
<td>Grappa di Barolo, del Piemonte, di Lombardia, del Trentino, del Friuli, del Veneto, dell’Alto Adige Wine brandy, Italy</td>
<td>Jijona y Turrón de Alicante Nougat, Spain</td>
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<tr>
<td>Graves Wine, Italy</td>
<td>Manchego Cheese, Spain</td>
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<td>Mortadella Bologna Meat sausage, Italy</td>
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<td>Malaga Wine, Spain</td>
<td>Mozzarella di Bufala Campana Cheese, Italy</td>
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<td>Marsala Wine, Italy</td>
<td>Parmigiano Reggiano Cheese, Italy</td>
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<td>Prosciutto di San Daniele Dry-cured ham, Italy</td>
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<td>Moselle Wine, Germany</td>
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<td>Sauternes Wine, France</td>
<td>Sávia Wine, France</td>
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